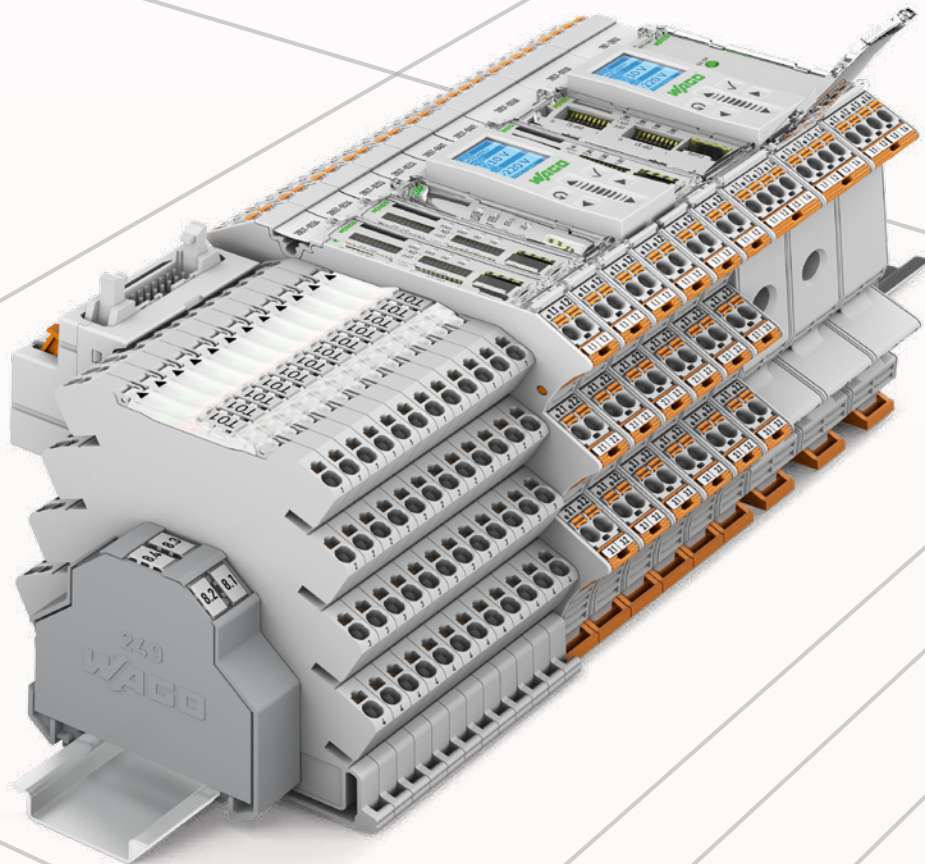


# WAGO Electronic Interface

Full Line Catalog, Volume 4 – Edition 2019/2020

4



# WAGO Full Line Catalogs



## Volume 1, WAGO Rail-Mount Terminal Block Systems

- Rail-Mount Terminal Blocks
- Rail-Mount Terminal Blocks with Pluggable Connector (X-COM®-SYSTEM)
- Patchboard Systems
- Terminal Strips
- PUSH WIRE® Connectors for Junction Boxes
- Lighting Connectors
- Shield Connecting System



## Volume 2, WAGO PCB Terminal Blocks and WAGO Connectors

- PCB Terminal Blocks
- THR/SMD PCB Terminal Blocks
- *MULTI CONNECTION SYSTEM (MCS)*
- Pluggable PCB Terminal Blocks
- Feedthrough Terminal Blocks
- Specialty Connectors
- Empty Housings



## Volume 3, Automation Technology

- Solutions & Software
- Operating & Monitoring
- Controllers
- Modular I/O-SYSTEM, IP20
- Industrial Switches
- Radio Technology
- IP67 Sensor/Actuator Boxes, IP67 Cables and Connectors



## Volume 4, WAGO Interface Electronic

- Relay and Optocoupler Modules
- Signal Conditioners and Isolation Amplifiers
- Current and Energy Measurement Technology
- Power Supplies
- Interface Modules and System Wiring
- Overvoltage Protection
- Empty Housings



## Volume 5, WAGO Pluggable Connection System WINSTA®

- Pluggable Connectors
- Snap-In Device Connectors
- Pluggable PCB Connectors
- Distribution Connectors
- Cable Assemblies
- Flat Cable Systems
- Distribution Boxes



## Volume 6, WAGO Marking

- Printer
- Software
- Terminal Block Marking
- Cable and Conductor Marking
- Device Marking
- Marker Carriers



## Volume 4, WAGO Electronic Interface

		Page	
	WAGO Relay Modules	6	1
	WAGO Solid-State Relay Modules and WAGO Optocoupler Modules	148	2
	WAGO Isolation Amplifiers and WAGO Signal Conditioners	236	3
	WAGO Current and Energy Measurement Technology	340	4
	WAGO Power Supplies	388	5
	WAGO Interface Modules	566	6
	WAGO System Wiring	608	7
	WAGO Interface Modules with Specialty Functions	656	8
	WAGO Empty Housings	708	9
	WAGO Overvoltage Protection	726	10
	WAGO Accessories and WAGO Tools	784	11
	Technical Section	834	12
	Indexes and Addresses	870	13

## Operating WAGO Connection Technologies

Please follow the applicable product-specific termination instructions.

### PUSH-IN CAGE CLAMP®



Push-in CAGE CLAMP® terminates the following copper conductors:  
solid



stranded



fine-stranded,  
also with tinned  
single strands



fine-stranded,  
tip-bonded



fine-stranded,  
with ferrule  
(gastight crimped)



fine-stranded,  
with pin terminal  
(gastight crimped)

The universal connection with an additional advantage:

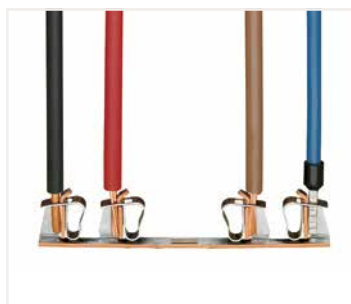
Push-in connection

Terminate solid and stranded (Class B 7 strands or less), as well as ferruled conductors, by simply pushing them in – no tools required.

Termination for all conductor types:

- Open clamping unit.
- Insert the conductor.
- Release clamp – done!

### CAGE CLAMP®



CAGE CLAMP® terminates the following copper conductors:  
solid



stranded



fine-stranded,  
also with tinned  
single strands



fine-stranded,  
tip-bonded



fine-stranded,  
with ferrule  
(gastight crimped)



fine-stranded,  
with pin terminal  
(gastight crimped)

The universal connection for solid, stranded and fine-stranded conductors

Termination:

- Open clamping unit.
- Insert the conductor.
- Release clamp – done!

## Operating WAGO Connection Technologies

Please follow the applicable product-specific termination instructions.

### POWER CAGE CLAMP®



POWER CAGE CLAMP terminates the following copper conductors:  
solid



stranded



fine-stranded,  
also with tinned  
single strands



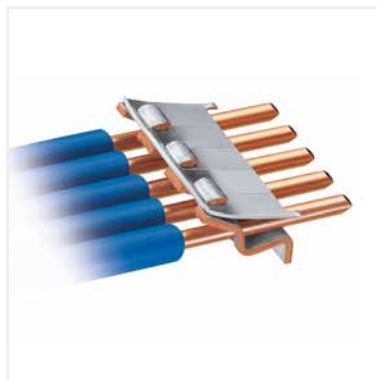
fine-stranded,  
with ferrule  
(gastight crimped)

The universal connection for conductors larger than 35 mm<sup>2</sup> (2 AWG)

Termination:

- Open clamp by turning a T-wrench counter-clockwise.
- Press the integrated latch to open clamping unit for hands-free wiring.
- Insert the conductor.
- A small counter-clockwise rotation closes the clamp, securing conductor.

### PUSH WIRE®



PUSH WIRE® terminates the following copper conductors:  
solid

PUSH WIRE® connection for solid and stranded conductors (depending on the model used)

Termination:

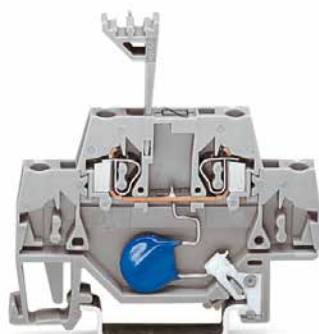
Tool-free, twist-free terminations for solid and rigid stranded conductors – simply push into the unit.

# The Right Interface

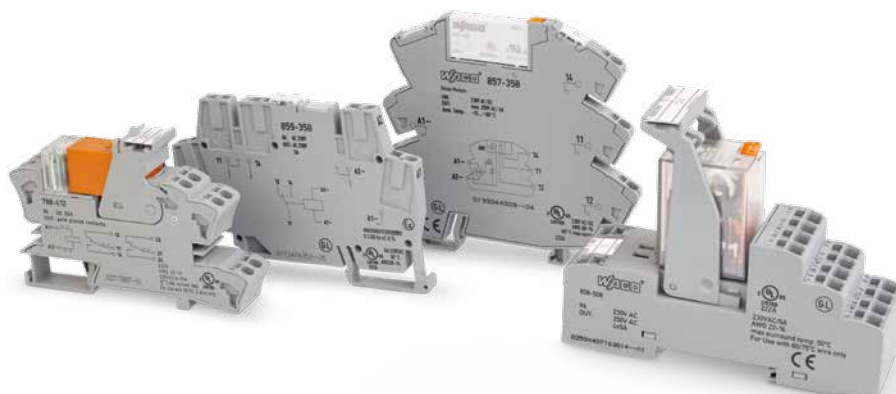
## WAGO Power Supplies



## WAGO Overvoltage Protection



## WAGO Relay Modules and WAGO Optocoupler Modules

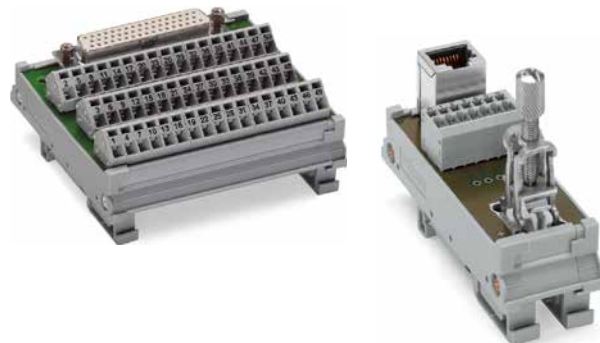


# for Every Application

## WAGO Signal Conditioners and WAGO Isolation Amplifiers



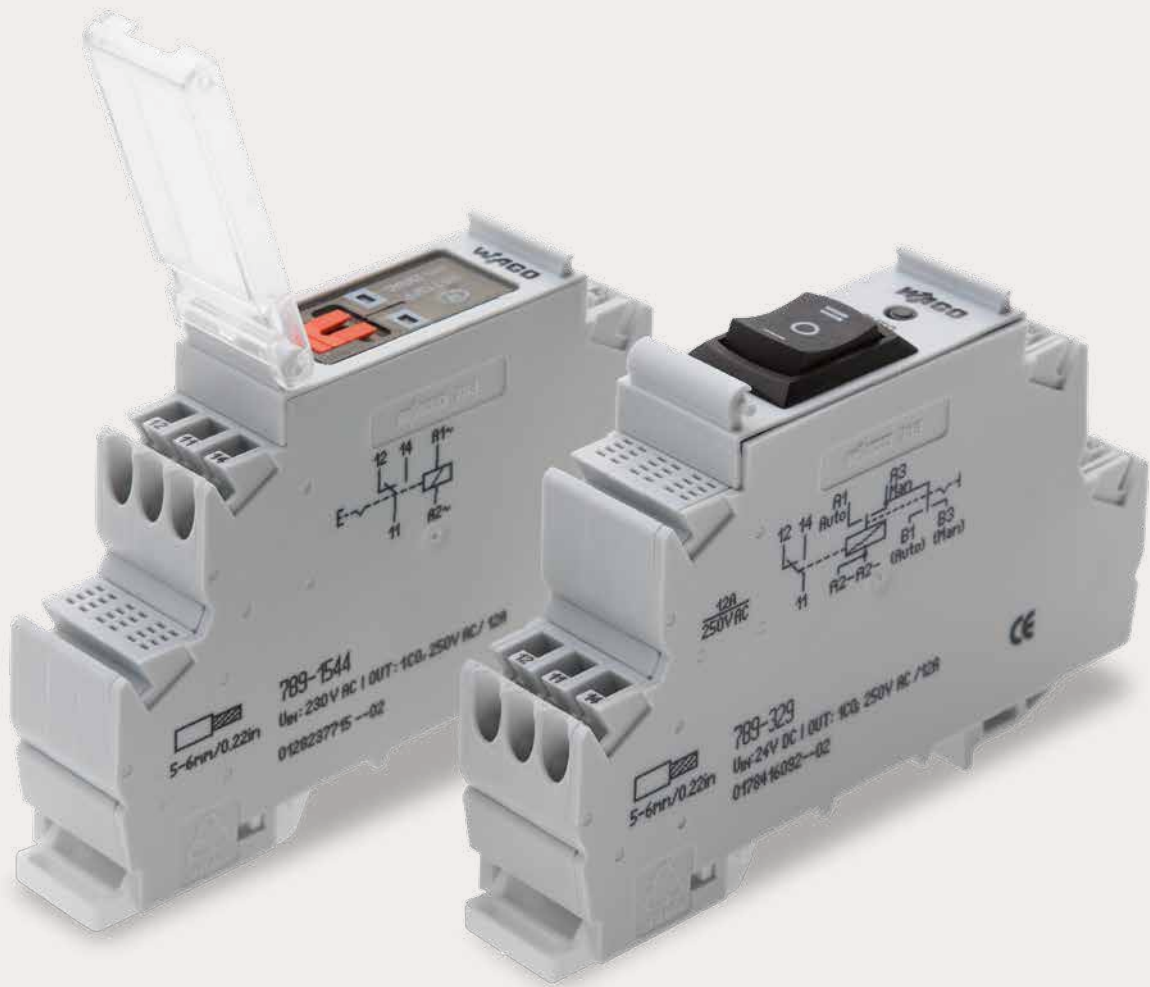
## WAGO Interface Modules



## WAGO Current and Energy Measurement Technology















# WAGO Relay Modules

## WAGO Relay Modules

		Page
	<b>Relay Modules, 857 Series</b>	
	Relay Modules	12
	Timer Relay Modules	22
	Accessories	26
	<b>Relay Modules, 788 Series</b>	
	Relay Modules	30
	Accessories	50
	<b>Relay Modules, 858 Series</b>	
	Relay Modules	64
	Accessories	74
	<b>Relay Modules, 859 Series</b>	
	Relay Modules	78
	Accessories	88
	<b>Relay Modules, 2042 Series</b>	
	Relay Modules	90
	Accessories	108
	<b>Relay Modules in a DIN-Rail Mount Enclosure, 789 Series</b>	
	Relay Modules	110
	Latching Relay Module	125
	Accessories	126
	<b>Relay Modules, 288 Series</b>	128
	<b>Relay Modules, 286 Series</b>	
	Relay Modules	136
	Accessories	146

# WAGO Relay Modules Selection Guide

1

Nominal Input Voltage U <sub>nom</sub>	Limiting Continuous Current	Make Contact	Break Contact	Changeover Contact	Approvals								Contact Material	For Railway Applications	Specialty function	Item Number	Page	
					EN 50121-3-2	EN 50155	EN 61373	EN 50205	EN 61810-3	EN 61812-1	GL	UL 508						ATEX
5 VDC	5 A			1			■					■	■		AgSnO <sub>2</sub>		859-302	78
5 VDC	5 A			1			■					■	■		AgNi + Au		859-312	79
12 VDC	5 A			1			■					■	■		AgSnO <sub>2</sub>		859-303	78
12 VDC	5 A			1			■					■	■		AgSnO <sub>2</sub>		859-353	80
12 VDC	5 A			4			■						■	AgCe	With manual operation	858-303	64	
12 VDC	6 A			1			■						■	AgSnO <sub>2</sub>		857-303	12	
12 VDC	8 A			2			■						■	AgNi 90/10		788-311	32	
12 VDC	16 A			1			■						■	AgNi 90/10		788-303	30	
12 VDC	16 A			1			■						■	AgSnO <sub>2</sub>	For lamp loads	788-353	38	
24 VDC	0.3 A			2				■					■	AgNi + Au	Force-guided contacts	788-906	42	
24 VDC	5 A	1												AgSnO <sub>2</sub>		286-364	136	
24 VDC	5 A	1												AgNi 0.15		288-364	128	
24 VDC	5 A	4			■		■							AgNi	■	2042-3024	102	
24 VDC	5 A	2	2			■	■							AgNi	■	2042-3084	104	
24 VDC	5 A	3	1			■	■							AgNi	■	2042-3074	103	
24 VDC	5 A		1											AgNi 0.15		288-368	129	
24 VDC	5 A		1											AgNi		286-368	137	
24 VDC	5 A		1				■				■	■		AgSnO <sub>2</sub>		859-304	78	
24 VDC	5 A		1				■				■	■		AgSnO <sub>2</sub>	■	859-390	82	
24 VDC	5 A		1				■				■			AgSnO <sub>2</sub>	■	859-398	85	
24 VDC	5 A		1				■				■	■		AgNi + Au		859-314	79	
24 VDC	5 A		1				■				■	■		AgNi + Au	■	859-392	83	
24 VDC	5 A		2											AgNi 10 +Au	Force-guided contacts	288-437	133	
24 VDC	5 A		4				■				■	■		AgCe	With manual operation	858-304	64	
24 VDC	5 A		4				■				■	■		AgCe + Au	With manual operation	858-314	65	
24 VDC	5 A		4				■				■	■		AgCe	■ With manual operation	858-354	68	
24 VDC	5 A		4				■				■	■		AgCe + Au	■ With manual operation	858-355	69	
24 VDC	6 A	1			■		■							AgSnO <sub>2</sub>	■	2042-3004	90	
24 VDC	6 A	1	1											AgSnO <sub>2</sub>		286-320	142	
24 VDC	6 A	2												AgSnO <sub>2</sub>		286-328	143	
24 VDC	6 A		1		■		■							AgSnO <sub>2</sub>	■	2042-3054	91	
24 VDC	6 A		1				■				■	■	■	AgSnO <sub>2</sub>		857-304	12	
24 VDC	6 A		1				■				■	■	■	AgNi + Au		857-314	13	
24 VDC	6 A		1		■		■			■	■			AgSnO <sub>2</sub>	■ Multifunctional/multi-time	857-640	22	
24 VDC	6 A		1		■		■			■	■			AgSnO <sub>2</sub>	■ Multifunctional/multi-time	857-642	23	
24 VDC	6 A		1		■		■			■	■			AgSnO <sub>2</sub>	■ Multifunctional/multi-time	857-604	24	
24 VDC	6 A		1											AgNi 0.15	Bistable	286-380	144	
24 VDC	6 A		1											AgNi 0.15	Bistable	286-381	145	
24 VDC	6 A		1											AgNi 90/10		288-304	130	
24 VDC	6 A		1											AgNi 0.15	Bistable	288-380	132	
24 VDC	6 A		2											AgNi 0.15		288-312	131	
24 VDC	6 A		2				■	■				■		AgNi	Force-guided contacts	788-384	41	
24 VDC	6 A		4									■		AgNi 90/10	With manual operation	858-390	70	
24 VDC	7 A		1											AgNi 0.15		286-304	138	
24 VDC	7 A		2											AgNi 0.15		286-312	140	
24 VDC	8 A	2			■		■							AgNi	■	2042-3014	96	
24 VDC	8 A	1	1		■		■							AgNi	■	2042-3064	98	
24 VDC	8 A		2				■					■		AgNi 90/10		788-312	32	
24 VDC	8 A		2				■					■		AgNi + Au		788-412	33	
24 VDC	8 A		2				■					■		AgNi	With manual operation	788-346	45	
24 VDC	8 A		2				■							AgNi	■ With manual operation	788-390	48	
24 VDC	8 A		2											AgNi 90/10		789-312	112	
24 VDC	8 A		2											AgNi	With manual operation	789-1346	118	

# WAGO Relay Modules Selection Guide

Nominal Input Voltage $U_{in(nom)}$	Limiting Continuous Current	Make Contact	Break Contact	Changeover Contact	Approvals										Contact Material	For Railway Applications	Specialty function	Item Number	Page	
					EN 50121-3-2	EN 50155	EN 61373	EN 50205	EN 61810-3	EN 61812-1	GL	UL 508	ATEX	IEC Ex						
24 VDC	8 A			2		■	■									AgNi	■		2042-3044	97
24 VDC	10 A			1	■		■									AgNi	■		2042-3034	94
24 VDC	12 A			1												AgNi 90/10			789-304	110
24 VDC	12 A			1												AgNi		With manual operation	789-1341	116
24 VDC	12 A			1						■						AgSnO <sub>2</sub>		For lamp loads; Manual/OFF/Auto switch	789-326	123
24 VDC	12 A			1												AgSnO <sub>2</sub>		For lamp loads; Manual/OFF/Auto switch	789-329	124
24 VDC	12 A			2										■		AgNi		With manual operation	858-324	72
24 VDC	16 A	1					■							■		AgSnO <sub>2</sub>		For lamp loads	788-356	39
24 VDC	16 A	1					■									AgSnO <sub>2</sub>		For lamp loads	788-357	40
24 VDC	16 A	1														AgSnO <sub>2</sub>		For lamp loads; Manual/OFF/Auto switch	789-323	120
24 VDC	16 A	1								■						AgSnO <sub>2</sub>		For lamp loads; Manual/OFF/Auto switch	789-324	121
24 VDC	16 A	1														AgSnO <sub>2</sub>		For lamp loads; Manual/OFF/Auto switch	789-325	122
24 VDC	16 A	1														AgSnO <sub>2</sub>			789-571	125
24 VDC	16 A			1			■							■		AgNi 90/10			788-304	30
24 VDC	16 A			1			■							■		AgNi + Au			788-404	31
24 VDC	16 A			1			■							■		AgSnO <sub>2</sub>		For lamp loads	788-354	38
24 VDC	16 A			1			■							■		AgNi		With manual operation	788-341	44
36 VDC	5 A			1			■									AgNi + Au	■		859-386	83
48 VDC	5 A			1			■						■	■		AgSnO <sub>2</sub>			859-305	78
48 VDC	5 A			1			■						■			AgSnO <sub>2</sub>	■		859-397	85
48 VDC	5 A			1			■									AgNi + Au	■		859-384	83
48 VDC	5 A			4			■							■		AgCe		With manual operation	858-305	64
48 VDC	6 A			1			■							■		AgSnO <sub>2</sub>			857-305	12
48 VDC	8 A			2			■							■		AgNi 90/10			788-313	32
48 VDC	12 A			2										■		AgNi		With manual operation	858-325	72
48 VDC	16 A			1			■							■		AgNi 90/10			788-305	30
60 VDC	8 A			2			■							■		AgNi 90/10			788-314	32
60 VDC	16 A			1			■							■		AgNi 90/10			788-306	30
110 VDC	5 A			1			■						■	■		AgSnO <sub>2</sub>			859-307	78
110 VDC	5 A			1			■						■	■		AgSnO <sub>2</sub>	■		859-391	84
110 VDC	5 A			1			■						■			AgSnO <sub>2</sub>	■		859-399	85
110 VDC	5 A			1			■						■	■		AgNi + Au	■		859-317	83
110 VDC	5 A			4			■							■		AgCe		With manual operation	858-307	64
110 VDC	6 A			4										■		AgNi 90/10		With manual operation	858-392	70
110 VDC	8 A			2			■							■		AgNi 90/10			788-315	32
110 VDC	12 A			2										■		AgNi		With manual operation	858-327	72
110 VDC	16 A			1			■							■		AgNi 90/10			788-307	30
220 VDC	5 A			1			■							■	■	AgSnO <sub>2</sub>			859-308	78
220 VDC	5 A			1			■							■	■	AgNi + Au			859-318	79
220 VDC	5 A			4			■							■		AgCe		With manual operation	858-308	64
220 VDC	6 A			4										■		AgNi 90/10		With manual operation	858-391	70
220 VDC	12 A			2										■		AgNi		With manual operation	858-328	72

# WAGO Relay Modules Selection Guide

1

Nominal Input Voltage $U_{nom}$	Limiting Continuous Current	Make Contact	Break Contact	Changeover Contact	Approvals								Contact Material	For Railway Applications	Specialty function	Item Number	Page	
					EN 50121-3-2	EN 50155	EN 61373	EN 50205	EN 61810-3	EN 61812-1	GL	UL 508						ATEX
12 VAC	6 A	4	4					■					■		AgSnO <sub>2</sub>	Force-guided contacts	288-413	134
24 VAC	5 A			4			■						■		AgCe	With manual operation	858-504	66
24 VAC	5 A			4			■						■		AgCe + Au	With manual operation	858-514	67
24 VAC	8 A			2			■						■		AgNi 90/10		788-512	36
24 VAC	8 A			2			■						■		AgNi	With manual operation	788-546	47
24 VAC	16 A			1			■						■		AgNi 90/10		788-506	34
24 VAC	16 A			1			■						■		AgNi	With manual operation	788-541	46
115 VAC	5 A			1			■					■	■		AgSnO <sub>2</sub>	Defined switch-on threshold	859-367	86
115 VAC	5 A			4			■						■		AgCe	With manual operation	858-507	66
115 VAC	5 A			4			■						■		AgCe + Au	With manual operation	858-517	67
115 VAC	7 A			1											AgNi 0.15		286-507	139
115 VAC	8 A			2			■						■		AgNi 90/10		788-515	36
115 VAC	8 A			2			■						■		AgNi + Au		788-615	37
115 VAC	8 A			2			■						■		AgNi	With manual operation	788-548	47
115 VAC	16 A			1			■						■		AgNi 90/10		788-507	34
115 VAC	16 A			1			■						■		AgNi + Au		788-607	35
115 VAC	16 A			1			■						■		AgNi	With manual operation	788-543	46
230 VAC	5 A			4			■					■	■		AgCe	With manual operation	858-508	66
230 VAC	5 A			4			■					■	■		AgCe + Au	With manual operation	858-518	67
230 VAC	5 A			1			■					■	■		AgSnO <sub>2</sub>	Defined switch-on threshold	859-368	87
230 VAC	6 A			1			■								AgSnO <sub>2</sub>	Integrated base load module	857-358/006-000	16
230 VAC	6 A			1			■								AgNi + Au	Integrated base load module	857-368/006-000	17
230 VAC	7 A			1											AgNi 0.15		286-508	139
230 VAC	7 A			2											AgNi 0.15		286-516	141
230 VAC	8 A			2			■						■		AgNi 90/10		788-516	36
230 VAC	8 A			2			■						■		AgNi + Au		788-616	37
230 VAC	8 A			2			■						■		AgNi	With manual operation	788-549	47
230 VAC	8 A			2											AgNi	With manual operation	789-1549	119
230 VAC	12 A			1											AgNi 90/10		789-508	111
230 VAC	12 A			1											AgNi	With manual operation	789-1544	117
230 VAC	12 A			2									■		AgNi	With manual operation	858-528	73
230 VAC	16 A	1													AgSnO <sub>2</sub>		789-570	125
230 VAC	16 A			1			■						■		AgNi	With manual operation	788-544	46
230 VAC	16 A			1			■						■		AgNi 90/10		788-508	34
230 VAC	16 A			1			■						■		AgNi + Au		788-608	35

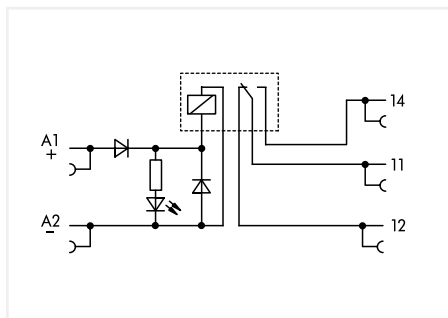


# WAGO Relay Modules Selection Guide

Nominal Input Voltage $U_{nom}$	Limiting Continuous Current	Make Contact	Break Contact	Changeover Contact	Approvals								Contact Material	For Railway Applications	Specialty function	Item Number	Page		
					EN 50121-3-2	EN 50155	EN 61373	EN 50205	EN 61810-3	EN 61812-1	GL	UL 508						ATEX	IEC Ex
12 VAC/DC	5 A			1			■					■	■		AgSnO <sub>2</sub>		859-353	80	
24 VAC/DC	4 A	1					■						■	■	■	AgSnO <sub>2</sub>		857-1330	20
24 VAC/DC	4 A	4														AgNi + Au		789-552	114
24 VAC/DC	4 A	2	2													AgNi + Au		789-536	115
24 VAC/DC	5 A	1														AgNi 0.15		288-564	128
24 VAC/DC	5 A			1			■					■	■			AgSnO <sub>2</sub>		859-354	80
24 VAC/DC	6 A	4	4					■								AgSnO <sub>2</sub>	Force-guided contacts	288-414	134
24 VAC/DC	6 A			1			■									AgSnO <sub>2</sub>		857-354	14
24 VAC/DC	6 A			1												AgNi 90/10		288-504	130
24 VAC/DC	6 A			1			■									AgNi + Au		857-364	15
24 VAC/DC	6 A			2												AgNi 0.15		288-512	131
24 VAC/DC	16 A	1														AgSnO <sub>2</sub>	For lamp loads	789-520	113
48 VAC/DC	5 A			1			■					■	■			AgSnO <sub>2</sub>		859-355	80
115 VAC/DC	5 A			1			■					■	■			AgNi + Au		859-360	81
115 VAC/DC	5 A			1			■					■	■			AgSnO <sub>2</sub>		859-357	80
115 VAC/DC	6 A			1			■						■	■		AgSnO <sub>2</sub>		857-357	12
115 VAC/DC	6 A			1			■						■	■		AgNi + Au		857-367	15
230 VAC/DC	5 A			1			■					■	■			AgSnO <sub>2</sub>		859-358	80
230 VAC/DC	5 A			1			■					■	■			AgNi + Au		859-359	81
230 VAC/DC	6 A	4	4					■					■			AgSnO <sub>2</sub>	Force-guided contacts	288-418	134
230 VAC/DC	6 A			1			■					■	■	■		AgSnO <sub>2</sub>		857-358	12
230 VAC/DC	6 A			1			■					■	■	■		AgNi + Au		857-368	15
24 ... 230 VAC/DC	3 A	1			■		■									AgSnO <sub>2</sub>		2042-3809	92
24 ... 230 VAC/DC	3 A	4				■	■									AgNi		2042-3829	105
24 ... 230 VAC/DC	3 A	2	2			■	■									AgNi		2042-3889	107
24 ... 230 VAC/DC	3 A	3	1			■	■									AgNi		2042-3879	106
24 ... 230 VAC/DC	4 A			1		■	■									AgNi		2042-3839	95
24 ... 230 VAC/DC	5 A	2			■		■									AgNi		2042-3819	99
24 ... 230 VAC/DC	5 A	1	1		■		■									AgNi		2042-3869	101
24 ... 230 VAC/DC	5 A			2	■		■									AgNi		2042-3849	100
24 ... 230 VAC/DC	6 A			1		■	■									AgSnO <sub>2</sub>		2042-3859	93
24 ... 230 VAC/DC	6 A			1	■		■					■				AgSnO <sub>2</sub>		857-359	18
24 ... 230 VAC/DC	6 A			1	■		■					■				AgNi + Au		857-369	19

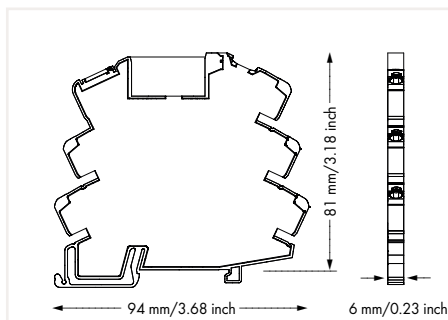
# Relay Module

## 857 Series



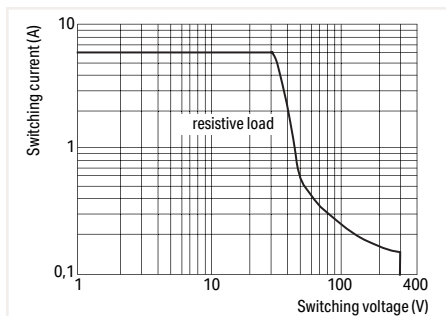
Relay Module; 1 changeover contact; Limiting continuous current: 6 A; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
12 VDC	17 mA	857-303	25
24 VDC	10 mA	857-304	25
48 VDC	6.5 mA	857-305	25
115 VAC/DC	4 mA	857-357	25
230 VAC/DC	3.5 mA	857-358	25



### Note:

To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching frequency with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Rated voltage	250 VDC
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	30.6 g
--------	--------

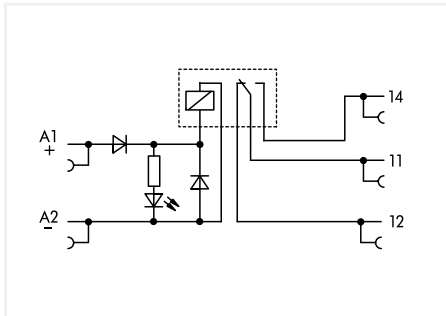
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

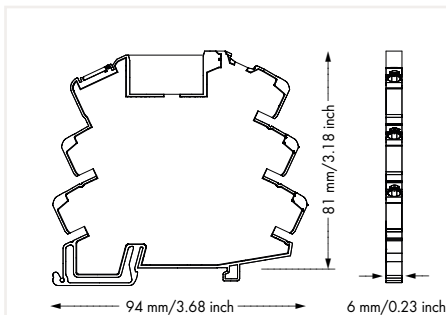
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508; ATEX, IEC Ex
--------------------------	------------------------------------------------------------

## Relay Module 857 Series



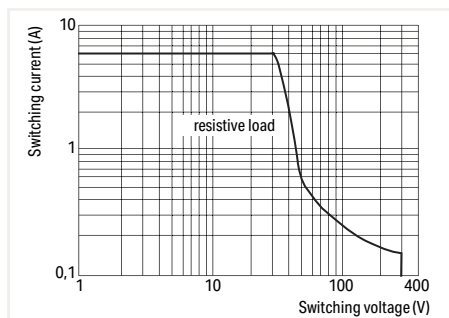
Relay Module; 1 changeover contact; Limiting continuous current: 6 A; with gold contacts; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	10 mA	857-314	25



### Note:

To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi + Au
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	1 V / 1 mA / 1 mW
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching frequency with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Rated voltage	250 VDC
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	31.2 g
--------	--------

### Environmental Requirements

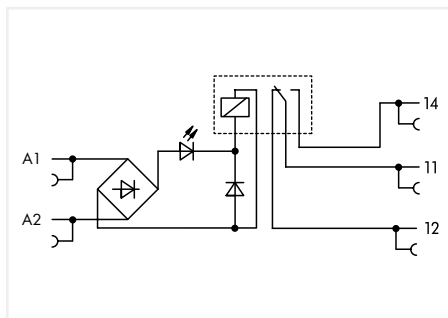
Surrounding air temperature (operation at $U_N$ )	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508; GL; ATEX; IEC Ex
--------------------------	----------------------------------------------------------------

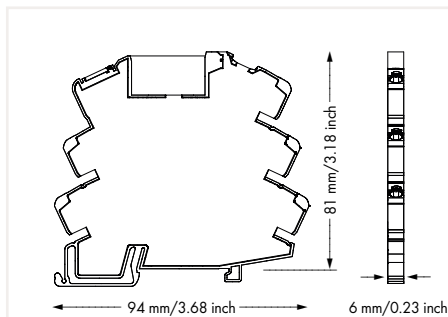
# Relay Module

## 857 Series



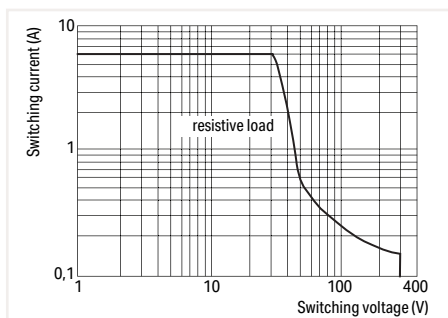
Relay Module; 1 changeover contact; Limiting continuous current: 6 A; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VAC/DC	8.5 mA	857-354	25
115 VAC/DC	4 mA	857-357	25
230 VAC/DC	3.5 mA	857-358	25



### Note:

To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 % (857-354; 857-357); -20 ... +10 % (857-358)
---------------------	--------------------------------------------------------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>5</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching frequency with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Rated voltage	250 VDC
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	30.6 g
--------	--------

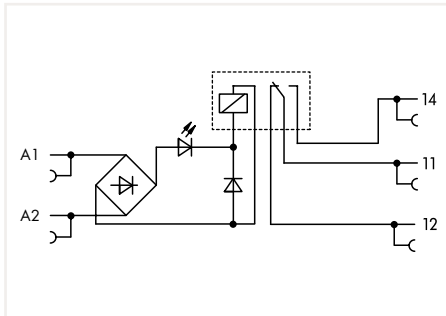
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

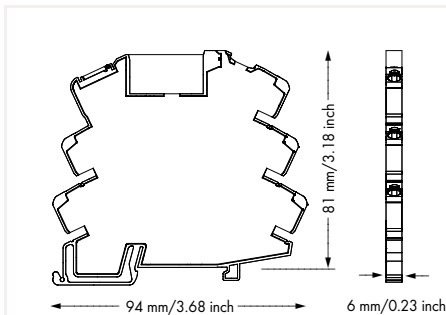
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508; ATEX, IEC Ex
--------------------------	------------------------------------------------------------

## Relay Module 857 Series



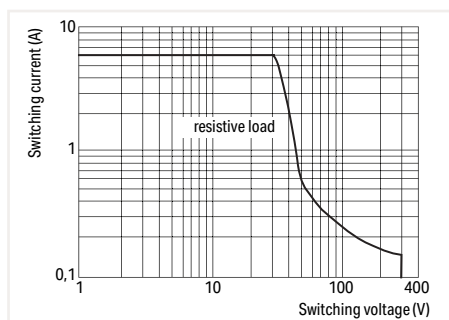
Relay Module; 1 changeover contact; Limiting continuous current: 6 A; with gold contacts; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VAC/DC	8.5 mA	857-364	25
115 VAC/DC	4 mA	857-367	25
230 VAC/DC	3.5 mA	857-368	25



### Note:

To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 % (857-364; 857-367); -20 ... +10 % (857-368)
---------------------	--------------------------------------------------------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi + Au
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	1 V / 1 mA / 1 mW
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50x 10 <sup>3</sup> switching operations
Mechanical life	5x 10 <sup>6</sup> switching operations
Switching frequency with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Rated voltage	250 VDC
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	30.3 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

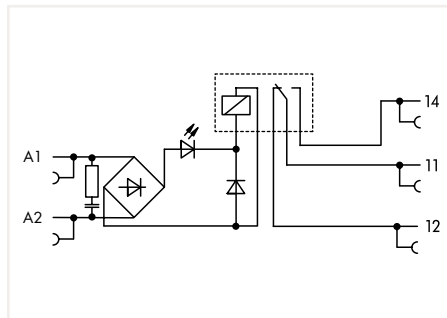
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508; ATEX, IEC Ex
--------------------------	------------------------------------------------------------



# Relay Module 857 Series

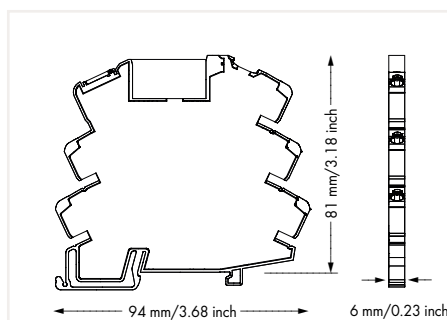


Similar to pictured device

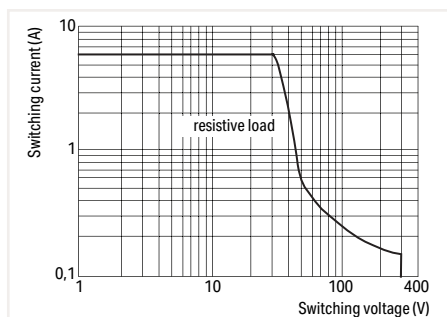


Relay Module; 1 changeover contact; Limiting continuous current: 6 A; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
230 VAC	16 mA	857-358/006-000	25



**Note:**  
To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +10 %
Line capacitance (max.)	170 nF
Cable length (control circuit)	≤ 350 m (for a line capacitance of 330 nF/km)

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>5</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching frequency with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Rated voltage	250 VDC
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

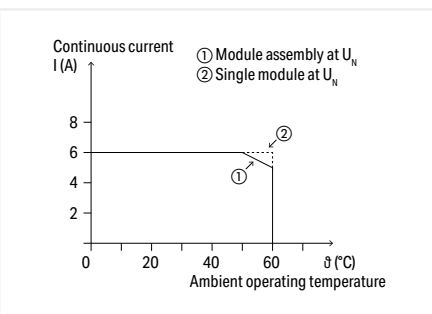
Weight	33.2 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373
--------------------------	--------------------------------------

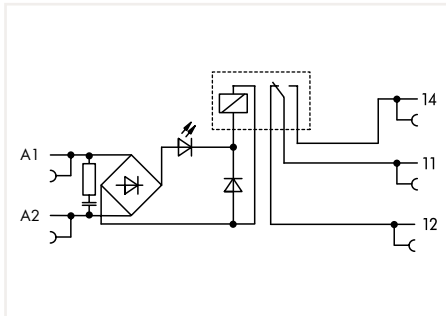


Current-Carrying Capacity Curve

# Relay Module 857 Series

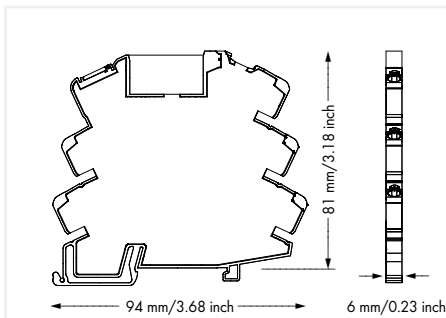


Similar to pictured device



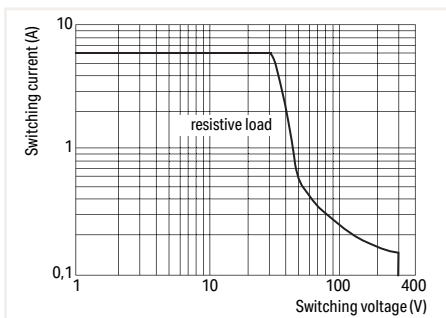
Relay Module; 1 changeover contact; Limiting continuous current: 6 A; with gold contacts; with integrated base load module; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
230 VAC	16 mA	857-368/006-000	25



**Note:**

- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.
- To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +10 %
Line capacitance (max.)	170 nF
Cable length (control circuit)	≤ 350 m (for a line capacitance of 330 nF/km)

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi + Au
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	1 V / 1 mA / 1 mW
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching frequency with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Rated voltage	250 VDC
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

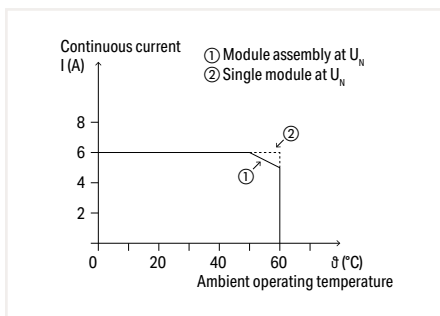
Weight	31.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

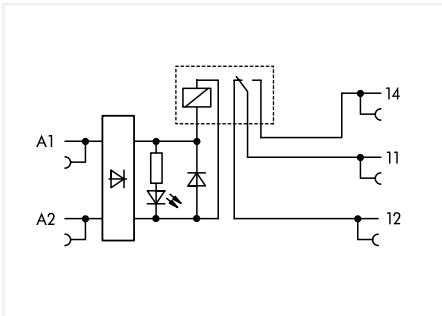
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373
--------------------------	--------------------------------------



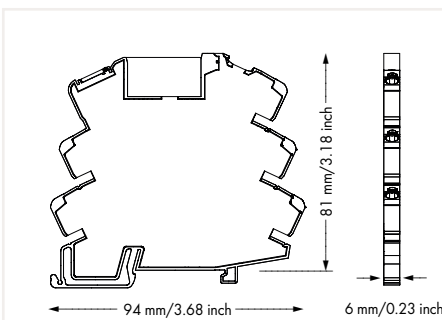
Current-Carrying Capacity Curve

# Relay Module 857 Series

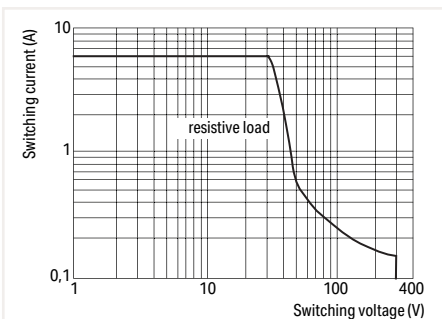


Relay Module; 1 changeover contact; Limiting continuous current: 6 A; Status indicator: yellow; 6 mm wide

$U_N$	Item No.	Pack. Unit
24 ... 230 VAC/DC	857-359	25



**Note:**  
To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +10 %
Input current	3.5 mA (230 VAC); 20 mA (24 VDC)

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching frequency with/without load (max.)	6 min <sup>-1</sup> / 60 min <sup>-1</sup>

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Rated voltage	250 VDC
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

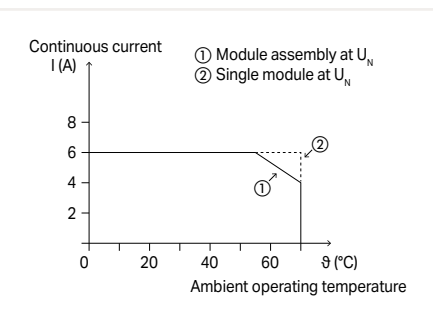
Weight	30.9 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

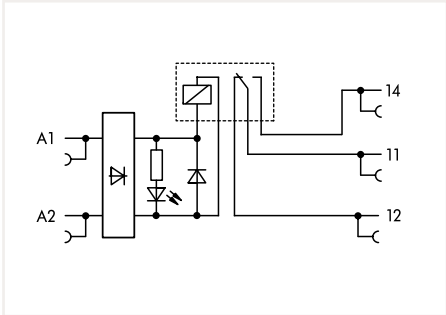
### Standards and Specifications

Standards/specifications	EN 50121-3-2; EN 50121-4; EN 61000-6-2; EN 61000-6-3; EN 61010-2-201; EN 61810-1; EN 61373; UL 508
--------------------------	----------------------------------------------------------------------------------------------------



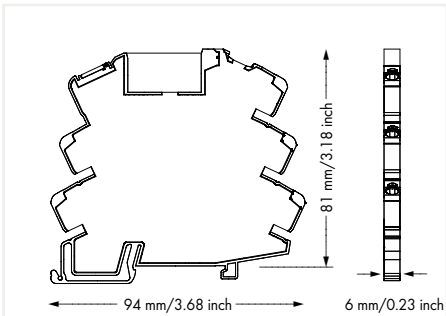
Current-Carrying Capacity Curve

# Relay Module 857 Series

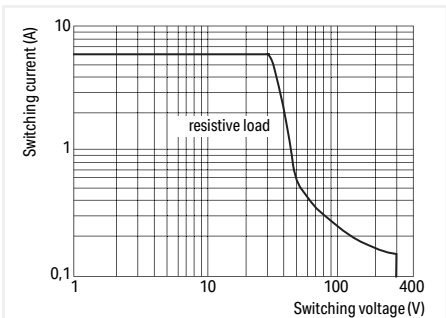


Relay Module; 1 changeover contact; Limiting continuous current: 6 A; with gold contacts; Status indicator: yellow; 6 mm wide

$U_N$	Item No.	Pack. Unit
24 ... 230 VAC/DC	857-369	25



**Note:**  
To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

Control Circuit	
Input voltage range	-30 ... +10 %
Input current	3.5 mA (230 VAC); 20 mA (24 VDC)

Load Circuit	
Number of changeover/switchover contacts	1
Contact material	AgNi + Au
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	1 V / 1 mA / 1 mW
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching frequency with/without load (max.)	6 min <sup>-1</sup> / 60 min <sup>-1</sup>

Signaling	
Status indicator	Yellow LED

Safety and Protection	
Rated voltage	250 VDC
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

Connection Data	
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

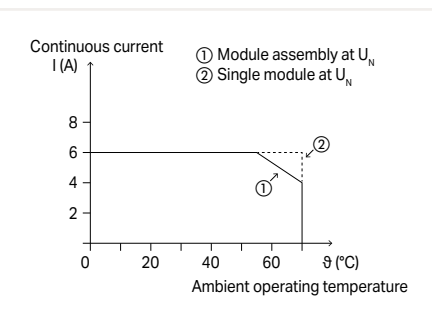
Physical Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Weight	31.9 g

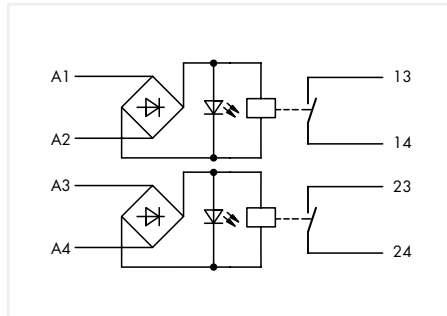
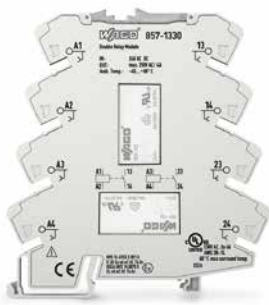
Environmental Requirements	
Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

Standards and Specifications	
Standards/specifications	EN 50121-3-2; EN 50121-4; EN 61000-6-2; EN 61000-6-3; EN 61010-2-201; EN 61810-1; EN 61373; UL 508



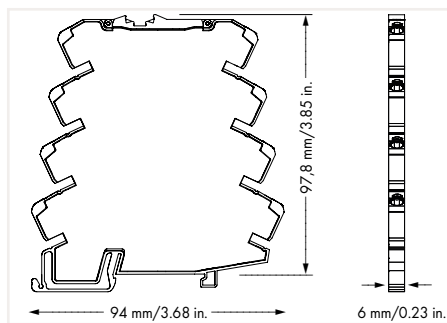
Current-Carrying Capacity Curve

# Relay Module 857 Series

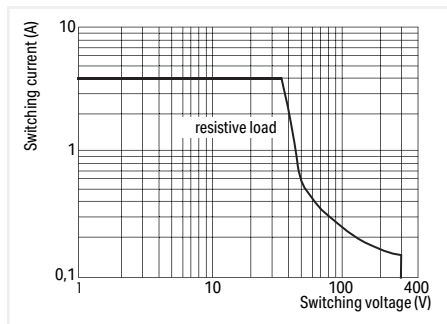


Relay Module; 2-channel; 1 make contact; Limiting continuous current: 4 A; Status indicator: yellow; 6 mm wide

U <sub>N</sub>	I <sub>N</sub>	Item No.	Pack. Unit
AC/DC 24	10 mA	857-1330	25



**Note:**  
To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 %
---------------------	---------------

### Load Circuit

Number of make contacts/switch-on contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	4 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching frequency with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Rated voltage	250 VDC
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	4 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	39.2 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at U <sub>N</sub> )	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

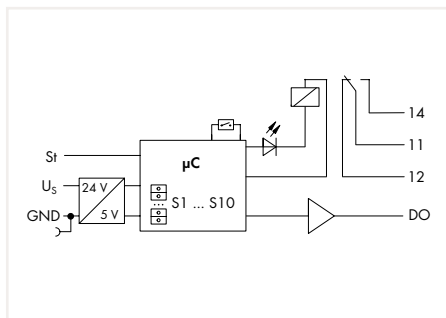
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508; ATEX, IEC Ex
--------------------------	------------------------------------------------------------



# Timer Relay Module

## 857 Series

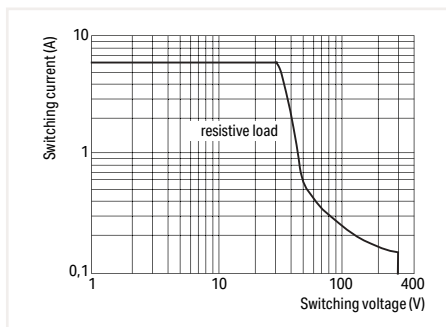


Timer Relay Module; 1 changeover contact; Limiting continuous current: 6 A; for railway applications; Multifunctional/multi-time; Status indicator: yellow; 6 mm wide

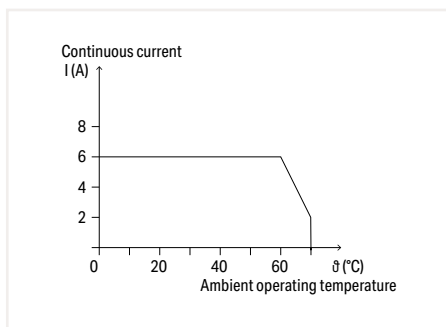
$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	18 mA	857-640	1

### Features:

- 14 functions
- Function and time range adjustable via DIP switch



DC Load Limit Curve



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range	±30 %
Time range	Adjustable: 0.01 ... 0.1 s; 0.1 ... 1 s; 1 ... 10 s; 10 ... 100 s; 1 ... 10 min; 10 ... 100 min; 1 ... 10 h; 10 ... 100 h
Reset time	50 ms
Minimum pulse length (control input)	10 ms
Functions	On delay; On-delay, with control input; Off-delay, with control input; On- and off-delay, with control input; Single-shot leading edge; Single-shot leading edge, with control input; Off-delay, with control input; Single-shot leading and trailing edge, with control input; On-delay and single-shot leading edge; On-delay and single-shot leading edge, with control input; Step switching; Blinking, pulse start; Blinking, interval start; Relay switching

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Digital output (DO)	$U_N - 1$ V; 100 mA

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Rated voltage	250 VDC
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	33.2 g
--------	--------

### Environmental Requirements

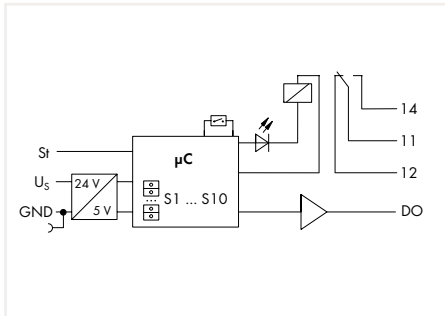
Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61812-1; EN 61373; EN 50121-3-2; UL 508
--------------------------	--------------------------------------------



# Timer Relay Module 857 Series

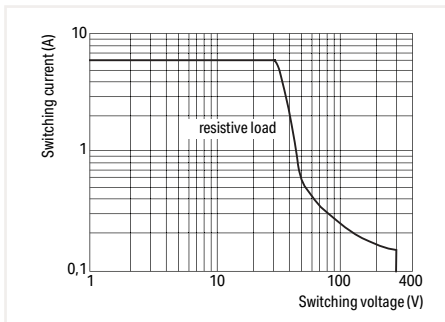


Timer Relay Module; 1 changeover contact; Limiting continuous current: 6 A; for railway applications; Multifunctional/multi-time; Status indicator: yellow; 6 mm wide

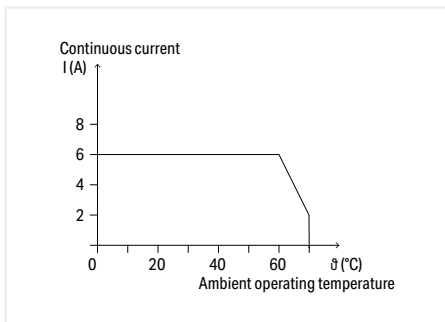
$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	18 mA	857-642	1

#### Features:

- 7 functions
- 2 separately adjustable time ranges
- Function and time range adjustable via DIP switch



DC Load Limit Curve



Current-Carrying Capacity Curve

#### Control Circuit

Input voltage range	±30 %
Time range	Adjustable: 0.01 ... 0.1 s; 0.1 ... 1 s; 1 ... 10 s; 10 ... 100 s; 1 ... 10 min; 10 ... 100 min; 1 ... 10 h; 10 ... 100 h
Reset time	50 ms
Minimum pulse length (control input)	10 ms
Functions	On- and off-delay, with control input; On-delay and single-shot leading edge; On-delay and single-shot leading edge, with control input; Single-shot leading and trailing edge, with control input; Pulse sequence evaluation, with control input; Repeat cycle timer, pulse start; Repeat cycle timer, interval start, control input

#### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Digital output (DO)	$U_N - 1$ V; 100 mA

#### Signaling

Status indicator	Yellow LED
------------------	------------

#### Safety and Protection

Rated voltage	250 VDC
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

#### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

#### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

#### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

#### Material Data

Weight	51.31 g
--------	---------

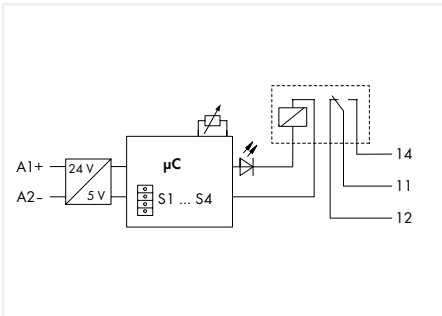
#### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

#### Standards and Specifications

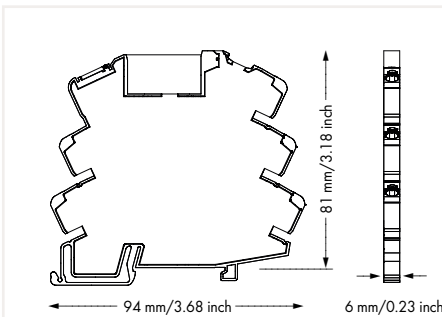
Standards/specifications	EN 61812-1; EN 61373; EN 50121-3-2; UL 508
--------------------------	--------------------------------------------

# Timer Relay Module 857 Series



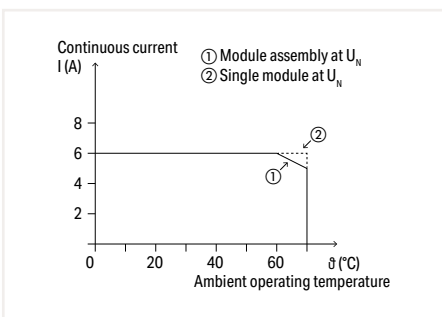
Timer Relay Module; 1 changeover contact; Limiting continuous current: 6 A; for railway applications; Multifunctional/multi-time; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	17.5 mA	857-604	1



**Features:**

- 4 functions
- Function and time range adjustable via DIP switch



Current-Carrying Capacity Curve

Control Circuit	
Input voltage range	±30 %
Time range	Adjustable: 0.1 ... 10 s; 3 ... 300 s; 0.3 ... 30 min; 3 ... 300 min
Reset time	50 ms
Minimum pulse length (control input)	10 ms
Repeat accuracy	±1 %
Functions	On-delay; Single-shot leading edge; On-delay and single-shot leading edge (1s fixed); blinking

Load Circuit	
Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>6</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations

Signaling	
Status indicator	Yellow LED

Safety and Protection	
Rated voltage	250 VDC
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

Connection Data	
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

Physical Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

Mechanical Data	
Mounting type	DIN-35 rail

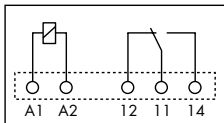
Material Data	
Weight	24.88 g

Environmental Requirements	
Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

Standards and Specifications	
Standards/specifications	EN 61812-1; EN 61373; EN 50121-3-2; UL 508



# Basic Relay 857 Series

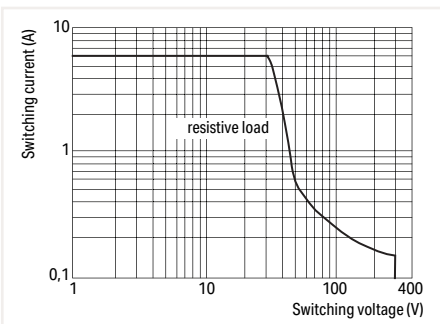


Basic Relay; 1 changeover contact; Limiting continuous current: 6 A; 5 mm wide; 15 mm high

$U_N$	Item No.	Pack. Unit
12 VDC	857-150	20
24 VDC	857-152	20
48 VDC	857-154	20
60 VDC	857-155	20

#### Note:

- The 60 VDC spare relay must be used for 60 VDC, 110 VDC, 220 VDC and 115 VAC/DC, 230 VAC/DC relay modules.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

Load Circuit	
Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>6</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching frequency with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

Safety and Protection	
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

Physical Data	
Width	5 mm / 0.197 inch
Height from the surface	15 mm / 0.591 inch
Depth	28 mm / 1.09 inch

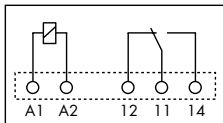
Mechanical Data	
Mounting type	Pluggable module

Material Data	
Weight	4.7 g

Environmental Requirements	
Surrounding air temperature (operation at $U_N$ )	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C

Standards and Specifications	
Standards/specifications	EN 61810-1, EN 61373; VDE, UR

## Basic Relay 857 Series

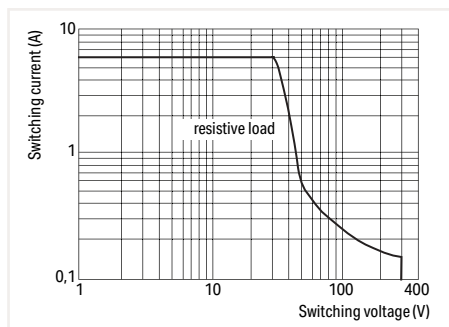


Basic Relay; 1 changeover contact; Limiting continuous current: 6 A; with gold contacts; 5 mm wide; 15 mm high

$U_N$	Item No.	Pack. Unit
12 VDC	857-151	20
24 VDC	857-153	20
60 VDC	857-157	20

### Note:

- The 60 VDC spare relay must be used for 60 VDC, 110 VDC, 220 VDC and 115 VAC/DC, 230 VAC/DC relay modules.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.
- 30 VDC switching voltages and 50 mA currents must not be exceeded for gold-plated basic relays. Higher switching power eventually evaporates the gold layer. The resulting power deposits in the housing may reduce service life.



DC Load Limit Curve

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi + Au
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	1 V / 1 mA / 1 mW
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching frequency with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	5 mm / 0.197 inch
Height from the surface	15 mm / 0.591 inch
Depth	28 mm / 1.09 inch

### Mechanical Data

Mounting type	Pluggable module
---------------	------------------

### Material Data

Weight	4.7 g
--------	-------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

Standards/specifications	EN 61810-1, EN 61373; VDE, UR
--------------------------	-------------------------------

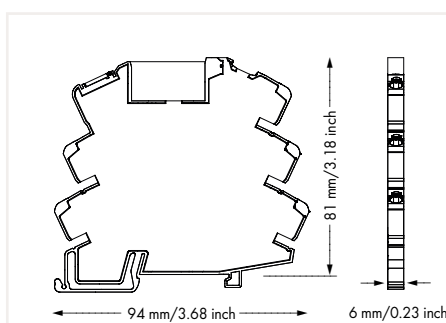
# Relay Socket

## 857 Series



Relay Socket; for 5 mm basic relay; Status indicator: yellow

$U_N$	Item No.	Pack. Unit
24 VAC/DC	857-104	25



### Load Circuit

Limiting continuous current	6 A
Switching voltage (max.)	250 VAC

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Protection type	IP20
-----------------	------

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	26.3 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... 70 °C
Surrounding air temperature (storage)	-40 ... 70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; UR 508
--------------------------	------------------------

# Accessories

1



Push-in type jumper bar; light gray; insulated; 18 A

Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)

Item no. suffixes for colored push-in type jumper bars

yellow	... /000-029	
red	... /000-005	
blue	... /000-006	



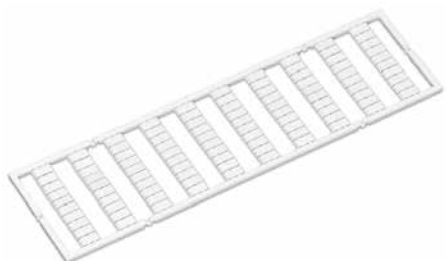
Comb-style jumper bar; insulated; for conductor entry

Description	Item No.	Pack. Unit
2-way	281-482	100



Operating tool with a partially insulated shaft; Type 2; (3.5 x 0.5) mm blade

	Item No.	Pack. Unit
	210-720	50



WMB marker card; 10 strips with 10 markers; white; with black printing

Marking	Item No.	Pack. Unit
plain	793-501	5 cards
1 ... 10 (10 x)	793-502	5 cards
11 ... 20 (10 x)	793-503	5 cards
21 ... 30 (10 x)	793-504	5 cards
31 ... 40 (10 x)	793-505	5 cards
41 ... 50 (10 x)	793-506	5 cards
1 ... 50 (2 x)	793-566	5 cards



WMB Inline; for terminal block width: 5 ... 5.2 mm; plain; 1500 markers/reel; white

Marking	Item No.	Pack. Unit
plain	2009-115	1



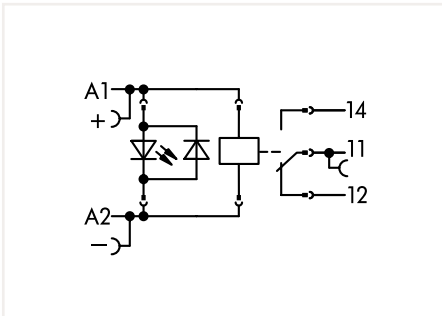
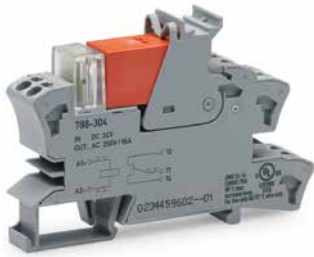
Marking strip; plain; 11 mm wide; 50 m reel; white

Marking	Item No.	Pack. Unit
plain	2009-110	1



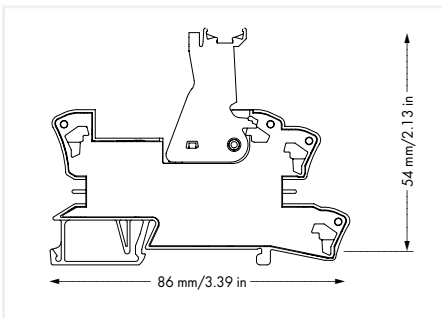
# Relay Module 788 Series

1



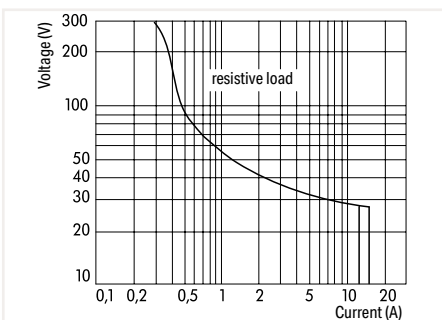
Relay Module; 1 changeover contact; Limiting continuous current: 16 A; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
12 VDC	36 mA	788-303	20
24 VDC	19 mA	788-304	20
48 VDC	11 mA	788-305	20
60 VDC	115 mA	788-306	20
110 VDC	6 mA	788-307	20



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi 90/10
Limiting continuous current	16 A
Inrush current (resistive) max.	30 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 6 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	6 ms
Electrical life (NO; resistive load; 23 °C)	30 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 1200 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

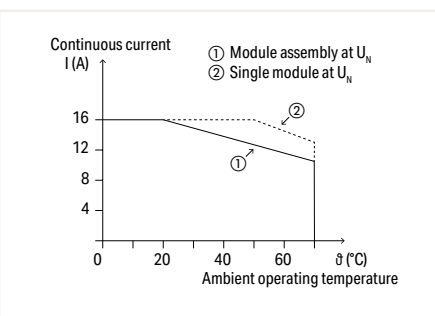
Weight	45.9 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

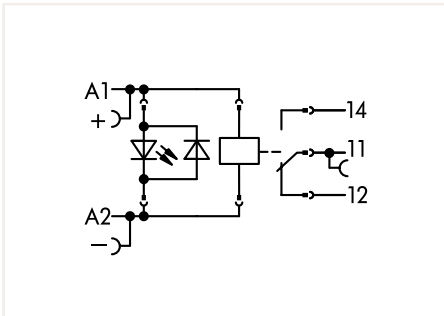
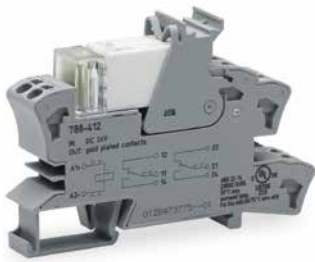
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508 (max. 10 A)
--------------------------	----------------------------------------------------------



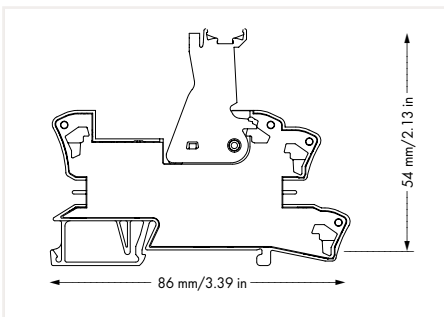
Current-Carrying Capacity Curve

# Relay Module 788 Series



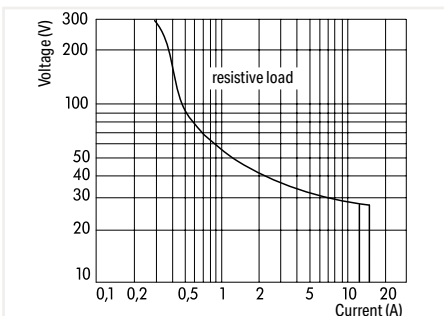
Relay Module; 1 changeover contact; Limiting continuous current: 16 A; with gold contacts; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	19 mA	788-404	20



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi + Au
Limiting continuous current	16 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 6 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	5 V / 2 mA / 50 mW
Pull-in time (typ.)	7 ms
Drop-out time (typ.)	3 ms
Bounce time (typ.)	6 ms
Electrical life (NO; resistive load; 23 °C)	30 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	10 min <sup>-1</sup> / 1200 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

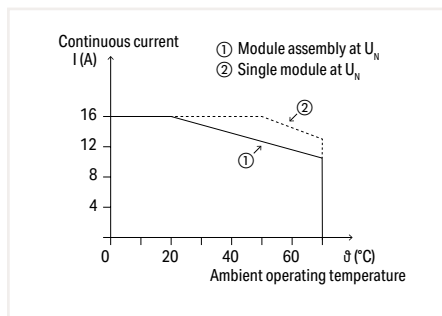
Weight	46.1 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

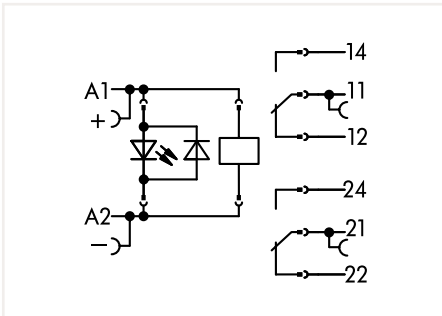
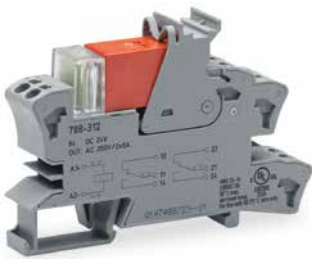
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508
--------------------------	----------------------------------------------



Current-Carrying Capacity Curve

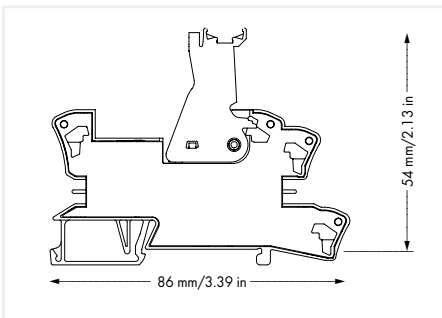
# Relay Module 788 Series

1



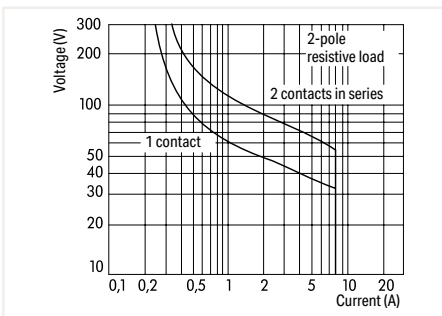
Relay Module; 2 changeover contacts; Limiting continuous current: 8 A; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
12 VDC	36 mA	788-311	20
24 VDC	19 mA	788-312	20
48 VDC	11 mA	788-313	20
60 VDC	11 mA	788-314	20
110 VDC	6 mA	788-315	20



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi 90/10
Limiting continuous current	8 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	10 ms
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 1200 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

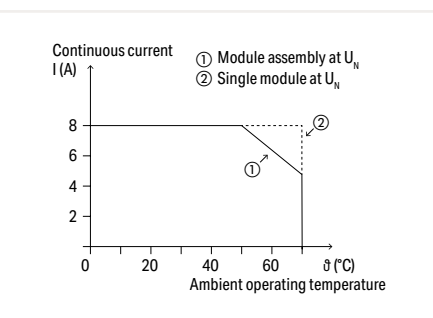
Weight	45.4 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

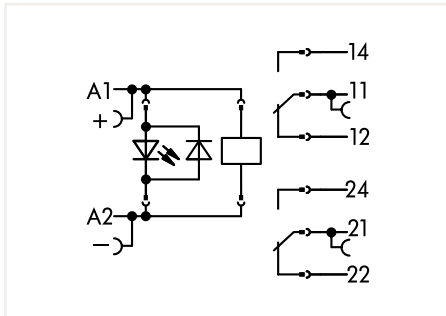
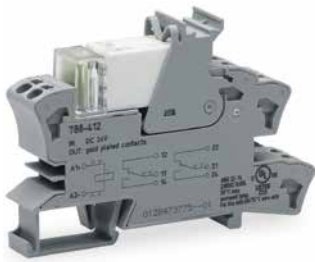
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508
--------------------------	----------------------------------------------



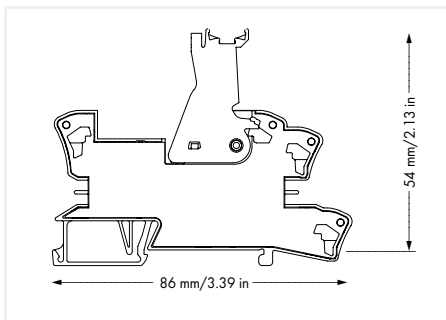
Current-Carrying Capacity Curve

# Relay Module 788 Series



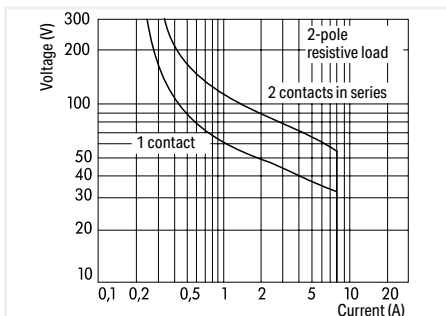
Relay Module; 2 changeover contacts; Limiting continuous current: 8 A; with gold contacts; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	17 mA	788-412	20



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi + Au
Limiting continuous current	8 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	5 V / 2 mA / 50 mW
Pull-in time (typ.)	7 ms
Drop-out time (typ.)	3 ms
Bounce time (typ.)	6 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	10 min <sup>-1</sup> / 1200 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

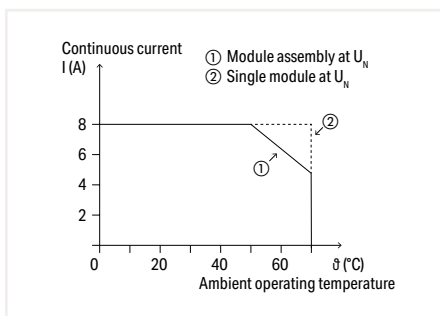
Weight	47.6 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

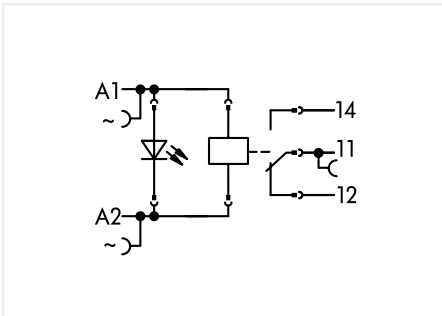
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508
--------------------------	----------------------------------------------



Current-Carrying Capacity Curve

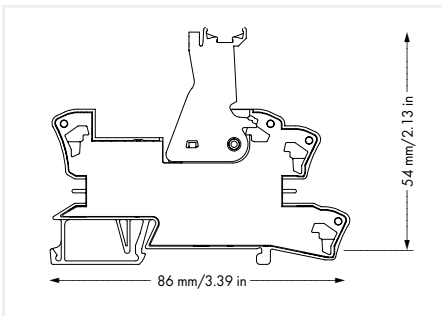
# Relay Module 788 Series

1



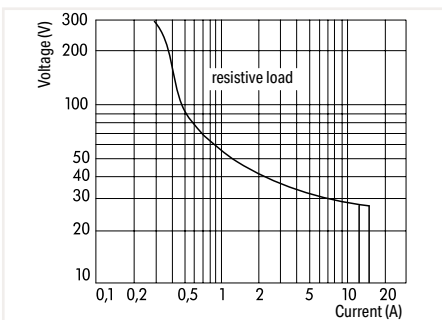
Relay Module; 1 changeover contact; Limiting continuous current: 16 A; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VAC	34 mA	788-506	20
115 VAC	8 mA	788-507	20
230 VAC	3.5 mA	788-508	20



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi 90/10
Limiting continuous current	16 A
Inrush current (resistive) max.	30 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 6 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	10 ms
Drop-out time (typ.)	35 ms
Bounce time (typ.)	6 ms
Electrical life (NO; resistive load; 23 °C)	30 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 600 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

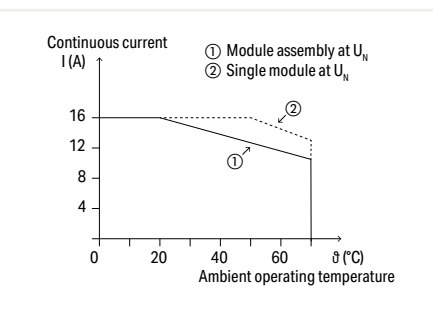
Weight	46.4 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

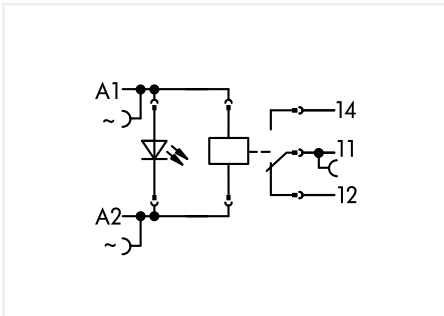
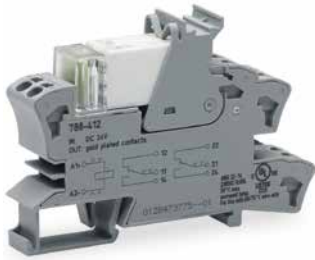
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508
--------------------------	----------------------------------------------



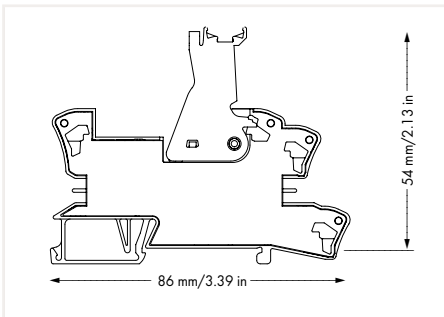
Current-Carrying Capacity Curve

# Relay Module 788 Series



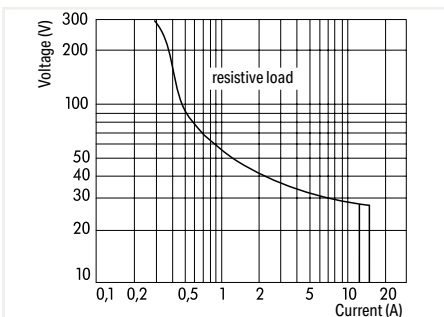
Relay Module; 1 changeover contact; Limiting continuous current: 16 A; with gold contacts; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
115 VAC	8.2 mA	788-607	20
230 VAC	5 mA	788-608	20



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi + Au
Limiting continuous current	16 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 6 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	5 V / 2 mA / 50 mW
Pull-in time (typ.)	7 ms
Drop-out time (typ.)	3 ms
Electrical life (NO; resistive load; 23 °C)	70 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

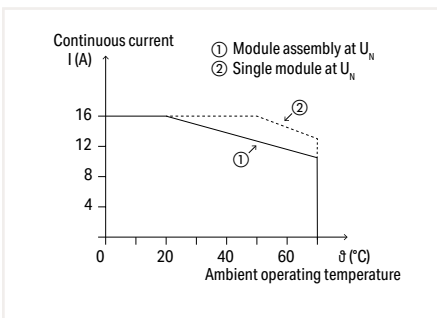
Weight	44.4 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

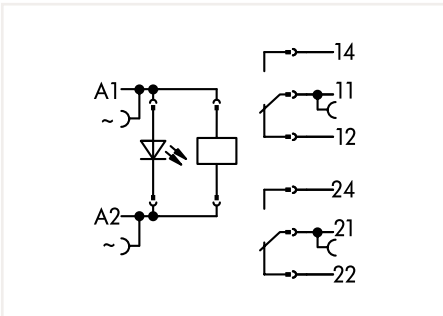
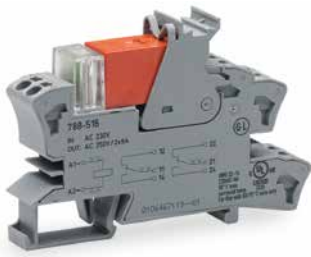
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508
--------------------------	----------------------------------------------



Current-Carrying Capacity Curve

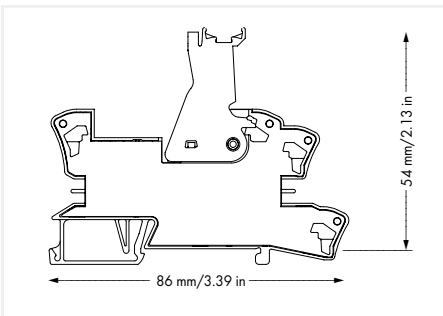
# Relay Module 788 Series

1



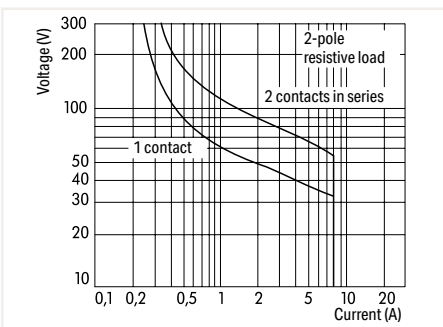
Relay Module; 2 changeover contacts; Limiting continuous current: 8 A; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VAC	34 mA	788-512	20
115 VAC	8 mA	788-515	20
230 VAC	3.5 mA	788-516	20



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi 90/10
Limiting continuous current	8 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	10 ms
Drop-out time (typ.)	35 ms
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 1200 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

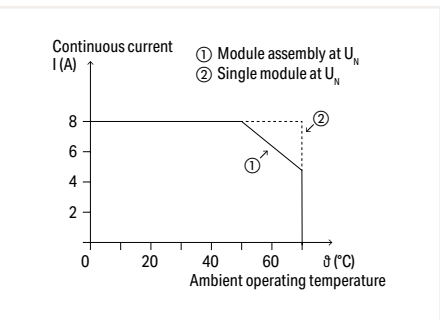
Weight	47.7 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

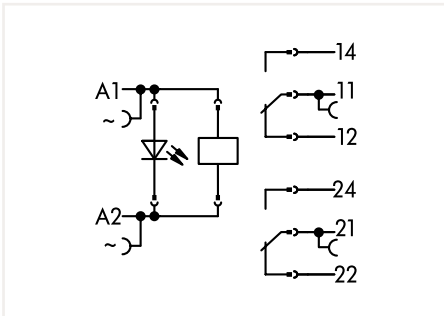
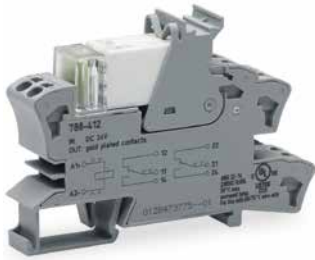
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508
--------------------------	--------------------------------------------------



Current-Carrying Capacity Curve

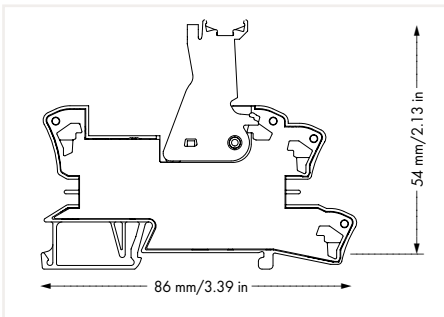


# Relay Module 788 Series



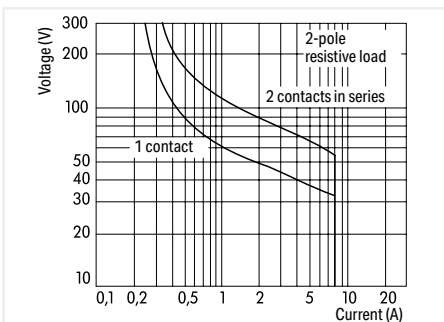
Relay Module; 2 changeover contacts; Limiting continuous current: 8 A; with gold contacts; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
115 VAC	8.2 mA	788-615	20
230 VAC	5 mA	788-616	20



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi + Au
Limiting continuous current	8A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	5 V / 2 mA / 50 mW
Pull-in time (typ.)	10 ms
Drop-out time (typ.)	35 ms
Bounce time (typ.)	6 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	10 min <sup>-1</sup> / 1200 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

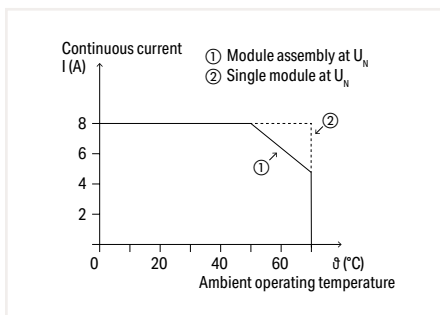
Weight	47 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

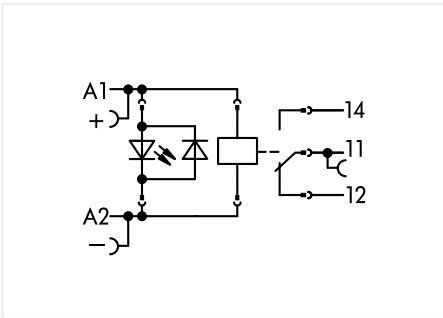
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508
--------------------------	----------------------------------------------



Current-Carrying Capacity Curve

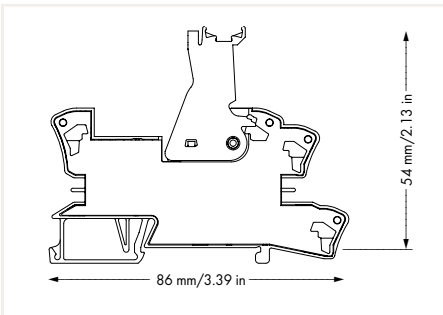
# Relay Module 788 Series

1



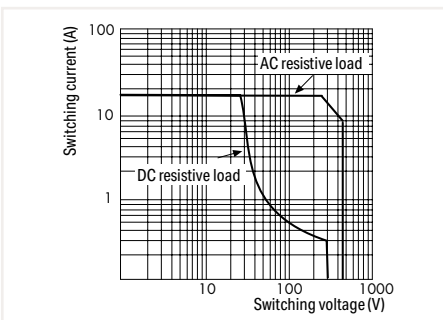
Relay Module; 1 changeover contact; Limiting continuous current: 16 A; for lamp loads; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
12 VDC	35 mA	788-353	20
24 VDC	19 mA	788-354	20



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	16 A
Inrush current (resistive) max.	120 A (AC) / 50 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Recommended minimum load	5 V / 100 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	5 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

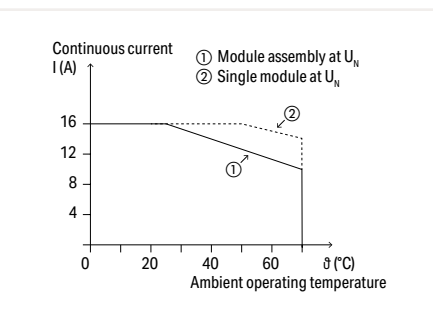
Weight	44.4 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

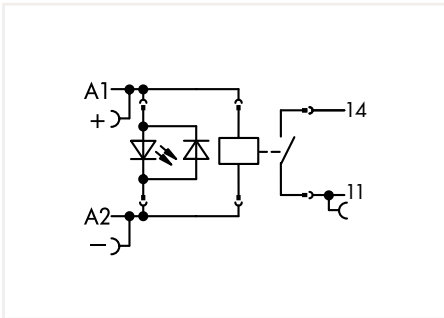
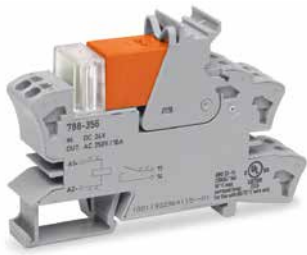
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508 (max. 10 A)
--------------------------	----------------------------------------------------------



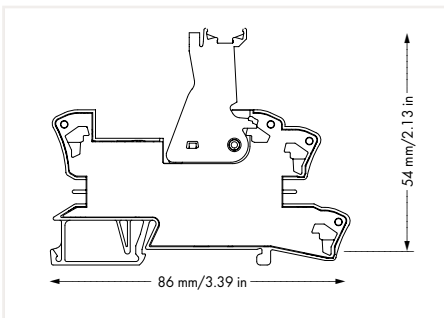
Current-Carrying Capacity Curve

# Relay Module 788 Series



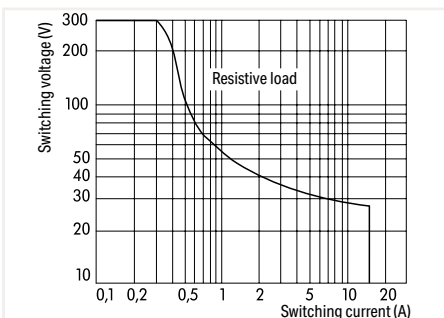
Relay Module; 1 make contact; Limiting continuous current: 16 A; for lamp loads; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	19 mA	788-356	20



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 %
---------------------	---------------

### Load Circuit

Number of make contacts/switch-on contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	16 A
Inrush current (resistive) max.	80 A (AC) / 20 ms; 30 A / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 100 mA
Pull-in time (typ.)	9 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	3 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

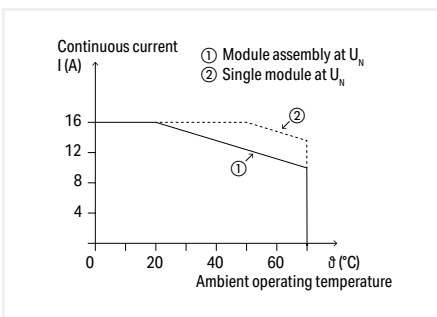
Weight	46.8 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

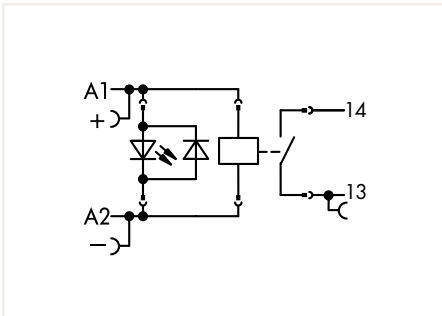
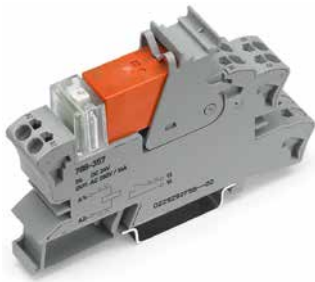
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508 (max. 10 A)
--------------------------	----------------------------------------------------------



Current-Carrying Capacity Curve

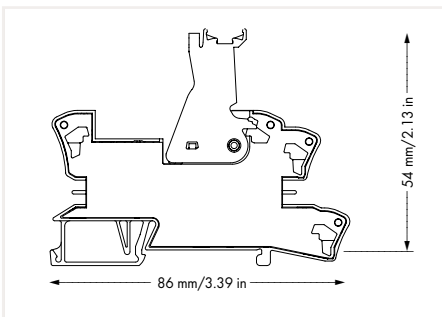
# Relay Module 788 Series

1



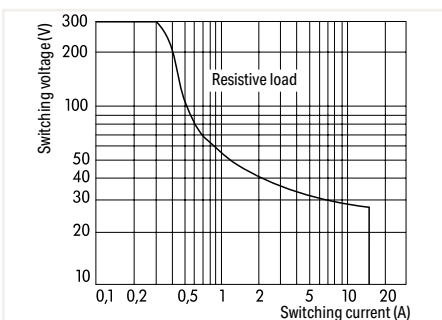
Relay Module; 1 make contact; Limiting continuous current: 16 A; for lamp loads; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	17 mA	788-357	20



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	-10 ... +20 %
---------------------	---------------

### Load Circuit

Number of make contacts/switch-on contacts	1
Contact material	AgSnO <sub>2</sub> , W pre-make contact
Limiting continuous current	16 A
Inrush current (resistive) max.	165 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 100 mA
Pull-in time (typ.)	10 ms
Drop-out time (typ.)	5 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	5 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 60 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1.25 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

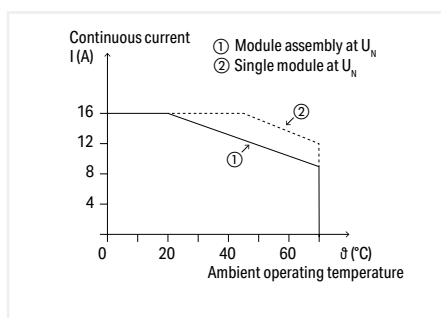
Weight	46.6 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

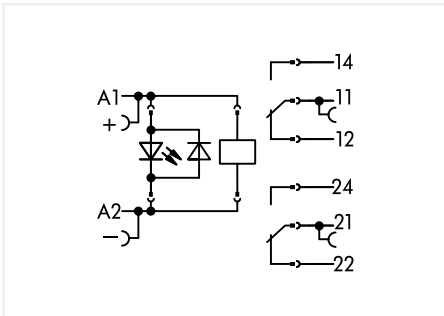
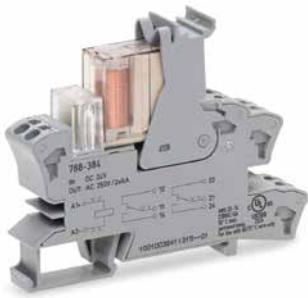
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373
--------------------------	--------------------------------------



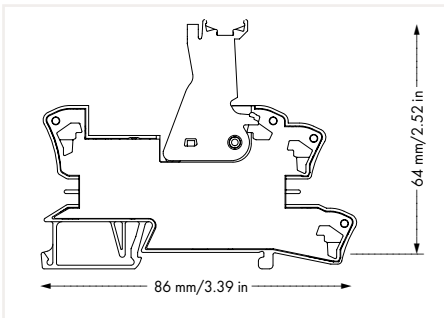
Current-Carrying Capacity Curve

# Relay Module 788 Series



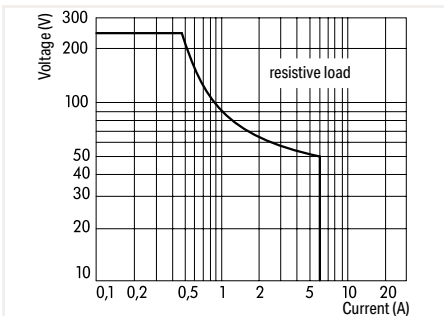
Relay Module; with force-guided contacts; 2 change-over contacts; Limiting continuous current: 6 A; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	31 mA	788-384	10



**Note:**

- Per EN 50205, it is only permitted to use 1 make contact/1 break contact for safety circuits (11-14 and 22-21 or 12-11 and 21-24).
- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +10 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi
Limiting continuous current	6 A
Inrush current (resistive) max.	14 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 3 A / 24 VDC
Recommended minimum load	5 V / 10 mA
Pull-in time (typ.)	10 ms
Drop-out time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 300 min <sup>-1</sup>
Mechanical force-guided operation	Type A
Type of basic relay	TE SR2M

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	64 mm / 2.52 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

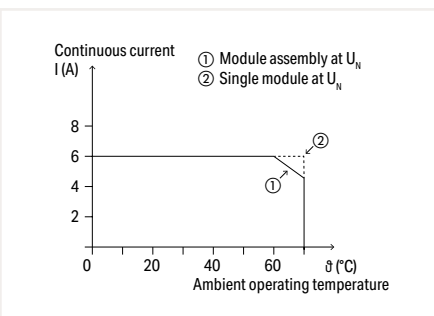
Weight	50.3 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

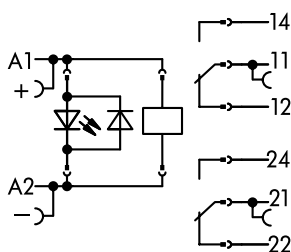
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508
--------------------------	----------------------------------------------



Current-Carrying Capacity Curve

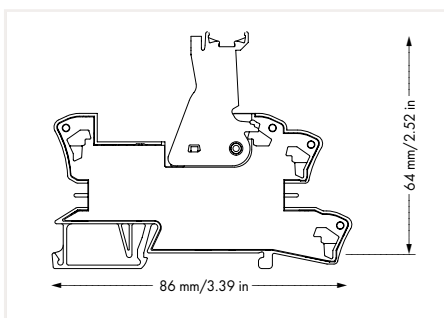
# Relay Module

## 788 Series



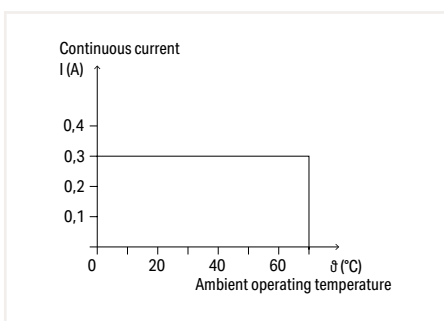
Relay Module; with force-guided contacts; 2 change-over contacts; Limiting continuous current: 0.3 A; with gold contacts; Status indicator: green; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	30 mA	788-906	10



### Note:

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range	-15 ... +10 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi + Au
Limiting continuous current	0.3 A
Switching voltage (max.)	60 VAC
Switching power (resistive) max.	18 VA (AC)
Recommended minimum load	0.1 V / 1 mA / 1 mW
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	12 ms
Electrical life (NO; resistive load; 23 °C)	200 x 10 <sup>3</sup> switching operations
Mechanical life	50 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 600 min <sup>-1</sup>
Mechanical force-guided operation	Type A
Type of basic relay	Dold OA 5669

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	64 mm / 2.52 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	50 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

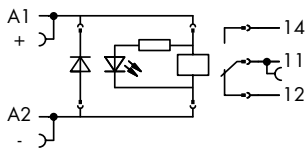
### Standards and Specifications

Standards/specifications	EN 61010-2-201, EN 61810-3; UL 508 (max. 40 °C)
--------------------------	-------------------------------------------------



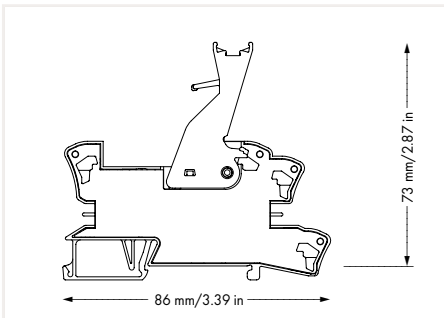


# Relay Module 788 Series



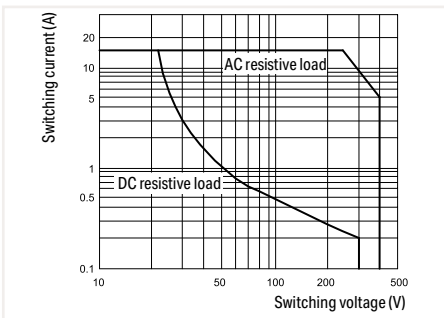
Relay Module; 1 changeover contact; Limiting continuous current: 16 A; Manually operated; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	16.7 mA	788-341	15



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi
Limiting continuous current	16 A
Inrush current (resistive) max.	24 A (AC) / 4 s; 32 A / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 240 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	8 ms
Bounce time (typ.)	6 ms
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 300 min <sup>-1</sup>

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

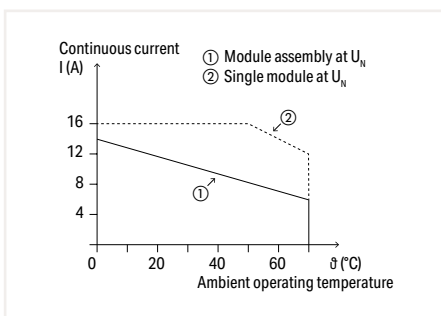
Weight	50 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

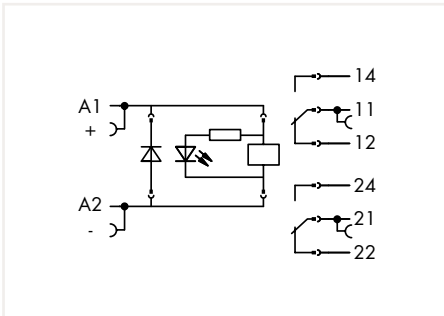
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508 (max. 10 A)
--------------------------	----------------------------------------------------------



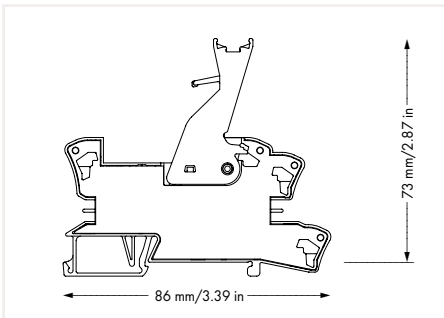
Current-Carrying Capacity Curve

# Relay Module 788 Series



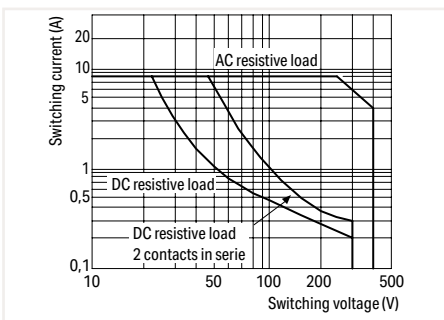
Relay Module; 2 changeover contacts; Limiting continuous current: 8 A; Manually operated; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	16.7 mA	788-346	15



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi
Limiting continuous current	8 A
Inrush current (resistive) max.	12 A (AC) / 4 s; 16 A / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 1.5 A / 240 VAC; DC 13: 1 A / 24 VDC
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	8 ms
Bounce time (typ.)	7 ms
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 300 min <sup>-1</sup>

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

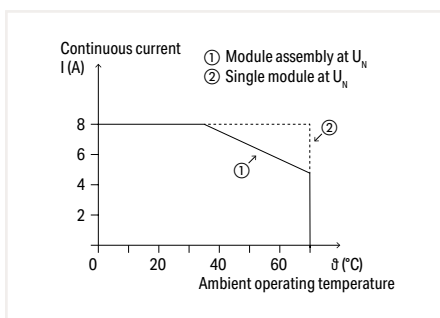
Weight	34.6 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

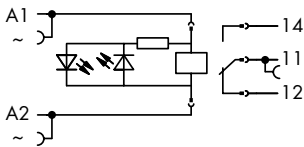
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508
--------------------------	----------------------------------------------



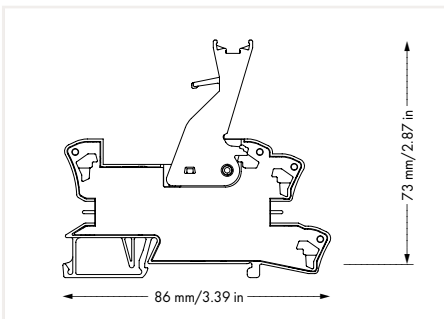
Current-Carrying Capacity Curve

# Relay Module 788 Series



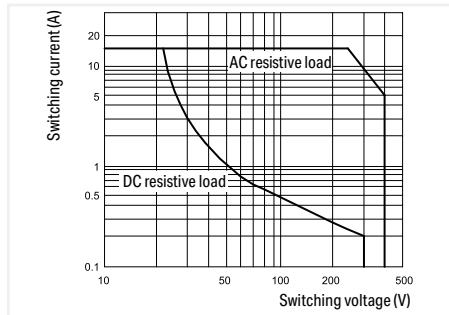
Relay Module; 1 changeover contact; Limiting continuous current: 16 A; Manually operated; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VAC	31.6 mA	788-541	15
115 VAC	6.6 mA	788-543	15
230 VAC	3.2 mA	788-544	15



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi
Limiting continuous current	16 A
Inrush current (resistive) max.	24 A (AC) / 4 s; 32 A / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 240 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	8 ms
Bounce time (typ.)	6 ms
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 300 min <sup>-1</sup>

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

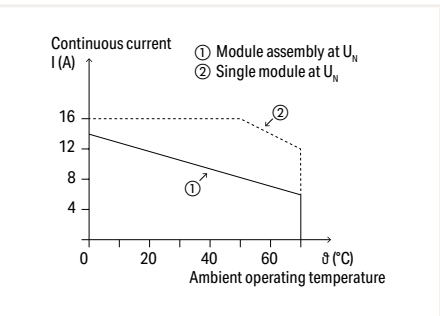
Weight	47 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

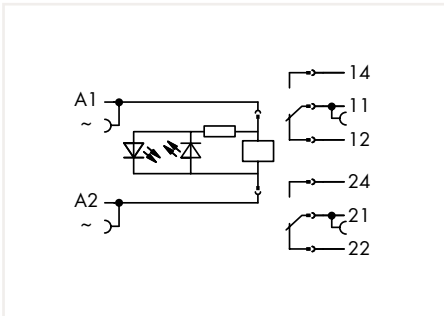
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508 (max. 10 A)
--------------------------	----------------------------------------------------------



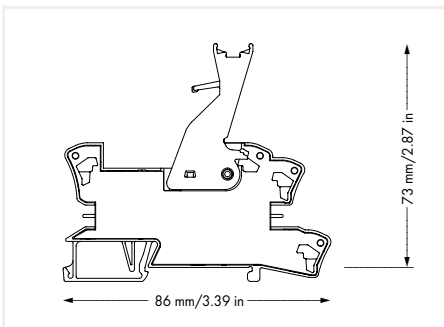
Current-Carrying Capacity Curve

# Relay Module 788 Series



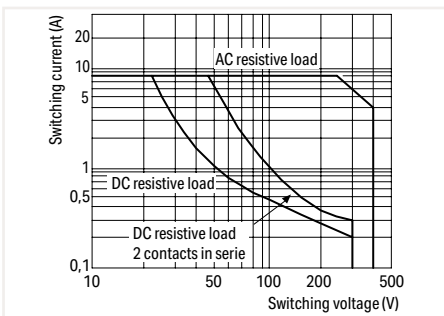
Relay Module; 2 changeover contacts; Limiting continuous current: 8 A; Manually operated; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VAC	31.6 mA	788-546	15
115 VAC	6.6 mA	788-548	15
230 VAC	3.2 mA	788-549	15



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi
Limiting continuous current	8 A
Inrush current (resistive) max.	12 A (AC) / 4 s; 16 A / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 1.5 A / 240 VAC; DC 13: 1 A / 24 VDC
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	8 ms
Bounce time (typ.)	7 ms
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 300 min <sup>-1</sup>

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

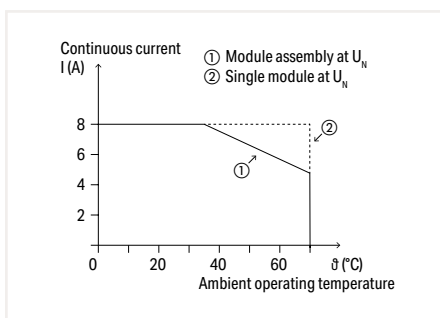
Weight	46.4 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

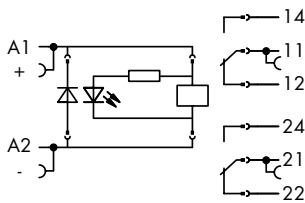
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508
--------------------------	----------------------------------------------



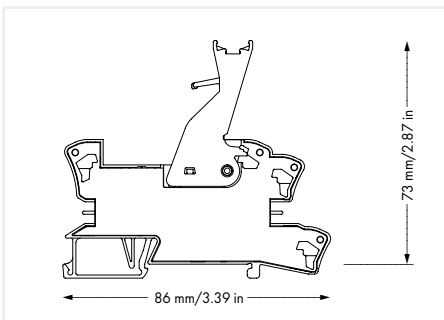
Current-Carrying Capacity Curve

# Relay Module 788 Series



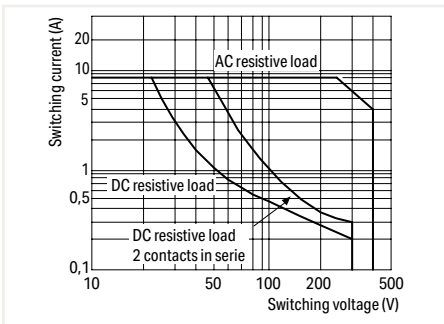
Relay Module; 2 changeover contacts; Limiting continuous current: 8 A; Manually operated; for railway applications; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	19.1 mA	788-390	15



**Note:**

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +25 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi
Limiting continuous current	8 A
Inrush current (resistive) max.	12 A (AC) / 4 s; 16 A / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 1.5 A / 240 VAC; DC 13: 1 A / 24 VDC
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	8 ms
Bounce time (typ.)	7 ms
Electrical life (NO; resistive load; 23 °C)	10x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 300 min <sup>-1</sup>

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

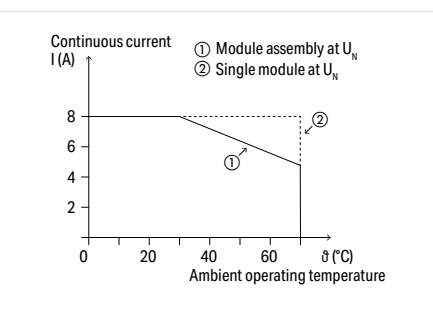
Weight	48 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373
--------------------------	--------------------------------------

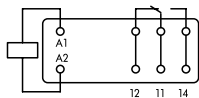


Current-Carrying Capacity Curve



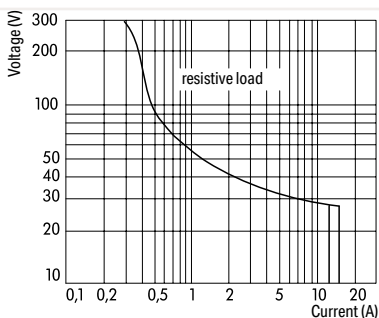
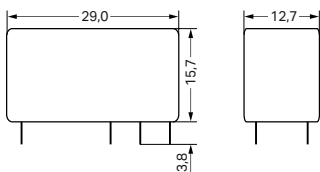
# Basic Relay 788 Series

1



Basic Relay; 1 changeover contact; Limiting continuous current: 16 A; 13 mm wide; 15 mm high

$U_N$	Item No.	Pack. Unit
12 VDC	788-150	20
24 VDC	788-154	20
48 VDC	788-158	20
60 VDC	788-162	20
110 VDC	788-166	20
24 VAC	788-170	20
115 VAC	788-174	20
230 VAC	788-178	20



DC Load Limit Curve

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi 90/10
Limiting continuous current	16 A
Inrush current (resistive) max.	30 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 6 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	6 ms
Electrical life (NO; resistive load; 23 °C)	30 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 1200 min <sup>-1</sup>

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>

### Physical Data

Width	12.7 mm / 0.5 inch
Height from the surface	15.7 mm / 0.618 inch
Depth	29 mm / 1.142 inch

### Mechanical Data

Mounting type	Pluggable module
---------------	------------------

### Material Data

Weight	13.1 g
--------	--------

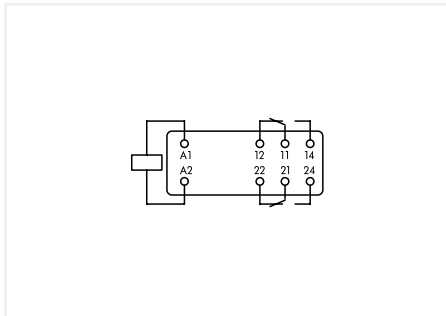
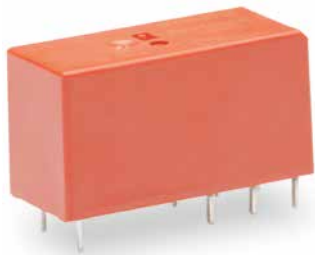
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

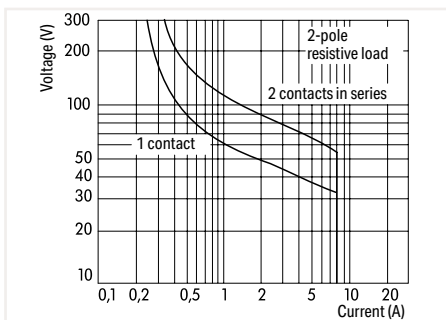
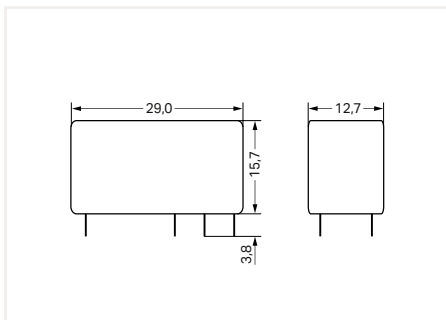
Standards/specifications	EN 61810-1
--------------------------	------------

# Basic Relay 788 Series



Basic Relay; 2 changeover contacts; Limiting continuous current: 8 A; 13 mm wide; 15 mm high

U <sub>N</sub>	Item No.	Pack. Unit
12 VDC	788-152	20
24 VDC	788-156	20
48 VDC	788-160	20
60 VDC	788-164	20
110 VDC	788-168	20
24 VAC	788-172	20
115 VAC	788-176	20
230 VAC	788-180	20



DC Load Limit Curve

Load Circuit	
Number of changeover/switchover contacts	2
Contact material	AgNi 90/10
Limiting continuous current	8 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	10 ms
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 1200 min <sup>-1</sup>

Safety and Protection	
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>

Physical Data	
Width	12.7 mm / 0.5 inch
Height from the surface	15.7 mm / 0.618 inch
Depth	29 mm / 1.142 inch

Mechanical Data	
Mounting type	Pluggable module

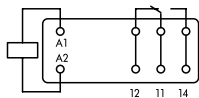
Material Data	
Weight	13 g

Environmental Requirements	
Surrounding air temperature (operation at U <sub>N</sub> )	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C

Standards and Specifications	
Standards/specifications	EN 61810-1

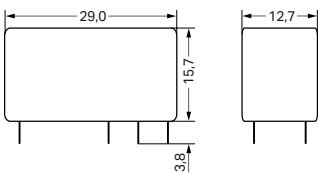


# Basic Relay 788 Series

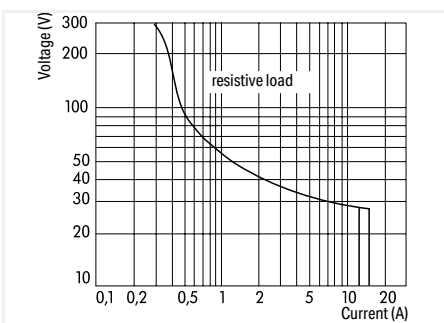


Basic Relay; 1 changeover contact; Limiting continuous current: 16 A; with gold contacts; 13 mm wide; 15 mm high

$U_N$	Item No.	Pack. Unit
24 VDC	788-155	20
115 VAC	788-175	20
230 VAC	788-179	20



**Note:**  
To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi + Au
Limiting continuous current	16 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 6 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	5 V / 2 mA / 50 mW
Pull-in time (typ.)	7 ms
Drop-out time (typ.)	3 ms
Electrical life (NO; resistive load; 23 °C)	30 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>

### Physical Data

Width	12.7 mm / 0.5 inch
Height from the surface	15.7 mm / 0.618 inch
Depth	29 mm / 1.142 inch

### Mechanical Data

Mounting type	Pluggable module
---------------	------------------

### Material Data

Weight	11 g
--------	------

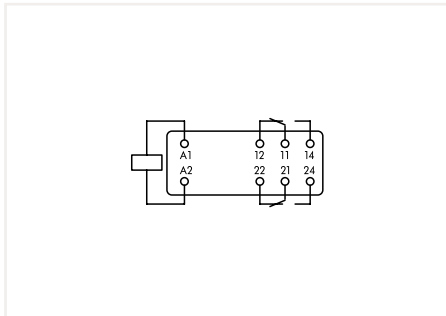
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

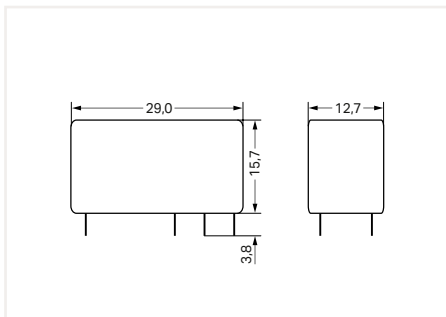
Standards/specifications	EN 61810-1
--------------------------	------------

# Basic Relay 788 Series



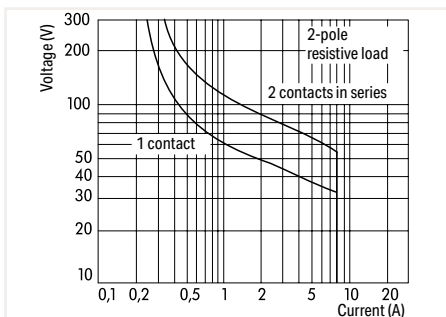
Basic Relay; 2 changeover contacts; Limiting continuous current: 8 A; with gold contacts; 13 mm wide; 15 mm high

$U_N$	Item No.	Pack. Unit
24 VDC	788-157	20
115 VAC	788-177	20
230 VAC	788-181	20



**Note:**

To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi + Au
Limiting continuous current	8 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 3 A / 250 VAC; DC 13: 2 A / 24 VDC
Recommended minimum load	5 V / 2 mA / 50 mW
Pull-in time (typ.)	7 ms
Drop-out time (typ.)	3 ms
Electrical life (NO; resistive load; 23 °C)	1 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>

### Physical Data

Width	12.7 mm / 0.5 inch
Height from the surface	15.7 mm / 0.618 inch
Depth	29 mm / 1.142 inch

### Mechanical Data

Mounting type	Pluggable module
---------------	------------------

### Material Data

Weight	13.4 g
--------	--------

### Environmental Requirements

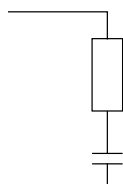
Surrounding air temperature (operation at $U_N$ )	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

Standards/specifications	EN 61810-1
--------------------------	------------

# Suppressor Module

## 788 Series



Suppressor Module; for miniature switching relays;  
Pluggable, for relay sockets (788 and 858 Series)

$U_N$	Item No.	Pack. Unit
110 ... 230 VAC	788-148	50

### Note:

- To guarantee safe operation, residual voltages (due to the cable capacitance of long connection lines or leakage currents of semi-conductor switches and their protective circuits) must be lower than the release voltage of the relays.
- For DC relays, the release voltage is specified with  $\leq 5\%$  of the nominal voltage; for AC relays, it is 15% of the nominal voltage (per VDE 0435).
- The relay may not reset if a high residual voltage exists. Depending on the reason for the residual voltage, changing the cable routing or a parallel connection of an RC element could remedy this situation.

### Operating Data

Nominal operating voltage	110 ... 230 VAC
Operating voltage	0 ... 230 VAC
Power consumption at $U_N$	7.2 mA (230 VAC; 50 Hz); 3.6 mA (115 VAC; 50 Hz)

### Module Characteristics

Resistance	470 $\Omega$
Capacitance	100 nF

### Physical Data

Width	15 mm / 0.591 inch
Height from the surface	15.7 mm / 0.618 inch
Depth	10 mm / 0.394 inch

### Mechanical Data

Mounting type	Pluggable module
---------------	------------------

### Material Data

Weight	1.5 g
--------	-------

### Environmental Requirements

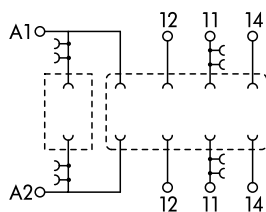
Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

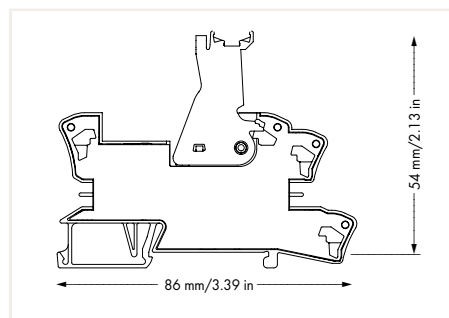


## Relay Socket 788 Series



Relay Socket; 1 changeover contact; for 15 mm basic relays

	Item No.	Pack. Unit
	788-100	20



### Control Circuit

Nominal input voltage $U_N$	250 VAC/DC (depends on relay)
Input voltage range	0 ... 250 V (depends on relay)

### Load Circuit

Number of changeover/switchover contacts	1
Limiting continuous current	16 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC)

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	6 kV <sub>rms</sub> (depends on relay)
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub> (depends on relay)
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	31.3 g
--------	--------

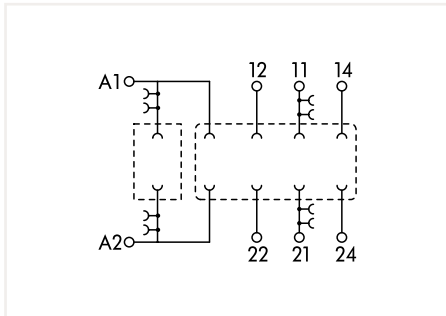
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C (depends on relay)
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

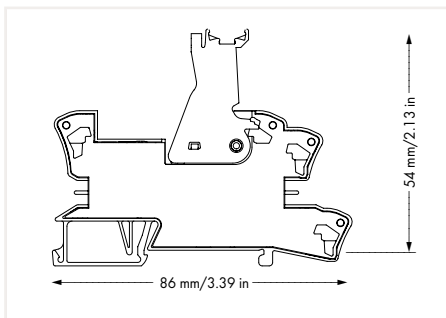
Standards/specifications	EN 60664-1
--------------------------	------------

## Relay Socket 788 Series



Relay Socket; 2 changeover contacts; for 15 mm basic relays

	Item No.	Pack. Unit
	788-102	20



### Control Circuit

Nominal input voltage $U_N$	250 VAC/DC (depends on relay)
Input voltage range	0 ... 250 V (depends on relay)

### Load Circuit

Number of changeover/switchover contacts	2
Limiting continuous current	8 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC)

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	6 kV <sub>rms</sub> (depends on relay)
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub> (depends on relay)
Dielectric strength, load/load circuit (AC, 1 min)	3.5 kV
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	30.7 g
--------	--------

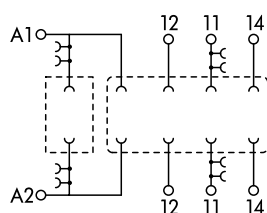
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C (depends on relay)
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

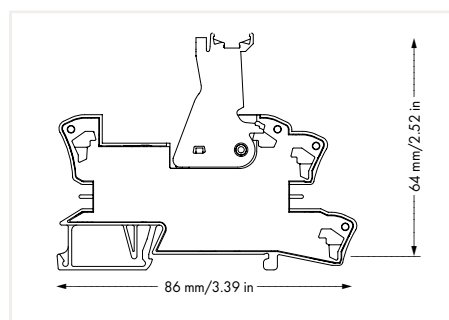
Standards/specifications	EN 60664-1
--------------------------	------------

## Relay Socket 788 Series



Relay Socket; 1 changeover contact; for 25 mm basic relays

	Item No.	Pack. Unit
	788-101	15



### Control Circuit

Nominal input voltage $U_N$	250 VAC/DC (depends on relay)
Input voltage range	0 ... 250 V (depends on relay)

### Load Circuit

Number of changeover/switchover contacts	1
Limiting continuous current	16 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC)

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	6 kV <sub>rms</sub> (depends on relay)
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub> (depends on relay)
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	64 mm / 2.52 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	31 g
--------	------

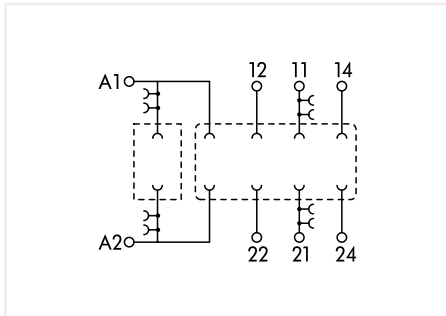
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C (depends on relay)
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

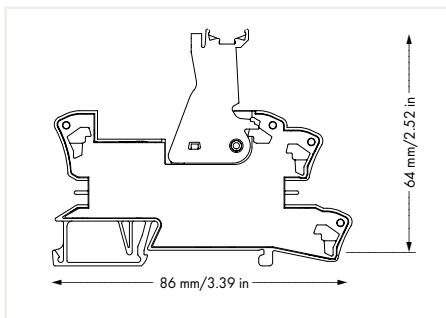
Standards/specifications	EN 60664-1
--------------------------	------------

## Relay Socket 788 Series



Relay Socket; 2 changeover contacts; for 25 mm basic relays

	Item No.	Pack. Unit
	788-103	15



### Control Circuit

Nominal input voltage $U_N$	250 VAC/DC (depends on relay)
Input voltage range	0 ... 250 V (depends on relay)

### Load Circuit

Number of changeover/switchover contacts	2
Limiting continuous current	8 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC)

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	6 kV <sub>rms</sub> (depends on relay)
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub> (depends on relay)
Dielectric strength, load/load circuit (AC, 1 min)	3.5 kV <sub>rms</sub> (depends on relay)
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	64 mm / 2.52 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	31 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C (depends on relay)
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

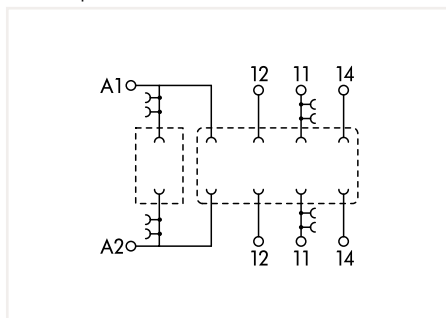


# Relay Socket

## 788 Series

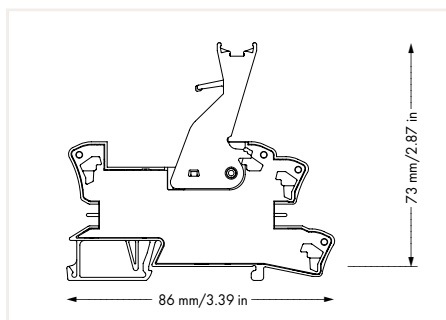


Similar to pictured device



Relay Socket; 1 changeover contact; Manually operated; for 25 mm basic relays

	Item No.	Pack. Unit
	788-108	15



### Control Circuit

Nominal input voltage $U_N$	250 VAC/DC (depends on relay)
Input voltage range	0 ... 250 V (depends on relay)

### Load Circuit

Number of changeover/switchover contacts	1
Limiting continuous current	16 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC)

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	6 kV <sub>rms</sub> (depends on relay)
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub> (depends on relay)
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	32 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C (depends on relay)
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

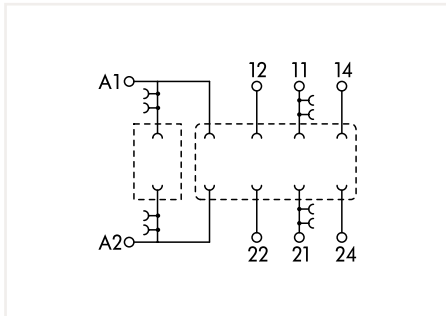
### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

## Relay Socket 788 Series

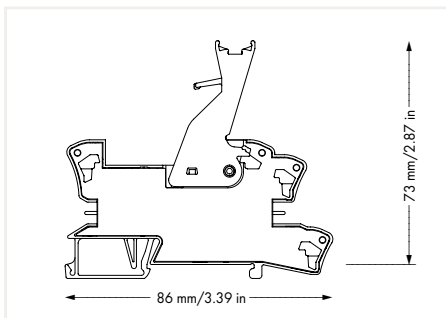


Similar to pictured device



Relay Socket; 2 changeover contacts; Manually operated; for 25 mm basic relays

	Item No.	Pack. Unit
	788-109	15



### Control Circuit

Nominal input voltage $U_N$	250 VAC/DC (depends on relay)
Input voltage range	0 ... 250 V (depends on relay)

### Load Circuit

Number of changeover/switchover contacts	2
Limiting continuous current	8 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC)

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	6 kV <sub>rms</sub> (depends on relay)
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub> (depends on relay)
Dielectric strength, load/load circuit (AC, 1 min)	3.5 kV <sub>rms</sub> (depends on relay)
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	32.1 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C (depends on relay)
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

# Accessories

1



Accessories for relay modules; Operation status indicator: red

U <sub>N</sub>	I <sub>N</sub>	Item No.	Pack. Unit
24 VDC	2.4 mA	788-120	50(2x25)
48 VDC	1.9 mA	788-121	50(2x25)
24 VAC	2.1 mA	788-123	50(2x25)
110 VDC	1.9 mA	788-122	50(2x25)
115 VAC	1.7 mA	788-124	50(2x25)
230 VAC	1.6 mA	788-125	50(2x25)



Twin ferrule; Sleeve for 2 x 1 mm<sup>2</sup> / 2 x 18 AWG; red, insulated; 12 mm long

Color	Item No.	Pack. Unit
red	216-542	500



Comb-style jumper bar; insulated; 18 A

Description	Item No.	Pack. Unit
2-way	788-113	200 (8x25)
3-way	788-114	100 (4x25)
4-way	788-115	100 (4x25)
6-way	788-116	100 (4x25)
8-way	788-117	100 (4x25)
1 to 3	788-118	100 (4x25)



Push-in type jumper bar; light gray; insulated; 18 A

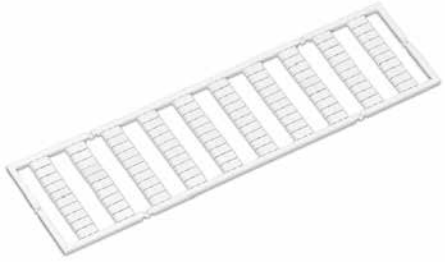
Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)



Operating tool with a partially insulated shaft; Type 2; (3.5 x 0.5) mm blade

Item No.	Pack. Unit
210-720	50

## Accessories



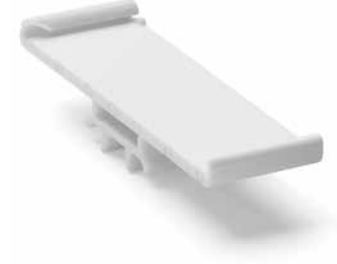
WMB marker card; 10 strips with 10 markers; white; with black printing

Marking	Item No.	Pack. Unit
plain	793-501	5 cards
1 ... 10 (10 x)	793-502	5 cards
11 ... 20 (10 x)	793-503	5 cards
21 ... 30 (10 x)	793-504	5 cards
31 ... 40 (10 x)	793-505	5 cards
41 ... 50 (10 x)	793-506	5 cards
1 ... 50 (2 x)	793-566	5 cards



WMB Inline; for terminal block width: 5 ... 5.2 mm; plain; 1500 markers/reel; white

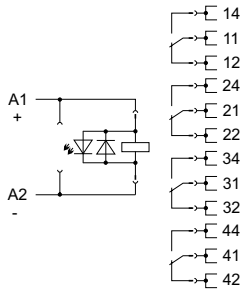
Marking	Item No.	Pack. Unit
plain	2009-115	1



Group marker carrier; for WMB and Mini-WSB marker slots; 10 mm wide

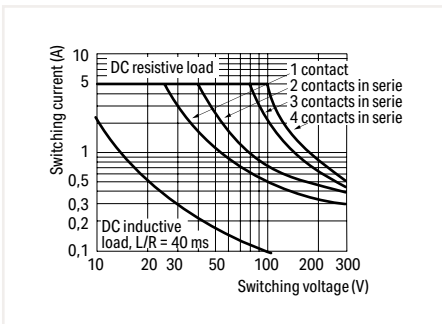
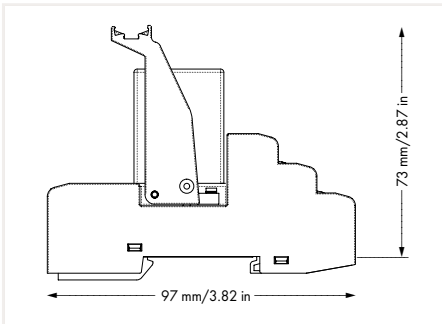
	Item No.	Pack. Unit
	209-145	100

# Relay Module 858 Series



Relay Module; 4 changeover contacts; Limiting continuous current: 5 A; manually operated; Status indicator: red; 31 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
12 VDC	75 mA	858-303	5
24 VDC	36.9 mA	858-304	5
48 VDC	18.5 mA	858-305	5
110 VDC	10 mA	858-307	5
220 VDC	4.1 mA	858-308	5



DC Load Limit Curve

### Control Circuit

Input voltage range	-20 ... +10 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	4
Contact material	AgCe
Limiting continuous current	5 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 100 mA
Pull-in time (typ.)	25 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	20 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Fine-stranded conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch
Note (conductor cross section)	2 x 0.34 ... 2 x 1.5 mm <sup>2</sup> / 1 x 2.5 mm <sup>2</sup> / 2 x 22 ... 2 x 16 AWG

### Physical Data

Width	31 mm / 1.22 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	97 mm / 3.819 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	99.5 g
--------	--------

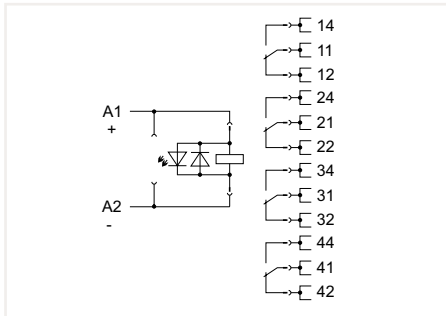
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

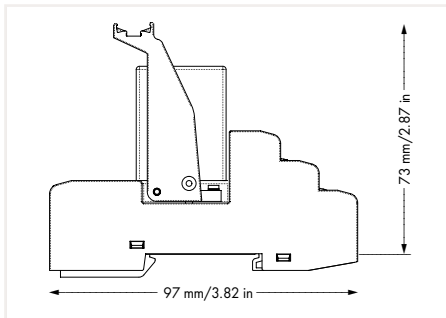
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508 (max. 50 °C); GL (858-304)
--------------------------	-------------------------------------------------------------------------

# Relay Module 858 Series

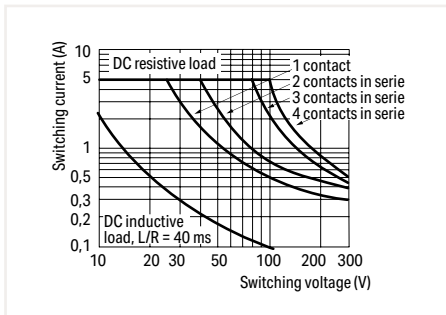


Relay Module; 4 changeover contacts; Limiting continuous current: 5 A; with gold contacts; manually operated; Status indicator: red; 31 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	36.9 mA	858-314	5



**Note:**  
To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Control Circuit

Input voltage range	-20 ... +10 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	4
Contact material	AgCe + Au
Limiting continuous current	5 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	5 V / 1 mA / 50 mW
Pull-in time (typ.)	25 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	20 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Fine-stranded conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch
Note (conductor cross section)	2 x 0.34 ... 2 x 1.5 mm <sup>2</sup> / 1 x 2.5 mm <sup>2</sup> / 2 x 22 ... 2 x 16 AWG

### Physical Data

Width	31 mm / 1.22 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	97 mm / 3.819 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	97.5 g
--------	--------

### Environmental Requirements

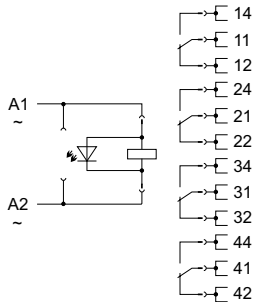
Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508 (max. 50 °C)
--------------------------	---------------------------------------------------------------

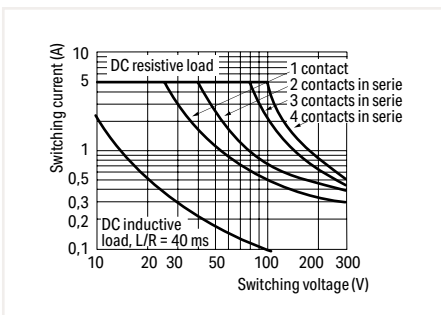
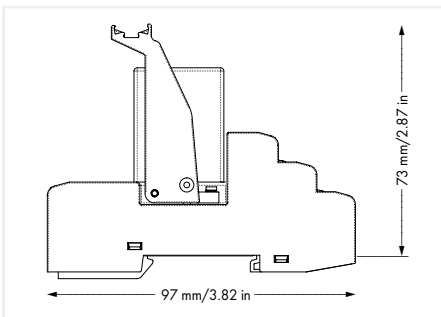
# Relay Module

## 858 Series



Relay Module; 4 changeover contacts; Limiting continuous current: 5 A; manually operated; Status indicator: red; 31 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VAC	50 mA	858-504	5
115 VAC	10 mA	858-507	5
230 VAC	8.3 mA	858-508	5



DC Load Limit Curve

### Control Circuit

Input voltage range	-20 ... +10 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	4
Contact material	AgCe
Limiting continuous current	5 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 100 mA
Pull-in time (typ.)	25 ms
Drop-out time (typ.)	35 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	20 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Fine-stranded conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch
Note (conductor cross section)	2 x 0.34 ... 2 x 1.5 mm <sup>2</sup> / 1 x 2.5 mm <sup>2</sup> / 2 x 22 ... 2 x 16 AWG

### Physical Data

Width	31 mm / 1.22 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	97 mm / 3.819 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	96.1 g
--------	--------

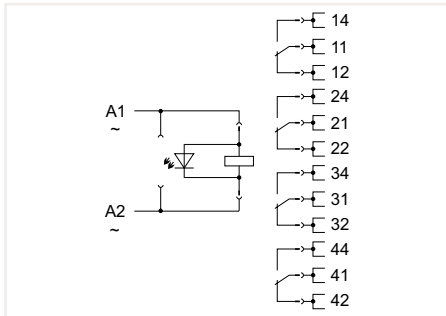
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

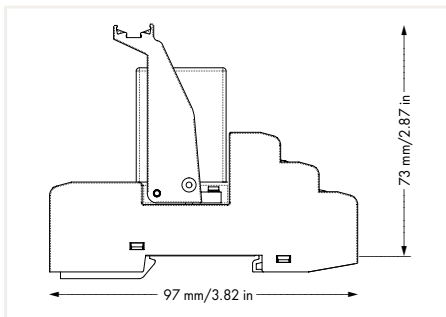
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508 (max. 50 °C)
--------------------------	-----------------------------------------------------------

## Relay Module 858 Series



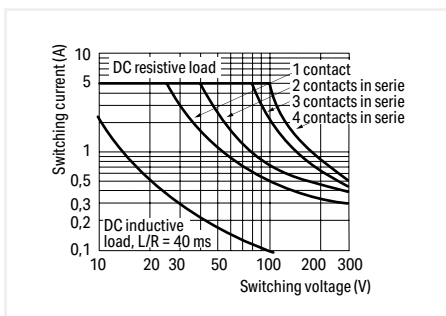
Relay Module; 4 changeover contacts; Limiting continuous current: 5 A; with gold contacts; manually operated; Status indicator: red; 31 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VAC	50 mA	858-514	5
115 VAC	10 mA	858-517	5
230 VAC	8.3 mA	858-518	5



### Note:

To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Control Circuit

Input voltage range	-20 ... +10 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	4
Contact material	AgCe + Au
Limiting continuous current	5 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	5 V / 1 mA / 50 mW
Pull-in time (typ.)	25 ms
Drop-out time (typ.)	35 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	20 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Fine-stranded conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch
Note (conductor cross section)	2 x 0.34 ... 2 x 1.5 mm <sup>2</sup> / 1 x 2.5 mm <sup>2</sup> / 2 x 22 ... 2 x 16 AWG

### Physical Data

Width	31 mm / 1.22 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	97 mm / 3.819 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	95.5 g
--------	--------

### Environmental Requirements

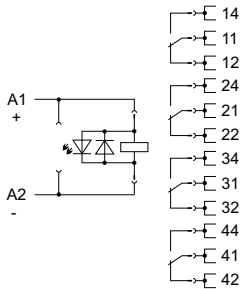
Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508 (max. 50 °C)
--------------------------	-----------------------------------------------------------

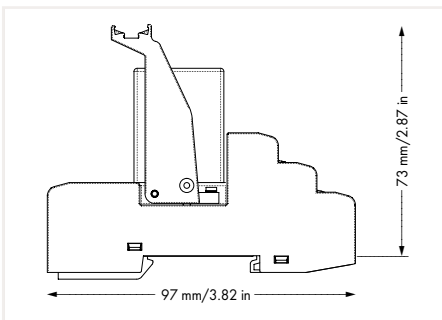


# Relay Module 858 Series

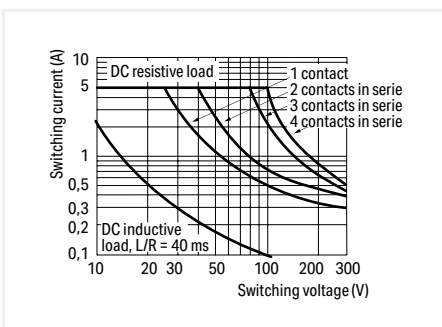


Relay Module; 4 changeover contacts; Limiting continuous current: 5 A; manually operated; for railway applications; Status indicator: red; 31 mm wide

U <sub>N</sub>	I <sub>N</sub>	Item No.	Pack. Unit
24 VDC	42 mA	858-354	5



**Note:**  
To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +25 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	4
Contact material	AgCe
Limiting continuous current	5 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 100 mA
Pull-in time (typ.)	25 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	20 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Fine-stranded conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch
Note (conductor cross section)	2 x 0.34 ... 2 x 1.5 mm <sup>2</sup> / 1 x 2.5 mm <sup>2</sup> / 2 x 22 ... 2 x 16 AWG

### Physical Data

Width	31 mm / 1.22 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	97 mm / 3.819 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	98.3 g
--------	--------

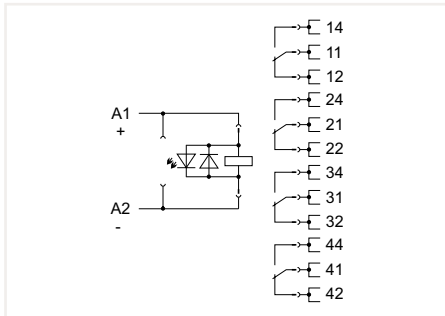
### Environmental Requirements

Surrounding air temperature (operation at U <sub>N</sub> )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

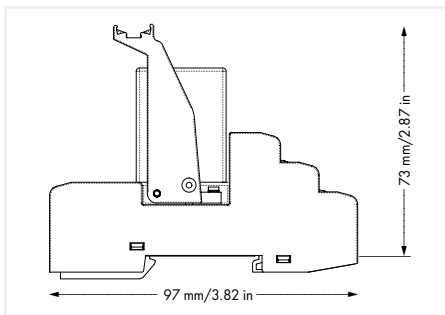
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508
--------------------------	----------------------------------------------

# Relay Module 858 Series



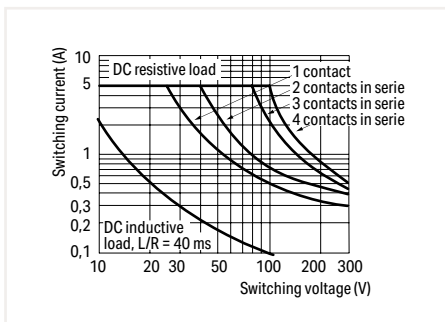
Relay Module; 4 changeover contacts; Limiting continuous current: 5 A; with gold contacts; manually operated; for railway applications; Status indicator: red; 31 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	42 mA	858-355	5



### Note:

To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +25 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	4
Contact material	AgCe + Au
Limiting continuous current	5 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1000 VA (AC); DC see load limit curve
Recommended minimum load	5 V / 1 mA / 50 mW
Pull-in time (typ.)	25 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	20 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Fine-stranded conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch
Note (conductor cross section)	2 x 0.34 ... 2 x 1.5 mm <sup>2</sup> / 1 x 2.5 mm <sup>2</sup> / 2 x 22 ... 2 x 16 AWG

### Physical Data

Width	31 mm / 1.22 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	97 mm / 3.819 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	101 g
--------	-------

### Environmental Requirements

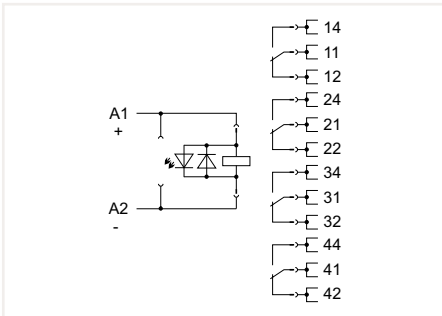
Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508
--------------------------	----------------------------------------------

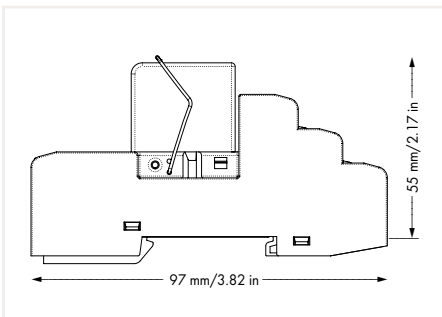
# Relay Module 858 Series

1

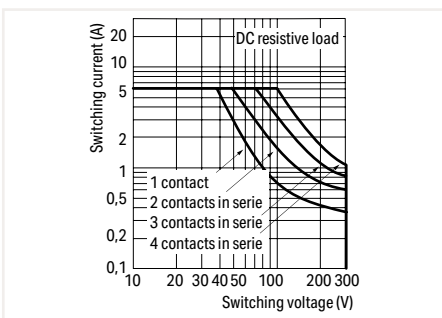


Relay Module; 4 changeover contacts; Limiting continuous current: 6 A; manually operated; Status indicator: red; 31 mm wide

U <sub>N</sub>	I <sub>N</sub>	Item No.	Pack. Unit
24 VDC	31.5 mA	858-390	5
110 VDC	7.7 mA	858-392	5
220 VDC	4.3 mA	858-391	5



**Note:**  
To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Control Circuit

Input voltage range	-10 ... +30 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	4
Contact material	AgNi 90/10
Limiting continuous current	6 A
Inrush current (resistive) max.	12 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	18 ms
Bounce time (typ.)	8 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 60 min <sup>-1</sup>

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1.2 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	2 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Fine-stranded conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch
Note (conductor cross section)	2 x 0.34 ... 2 x 1.5 mm <sup>2</sup> / 1 x 2.5 mm <sup>2</sup> / 2 x 22 ... 2 x 16 AWG

### Physical Data

Width	31 mm / 1.22 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	97 mm / 3.819 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	87.2 g
--------	--------

### Environmental Requirements

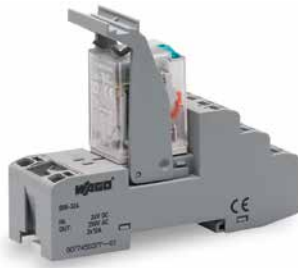
Surrounding air temperature (operation at U <sub>N</sub> )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

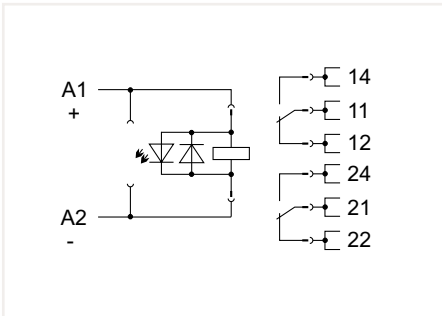
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; UL 508 (max. 50 °C)
--------------------------	-----------------------------------------------------------



# Relay Module 858 Series

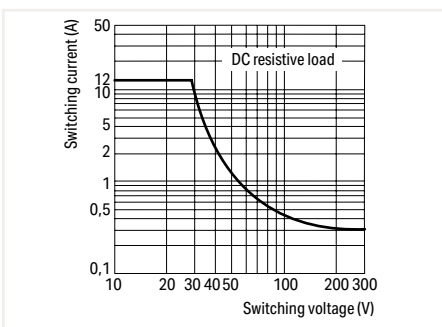
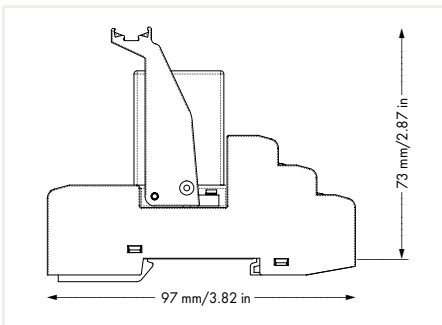


1



Relay Module; 2 changeover contacts; Limiting continuous current: 12 A; manually operated; Status indicator: red; 31 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	37.5 mA	858-324	5
48 VDC	18.5 mA	858-325	5
110 VDC	8.1 mA	858-327	5
220 VDC	4.1 mA	858-328	5



DC Load Limit Curve

### Control Circuit

Input voltage range	-20 ... +10 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi
Limiting continuous current	12 A
Inrush current (resistive) max.	24 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	3000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 1.5 A / 240 VAC; DC 13: 0.1 A / 250 VDC
Recommended minimum load	10 V / 5 mA / 300 mW
Pull-in time (typ.)	13 ms
Drop-out time (typ.)	3 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	20 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	20 min <sup>-1</sup> / 200 min <sup>-1</sup>

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Fine-stranded conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch
Note (conductor cross section)	2 x 0.34 ... 2 x 1.5 mm <sup>2</sup> / 1 x 2.5 mm <sup>2</sup> / 2 x 22 ... 2 x 16 AWG

### Physical Data

Width	31 mm / 1.22 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	97 mm / 3.819 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	87.5 g
--------	--------

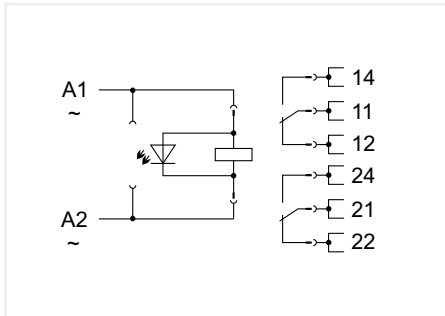
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +55 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

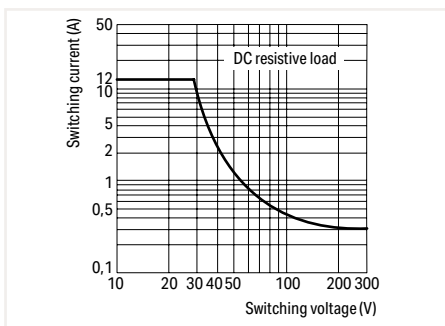
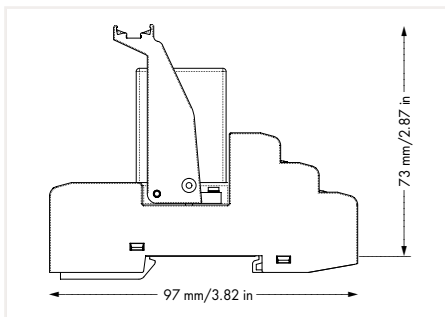
Standards/specifications	EN 61010-2-201; EN 61810-1; UL 508
--------------------------	------------------------------------

## Relay Module 858 Series



Relay Module; 2 changeover contacts; Limiting continuous current: 12 A; manually operated; Status indicator: red; 31 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
230 VAC	11 mA	858-528	5



DC Load Limit Curve

### Control Circuit

Input voltage range	-20 ... +10 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi
Limiting continuous current	12 A
Inrush current (resistive) max.	24 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	3000 VA (AC); DC see load limit curve
Switching capacity	AC 15: 1.5 A / 240 VAC; DC 13: 0.1 A / 250 VDC
Recommended minimum load	10 V / 5 mA / 300 mW
Pull-in time (typ.)	10 ms
Drop-out time (typ.)	8 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	20 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	20 min <sup>-1</sup> / 200 min <sup>-1</sup>

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Fine-stranded conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch
Note (conductor cross section)	2 x 0.34 ... 2 x 1.5 mm <sup>2</sup> / 1 x 2.5 mm <sup>2</sup> / 2 x 22 ... 2 x 16 AWG

### Physical Data

Width	31 mm / 1.22 inch
Height from upper-edge of DIN-rail	73 mm / 2.874 inch
Depth	97 mm / 3.819 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	85.3 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +55 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

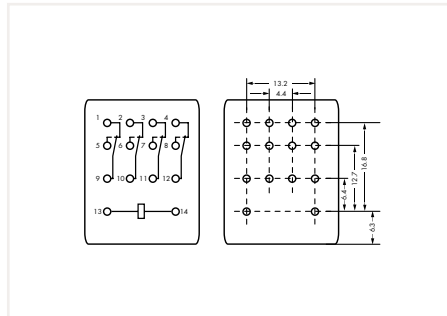
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; UL 508
--------------------------	------------------------------------

# Basic Relay 858 Series

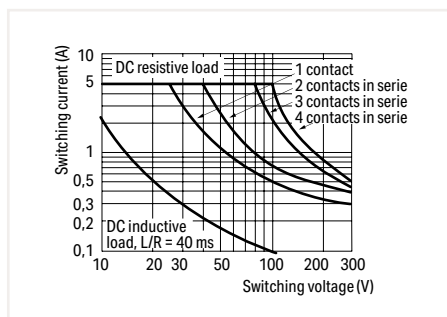
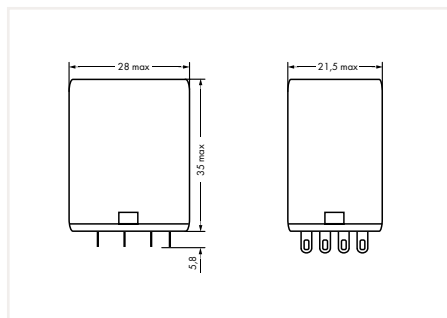


Similar to pictured device



Basic Relay; 4 changeover contacts; Limiting continuous current: 5 A; manually operated; Status indicator: red; 22 mm wide; 25 mm high

$U_N$	$I_N$	Item No.	Pack. Unit
12 VDC	75 mA	858-164	3
24 VDC	36.9 mA	858-150	3
24 VAC	50 mA	858-154	3
230 VAC	8.3 mA	858-151	3



DC Load Limit Curve

### Load Circuit

Number of changeover/switchover contacts	4
Contact material	AgCe
Limiting continuous current	5 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 100 mA
Pull-in time (typ.)	25 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	20 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Dielectric strength, control/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	21.5 mm / 0.846 inch
Height from the surface	35 mm / 1.378 inch
Depth	28 mm / 1.102 inch

### Mechanical Data

Mounting type	Pluggable module
---------------	------------------

### Material Data

Weight	37 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +80 °C

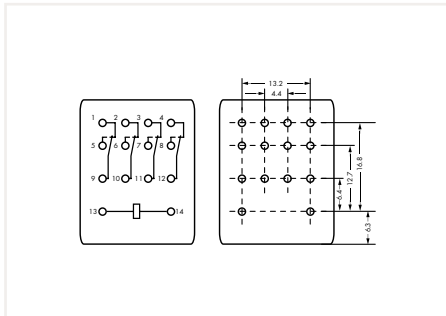
### Standards and Specifications

Standards/specifications	EN 61810-1
--------------------------	------------

# Basic Relay 858 Series

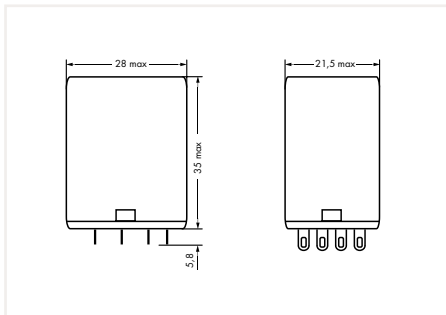


Similar to pictured device



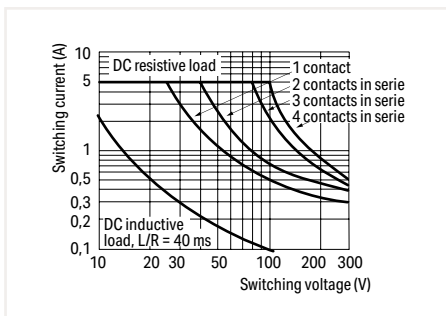
Basic Relay; 4 changeover contacts; Limiting continuous current: 5 A; with gold contacts; manually operated; Status indicator: red; 22 mm wide; 25 mm high

U <sub>N</sub>	I <sub>N</sub>	Item No.	Pack. Unit
24 VDC	36.9 mA	858-152	3
230 VAC	8.3 mA	858-153	3



**Note:**

To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Load Circuit

Number of changeover/switchover contacts	4
Contact material	AgCe + Au
Limiting continuous current	5 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	5 V / 1 mA / 50 mW
Pull-in time (typ.)	25 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	20 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED; mechanical
------------------	---------------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	21.5 mm / 0.846 inch
Height from the surface	35 mm / 1.378 inch
Depth	28 mm / 1.102 inch

### Mechanical Data

Mounting type	Pluggable module
---------------	------------------

### Material Data

Weight	35 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at U <sub>N</sub> )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +80 °C

### Standards and Specifications

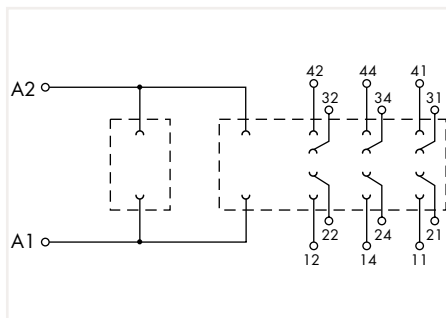
Standards/specifications	EN 61810-1
--------------------------	------------



# Relay Socket

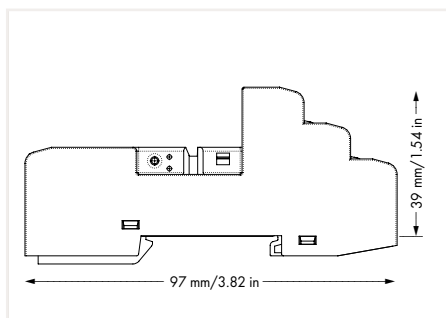
## 858 Series

1



Relay Socket; 4 changeover contacts; Limiting continuous current: 6 A; manually operated; 31 mm wide

	Item No.	Pack. Unit
	858-100	10



### Control Circuit

Nominal input voltage $U_N$	250 VAC/DC (depends on relay)
Input voltage range	0 ... 250 V (depends on relay)

### Load Circuit

Limiting continuous current	12 A
Switching voltage (max.)	250 VAC

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub> (depends on relay)
Dielectric strength, open contact (AC, 1 min)	1.5 kV <sub>rms</sub> (depends on relay)
Dielectric strength, load/load circuit (AC, 1 min)	2 kV <sub>rms</sub> (depends on relay)
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Fine-stranded conductor	0.34 ... 1.5 mm <sup>2</sup> / 22 ... 16 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch
Note (conductor cross section)	2 x 0.34 ... 2 x 1.5 mm <sup>2</sup> / 1 x 2.5 mm <sup>2</sup> / 2 x 22 ... 2 x 16 AWG

### Physical Data

Width	31 mm / 1.22 inch
Height from upper-edge of DIN-rail	39 mm / 1.535 inch
Depth	97 mm / 3.819 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	56.2 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C (depends on relay)
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1; UL 508
--------------------------	--------------------

## Accessories



Accessories for relay modules; Operation status indicator: red

$U_N$	Power consumption at $U_N$	Item No.	Pack. Unit
24 VDC	2.4 mA	788-120	50(2x25)
48 VDC	1.9 mA	788-121	50(2x25)
110 VDC	1.9 mA	788-122	50(2x25)
24 VAC	2.1 mA	788-123	50(2x25)
115 VAC	1.7 mA	788-124	50(2x25)
230 VAC	1.6 mA	788-125	50(2x25)

Holding bracket

Item No.	Pack. Unit
858-110	10 (1)



Push-in type jumper bar; for the coil side

Description	Item No.	Pack. Unit
$I_N$ 12 A	858-402	200 (8x25)

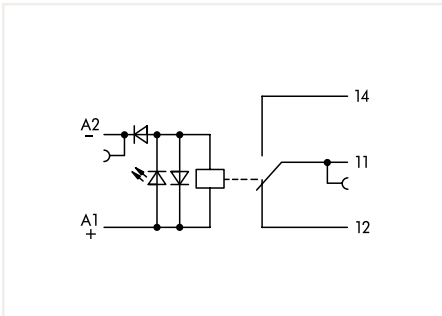


Operating tool with a partially insulated shaft; Type 1; (2.5 x 0.4) mm blade

Item No.	Pack. Unit
210-719	50

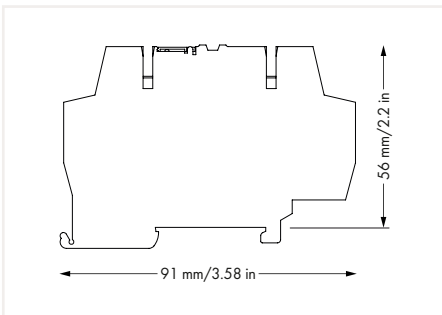
# Relay Module

## 859 Series

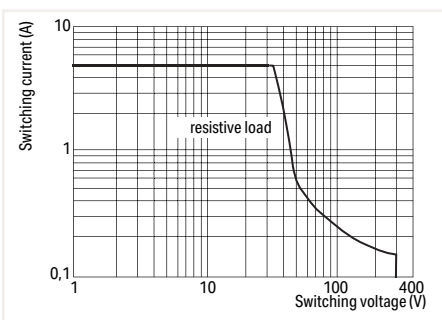


Relay Module; 1 changeover contact; Limiting continuous current: 5 A; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
5 VDC	31 mA	859-302	10
12 VDC	17 mA	859-303	10
24 VDC	10 mA	859-304	10
48 VDC	6.5 mA	859-305	10
110 VDC	3.5 mA	859-307	10
220 VDC	3.2 mA	859-308	10



Note:  
To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	5 A
Inrush current (resistive) max.	20 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	22.2 g
--------	--------

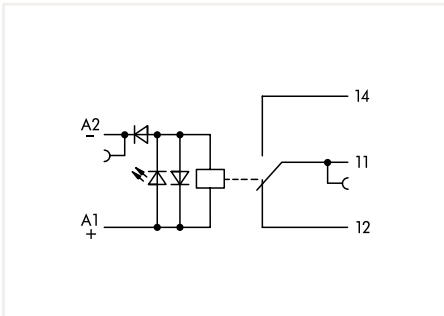
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

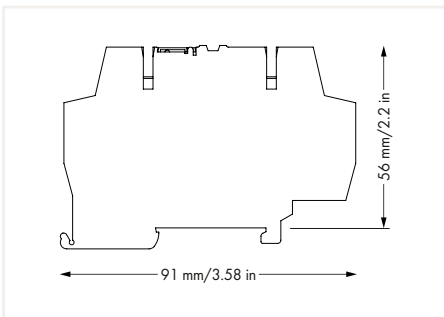
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508
--------------------------	--------------------------------------------------

## Relay Module 859 Series



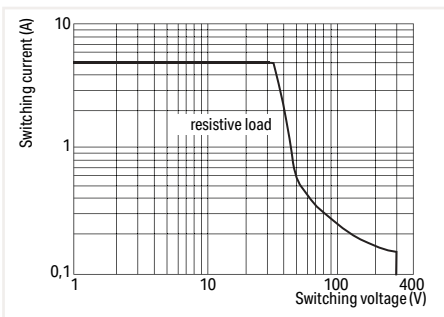
Relay Module; 1 changeover contact; Limiting continuous current: 5 A; with gold contacts; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
5 VDC	31 mA	859-312	10
24 VDC	10 mA	859-314	10
220 VDC	3.2 mA	859-318	10



### Note:

To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi + Au
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	1 V / 1 mA / 1 mW
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	22.5 g
--------	--------

### Environmental Requirements

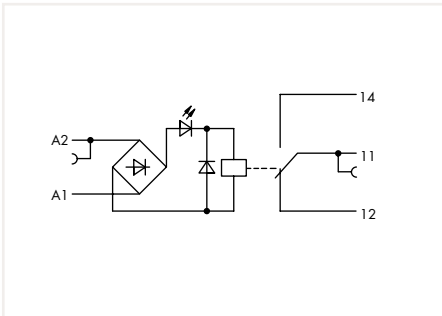
Surrounding air temperature (operation at $U_N$ )	-40 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508
--------------------------	--------------------------------------------------

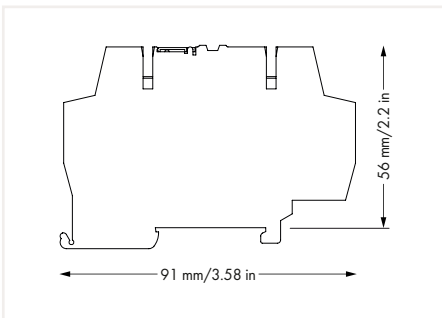
# Relay Module 859 Series

1

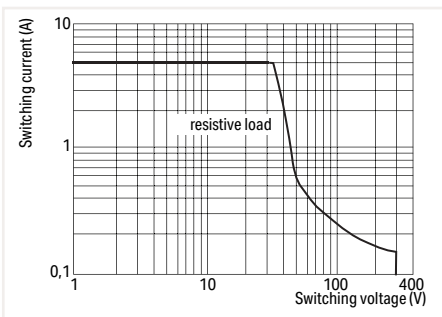


Relay Module; 1 changeover contact; Limiting continuous current: 5 A; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
12 VAC/DC	15 mA	859-353	10
24 VAC/DC	8 mA	859-354	10
48 VAC/DC	5.3 mA	859-355	10
115 VAC/DC	3.5 mA	859-357	10
230 VAC/DC	3.5 mA	859-358	10



**Note:**  
To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +10 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	5 A
Inrush current (resistive) max.	10 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	22.7 g
--------	--------

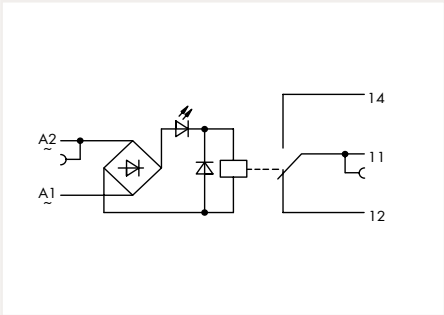
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

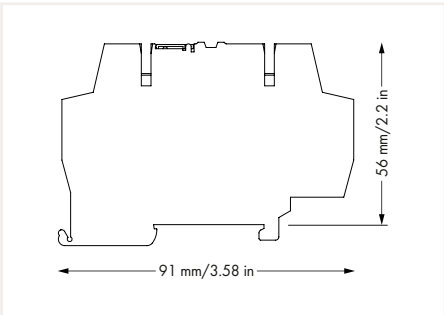
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508
--------------------------	--------------------------------------------------

# Relay Module 859 Series

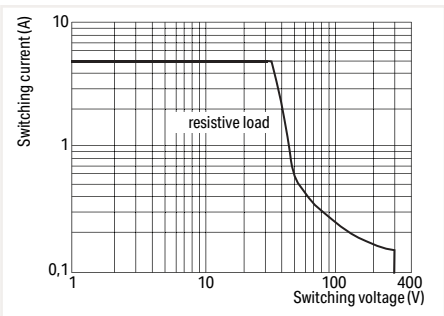


Relay Module; 1 changeover contact; Limiting continuous current: 5 A; with gold contacts; Status indicator: red; 6 mm wide

U <sub>N</sub>	I <sub>N</sub>	Item No.	Pack. Unit
115 VAC/DC	3.5 mA	859-360	10
230 VAC/DC	3.5 mA	859-359	10



Note:  
To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

Control Circuit	
Input voltage range	-15 ... +10 %

Load Circuit	
Number of changeover/switchover contacts	1
Contact material	AgNi + Au
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	1 V / 1 mA / 1 mW
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	30 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

Signaling	
Status indicator	Red LED

Safety and Protection	
Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>

Connection Data	
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

Mechanical Data	
Mounting type	DIN-35 rail

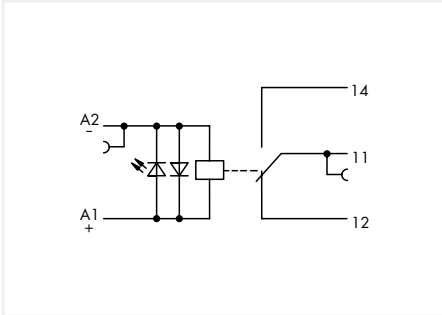
Material Data	
Weight	25.3 g

Environmental Requirements	
Surrounding air temperature (operation at U <sub>N</sub> )	-40 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

Standards and Specifications	
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508

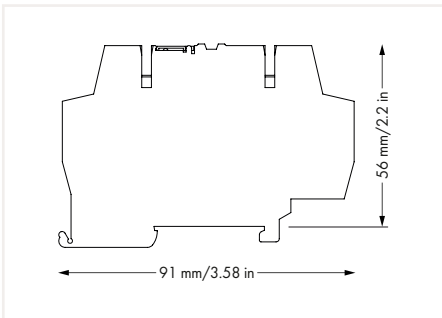
# Relay Module 859 Series

1

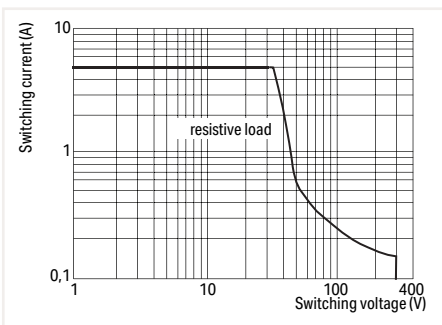


Relay Module; 1 changeover contact; Limiting continuous current: 5 A; for railway applications; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	12 mA	859-390	10



**Note:**  
To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +25 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>6</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

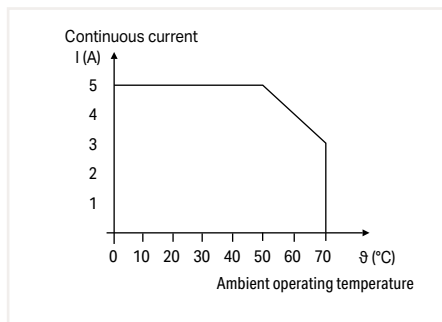
Weight	22.9 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

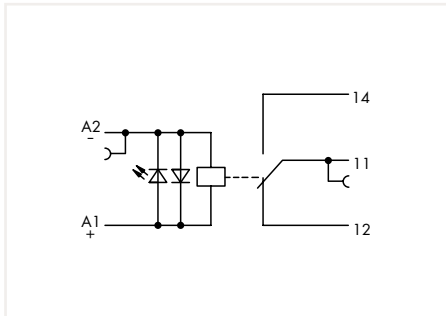
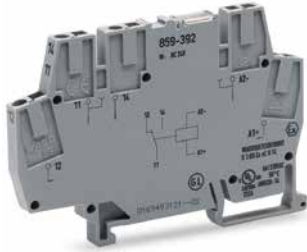
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508
--------------------------	--------------------------------------------------



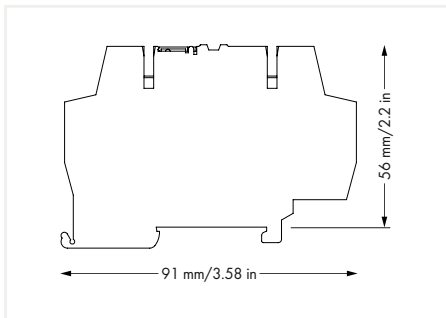
Current-Carrying Capacity Curve

## Relay Module 859 Series



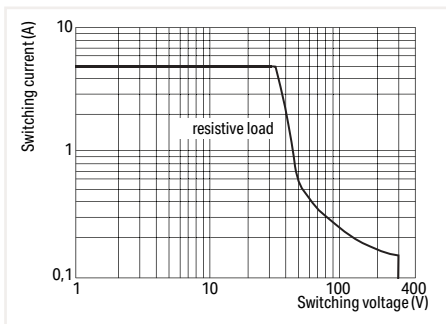
Relay Module; 1 changeover contact; Limiting continuous current: 5 A; with gold contacts; for railway applications; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	10 mA	859-392	10
36 VDC	10.1 mA	859-386	10
48 VDC	7.9 mA	859-384	10
110 VDC	3.1 mA	859-317	10



### Note:

To prevent damaging the gold layer, 30 VDC switching voltages and 50 mA currents must not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce service life.



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +25 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi + Au
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	1 V / 1 mA / 1 mW
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

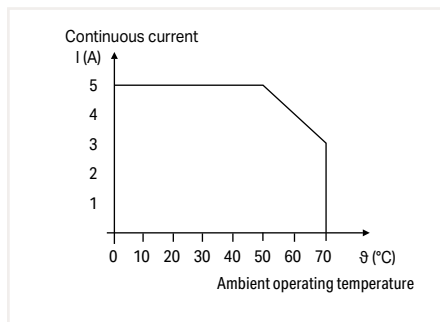
Weight	22.3 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508
--------------------------	--------------------------------------------------

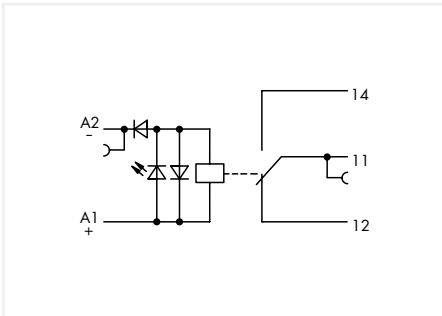


Current-Carrying Capacity Curve



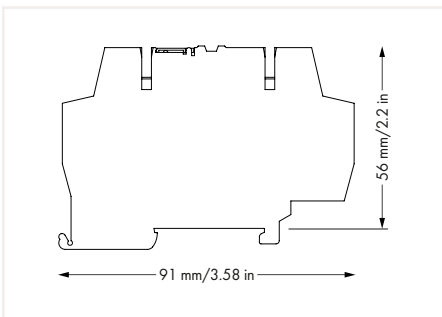
# Relay Module 859 Series

1

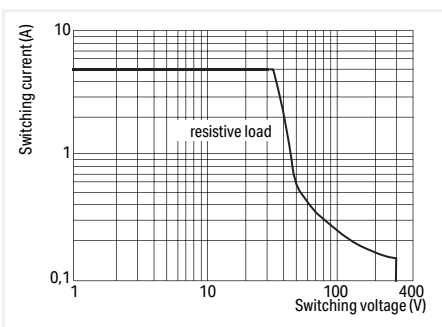


Relay Module; 1 changeover contact; Limiting continuous current: 5 A; for railway applications; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
110 VDC	2.7 mA	859-391	10



**Note:**  
To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	±30 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>6</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

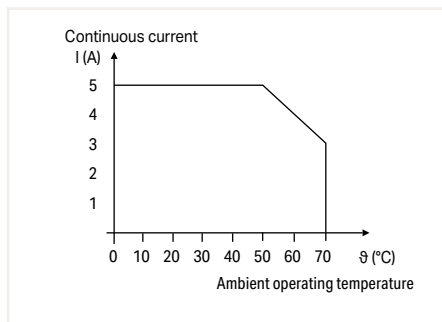
Weight	22.4 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

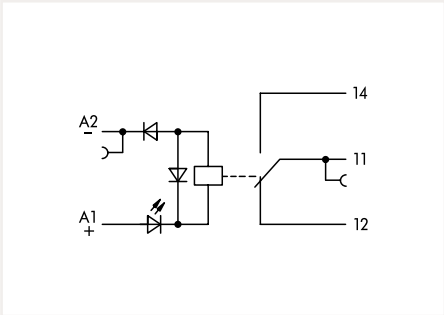
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508
--------------------------	--------------------------------------------------



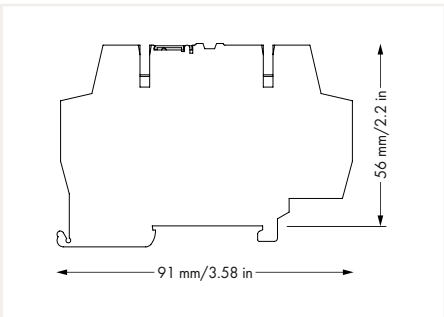
Current-Carrying Capacity Curve

# Relay Module 859 Series

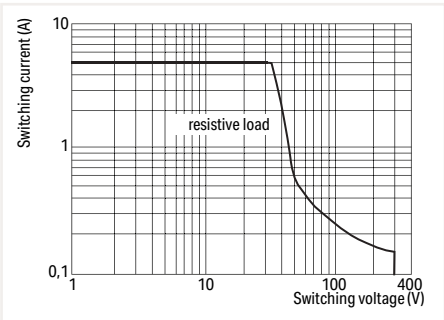


Relay Module; 1 changeover contact; Limiting continuous current: 5 A; for railway applications; Status indicator: red; 6 mm wide

U <sub>N</sub>	I <sub>N</sub>	Item No.	Pack. Unit
24 VDC	14.4 mA	859-398	10
48 VDC	7.9 mA	859-397	10
110 VDC	3.1 mA	859-399	10



**Note:**  
To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	±40 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

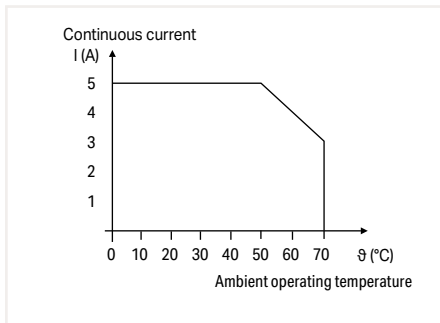
Weight	22.6 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at U <sub>N</sub> )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

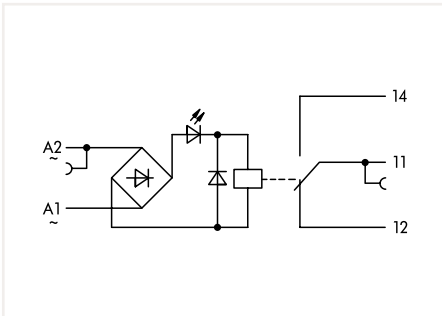
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; GL
--------------------------	------------------------------------------



Current-Carrying Capacity Curve

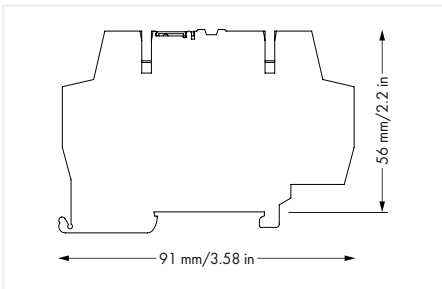
# Relay Module 859 Series

1

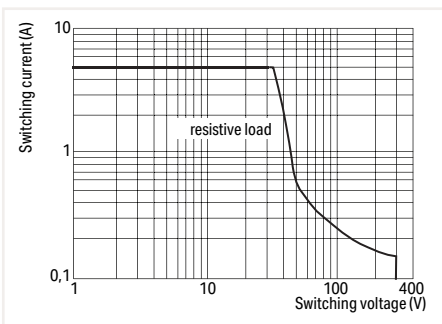


Relay Module; 1 changeover contact; Limiting continuous current: 5 A; with defined switch-on threshold; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
115 VAC	4.2 mA	859-367	10



**Note**  
To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
Switch-off threshold (relay/LED)	60 VAC / 60 VAC
Switch-on threshold (relay/LED)	95 VAC / 80 VAC

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	22.7 g
--------	--------

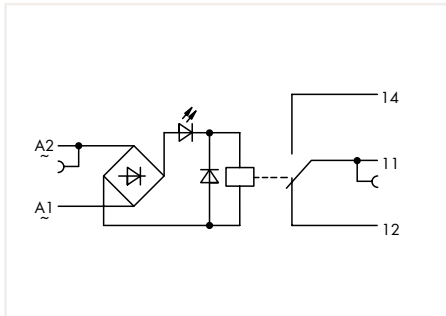
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

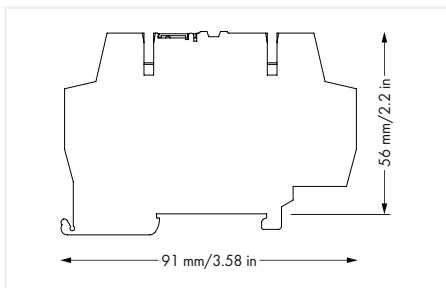
Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508
--------------------------	--------------------------------------------------

## Relay Module 859 Series



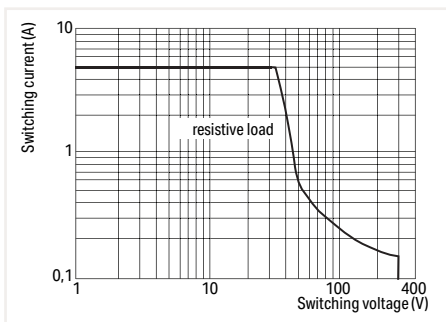
Relay Module; 1 changeover contact; Limiting continuous current: 5 A; with defined switch-on threshold; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
230 VAC	4.2 mA	859-368	10



### Note

To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
Switch-off threshold (relay/LED)	140 VAC / 150 VAC
Switch-on threshold (relay/LED)	190 VAC / 165 VAC

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	25 ms
Bounce time (typ.)	3.5 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 180 min <sup>-1</sup>

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	22.7 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508
--------------------------	--------------------------------------------------

## Accessories

1



Operating tool with a partially insulated shaft; Type 2; (3.5 x 0.5) mm blade

Item No.	Pack. Unit
210-720	50



End and intermediate plate; 1 mm thick

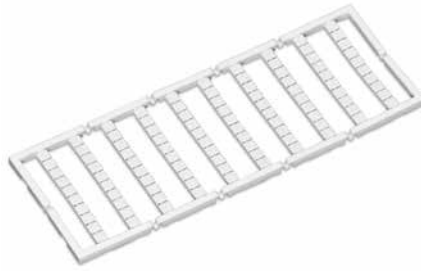
Item No.	Pack. Unit
859-525	100



Test pin; 1 mm Ø; with solder connection for test cable

Item No.	Pack. Unit
859-500	100

## Accessories



1

Push-in type jumper bar; light gray; insulated; 18 A

Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)
Item no. suffixes for colored push-in type jumper bars		
yellow	.../000-029	
red	.../000-005	
blue	.../000-006	

Mini-WSB marker card; Marker width: 5 mm; 10 strips with 10 markers/card

Marking	Item No.	Pack. Unit
plain	248-501	50
1 ... 10 (10 x)	248-502	50
11 ... 20 (10 x)	248-503	50
21 ... 30 (10 x)	248-504	50
31 ... 40 (10 x)	248-505	50
41 ... 50 (10 x)	248-506	50
1 ... 50 (2 x)	248-566	50
K1 ... K10	248-450	50
K11 ... K20	248-451	50
K100	248-452	50
U1 ... U10	248-453	50
U11 ... U20	248-454	50
U100	248-455	50

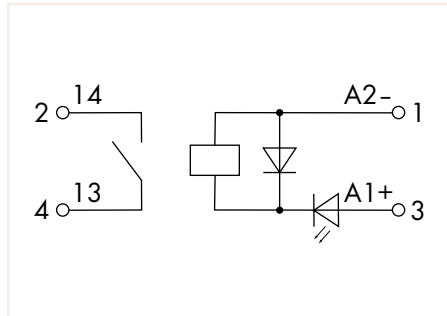
Mini-WSB Inline; for terminal block width: 5 ... 5.2 mm; plain; 1700 markers/reel; white

Marking	Item No.	Pack. Unit
plain	2009-145	1

# Relay Module 2042 Series

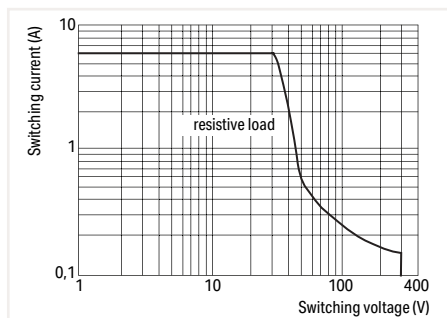
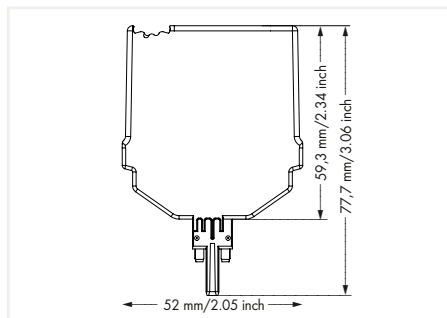


Similar to picture



Relay Module; Relay with 1 make contact; 24 VDC; for railway applications; Status indicator: green

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	6.6 mA	2042-3004	6



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +25 %
---------------------	---------------

### Load Circuit

Number of make contacts/switch-on contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	6 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>5</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	10.3 mm / 0.406 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	67.9 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

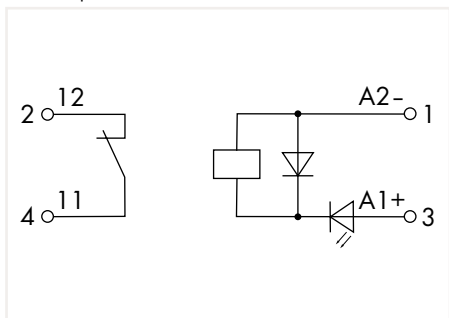
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

## Relay Module 2042 Series

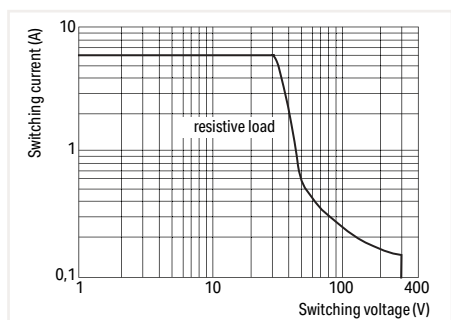
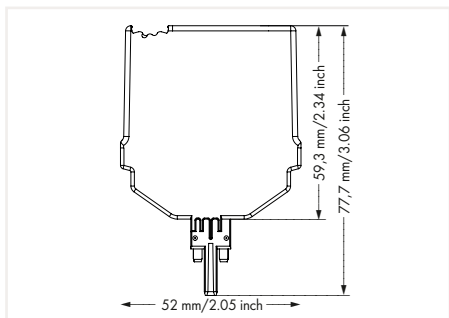


Similar to picture



Relay Module; Relay with 1 break contact; 24 VDC; for railway applications; Status indicator: green

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	6.4 mA	2042-3054	6



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +25 %
---------------------	---------------

### Load Circuit

Number of break contacts/switch-off contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	6 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	4 ms
Electrical life (NC; resistive load; 23 °C)	10 x 10 <sup>8</sup> switching operations
Mechanical life	5 x 10 <sup>8</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	10.3 mm / 0.406 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	67.9 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

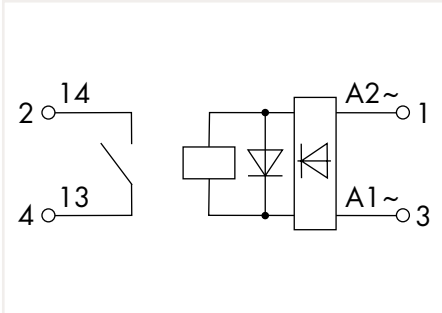
Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------



# Relay Module 2042 Series

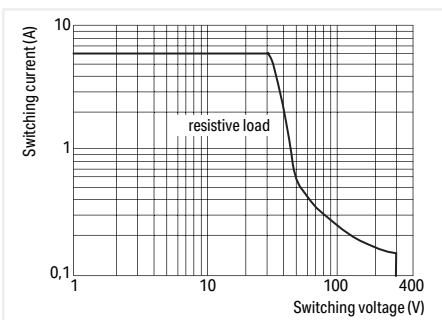
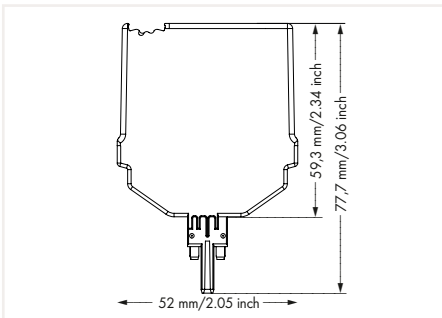


Similar to picture



Relay Module; Relay with 1 make contact;  
24 ... 230 VAC/DC; Status indicator: green

U <sub>N</sub>	I <sub>N</sub>	Item No.	Pack. Unit
24 ... 230 V AC/DC	26.3 ... 1.7 mA	2042-3809	6



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of make contacts/switch-on contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	3 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	750 VA (AC); DC see load limit curve
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>6</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	10.3 mm / 0.406 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	69.1 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at U <sub>N</sub> )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

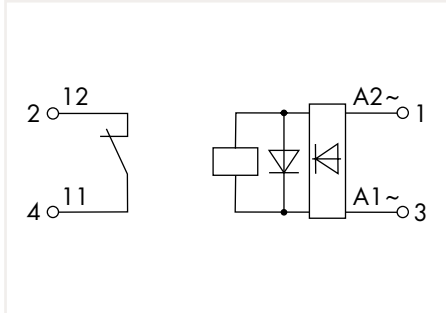
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

## Relay Module 2042 Series

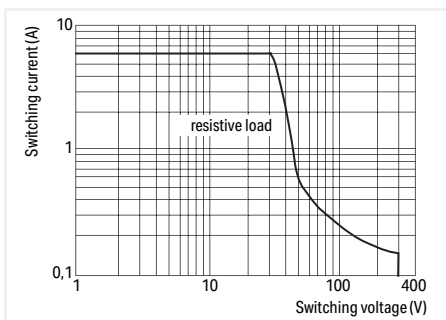
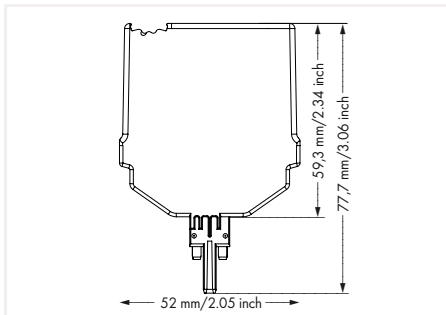


Similar to picture



Relay Module; Relay with 1 break contact;  
24 ... 230 VAC/DC; Status indicator: green

$U_N$	$I_N$	Item No.	Pack. Unit
24 ... 230 V AC/DC	26.3 ... 1.7 mA	2042-3859	6



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of break contacts/switch-off contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	6 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC); DC see load limit curve
Recommended minimum load	10 V / 10 mA; 24 V / 1 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	4 ms
Electrical life (NC; resistive load; 23 °C)	10 x 10 <sup>8</sup> switching operations
Mechanical life	5 x 10 <sup>8</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	10.3 mm / 0.406 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	69.1 g
--------	--------

### Environmental Requirements

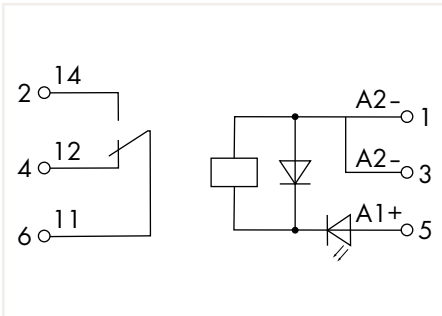
Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

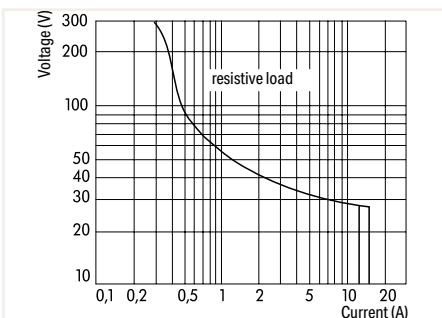
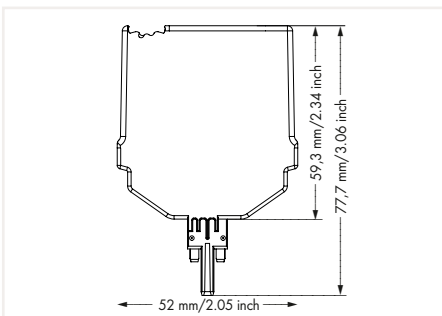
# Relay Module

## 2042 Series



Relay Module; Relay with 1 changeover contact;  
24 VDC; for railway applications; Status indicator: green

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	13.7 mA	2042-3034	4



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +25 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi
Limiting continuous current	10 A
Inrush current (resistive) max.	30 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2500 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>9</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	15.5 mm / 0.61 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	33.1 g
--------	--------

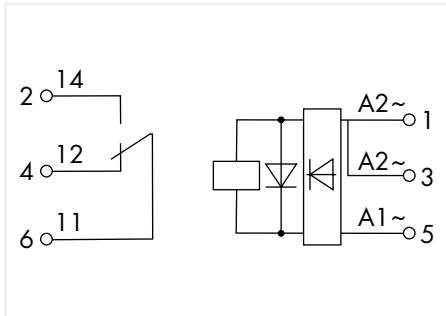
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

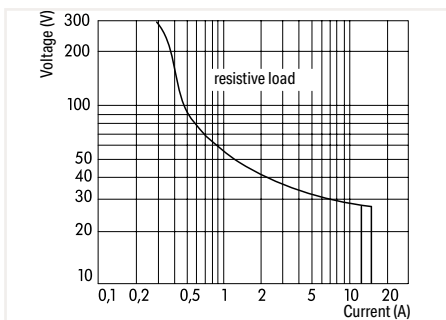
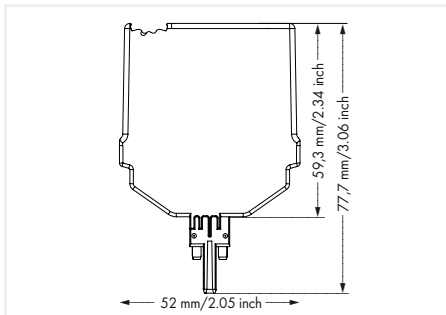
Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

## Relay Module 2042 Series



Relay Module; Relay with 1 changeover contact;  
24 ... 230 VAC/DC; Status indicator: green

$U_N$	$I_N$	Item No.	Pack. Unit
24 ... 230 V AC/DC	50.2 ... 2.8 mA	2042-3839	4



DC Load Limit Curve

### Control Circuit

Input voltage range	$\pm 10\%$
---------------------	------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi
Limiting continuous current	4 A
Inrush current (resistive) max.	30 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1000 VA (AC); DC see load limit curve
Recommended minimum load	5 V / 100 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	15.5 mm / 0.61 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	36.3 g
--------	--------

### Environmental Requirements

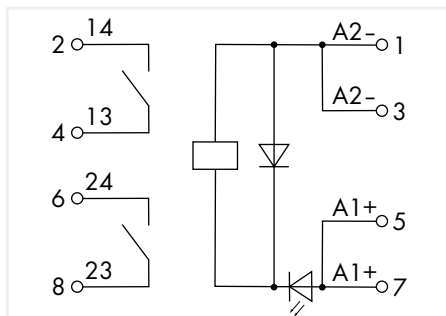
Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

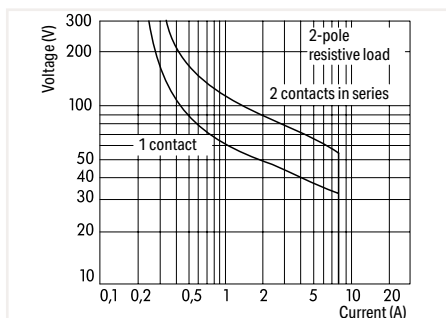
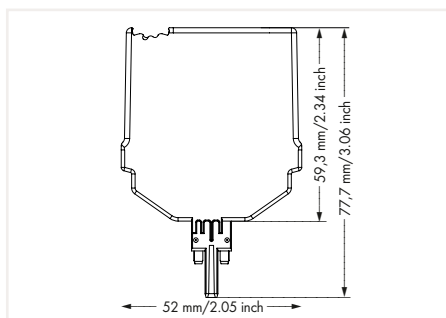
# Relay Module

## 2042 Series



Relay Module; Relay with 2 make contacts; 24 VDC; for railway applications; Status indicator: green

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	13.8 mA	2042-3014	4



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +25 %
---------------------	---------------

### Load Circuit

Number of make contacts/switch-on contacts	2
Contact material	AgNi
Limiting continuous current	8 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	20.7 mm / 0.815 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	36.9 g
--------	--------

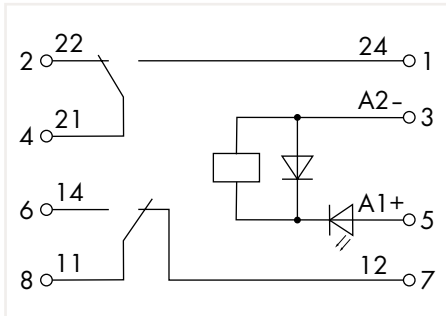
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

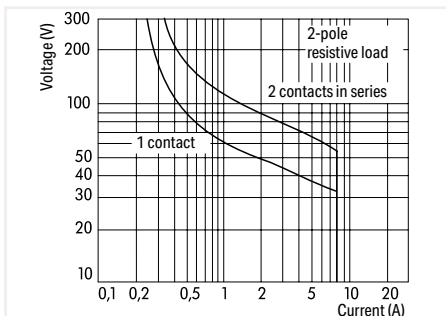
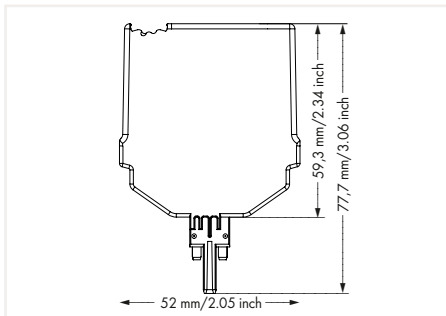
Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

## Relay Module 2042 Series



Relay Module; Relay with 2 changeover contacts;  
24 VDC; for railway applications; Status indicator: green

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	13.8 mA	2042-3044	4



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +25 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi
Limiting continuous current	8 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	20.7 mm / 0.815 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	37 g
--------	------

### Environmental Requirements

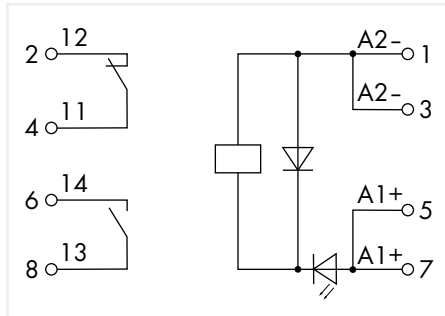
Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

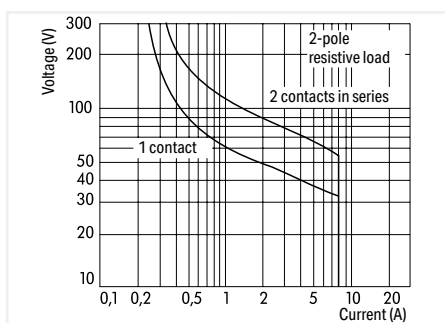
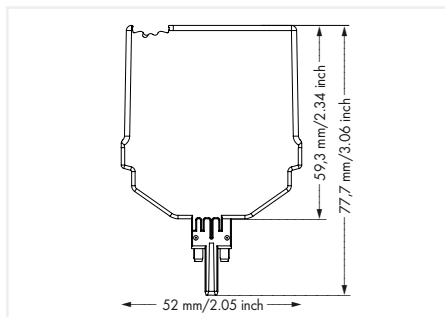
# Relay Module

## 2042 Series



Relay Module; Relay with 1 break contact and 1 make contact; 24 VDC; for railway applications; Status indicator: green

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	13.8 mA	2042-3064	4



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +25 %
---------------------	---------------

### Load Circuit

Number of break contacts/switch-off contacts	1
Number of make contacts/switch-on contacts	1
Contact material	AgNi
Limiting continuous current	8 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	20.7 mm / 0.815 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	37.1 g
--------	--------

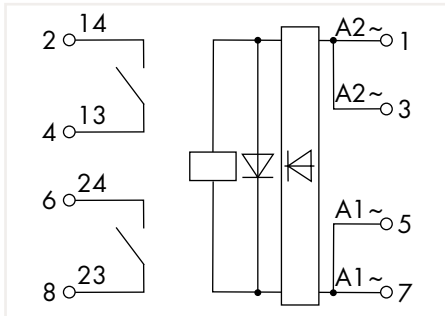
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

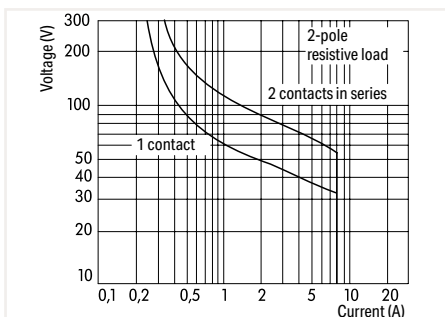
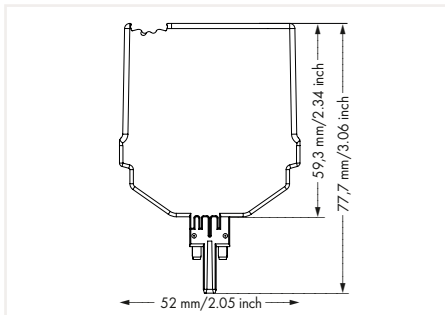
Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

## Relay Module 2042 Series



Relay Module; Relay with 2 make contacts;  
24 ... 230 VAC/DC; Status indicator: green

$U_N$	$I_N$	Item No.	Pack. Unit
24 ... 230 V AC/DC	49.1 ... 2.9 mA	2042-3819	4



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of make contacts/switch-on contacts	2
Contact material	AgNi
Limiting continuous current	5 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	20.7 mm / 0.815 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	40.1 g
--------	--------

### Environmental Requirements

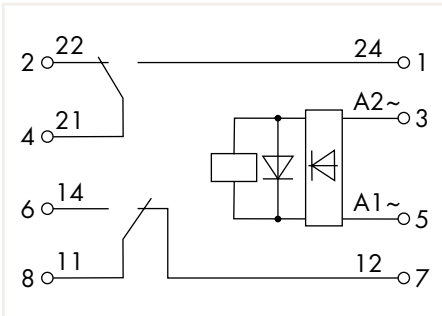
Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

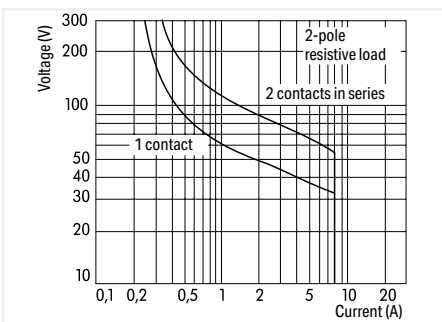
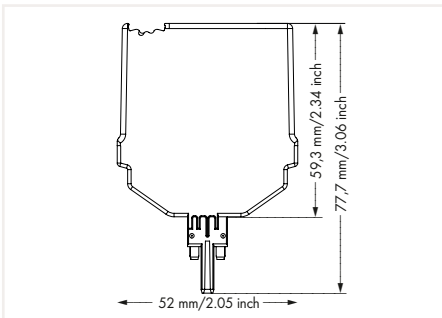


# Relay Module 2042 Series



Relay Module; Relay with 2 changeover contacts;  
24 ... 230 VAC/DC; Status indicator: green

U <sub>N</sub>	I <sub>N</sub>	Item No.	Pack. Unit
24 ... 230 V AC/DC	49.1 ... 2.9 mA	2042-3849	4



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi
Limiting continuous current	5 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	20.7 mm / 0.815 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	76.4 g
--------	--------

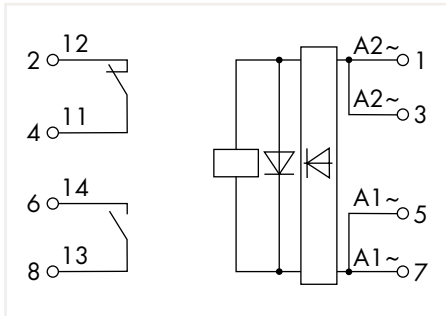
### Environmental Requirements

Surrounding air temperature (operation at U <sub>N</sub> )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

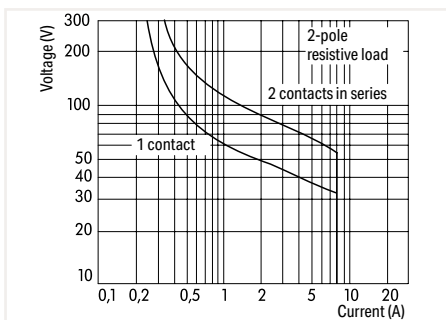
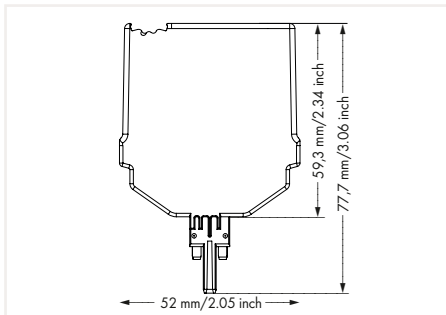
Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

## Relay Module 2042 Series



Relay Module; Relay with 1 break contact and 1 make contact; 24 ... 230 VAC/DC; Status indicator: green

$U_N$	$I_N$	Item No.	Pack. Unit
24 ... 230 V AC/DC	49.1 ... 2.9 mA	2042-3869	4



DC Load Limit Curve

### Control Circuit

Input voltage range	$\pm 10\%$
---------------------	------------

### Load Circuit

Number of break contacts/switch-off contacts	1
Number of make contacts/switch-on contacts	1
Contact material	AgNi
Limiting continuous current	5 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	20.7 mm / 0.815 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	76.4 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

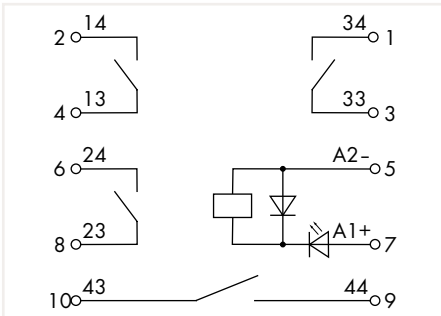
Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

# Relay Module

## 2042 Series

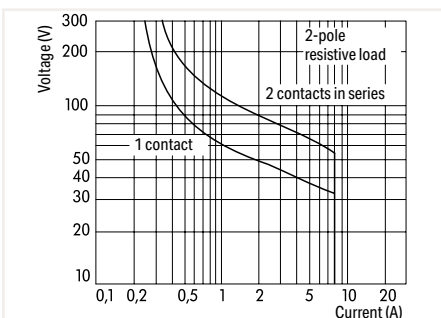
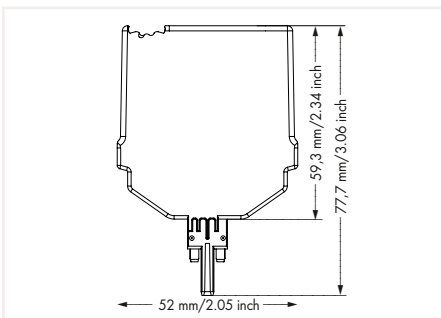


Similar to picture



Relay Module; Relay with 4 make contacts; 24 VDC; for railway applications; Status indicator: green

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	28.1 mA	2042-3024	5



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +25 %
---------------------	---------------

### Load Circuit

Number of make contacts/switch-on contacts	4
Contact material	AgNi
Limiting continuous current	5 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>9</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	25.9 mm / 1.02 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	80 g
--------	------

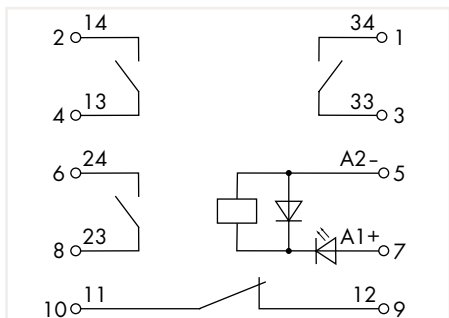
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

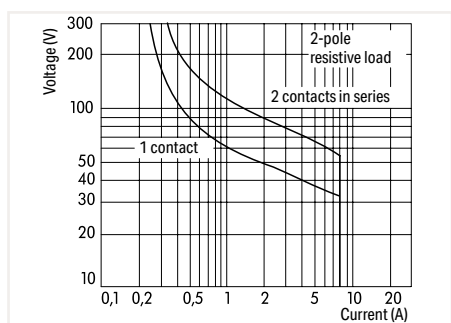
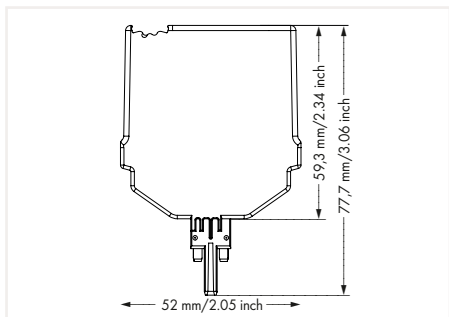
Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

## Relay Module 2042 Series



Relay Module; Relay with 3 make contacts and 1 break contact; 24 VDC; for railway applications; Status indicator: green

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	27.4 mA	2042-3074	5



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +25 %
---------------------	---------------

### Load Circuit

Number of break contacts/switch-off contacts	1
Number of make contacts/switch-on contacts	3
Contact material	AgNi
Limiting continuous current	5 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	25.9 mm / 1.02 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	58.7 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

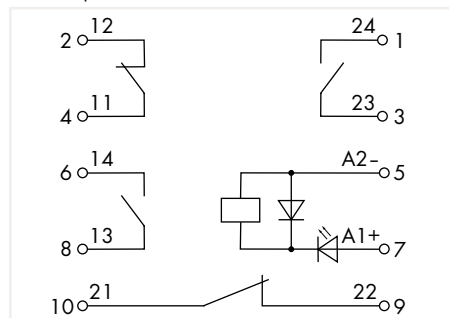
Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

# Relay Module

## 2042 Series

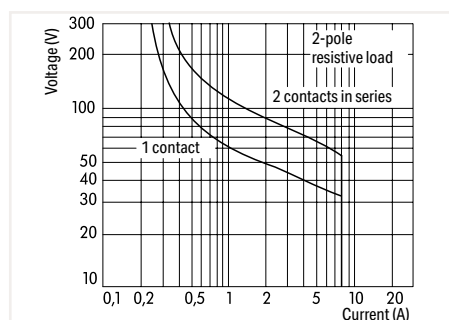
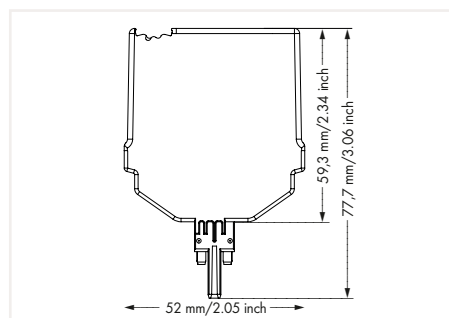


Similar to picture



Relay Module; Relay with 2 break contacts and 2 make contacts; 24 VDC; for railway applications; Status indicator: green

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	28.1 mA	2042-3084	5



DC Load Limit Curve

### Control Circuit

Input voltage range	-30 ... +25 %
---------------------	---------------

### Load Circuit

Number of break contacts/switch-off contacts	2
Number of make contacts/switch-on contacts	2
Contact material	AgNi
Limiting continuous current	5 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	25.9 mm / 1.02 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	58.7 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

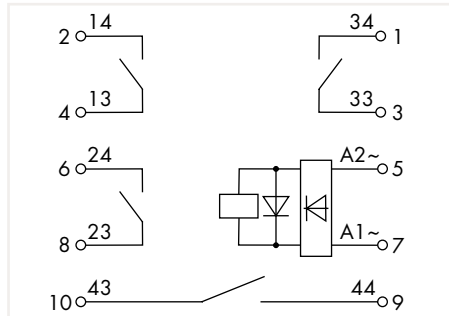
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

# Relay Module 2042 Series

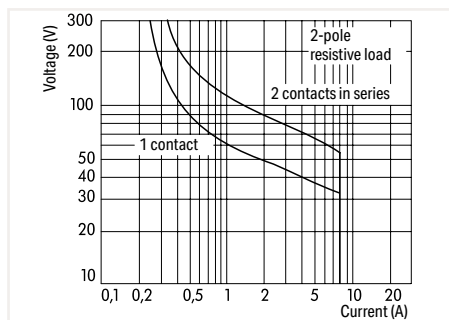
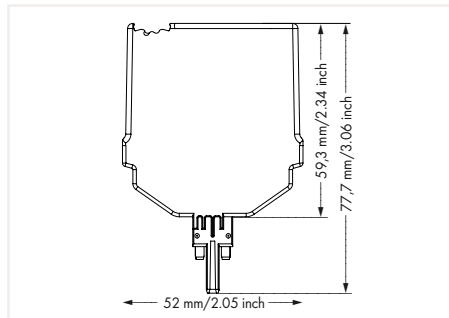


Similar to picture



Relay Module; Relay with 4 make contacts;  
24 ... 230 VAC/DC; Status indicator: green

U <sub>N</sub>	I <sub>N</sub>	Item No.	Pack. Unit
24 ... 230 V AC/DC	58.4 ... 6 mA	2042-3829	5



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of make contacts/switch-on contacts	4
Contact material	AgNi
Limiting continuous current	3 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	750 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	25.9 mm / 1.02 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	58.7 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at U <sub>N</sub> )	-40 ... +50 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

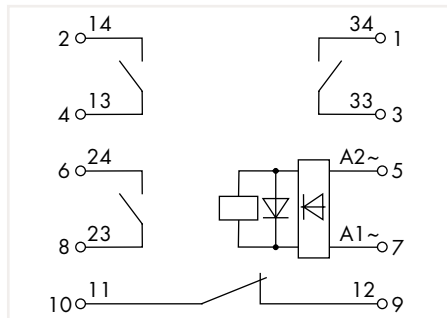
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

# Relay Module 2042 Series

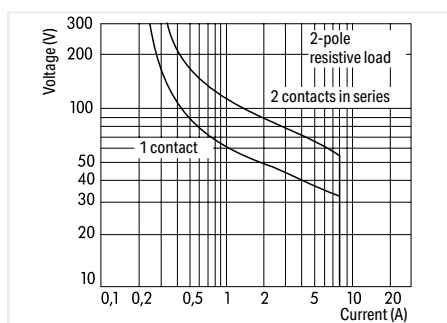
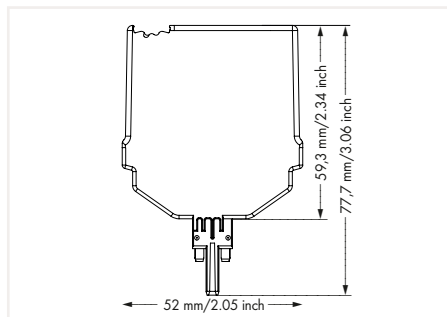


Similar to picture



Relay Module; Relay with 3 make contacts and 1 break contact; 24 ... 230 VAC/DC; Status indicator: green

U <sub>N</sub>	I <sub>N</sub>	Item No.	Pack. Unit
24 ... 230 V AC/DC	58.4 ... 6 mA	2042-3879	5



DC Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of break contacts/switch-off contacts	1
Number of make contacts/switch-on contacts	3
Contact material	AgNi
Limiting continuous current	3 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	750 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	25.9 mm / 1.02 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	83.9 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at U <sub>N</sub> )	-40 ... +50 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

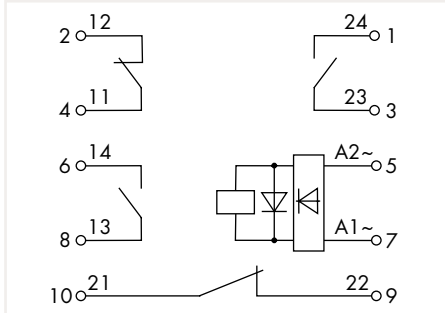
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------

## Relay Module 2042 Series

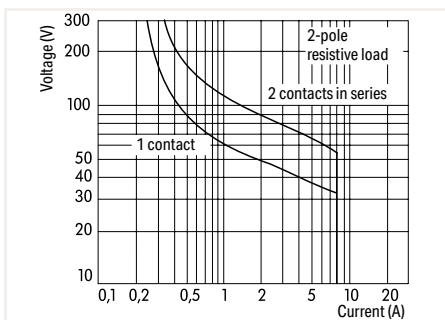
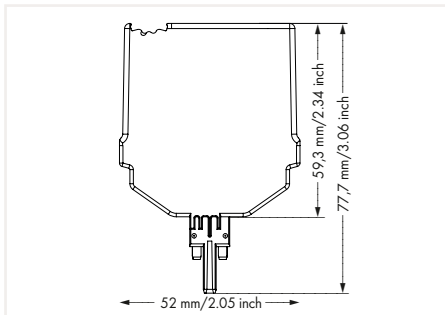


Similar to picture



Relay Module; Relay with 2 break contacts and 2 make contacts; 24 ... 230 VAC/DC; Status indicator: green

$U_N$	$I_N$	Item No.	Pack. Unit
24 ... 230 V AC/DC	58.4 ... 6 mA	2042-3889	5



DC Load Limit Curve

### Control Circuit

Input voltage range	$\pm 10\%$
---------------------	------------

### Load Circuit

Number of break contacts/switch-off contacts	2
Number of make contacts/switch-on contacts	2
Contact material	AgNi
Limiting continuous current	3 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	750 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	25.9 mm / 1.02 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Weight	83.9 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +50 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

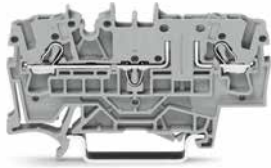
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2
--------------------------	----------------------------------------



# Accessories

1



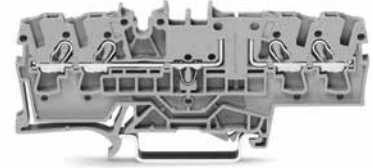
2-conductor carrier terminal block; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>; Push-in CAGE CLAMP®

Color	Item No.	Pack. Unit
gray	2002-1661	50



3-conductor carrier terminal block; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>; Push-in CAGE CLAMP®

Color	Item No.	Pack. Unit
gray	2002-1761	50



4-conductor carrier terminal block; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>; Push-in CAGE CLAMP®

Color	Item No.	Pack. Unit
gray	2002-1861	50



End and intermediate plate; 1 mm thick

Color	Item No.	Pack. Unit
orange	2002-1692	
gray	2002-1691	



End and intermediate plate; 1 mm thick

Color	Item No.	Pack. Unit
orange	2002-1792	
gray	2002-1791	

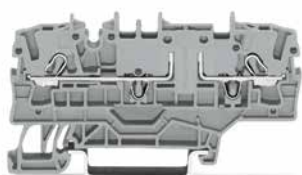


End and intermediate plate; 1 mm thick

Color	Item No.	Pack. Unit
orange	2002-1892	
gray	2002-1891	

## Accessories

1



2-conductor carrier terminal block; with additional slot for adjacent jumper, for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>; Push-in CAGE CLAMP®

Color	Item No.	Pack. Unit
gray	2002-1961	50

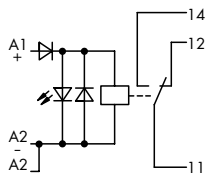
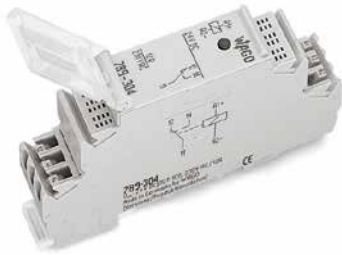


End and intermediate plate; 1 mm thick

Color	Item No.	Pack. Unit
orange	2002-1992	100 (4x25)
gray	2002-1991	100 (4x25)

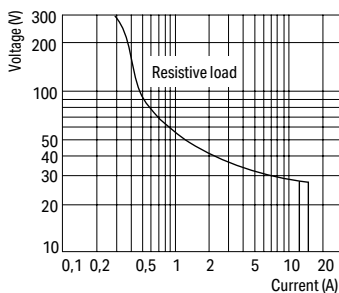
# Relay Module

## 789 Series



Relay Module; 1 changeover contact; Limiting continuous current: 12 A; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	19 mA	789-304	10



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +10 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi 90/10
Limiting continuous current	12 A
Inrush current (resistive) max.	30 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	3000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	6 ms
Mechanical life	3 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	50.5 g
--------	--------

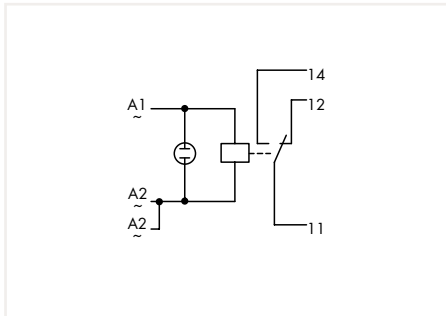
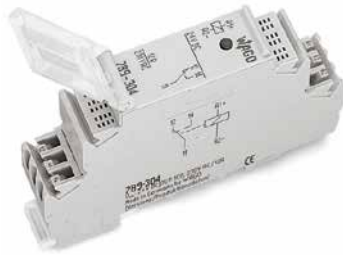
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

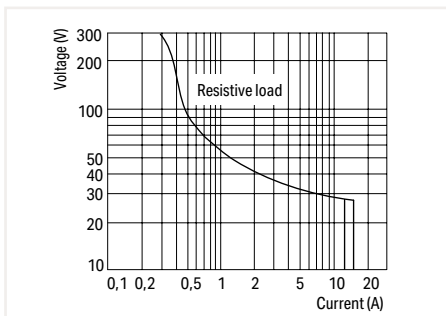
Standards/specifications	EN 60664-1
--------------------------	------------

## Relay Module 789 Series



Relay Module; 1 changeover contact; Limiting continuous current: 12 A; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
230 VAC	4.2 mA	789-508	10



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +10 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi 90/10
Limiting continuous current	12 A
Inrush current (resistive) max.	30 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	3000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	15 ms
Bounce time (typ.)	3 ms
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	red
------------------	-----

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	49.2 g
--------	--------

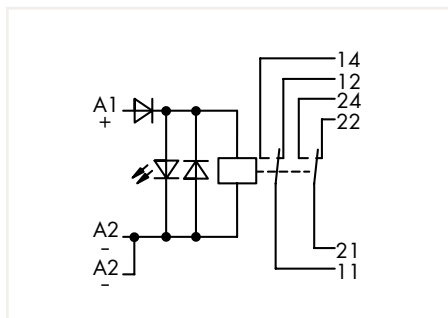
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

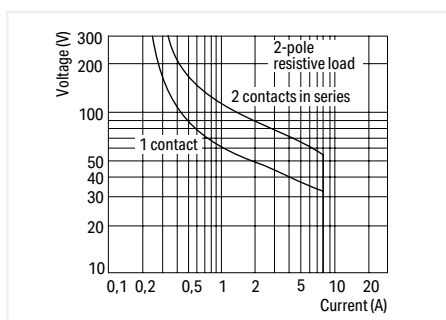
Standards/specifications	EN 60664-1
--------------------------	------------

## Relay Module 789 Series



Relay Module; 2 changeover contacts; Limiting continuous current: 8 A; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	21 mA	789-312	10



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +10 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi 90/10
Limiting continuous current	8 A
Inrush current (resistive) max.	15 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	6 ms
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	55 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

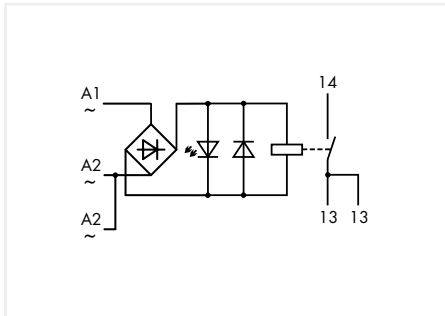
### Standards and Specifications

Standards/specifications	EN 61010-2-201
--------------------------	----------------

## Relay Module 789 Series



Similar to pictured device

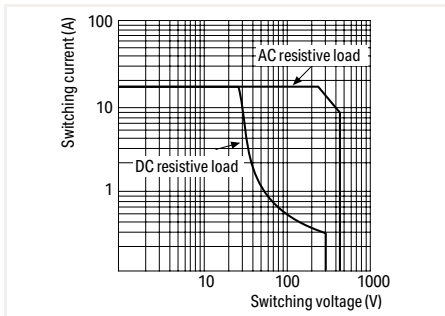


Relay Module; 1 make contact; Limiting continuous current: 16 A; for lamp loads; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VAC/DC	32 mA	789-520	10

### Note:

To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 %
---------------------	---------------

### Load Circuit

Number of make contacts/switch-on contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	16 A
Inrush current (resistive) max.	120 A (AC) / 50 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	5 ms
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	53.8 g
--------	--------

### Environmental Requirements

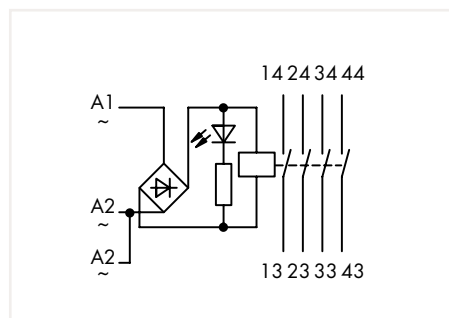
Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1, EN 61810-1
--------------------------	------------------------

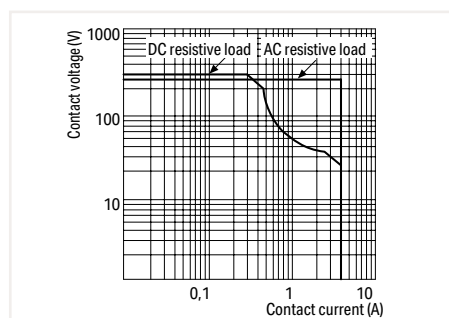
# Relay Module

## 789 Series



Relay Module; 4 make contacts; Limiting continuous current: 4 A; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VAC/DC	12 mA	789-552	10



Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +10 %
---------------------	---------------

### Load Circuit

Number of make contacts/switch-on contacts	4
Contact material	AgNi + Au
Limiting continuous current	4 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1000 VA (AC); DC see load limit curve
Recommended minimum load	0.1 V / 0.1 mA
Pull-in time (typ.)	20 ms
Drop-out time (typ.)	20 ms
Bounce time (typ.)	1 ms
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	0.75 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	51.9 g
--------	--------

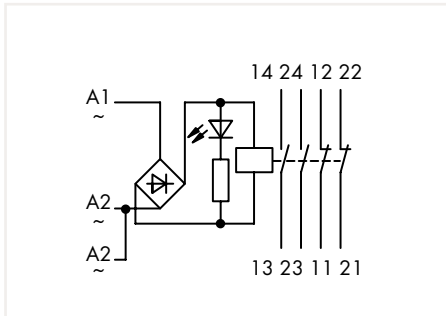
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1, EN 61810-1
--------------------------	------------------------

## Relay Module 789 Series

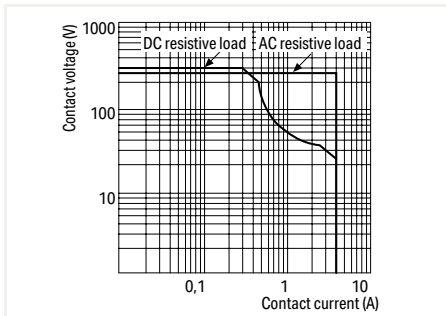


Relay Module; 2 make contacts and 2 break contacts;  
Limiting continuous current: 4 A; Status indicator: red;  
18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VAC/DC	12 mA	789-536	10

### Note:

To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +10 %
---------------------	---------------

### Load Circuit

Number of break contacts/switch-off contacts	2
Number of make contacts/switch-on contacts	2
Contact material	AgNi + Au
Limiting continuous current	4 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1000 VA (AC); DC see load limit curve
Recommended minimum load	0.1 V / 0.1 mA
Pull-in time (typ.)	20 ms
Drop-out time (typ.)	20 ms
Bounce time (typ.)	1 ms
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	0.75 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	50.7 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1, EN 61810-1
--------------------------	------------------------

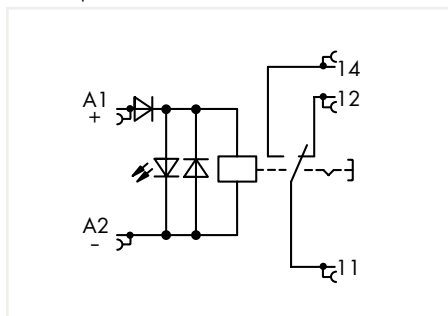


# Relay Module

## 789 Series



Similar to pictured device

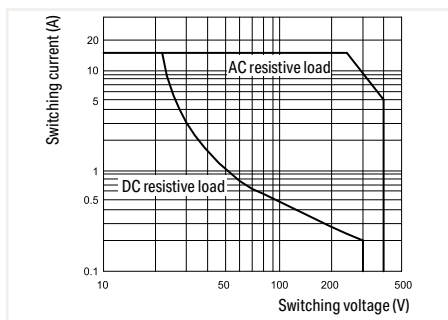


Relay Module; 1 changeover contact; Limiting continuous current: 12 A; manually operated; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	17 mA	789-1341	10

### Note:

To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



Load Limit Curve

### Control Circuit

Input voltage range	$\pm 10\%$
---------------------	------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi
Limiting continuous current	12 A
Inrush current (resistive) max.	24 A (AC) / 4 s; 32 A / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	3000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	8 ms
Bounce time (typ.)	6 ms
Mechanical life	$5 \times 10^6$ switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	50.8 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

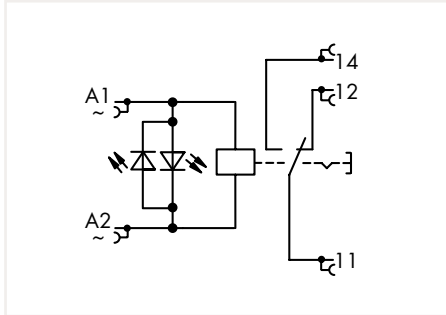
### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

## Relay Module 789 Series



Similar to pictured device

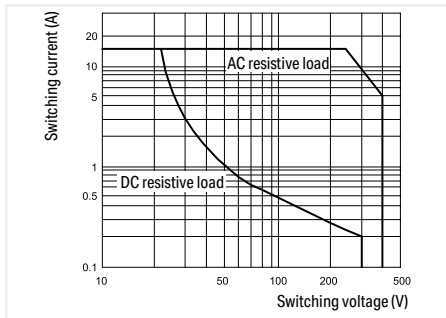


Relay Module; 1 changeover contact; Limiting continuous current: 12 A; manually operated; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
230 VAC	3.5 mA	789-1544	10

### Note:

To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



Load Limit Curve

### Control Circuit

Input voltage range	$\pm 10\%$
---------------------	------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi
Limiting continuous current	12 A
Inrush current (resistive) max.	24 A (AC) / 4 s; 32 A / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	3000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	8 ms
Bounce time (typ.)	6 ms
Mechanical life	$5 \times 10^6$ switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	50.2 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

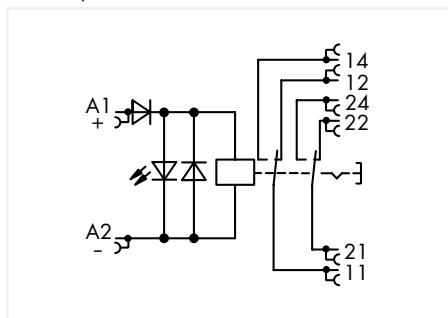
Standards/specifications	EN 60664-1
--------------------------	------------

# Relay Module

## 789 Series



Similar to pictured device

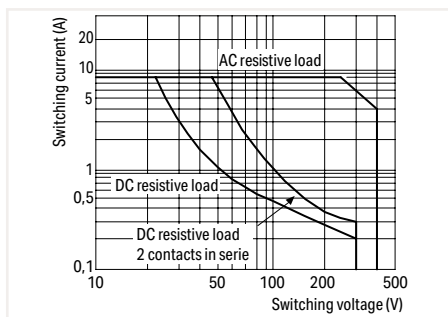


Relay Module; 2 changeover contacts; Limiting continuous current: 8 A; manually operated; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	17 mA	789-1346	10

### Note:

To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



Load Limit Curve

### Control Circuit

Input voltage range	$\pm 10\%$
---------------------	------------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi
Limiting continuous current	8 A
Inrush current (resistive) max.	12 A (AC) / 4 s; 16 A / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	8 ms
Bounce time (typ.)	7 ms
Mechanical life	$5 \times 10^6$ switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	57.6 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

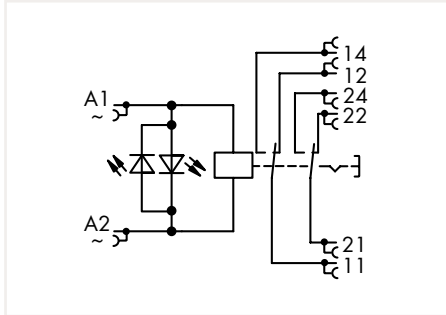
### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

## Relay Module 789 Series



Similar to pictured device

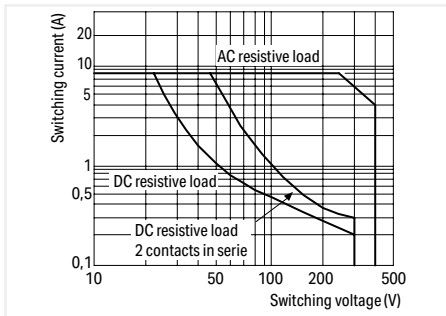


Relay Module; 2 changeover contacts; Limiting continuous current: 8 A; manually operated; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
230 VAC	3.5 mA	789-1549	10

### Note:

To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



Load Limit Curve

### Control Circuit

Input voltage range	±10 %
---------------------	-------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi
Limiting continuous current	8 A
Inrush current (resistive) max.	12 A (AC) / 4 s; 16 A / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	2000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	8 ms
Bounce time (typ.)	7 ms
Mechanical life	5 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	59.5 g
--------	--------

### Environmental Requirements

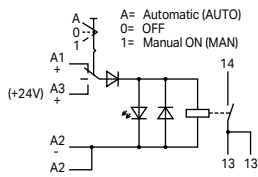
Surrounding air temperature (operation at $U_N$ )	-25 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

# Relay Module

## 789 Series

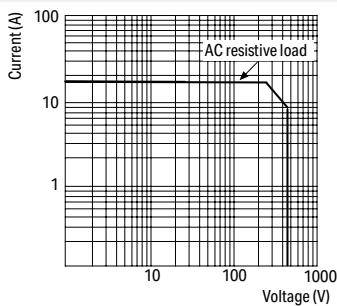


Relay Module; 1 make contact; Limiting continuous current: 16 A; for lamp loads; Manual/OFF/Auto switch; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	19 mA	789-323	10

### Note:

To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 %
---------------------	---------------

### Load Circuit

Number of make contacts/switch-on contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	16 A
Inrush current (resistive) max.	120 A (AC) / 50 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	5 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	54.2 g
--------	--------

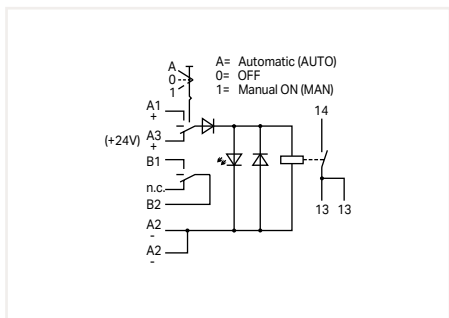
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

## Relay Module 789 Series

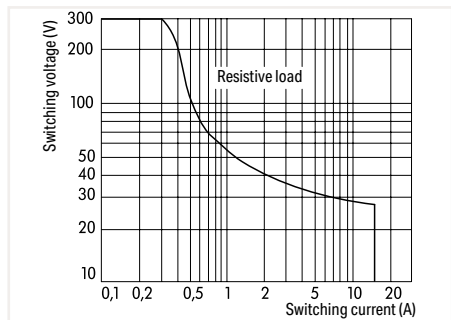


Relay Module; 1 make contact; Limiting continuous current: 16 A; for lamp loads; Manual/OFF/Auto switch; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	17 mA	789-324	10

### Note:

To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



DC Load Limit Curve

### Control Circuit

Input voltage range	-10 ... +20 %
Nominal voltage (feedback contact)	24 VDC; SELV/PELV

### Load Circuit

Number of make contacts/switch-on contacts	1
Contact material	AgSnO <sub>2</sub> , W pre-make contact
Limiting continuous current	16 A
Inrush current (resistive) max.	165 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Pull-in time (typ.)	10 ms
Drop-out time (typ.)	5 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	5 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	60.4 g
--------	--------

### Environmental Requirements

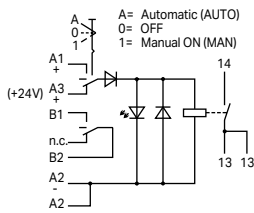
Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1, EN 61810-1
--------------------------	------------------------

# Relay Module

## 789 Series

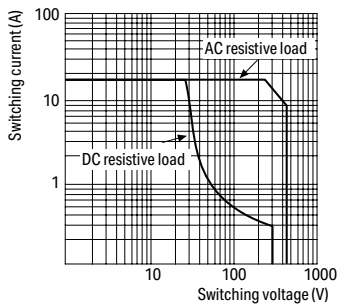


Relay Module; 1 make contact; Limiting continuous current: 16 A; for lamp loads; Manual/OFF/Auto switch; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	19 mA	789-325	10

### Note:

To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 %
Nominal voltage (feedback contact)	24 VDC; SELV/PELV

### Load Circuit

Number of make contacts/switch-on contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	16 A
Inrush current (resistive) max.	120 A (AC) / 50 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	5 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	57.2 g
--------	--------

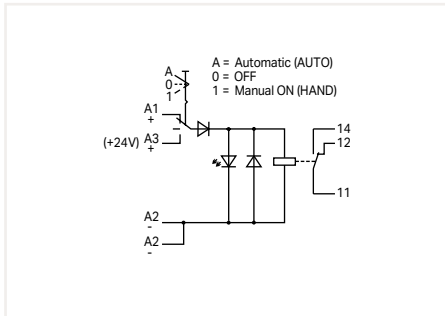
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

## Relay Module 789 Series

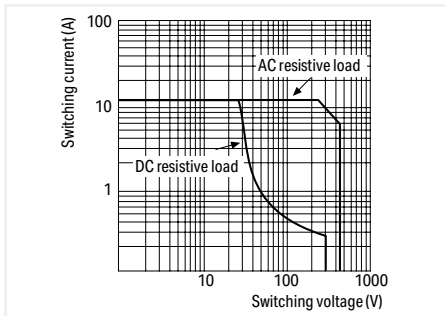


Relay Module; 1 changeover contact; Limiting continuous current: 12 A; for lamp loads; Manual/OFF/Auto switch; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	19 mA	789-326	10

### Note:

To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	12 A
Inrush current (resistive) max.	120 A (AC) / 50 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	3000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	5 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	55 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

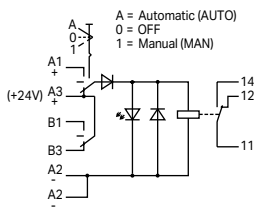
### Standards and Specifications

Standards/specifications	EN 60664-1, EN 61810-1
--------------------------	------------------------



# Relay Module

## 789 Series

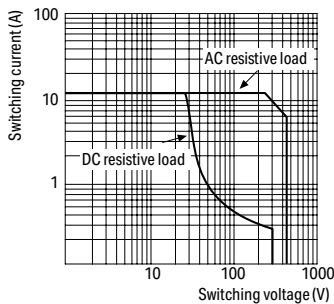


Relay Module; 1 changeover contact; Limiting continuous current: 12 A; for lamp loads; Manual/OFF/Auto switch; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	19 mA	789-329	10

### Note:

To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.



Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	12 A
Inrush current (resistive) max.	120 A (AC) / 50 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	3000 VA (AC); DC see load limit curve
Recommended minimum load	12 V / 10 mA
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	5 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	51 g
--------	------

### Environmental Requirements

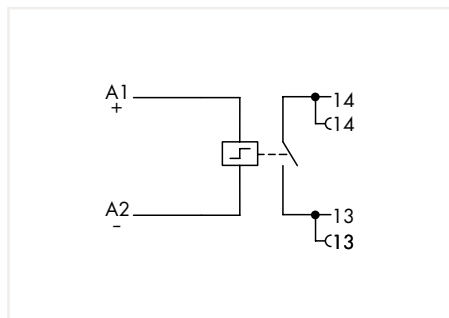
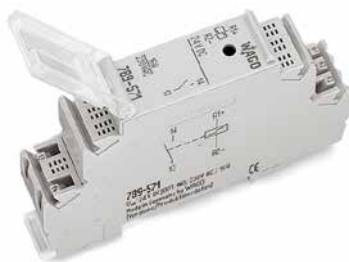
Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

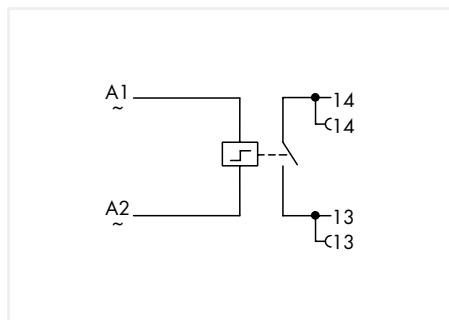
Standards/specifications	EN 60664-1
--------------------------	------------

# Latching Relay Module

## 789 Series



789-571



789-570

Latching Relay Module; 1 make contact; Limiting continuous current: 16 A; Status indicator: red; 18 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	42 mA	789-571	10
230 VAC	10 mA	789-570	10

### Control Circuit

Input voltage range	-15 ... +10 %
Minimum pulse length (control input)	40 ms
Coil control	Pulse mode
Minimum break time	180 ms

### Load Circuit

Number of make contacts/switch-on contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	16 A
Inrush current (resistive) max.	50 A (AC) / 20 ms
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC)
Recommended minimum load	10 V / 10 mA
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	1 x 10 <sup>6</sup> switching operations
Switching load with/without load (max.)	6 min <sup>-1</sup> / 240 min <sup>-1</sup>
Circuit Protection	Circuit breaker max. 16 A, B characteristic

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	58.8 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

## Accessories

1



Operating tool with a partially insulated shaft; Type 2; (3.5 x 0.5) mm blade

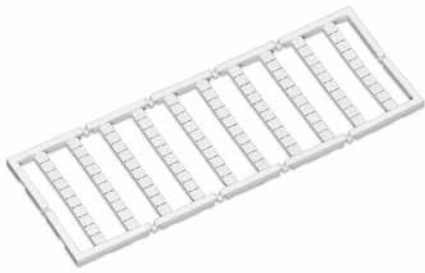
	Item No.	Pack. Unit
	210-720	50



Push-in type jumper bar; 12-way; Nominal current: 16 A; uninsulated

	Item No.	Pack. Unit
	789-112	100 (4x25)

## Accessories



Mini-WSB marker card; Marker width: 5 mm; 10 strips with 10 markers/card

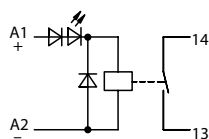
Marking	Item No.	Pack. Unit
plain	248-501	50
1 ... 10 (10 x)	248-502	50
11 ... 20 (10 x)	248-503	50
21 ... 30 (10 x)	248-504	50
31 ... 40 (10 x)	248-505	50
41 ... 50 (10 x)	248-506	50
1 ... 50 (2 x)	248-566	50
K1 ... K10	248-450	50
K11 ... K20	248-451	50
K100	248-452	50
U1 ... U10	248-453	50
U11 ... U20	248-454	50
U100	248-455	50

Felt-tip pen; for permanent marking

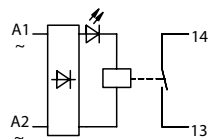
	Item No.	Pack. Unit
	210-110	200

# Relay Module

## 288 Series



288-364



288-546; 288-567

Relay Module; 1 make contact; Limiting continuous current: 5 A; 13 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	20 mA	288-364	1
24 VAC/DC	20 mA	288-564	1

### Control Circuit

Input nominal voltage range	$\pm 10\%$
-----------------------------	------------

### Load Circuit

Number of make contacts/switch-on contacts	1
Contact material	AgNi 0.15
Limiting continuous current	5 A
Inrush current (resistive) max.	16 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC)
Pull-in time (typ.)	4 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	2 ms
Electrical life (NO; resistive load; 23 °C)	200 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	13 mm / 0.512 inch
Height from upper-edge of DIN-rail	47 mm / 1.85 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	30.6 g
--------	--------

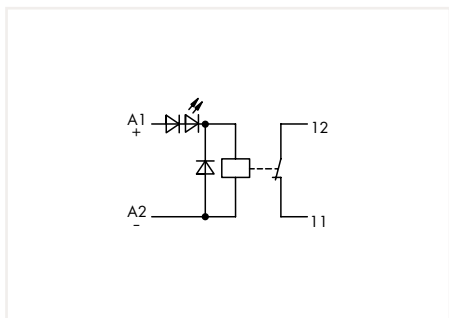
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201
--------------------------	----------------

## Relay Module 288 Series



Relay Module; 1 break contact; Limiting continuous current: 5 A; 13 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	20 mA	288-368	1

### Control Circuit

Input nominal voltage range	$\pm 10\%$
-----------------------------	------------

### Load Circuit

Number of break contacts/switch-off contacts	1
Contact material	AgNi 0.15
Limiting continuous current	5 A
Inrush current (resistive) max.	16 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC)
Pull-in time (typ.)	4 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	2 ms
Electrical life (NO; resistive load; 23 °C)	200 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	13 mm / 0.512 inch
Height from upper-edge of DIN-rail	47 mm / 1.85 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	30.9 g
--------	--------

### Environmental Requirements

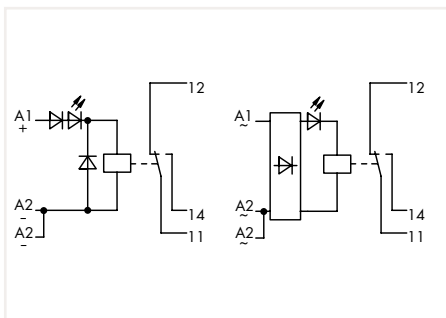
Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201
--------------------------	----------------

# Relay Module

## 288 Series



Relay Module; 1 changeover contact; Limiting continuous current: 6 A; 21 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	21.8 mA	288-304	1
24 VAC/DC	21.8 mA	288-504	1

### Control Circuit

Input nominal voltage range	$\pm 10\%$
-----------------------------	------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi 90/10
Limiting continuous current	6 A
Inrush current (resistive) max.	30 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC)
Pull-in time (typ.)	9 ms
Drop-out time (typ.)	3 ms
Bounce time (typ.)	2 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Safety and Protection

Rated voltage	300 V
Rated surge voltage	2.5 kV
Pollution degree	2
Overvoltage category	II
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Type of insulation (control/load circuit)	Reinforced insulation

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	20.5 mm / 0.807 inch
Height from upper-edge of DIN-rail	48 mm / 1.89 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	43.4 g
--------	--------

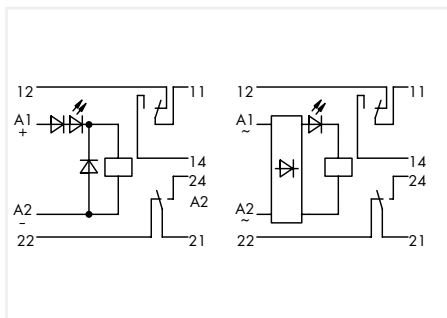
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201
--------------------------	----------------

## Relay Module 288 Series



Relay Module; 2 changeover contacts; Limiting continuous current: 6 A; 23 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	21.8 mA	288-312	1
24 VAC/DC	21.8 mA	288-512	1

### Control Circuit

Input nominal voltage range	$\pm 10\%$
-----------------------------	------------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi 0.15
Limiting continuous current	6 A
Inrush current (resistive) max.	14 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC)
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	3 ms
Bounce time (typ.)	2 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	20 x 10 <sup>6</sup> switching operations

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	22.5 mm / 0.886 inch
Height from upper-edge of DIN-rail	48 mm / 1.89 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	46.55 g
--------	---------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

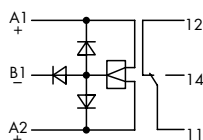
### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------



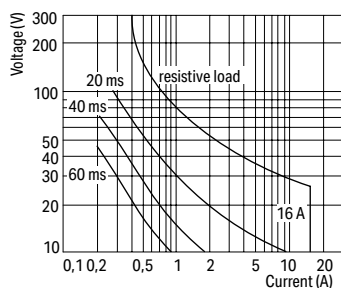
# Relay Module

## 288 Series



Relay Module; Bistable; 1 changeover contact; Limiting continuous current: 6 A; 21 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	41.5 mA	288-380	1



DC Load Limit Curve

### Control Circuit

Input voltage range	-15 ... +20 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi 0.15
Limiting continuous current	6 A
Inrush current (resistive) max.	16 A (AC) / 4 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC)
Pull-in time (typ.)	9 ms
Drop-out time (typ.)	3 ms
Bounce time (typ.)	2 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	20.5 mm / 0.807 inch
Height from upper-edge of DIN-rail	48 mm / 1.89 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	43.3 g
--------	--------

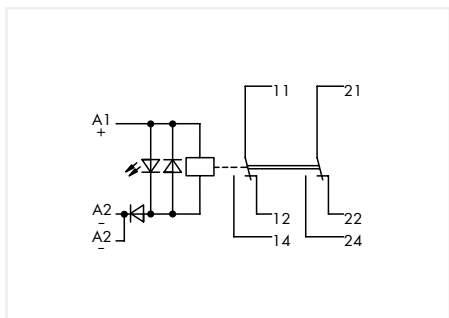
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

## Relay Module 288 Series



Relay Module; with force-guided contacts; 2 change-over contacts; Limiting continuous current: 5 A; 19 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	36 mA	288-437	1

### Note:

60 VDC switching voltages and 300 mA currents must not be exceeded for gold-plated basic relays. Higher switching power eventually evaporates the gold layer.

### Control Circuit

Input voltage range	-15 ... +10 %
---------------------	---------------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi 10 + Au
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC)
Recommended minimum load	0.1 V / 1 mA / 1 mW
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	12 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	50 x 10 <sup>6</sup> switching operations
Type of basic relay	Dold OA 5669.12

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	1.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	19 mm / 0.748 inch
Height from upper-edge of DIN-rail	38 mm / 1.496 inch
Depth	75 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	44.2 g
--------	--------

### Environmental Requirements

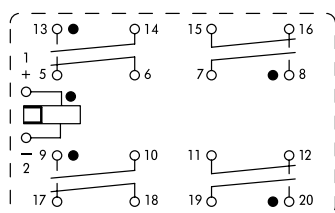
Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 50205
--------------------------	--------------------------

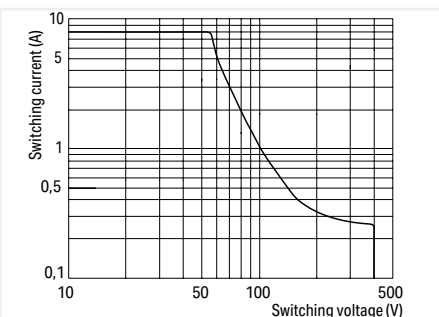
# Relay Module

## 288 Series



Relay Module; with force-guided contacts; 4 make contacts and 4 break contacts; Limiting continuous current: 6 A; 64 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
12 VAC		288-413	
24 VAC/DC	26 mA	288-414	1
230 VAC/DC	10 mA	288-418	1



DC Load Limit Curve

### Note:

If required a ventilation hole can be made in the cover, reducing the degree of protection from IP67 to IP30.

If an outer contact (20) should weld then the forced operated inner contact (12) driven by the actuator remains open. The rotating armature remains free to move. The unaffected contact pairs can operate normally, (i.e., their function to make or break remains unaffected).

If an inner contact should weld (12) then the movement of the rotating armature is blocked via the operator. Open contacts of all four contact pairs remain open. This arrangement corresponds to conventional, force-guided operation.

### Control Circuit

Input voltage range	-15 ... +20 %
---------------------	---------------

### Load Circuit

Number of break contacts/switch-off contacts	4
Number of make contacts/switch-on contacts	4
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC)
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC)
Recommended minimum load	10 V / 10 mA
Pull-in time (typ.)	18 ms
Drop-out time (typ.)	21 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	10 x 10 <sup>6</sup> switching operations
Mechanical force-guided operation	Type B

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1.3 kV

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	63.5 mm / 2.5 inch
Height from upper-edge of DIN-rail	40 mm / 1.575 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	109.3 g
--------	---------

### Environmental Requirements

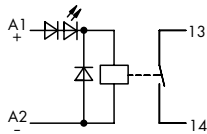
Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1; EN 50205; EN 61810-1; ESTI (SEV): 09.1133; UL 508; E120782; TÜV: 968/EZ 116.02/09
--------------------------	-----------------------------------------------------------------------------------------------

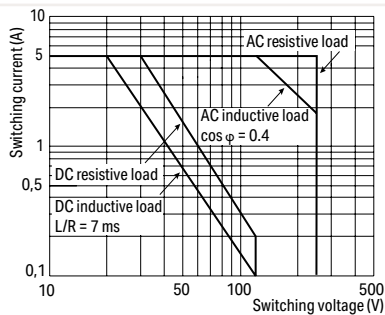
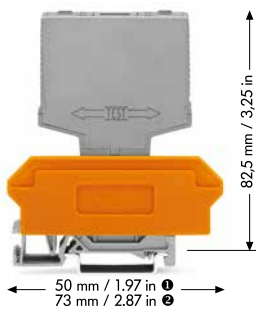


# Relay Module 286 Series



Relay Module; 1 make contact; Limiting continuous current: 5 A; Status indicator: red; 10 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	7.4 mA	286-364	1



DC Load Limit Curve

### Control Circuit

Input nominal voltage range  $\pm 10\%$

### Load Circuit

Number of make contacts/switch-on contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC)
Pull-in time (typ.)	6 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	2 ms
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations
Mechanical life	50 x 10 <sup>3</sup> switching operations

### Signaling

Status indicator Red LED

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.248 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type Pluggable relay module for terminal block for pluggable modules

### Material Data

Weight 16.8 g

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications EN 60664-1

### Accessories



Terminal block for pluggable modules; 4-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-618	40



Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

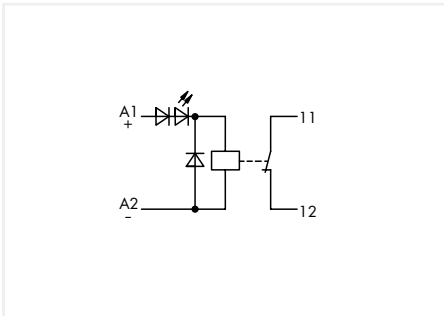
Item No.	Pack. Unit
280-608	40



Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

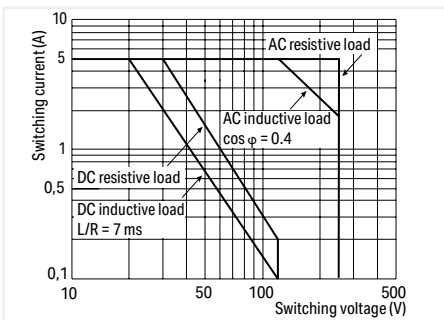
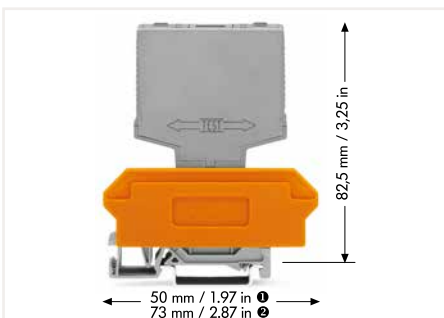
Item No.	Pack. Unit
280-762	30

# Relay Module 286 Series



Relay Module; 1 break contact; Limiting continuous current: 5 A; Status indicator: red; 10 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	20.4 mA	286-368	1



DC Load Limit Curve

### Accessories



Terminal block for pluggable modules; 4-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-618	40



Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-608	40



Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-762	30

### Control Circuit

Input nominal voltage range	±10 %
-----------------------------	-------

### Load Circuit

Number of break contacts/switch-off contacts	1
Contact material	AgNi
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC)
Pull-in time (typ.)	10 ms
Drop-out time (typ.)	4 ms
Bounce time (typ.)	3 ms
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Mechanical life	5 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.248 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	19.1 g
--------	--------

### Environmental Requirements

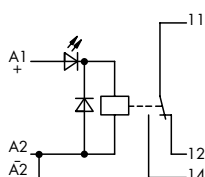
Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

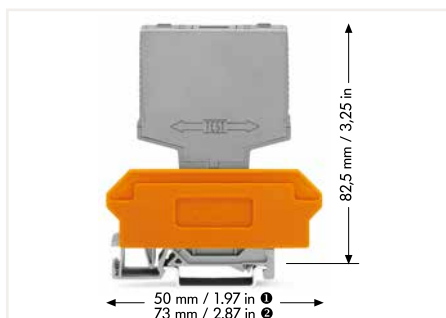
# Relay Module

## 286 Series



Relay Module; 1 changeover contact; Limiting continuous current: 7 A; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	19.4 mA	286-304	1



### Control Circuit

Input nominal voltage range	$\pm 10\%$
-----------------------------	------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi 0.15
Limiting continuous current	7 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1750 VA (AC)
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.248 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	34.9 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 6-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-619	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

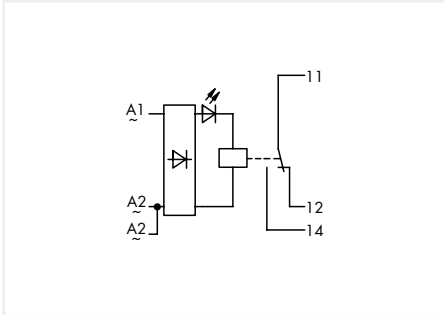
Item No.	Pack. Unit
280-609	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

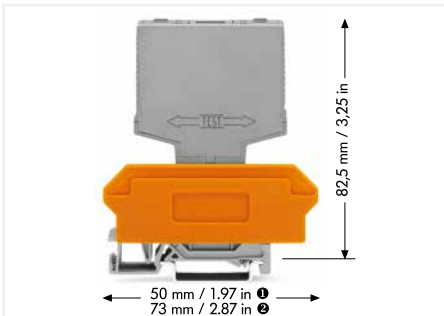
Item No.	Pack. Unit
280-763	25

## Relay Module 286 Series



Relay Module; 1 changeover contact; Limiting continuous current: 7 A; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
115 VAC	6.1 mA	286-507	1
230 VAC	4.8 mA	286-508	1



### Control Circuit

Input nominal voltage range	$\pm 10\%$
-----------------------------	------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi 0.15
Limiting continuous current	7 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1750 VA (AC)
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	6 ms
Bounce time (typ.)	4 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.248 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	31.1 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 6-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-619	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-609	30



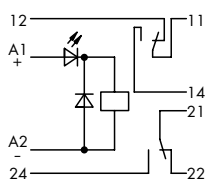
Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-763	25



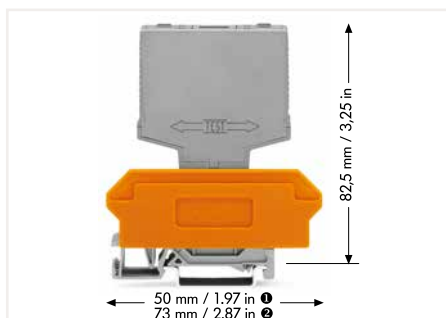
# Relay Module

## 286 Series



Relay Module; 2 changeover contacts; Limiting continuous current: 7 A; Status indicator: red; 20 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	21.8 mA	286-312	1



### Control Circuit

Input nominal voltage range	$\pm 10\%$
-----------------------------	------------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi 0.15
Limiting continuous current	7 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1750 VA (AC)
Pull-in time (typ.)	18 ms
Drop-out time (typ.)	3 ms
Bounce time (typ.)	2 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	20 mm / 0.787 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.248 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	39.6 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 8-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-638	20



Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

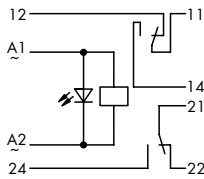
Item No.	Pack. Unit
280-628	20



Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

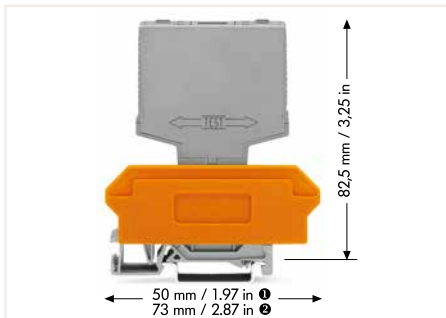
Item No.	Pack. Unit
280-764	20

## Relay Module 286 Series



Relay Module; 2 changeover contacts; Limiting continuous current: 7 A; Status indicator: red; 20 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
230 VAC	5.5 mA	286-516	1



### Control Circuit

Input nominal voltage range	$\pm 10\%$
-----------------------------	------------

### Load Circuit

Number of changeover/switchover contacts	2
Contact material	AgNi 0.15
Limiting continuous current	7 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1750 VA (AC)
Pull-in time (typ.)	15 ms
Drop-out time (typ.)	3 ms
Bounce time (typ.)	2 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	20 mm / 0.787 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.248 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	35.2 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 8-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-638	20



Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-628	20

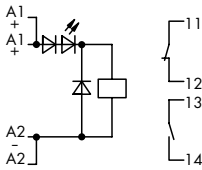


Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-764	20

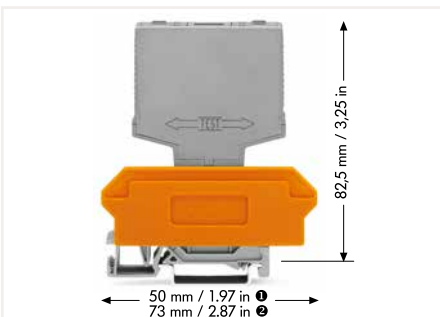
# Relay Module

## 286 Series



Relay Module; 1 make contact and 1 break contact;  
Limiting continuous current: 6 A; Status indicator: red;  
20 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	7.4 mA	286-320	1



### Control Circuit

Input nominal voltage range	±10 %
-----------------------------	-------

### Load Circuit

Number of break contacts/switch-off contacts	1
Number of make contacts/switch-on contacts	1
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	6 A
Inrush current (resistive) max.	15 A (AC) / 1 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC)
Pull-in time (typ.)	10 ms
Drop-out time (typ.)	4 ms
Bounce time (typ.)	1 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>9</sup> switching operations
Mechanical life	50 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	20 mm / 0.787 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.248 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	85.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 8-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-638	20



Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

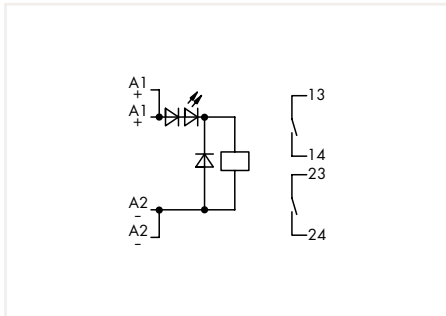
Item No.	Pack. Unit
280-628	20



Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

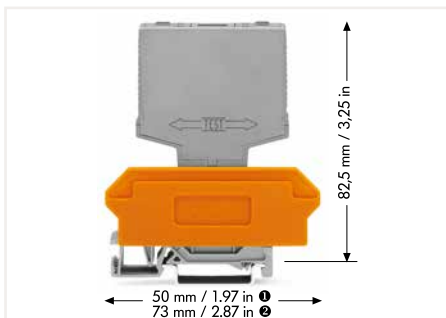
Item No.	Pack. Unit
280-764	20

## Relay Module 286 Series



Relay Module; 2 make contacts; Limiting continuous current: 6 A; Status indicator: red; 20 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	7.4 mA	286-328	1



### Control Circuit

Input nominal voltage range	±10 %
-----------------------------	-------

### Load Circuit

Number of make contacts/switch-on contacts	2
Contact material	AgSnO <sub>2</sub>
Limiting continuous current	6 A
Inrush current (resistive) max.	15 A (AC) / 1 s
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC)
Pull-in time (typ.)	10 ms
Drop-out time (typ.)	4 ms
Bounce time (typ.)	1 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	50 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	20 mm / 0.787 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.248 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	28.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 8-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-638	20



Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

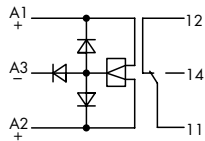
Item No.	Pack. Unit
280-628	20



Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

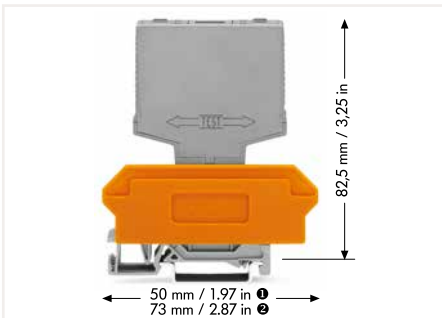
Item No.	Pack. Unit
280-764	20

# Relay Module 286 Series



Relay Module; Bistable; 1 changeover contact; Limiting continuous current: 6 A; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	41.5 mA	286-380	1



### Control Circuit

Input nominal voltage range	±10 %
-----------------------------	-------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi 0.15
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC)
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC)
Pull-in time (typ.)	9 ms
Drop-out time (typ.)	3 ms
Bounce time (typ.)	2 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.248 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	35 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 6-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-619	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

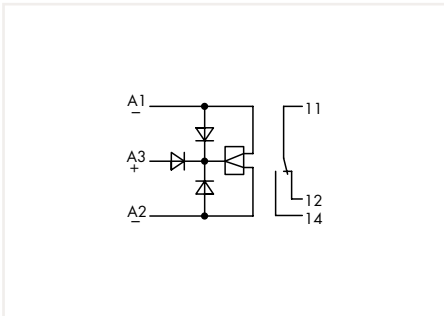
Item No.	Pack. Unit
280-609	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

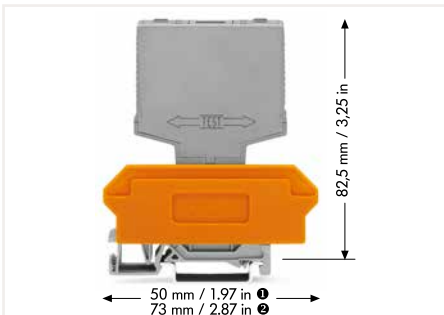
Item No.	Pack. Unit
280-763	25

## Relay Module 286 Series



Relay Module; Bistable; 1 changeover contact; Limiting continuous current: 6 A; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	41.5 mA	286-381	1



### Control Circuit

Input nominal voltage range	$\pm 10\%$
-----------------------------	------------

### Load Circuit

Number of changeover/switchover contacts	1
Contact material	AgNi 0.15
Limiting continuous current	6 A
Inrush current (resistive) max.	20 A (AC)
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1500 VA (AC)
Pull-in time (typ.)	9 ms
Drop-out time (typ.)	3 ms
Bounce time (typ.)	2 ms
Electrical life (NO; resistive load; 23 °C)	100 x 10 <sup>3</sup> switching operations
Mechanical life	30 x 10 <sup>6</sup> switching operations

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.248 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	36 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 6-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-619	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-609	30

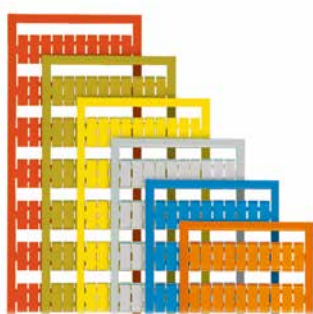


Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-763	25

# Accessories

1



WSB marker card; WSB marker width: 4 mm; 10 strips with 10 markers/card

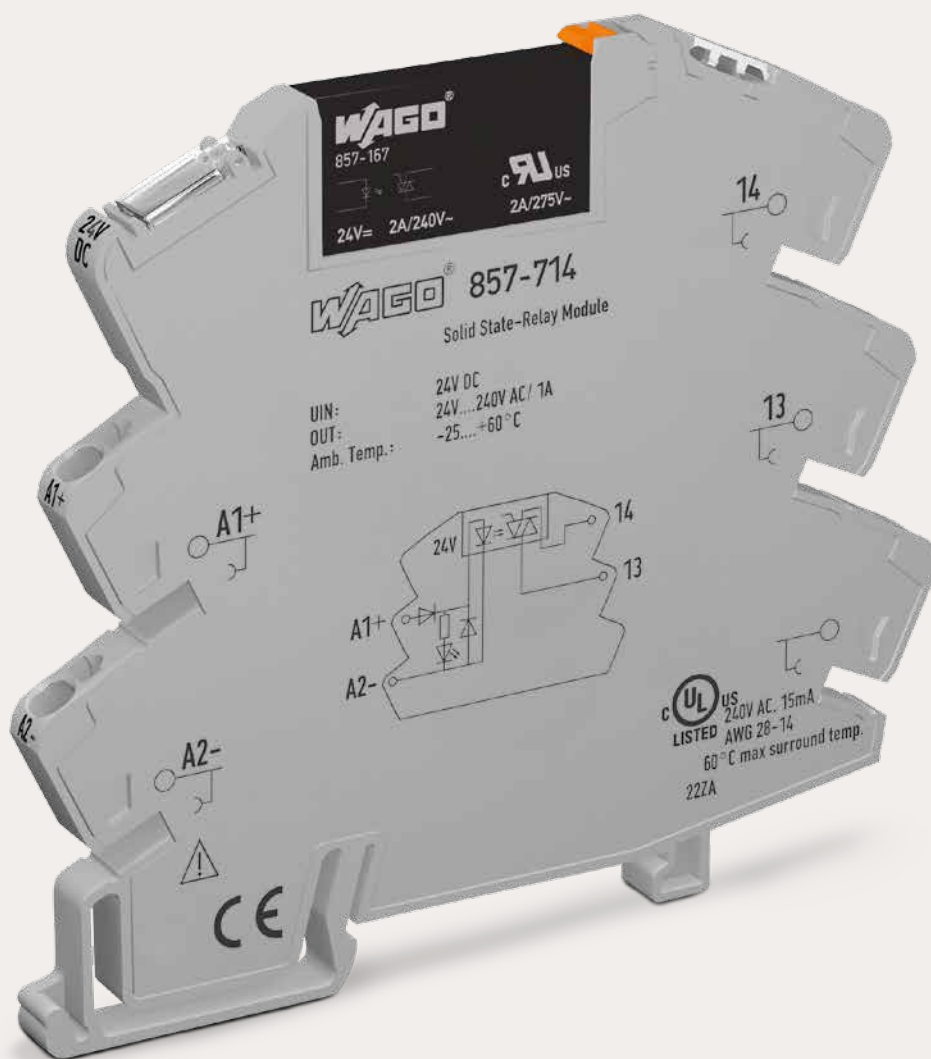
Marking	Item No.	Pack. Unit
K	209-782	50
1 ... 10 (10 x)	209-702	50
A1; A2; 13; 14	209-952	50
A1; A2; 11; 12	209-953	50
11; 12; 14; A1; A2; A2; 11; 12; 14	209-994	50
12; A1; A2; 24; 11; 14; 21; 22	209-995	50
A1; A1; A2; A2; 11; 12; 13; 14; 23; 24	209-693	50
12; A1; A2; 23; 24; 11; 13; 14; 21; 22	209-691	50
12; A1; A2; 23; 24; 11; 13; 14; 33; 34	209-690	50
14; A1; A2; 33; 34; 13; 23; 24; 43; 44	209-692	50
A1; A2; 32; 31; 34; 42; 41; 12; 11; 14; 22; 21; 24; 44	249-656	50
L+; 1; L-; L-; 11; 12; 13; 14	209-954	50
A1; A2; A3; 11; 12; 14	249-607	50
A1; A1; A2; A2; 12; 11; 11; 14	209-996	50
A1; A1; St; A2; A2; 12; 11; 11; 14	209-601	50
U1; U2; U3; U4; 0V; 12; 11; 11; 14; 14	209-951	50
U	209-789	50
A1; A2; A2; 1; 3; 2	209-685	50
A1; A2; A2; 1; 2; 2	209-686	50
A1+; A1+; A2-; A2-; 1; RL1; RL2; 2	209-955	50
A1+; A1+; A2-; A2-; 1+; 1+; A; 2-	249-651	50
+/-	209-552	50
1; 2; 3; 0V; +UB; OUT; ERR.; 0V	249-622	50
1; 2; 0V; +UB; OUT; ERR.; 0V	249-623	50
Lin; Lin; Lout; Lout; 24V; UA; UA; 0V	209-957	50
Lin; Lin; Lout; 11; 14; 14; Lin; Lin; Lout	249-654	50
lin; lin; lout; lout; 24V; 11; 12; 14; 0V	209-997	50
S	209-682	50
V	209-784	50
F1 ... F10	209-787	50
D	209-783	50
+; -; 1; 2; 3; 13; 14; 4; 5; 6	249-608	50
L; N; Ackn.; Failure; Test; N; 14; 24	249-606	50
A1; A2; Ackn.; Failure; 12; 11; 11; 14	249-653	50

WSB marker card; plain; WSB marker width: 4 mm; 10 strips with 10 markers/card

Color	Item No.	Pack. Unit
○ white	209-701	100
● yellow	209-701/000-002	100
● red	209-701/000-005	100
● blue	209-701/000-006	100
○ gray	209-701/000-007	100
● orange	209-701/000-012	100
● light green	209-701/000-017	100
● green	209-701/000-023	100
● violet	209-701/000-024	100












## WAGO Solid-State Relay and Optocoupler Modules

## WAGO Solid-State Relay and Optocoupler Modules

		Page
	<b>Solid-State Relay and Optocoupler Modules, 857 Series</b>	
	Sockets with a Solid-State Relay	152
	Optocoupler Modules	164
	Solid-State Timer Relay Modules	168
	Accessories, 857 Series	170
	<b>Solid-State Relay Modules, 788 Series</b>	
	Solid-State Relay Modules	178
	Accessories, 788 Series	184
	<b>Optocoupler Modules, 859 Series</b>	
	Optocoupler Modules	188
	Accessories, 859 Series	220
	<b>Solid-State Relay Modules, 2042 Series</b>	
	Solid-State Relay Modules	222
	<b>Optocoupler Modules, 286 Series</b>	
	Optocoupler Modules	226
	Accessories, 286 Series	234

# WAGO Solid-State Relay and Optocoupler Modules Selection Guide

2

Nominal Input Voltage $U_N$	Limiting Continuous Current	Nominal Input Current at $U_N$	2-Wire Connection	3-Wire Connection	High-Side Switching	Low-Side Switching	Zero-Voltage Switching	2-Way	Standards/Approvals						For Railway Applications	Specialty Function	Item Number	Page
									EN 50121-3-2	EN 61000-6-2	EN 61000-6-3	EN 61373	EN 61812-1	GL				
5 ADC	0.1 A	7.5 mA	■						■	■	■	■			■	859-793	193	
5 VDC	0.1 A	16.5 mA		■	■					■	■	■			■	859-753	214	
5 VDC	0.1 A	17 mA	■						■	■	■	■			■	859-795	190	
5 VDC	0.5 A	7.7 mA	■				■			■	■					859-902	219	
5 VDC	0.5 A	8 mA		■	■					■	■	■				859-750	207	
5 VDC	0.5 A	9.6 mA		■	■					■	■	■				859-702	205	
5 VDC	0.5 A	10 mA		■	■					■	■	■				859-752	208	
5 VDC	0.5 A	14 mA		■	■											286-752/002-000	226	
5 VDC	5 A	7.2 mA	■							■	■	■				859-738	200	
12 VDC	0.1 A	4 mA	■						■	■	■	■			■	859-798	192	
12 VDC	0.5 A	9.2 mA	■							■	■					859-797	213	
12 VDC	5 A	3.2 mA	■							■	■	■				859-739	201	
24 VDC	0.1 A	4 mA	■													286-794	232	
24 VDC	0.1 A	4 mA	■						■	■	■	■			■	859-791	188	
24 VDC	0.1 A	4.2 mA	■						■	■	■	■			■	859-794	189	
24 VDC	0.1 A	5.6 mA	■					■		■	■	■				857-1494	165	
24 VDC	0.1 A	7 mA	■						■	■	■	■			■	2042-7204	222	
24 VDC	0.1 A	9 mA	■							■	■	■				857-704	152	
24 VDC	0.1 A	9 mA		■	■					■	■	■				859-755	215	
24 VDC	0.1 A	9 mA		■	■					■	■	■				859-759	216	
24 VDC	0.1 A	9.2 mA	■						■	■	■	■			■	859-796	191	
24 VDC	0.1 A	14 mA	■													286-791	231	
24 VDC	0.25 A	15 mA	■					■								286-792	233	
24 VDC	0.5 A	5.3 mA		■		■				■	■					859-732	217	
24 VDC	0.5 A	5.9 mA		■	■					■	■	■				857-1432	166	
24 VDC	0.5 A	6 mA	■				■			■	■	■				859-734	218	
24 VDC	0.5 A	7 mA		■	■				■	■	■	■			■	2042-7304	224	
24 VDC	0.5 A	7.7 mA		■		■				■	■	■				859-708	206	
24 VDC	0.5 A	8 mA		■	■					■	■	■				859-758	210	
24 VDC	0.5 A	9 mA	■												2 inverted outputs	286-790	230	
24 VDC	0.5 A	11 mA		■	■					■	■	■				859-756	209	
24 VDC	0.5 A	11 mA		■		■				■	■	■				859-706	212	
24 VDC	0.5 A	15 mA		■	■											286-752	229	
24 VDC	1 A	7 mA	■				■			■	■	■				788-720	182	
24 VDC	1 A	9.15 mA	■				■		■		■	■			Multifunctional/ multi-time	857-634	169	
24 VDC	2 A	9.15 mA	■						■		■	■			Multifunctional/ multi-time	857-624	168	
24 VDC	2 A	9.2 mA	■				■			■	■	■				857-714	156	
24 VDC	3 A	4 mA		■		■				■	■	■				859-720	198	
24 VDC	3 A	7 mA	■							■	■	■				859-740	195	
24 VDC	3 A	7 mA	■							■	■	■				859-762	197	
24 VDC	3 A	7.75 mA	■					■		■	■	■				857-1430	164	
24 VDC	3 A	9.2 mA	■							■	■	■				857-724	160	
24 VDC	3 A	14 mA	■							■	■	■				859-730	194	
24 VDC	3 A	14 mA	■							■	■	■				859-761	196	
24 VDC	3.5 A	7 mA	■							■	■	■				788-700	179	
24 VDC	3.5 A	13 mA	■				■			■	■	■				788-730	181	
24 VDC	4 A	13.5 mA		■	■											286-723	228	
24 VDC	5 A	3.5 mA	■							■	■	■				859-737	199	
24 VDC	5 A	7 mA		■	■				■	■	■	■			■	2042-7604	225	
24 VDC	5 A	9.3 mA	■							■	■	■				788-701	180	
24 VDC	5 A	11 mA			■					■	■	■				788-710	178	
24 VDC	5 A	13.5 mA		■		■										286-721	227	
24 VDC	8 A	8.7 mA							■	■	■	■			■	857-734	163	

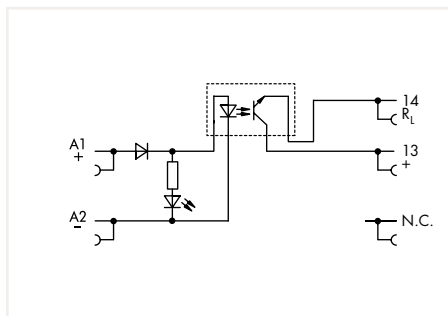
# WAGO Solid-State Relay and Optocoupler Modules Selection Guide

Nominal Input Voltage $U_N$	Limiting Continuous Current	Nominal Input Current at $U_N$	2-Wire Connection	3-Wire Connection	High-Side Switching	Low-Side Switching	Zero-Voltage Switching	2-Way	Standards/Approvals						For Railway Applications	Specialty Function	Item Number	Page
									EN 50121-3-2	EN 61000-6-2	EN 61000-6-3	EN 61373	EN 61812-1	GL				
48 VDC	0.1 A	7 mA	■						■	■	■	■			■		2042-7504	223
12 ... 48 VDC	4 A	5 mA	■							■	■	■					859-744	202
24 VAC/DC	4 A	10 mA	■			■				■	■	■					788-721	183
115 VAC/DC	0.1 A	4.2 mA	■							■	■	■					857-707	153
115 VAC/DC	2 A	3.9 mA	■			■				■	■	■					857-717	157
115 VAC/DC	3 A	3.9 mA	■							■	■	■					857-727	161
230 VAC/DC	0.1 A	3.25 mA	■							■	■	■					857-708	154
230 VAC/DC	2 A	3.2 mA	■			■				■	■	■					857-718	158
230 VAC/DC	3 A	3.2 mA	■							■	■	■					857-728	162
230 VAC	0.5 A	0.6 mA		■		■				■	■	■					859-712	203
230 VAC	0.5 A	0.6 mA		■	■					■	■	■					859-772	204

## Solid-State Relay Module 857 Series

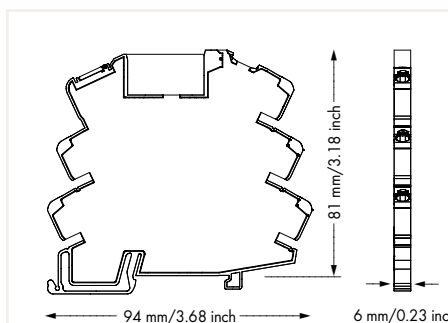


2



Solid-State Relay Module; Output voltage range:  
0 ... 48 VDC; Limiting continuous current: 0.1 A;  
2-wire connection; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	9 mA	857-704	25



**Note:**  
Optocouplers and solid-state relays are designed for use in signal processing networks that are not supplied by the low-voltage power grid.

### Control Circuit

Input voltage range (low level)	0 ... 10 VDC
Input voltage range (high level)	16.8 ... 30 VDC

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.1 A
Output voltage range	0 ... 48 VDC
Voltage drop (output) max.	≤ 1 VDC
Switching current (min.)	50 μA
Turn-on time	≤ 100 μs
Turn-off time	≤ 600 μs
Switching frequency	≤ 1 kHz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	29.8 g
--------	--------

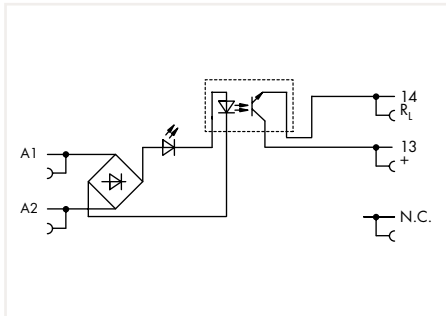
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +60 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

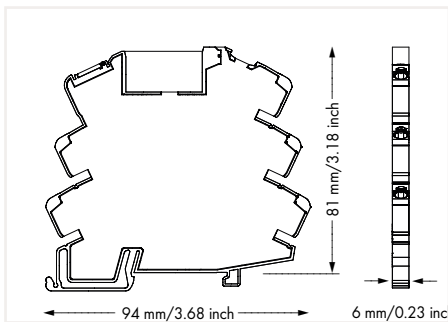
Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508
--------------------------	-----------------------------------------------------------------

## Solid-State Relay Module 857 Series



Solid-State Relay Module; Output voltage range: 0 ... 48 VDC; Limiting continuous current: 0.1 A; 2-wire connection; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
115 VAC/DC	4.2 mA	857-707	25



### Note:

Optocouplers and solid-state relays are designed for use in signal processing networks that are not supplied by the low-voltage power grid.

### Control Circuit

Input voltage range (low level)	0 ... 25 VAC/DC
Input voltage range (high level)	100 ... 138 VAC/DC

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.1 A
Output voltage range	0 ... 48 VDC
Voltage drop (output) max.	≤ 1 VDC
Switching current (min.)	50 μA
Turn-on time	4.5 ms
Turn-off time	10 ms
Switching frequency	≤ 20 Hz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	30 g
--------	------

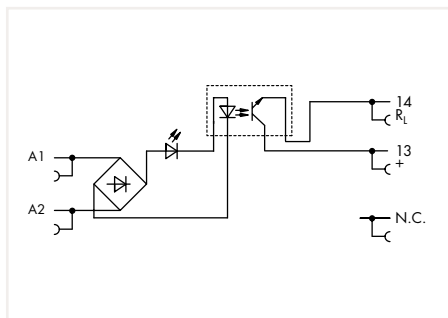
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +60 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

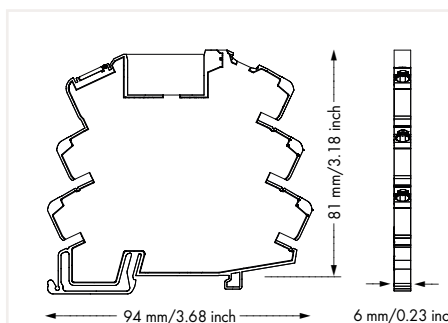
Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508
--------------------------	--------------------------------------------------------------

## Solid-State Relay Module 857 Series



Solid-State Relay Module; Output voltage range:  
0 ... 48 VDC; Limiting continuous current: 0.1 A;  
2-wire connection; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
230 VAC/DC	3.25 mA	857-708	25



**Note:**  
Optocouplers and solid-state relays are designed for use in signal processing networks that are not supplied by the low-voltage power grid.

### Control Circuit

Input voltage range (low level)	0 ... 30 VAC/DC
Input voltage range (high level)	200 ... 253 VAC/DC

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.1 A
Output voltage range	0 ... 48 VDC
Voltage drop (output) max.	≤ 1 VDC
Switching current (min.)	50 μA
Turn-on time	4.5 ms
Turn-off time	10 ms
Switching frequency	≤ 20 Hz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	30.7 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +60 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508
--------------------------	-----------------------------------------------------------------

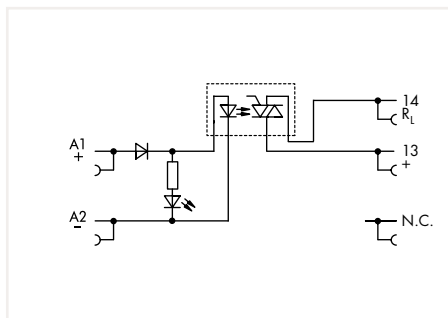




## Solid-State Relay Module 857 Series

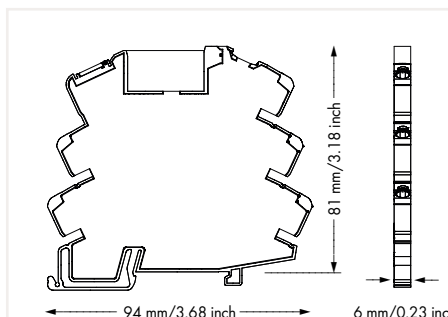


2



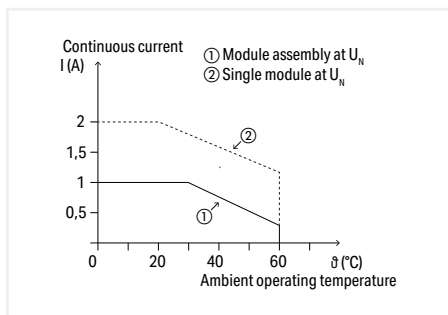
Solid-State Relay Module; Output voltage range: 24 ... 240 VAC; Limiting continuous current: 2 A; 2-wire connection; Zero-voltage switching; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	9.2 mA	857-714	25



### Note:

Optocouplers and solid-state relays are designed for use in signal processing networks that are not supplied by the low-voltage power grid.



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range (low level)	0 ... 10 VDC
Input voltage range (high level)	20 ... 28.8 VDC

### Load Circuit

Circuit type	2-wire connection; zero-voltage switching
Limiting continuous current	2 A
Output voltage range	24 ... 240 VAC
Voltage drop (output) max.	≤ 1.6 VAC
Leakage current at rated voltage	≤ 1.5 mA
Switching current (min.)	22 mA
Turn-on time	≤ 10 ms
Turn-off time	≤ 10 ms
Mains frequency	50 Hz / 60 Hz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	28.4 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +60 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

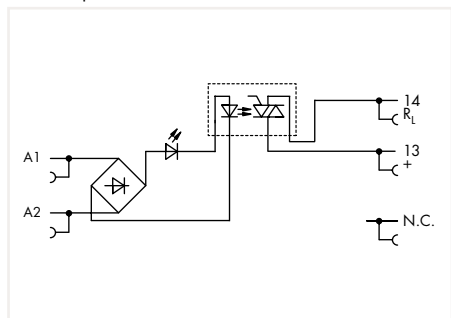
### Standards and Specifications

Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508
--------------------------	--------------------------------------------------------------

## Solid-State Relay Module 857 Series

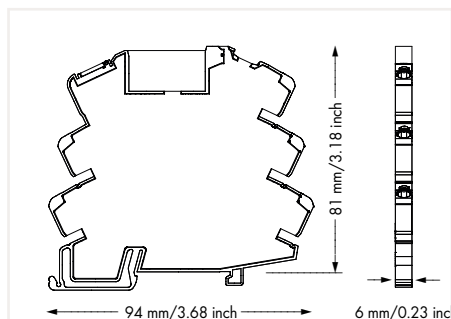


Similar to pictured device



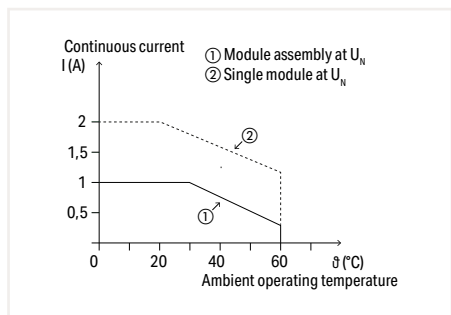
Solid-State Relay Module; Output voltage range: 24 ... 240 VAC; Limiting continuous current: 2 A; 2-wire connection; Zero-voltage switching; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
115 VAC/DC	3.9 mA	857-717	25



### Note:

Optocouplers and solid-state relays are designed for use in signal processing networks that are not supplied by the low-voltage power grid.



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range (low level)	0 ... 25 VAC/DC
Input voltage range (high level)	100 ... 138 VAC/DC

### Load Circuit

Circuit type	2-wire connection; zero-voltage switching
Limiting continuous current	2 A
Output voltage range	24 ... 240 VAC
Voltage drop (output) max.	≤ 1.6 VAC
Leakage current at rated voltage	≤ 1.5 mA
Switching current (min.)	22 mA
Turn-on time	≤ 10 ms
Turn-off time	≤ 10 ms
Mains frequency	50 Hz / 60 Hz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	28.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +60 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

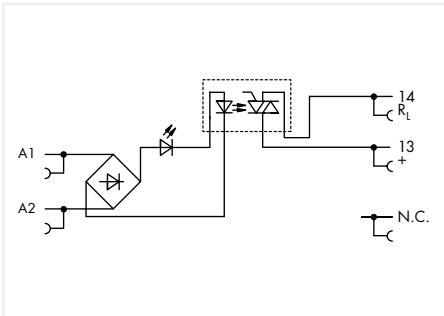
### Standards and Specifications

Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508
--------------------------	--------------------------------------------------------------

# Solid-State Relay Module

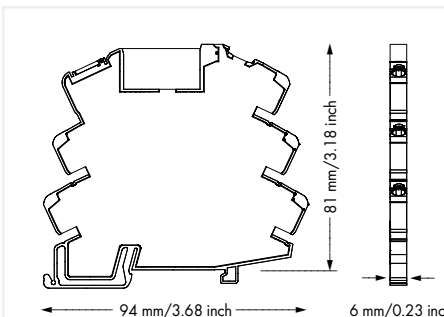
## 857 Series

2

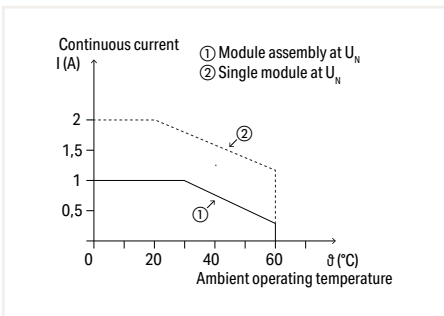


Solid-State Relay Module; Output voltage range: 24 ... 240 VAC; Limiting continuous current: 2 A; 2-wire connection; Zero-voltage switching; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
230 VAC/DC	3.2 mA	857-718	25



**Note:**  
Optocouplers and solid-state relays are designed for use in signal processing networks that are not supplied by the low-voltage power grid.



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range (low level)	0 ... 60 VAC/DC
Input voltage range (high level)	200 ... 253 VAC/DC

### Load Circuit

Circuit type	2-wire connection; zero-voltage switching
Limiting continuous current	2 A
Output voltage range	24 ... 240 VAC
Voltage drop (output) max.	≤ 1.6 VAC
Leakage current at rated voltage	≤ 1.5 mA
Switching current (min.)	22 mA
Turn-on time	≤ 10 ms
Turn-off time	≤ 10 ms
Mains frequency	50 Hz / 60 Hz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	29.2 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +60 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

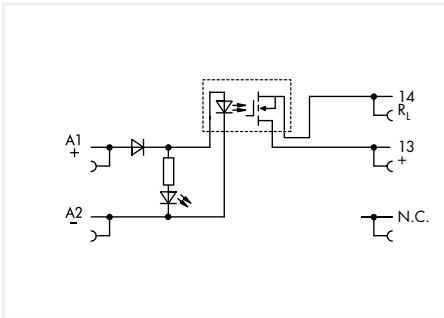
Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508
--------------------------	--------------------------------------------------------------



# Solid-State Relay Module

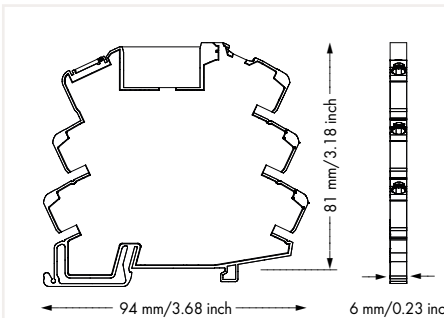
## 857 Series

2

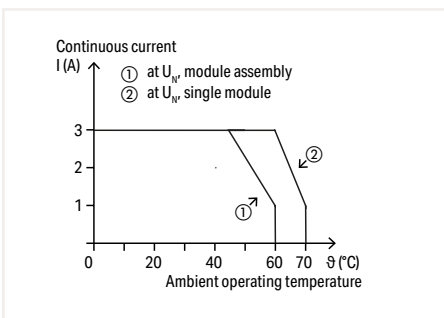


Solid-State Relay Module; Output voltage range: 0 ... 24 VDC; Limiting continuous current: 3 A; 2-wire connection; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	9.2 mA	857-724	25



**Note:**  
Optocouplers and solid-state relays are designed for use in signal processing networks that are not supplied by the low-voltage power grid.



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range (low level)	0 ... 10 VDC
Input voltage range (high level)	18.8 ... 31.2 VDC

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	3 A
Output voltage range	0 ... 24 VDC
Voltage drop (output) max.	≤ 0.12 VDC
Switching current (min.)	50 μA
Inrush current (max.)	15 A / 10 ms
Turn-on time	≤ 100 μs
Turn-off time	≤ 600 μs
Switching frequency	≤ 350 Hz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	28.4 g
--------	--------

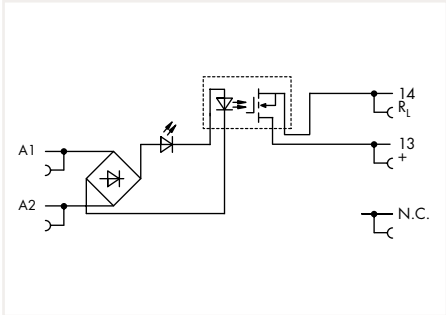
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

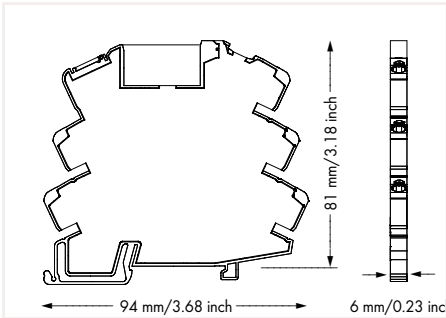
Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508; GL
--------------------------	------------------------------------------------------------------

# Solid-State Relay Module 857 Series

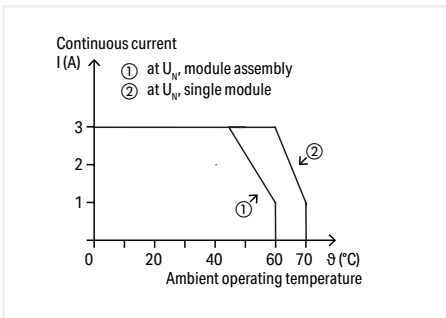


Solid-State Relay Module; Output voltage range: 0 ... 24 VDC; Limiting continuous current: 3 A; 2-wire connection; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
115 VAC/DC	3.9 mA	857-727	25



**Note:**  
Optocouplers and solid-state relays are designed for use in signal processing networks that are not supplied by the low-voltage power grid.



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range (low level)	0 ... 25 VAC/DC
Input voltage range (high level)	90 ... 138 VAC/DC

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	3 A
Output voltage range	0 ... 24 VDC
Voltage drop (output) max.	≤ 0.12 VDC
Switching current (min.)	50 μA
Inrush current (max.)	15 A / 10 ms
Turn-on time	4.5 ms
Turn-off time	10 ms
Switching frequency	≤ 20 Hz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	30.1 g
--------	--------

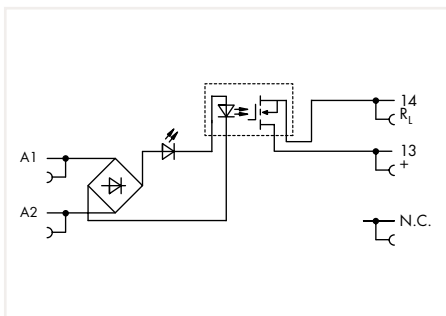
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

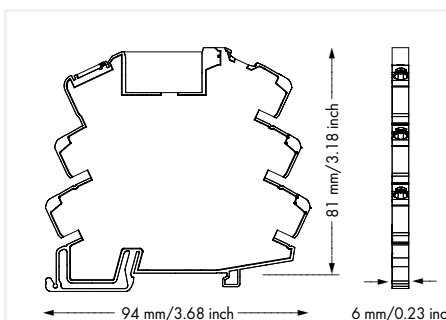
Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508
--------------------------	--------------------------------------------------------------

## Solid-State Relay Module 857 Series



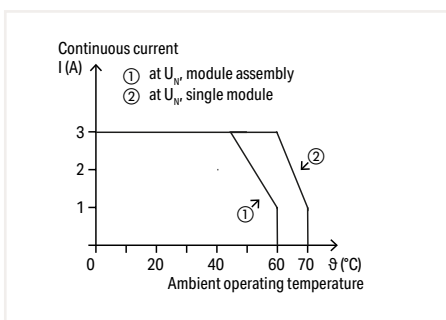
Solid-State Relay Module; Output voltage range:  
0 ... 24 VDC; Limiting continuous current: 3 A;  
2-wire connection; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
230 VAC/DC	3.2 mA	857-728	25



### Note:

Optocouplers and solid-state relays are designed for use in signal processing networks that are not supplied by the low-voltage power grid.



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range (low level)	0 ... 60 VAC/DC
Input voltage range (high level)	200 ... 253 VAC/DC

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	3 A
Output voltage range	0 ... 24 VDC
Voltage drop (output) max.	≤ 0.12 VDC
Switching current (min.)	50 μA
Inrush current (max.)	15 A / 10 ms
Turn-on time	4.5 ms
Turn-off time	10 ms
Switching frequency	≤ 20 Hz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	31 g
--------	------

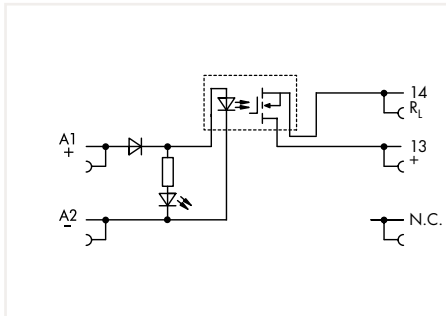
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

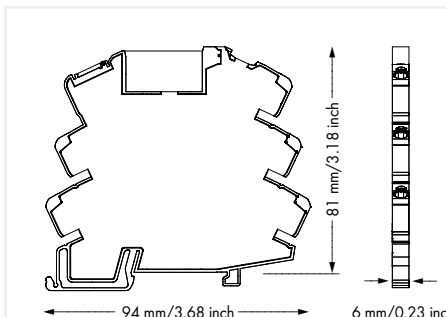
Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508
--------------------------	-----------------------------------------------------------------

## Solid-State Relay Module 857 Series



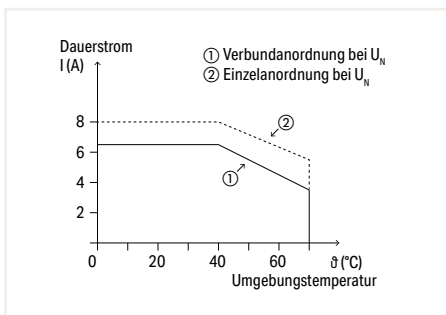
Solid-State Relay Module; Output voltage range: 1 ... 30 VDC; Limiting continuous current: 8 A; 2-wire connection; for railway applications; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC (SELV)	8.7 mA	857-734	25



### Note:

Optocouplers and solid-state relays are designed for use in signal processing networks that are not supplied by the low-voltage power grid.



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range (low level)	0 ... 4 VDC
Input voltage range (high level)	16.8 ... 30 VDC

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	8 A
Nominal output voltage	24 VDC (SELV)
Output voltage range	1 ... 30 VDC
Voltage drop (output) max.	≤ 80 mV (DC)
Switching current (min.)	10 mA
Turn-on time	≤ 60 μs
Turn-off time	≤ 250 μs
Switching frequency	≤ 500 Hz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Pollution degree	2
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	29.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

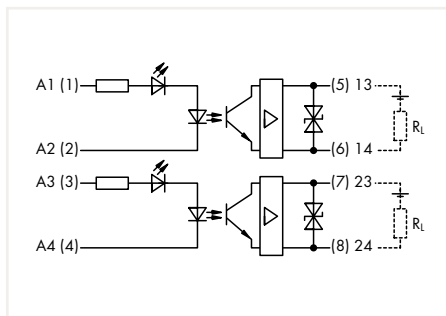
Standards/specifications	EN 61010-2-201; EN 61373; EN 61000-6-2; EN 61000-6-3; EN 50121-3-2; EN 50121-4
--------------------------	--------------------------------------------------------------------------------



## Optocoupler Module 857 Series

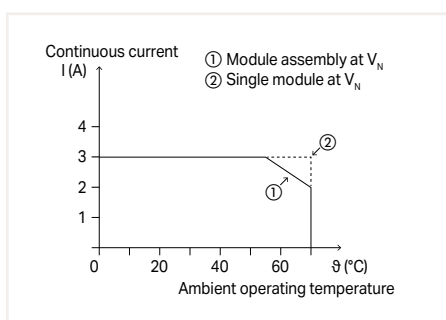
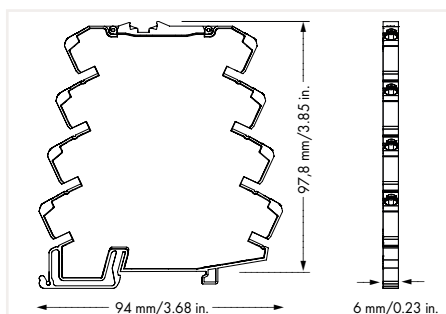


2



Optocoupler Module; 2-channel; Output voltage range: 3 ... 31.2 VDC; Limiting continuous current: 3 A; 2-wire connection; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	7.75 mA	857-1430	25



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	16.8 ... 31.2 VDC

### Load Circuit

Circuit type	2-channel; 2-wire connection
Limiting continuous current	3 A
Output voltage range	3 ... 31.2 VDC
Voltage drop (output) max.	≤ 0.2 VDC
Leakage current at rated voltage	≤ 250 μA
Turn-on time	≤ 25 μs
Turn-off time	≤ 250 μs
Switching frequency	≤ 300 Hz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	4 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	31.4 g
--------	--------

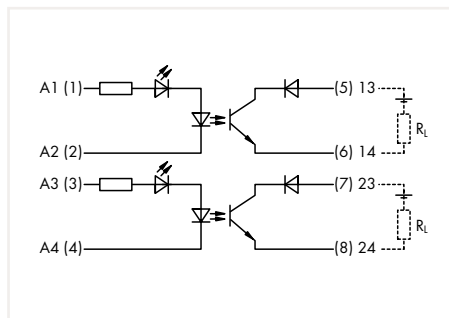
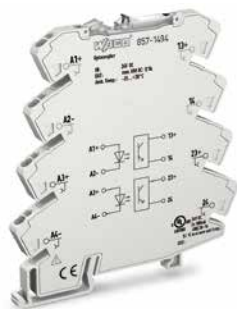
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

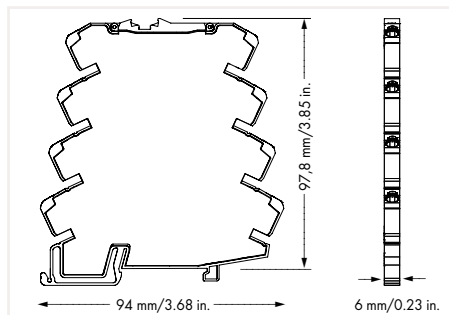
Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; GL; UL 508 (max. 70 °C/2 A)
--------------------------	-----------------------------------------------------------------------------------

## Optocoupler Module 857 Series



Optocoupler Module; 2-channel; Output voltage range: 9 ... 60 VDC; Limiting continuous current: 0.1 A; 2-wire connection; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	5.6 mA	857-1494	25



### Control Circuit

Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	16.8 ... 31.2 VDC

### Load Circuit

Circuit type	2-channel; 2-wire connection
Limiting continuous current	0.1 A
Output voltage range	9 ... 60 VDC
Voltage drop (output) max.	≤ 2 VDC
Leakage current at rated voltage	≤ 25 $\mu$ A
Turn-on time	≤ 20 $\mu$ s
Turn-off time	≤ 120 $\mu$ s
Switching frequency	≤ 1.5 kHz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Dielectric strength channel/channel (AC, 1 min)	4 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	30.2 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

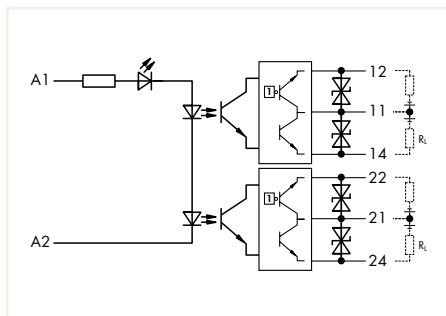
### Standards and Specifications

Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508 (max. 50 °C/100 mA)
--------------------------	----------------------------------------------------------------------------------

## Optocoupler Module 857 Series

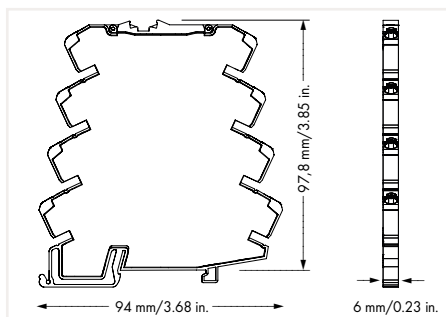


2



Optocoupler Module; 2-channel; Output voltage range: 9 ... 60 VDC; Limiting continuous current: 0.5 A; 2 changeover contacts; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	5.9 mA	857-1432	25



### Control Circuit

Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	16.8 ... 30 VDC

### Load Circuit

Circuit type	2-channel; 2-wire connection; high-side switching
Limiting continuous current	0.5 A
Output voltage range	9 ... 60 VDC
Voltage drop (output) max.	≤ 1.5 VDC
Leakage current at rated voltage	≤ 20 μA
Turn-on time	≤ 25 μs
Turn-off time	≤ 250 μs
Switching frequency	≤ 1.5 kHz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	33 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

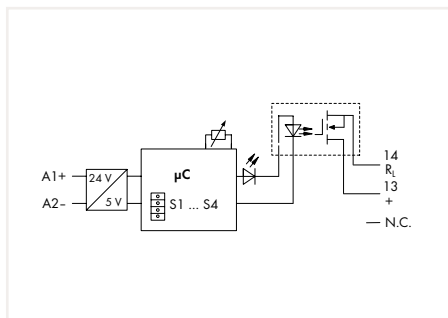
Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-2001; UL 508 (max. 70 °C / 0.3 A)
--------------------------	---------------------------------------------------------------------------------------



## Solid-State Timer Relay Module 857 Series

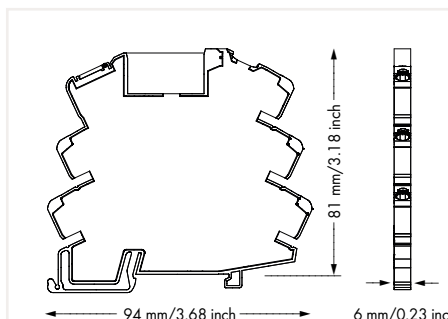


2



Solid-State Relay Module; Output voltage range: 0 ... 24 VDC; Limiting continuous current: 2 A; 2-wire connection; Multifunctional/multi-time; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	9.15 mA	857-624	25



### Features:

- 4 functions
- Function and time range adjustable via DIP switch

### Control Circuit

Input voltage range	-15 ... +30 %
Time range	Adjustable: 0.1 ... 10 s; 3 ... 300 s; 0.3 ... 30 min; 3 ... 300 min
Reset time	50 ms
Repeat accuracy	±1 %
Functions	On-delay; Single-shot leading edge; On-delay and single-shot leading edge (1s fixed); blinking

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	2 A
Output voltage range	0 ... 24 VDC
Voltage drop (output) max.	≤ 0.12 VDC
Turn-on time	≤ 100 µs
Turn-off time	≤ 2 ms

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	29.5 g
--------	--------

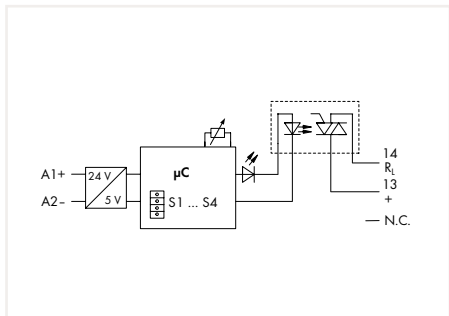
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +60 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

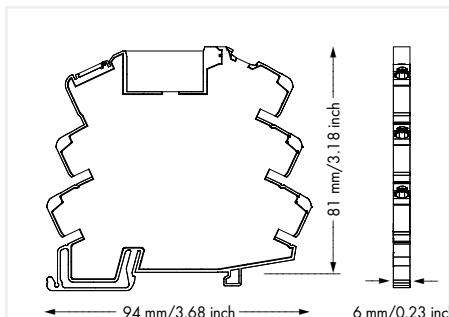
Standards/specifications	EN 61812-1; EN 61373; EN 50121-3-2
--------------------------	------------------------------------

## Solid-State Timer Relay Module 857 Series



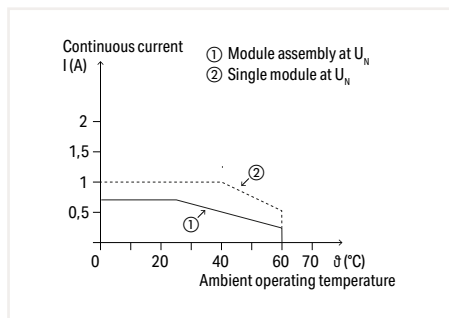
Solid-State Relay Module; Output voltage range: 24 ... 230 VDC; Limiting continuous current: 1 A; 2-wire connection; Multifunctional/multi-time; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	9.15 mA	857-634	25



### Features:

- 4 functions
- Function and time range adjustable via DIP switch



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range	-15 ... +30 %
Time range	Adjustable: 0.1 ... 10 s; 3 ... 300 s; 0.3 ... 30 min; 3 ... 300 min
Reset time	50 ms
Repeat accuracy	±1 %
Functions	On-delay; Single-shot leading edge; On-delay and single-shot leading edge (1s fixed); blinking

### Load Circuit

Circuit type	2-wire connection; zero-voltage switching
Limiting continuous current	1 A
Output voltage range	24 ... 230 VAC
Voltage drop (output) max.	≤ 1 VAC
Turn-on time	≤ 1 ms
Turn-off time	≤ 10 ms

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	29.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +60 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61812-1; EN 61373; EN 50121-3-2
--------------------------	------------------------------------

## Basic Solid-State Relay 857 Series



Basic Solid-State Relay; Output voltage range:  
0 ... 24 VDC; Limiting continuous current: 3 A;  
5 mm wide; 15 mm high

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	7 mA	857-161	20

### Control Circuit

Input voltage range (low level)	0 ... 10 VDC
Input voltage range (high level)	18.8 ... 31.2 VDC

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	3 A
Output voltage range	0 ... 24 VDC
Voltage drop (output) max.	≤ 0.12 VDC
Switching current (min.)	50 μA
Inrush current (max.)	15 A / 10 ms
Turn-on time	≤ 100 μs
Turn-off time	≤ 600 μs
Switching frequency	≤ 350 Hz

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
-------------------------------------------------------	------------------------

### Physical Data

Width	5 mm / 0.197 inch
Height from the surface	15 mm / 0.591 inch
Depth	28 mm / 1.102 inch

### Mechanical Data

Mounting type	Pluggable relay module
---------------	------------------------

### Material Data

Weight	3.6 g
--------	-------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-30 ... +80 °C
Surrounding air temperature (storage)	-40 ... +100 °C

## Basic Solid-State Relay 857 Series



Basic Solid-State Relay; Output voltage range:  
24 ... 240 VAC; Limiting continuous current: 2 A;  
5 mm wide; 15 mm high

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	7 mA	857-167	20

### Control Circuit

Input voltage range (low level)	0 ... 10 VDC
Input voltage range (high level)	20 ... 28.8 VDC

### Load Circuit

Circuit type	2-wire connection; zero-voltage switching
Limiting continuous current	2 A
Output voltage range	24 ... 240 VAC
Voltage drop (output) max.	≤ 1.6 VAC
Leakage current at rated voltage	≤ 1.5 mA
Switching current (min.)	22 mA
Turn-on time	≤ 10 ms
Turn-off time	≤ 10 ms
Mains frequency	50 Hz / 60 Hz

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
-------------------------------------------------------	------------------------

### Physical Data

Width	5 mm / 0.197 inch
Height from the surface	15 mm / 0.591 inch
Depth	28 mm / 1.102 inch

### Mechanical Data

Mounting type	Pluggable relay module
---------------	------------------------

### Material Data

Weight	3.5 g
--------	-------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-30 ... +80 °C
Surrounding air temperature (storage)	-40 ... +100 °C



## Basic Solid-State Relay 857 Series



Basic Solid-State Relay; Output voltage range:  
0 ... 48 VDC; Limiting continuous current: 0.1 A;  
5 mm wide; 15 mm high

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	7 mA	857-164	20

### Control Circuit

Input voltage range (low level)	0 ... 10 VDC
Input voltage range (high level)	16.8 ... 30 VDC

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.1 A
Output voltage range	0 ... 48 VDC
Voltage drop (output) max.	≤ 1 VDC
Switching current (min.)	50 μA
Turn-on time	≤ 100 μs
Turn-off time	≤ 600 μs
Switching frequency	≤ 1 kHz

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
-------------------------------------------------------	------------------------

### Physical Data

Width	5 mm / 0.197 inch
Height from the surface	15 mm / 0.591 inch
Depth	28 mm / 1.102 inch

### Mechanical Data

Mounting type	Pluggable relay module
---------------	------------------------

### Material Data

Weight	3.2 g
--------	-------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-30 ... +80 °C
Surrounding air temperature (storage)	-40 ... +100 °C

2

## Basic Solid-State Relay 857 Series



Basic Solid-State Relay; Output voltage range:  
0 ... 24 VDC; Limiting continuous current: 3 A;  
5 mm wide; 15 mm high

$U_N$	$I_N$	Item No.	Pack. Unit
60 VDC	3 mA	857-162	20

### Control Circuit

Input voltage range (low level)	0 ... 10 VDC
Input voltage range (high level)	35 ... 72 VDC

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	3 A
Output voltage range	0 ... 24 VDC
Voltage drop (output) max.	≤ 0.12 VDC
Switching current (min.)	50 μA
Inrush current (max.)	15 A / 10 ms
Turn-on time	≤ 100 μs
Turn-off time	≤ 600 μs
Switching frequency	≤ 350 Hz

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
-------------------------------------------------------	------------------------

### Physical Data

Width	5 mm / 0.197 inch
Height from the surface	15 mm / 0.591 inch
Depth	28 mm / 1.102 inch

### Mechanical Data

Mounting type	Pluggable relay module
---------------	------------------------

### Material Data

Weight	5 g
--------	-----

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-30 ... +80 °C
Surrounding air temperature (storage)	-40 ... +100 °C

## Basic Solid-State Relay 857 Series



Basic Solid-State Relay; Output voltage range:  
0 ... 48 VDC; Limiting continuous current: 0.1 A;  
5 mm wide; 15 mm high

$U_N$	$I_N$	Item No.	Pack. Unit
60 VDC	2.8 mA	857-165	20

### Control Circuit

Input voltage range (low level)	0 ... 10 VDC
Input voltage range (high level)	35 ... 72 VDC

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.1 A
Output voltage range	0 ... 48 VDC
Voltage drop (output) max.	≤ 1 VDC
Switching current (min.)	50 μA
Turn-on time	≤ 100 μs
Turn-off time	≤ 600 μs
Switching frequency	≤ 1 kHz
Mains frequency	50 Hz / 60 Hz

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
-------------------------------------------------------	------------------------

### Physical Data

Width	5 mm / 0.197 inch
Height from the surface	15 mm / 0.591 inch
Depth	28 mm / 1.102 inch

### Mechanical Data

Mounting type	Pluggable relay module
---------------	------------------------

### Material Data

Weight	3.4 g
--------	-------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +60 °C
Surrounding air temperature (storage)	-40 ... +70 °C

## Basic Solid-State Relay 857 Series



Basic Solid-State Relay; Output voltage range:  
24 ... 240 VAC; Limiting continuous current: 2 A;  
5 mm wide; 15 mm high

$U_N$	$I_N$	Item No.	Pack. Unit
60 VDC	3.1 mA	857-168	20

### Control Circuit

Input voltage range (low level)	0 ... 10 VDC
Input voltage range (high level)	35 ... 72 VDC

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	3 A
Output voltage range	0 ... 24 VDC
Voltage drop (output) max.	≤ 0.12 VDC
Switching current (min.)	50 μA
Inrush current (max.)	15 A / 10 ms
Turn-on time	≤ 100 μs
Turn-off time	≤ 600 μs
Switching frequency	≤ 350 Hz

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
-------------------------------------------------------	------------------------

### Physical Data

Width	5 mm / 0.197 inch
Height from the surface	15 mm / 0.591 inch
Depth	28 mm / 1.102 inch

### Mechanical Data

Mounting type	Pluggable relay module
---------------	------------------------

### Material Data

Weight	3.6 g
--------	-------

### Environmental Requirements

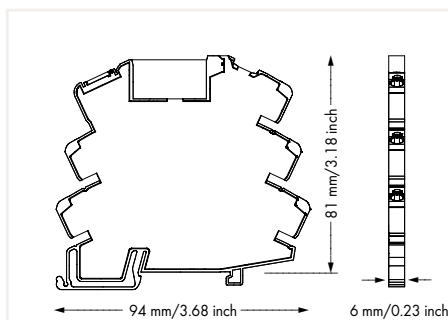
Surrounding air temperature (operation at $U_N$ )	-30 ... +80 °C
Surrounding air temperature (storage)	-40 ... +70 °C

## Relay Socket 857 Series



Relay Socket; for 5 mm basic relay; Status indicator: yellow

$U_N$	Item No.	Pack. Unit
24 VAC/DC	857-104	25
115 VAC/DC	857-107	25
230 VAC/DC	857-108	25



### Load Circuit

Limiting continuous current	6 A
Switching voltage (max.)	250 VAC

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Protection type	IP20
-----------------	------

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	81 mm / 3.189 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	26.3 g
--------	--------

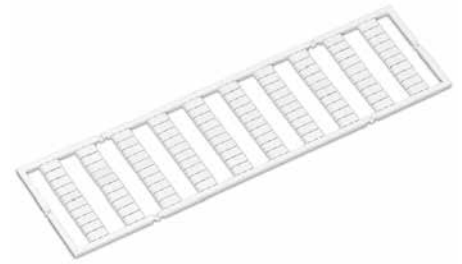
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; UR 508
--------------------------	------------------------

## Accessories 857 Series



2

Push-in type jumper bar; light gray; insulated; 18 A

Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)

Item no. suffixes for colored push-in type jumper bars

yellow	... /000-029	
red	... /000-005	
blue	... /000-006	

Comb-style jumper bar; insulated; for conductor entry

Description	Item No.	Pack. Unit
2-way	281-482	100

WMB marker card; 10 strips with 10 markers; white; with black printing

Marking	Item No.	Pack. Unit
plain	793-501	5 cards
1 ... 10 (10 x)	793-502	5 cards
11 ... 20 (10 x)	793-503	5 cards
21 ... 30 (10 x)	793-504	5 cards
31 ... 40 (10 x)	793-505	5 cards
41 ... 50 (10 x)	793-506	5 cards
1 ... 50 (2 x)	793-566	5 cards



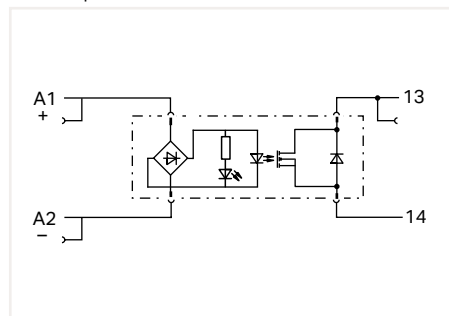
Operating tool with a partially insulated shaft; Type 2; (3.5 x 0.5) mm blade

Item No.	Pack. Unit
210-720	50

## Solid-State Relay Module 788 Series

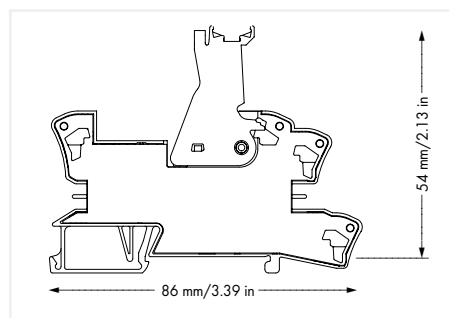


Similar to picture



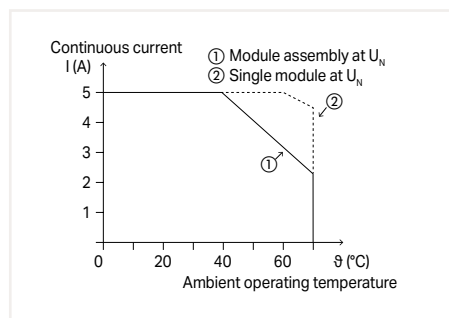
Solid-State Relay Module; Output voltage range:  
0 ... 35 VDC; Limiting continuous current: 5 A;  
2-wire connection; Status indicator: green; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	11 mA	788-710	20



### Note:

Optocouplers and solid-state relays are designed for use in signal processing networks that are not supplied by the low-voltage power grid.



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range (low level)	0 ... 3 VDC
Input voltage range (high level)	10 ... 30 VDC

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	5 A
Output voltage range	0 ... 35 VDC
Voltage drop (output) max.	≤ 0.3 VDC
Switching current (min.)	1 mA
Turn-on time	≤ 50 μs
Turn-off time	≤ 250 μs
Switching frequency	≤ 3 kHz

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Pollution degree	2
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.13 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	42 g
--------	------

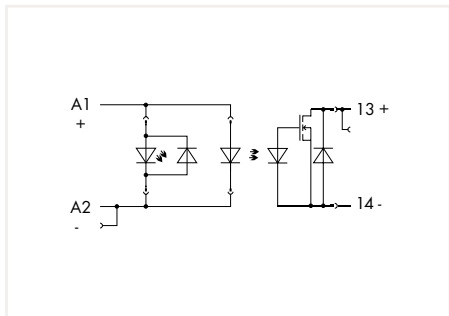
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

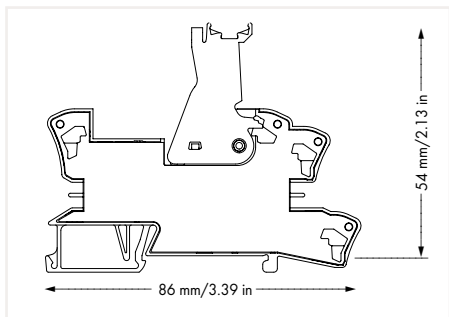
Standards/specifications	EN 61010-2-201; EN 61000-6-2; EN 61000-6-3; EN 61373
--------------------------	------------------------------------------------------

## Solid-State Relay Module 788 Series



Solid-State Relay Module; Output voltage range: 0 ... 24 VDC; Limiting continuous current: 3.5 A; 2-wire connection; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	7 mA	788-700	20



### Note:

A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.

### Control Circuit

Input voltage range (low level)	0 ... 8 VDC
Input voltage range (high level)	18 ... 30 VDC

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	3.5 A
Output voltage range	0 ... 24 VDC
Voltage drop (output) max.	≤ 0.1 VDC
Turn-on time	≤ 50 μs
Turn-off time	≤ 600 μs
Switching frequency	≤ 100 Hz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	41.7 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +60 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

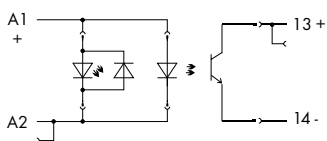
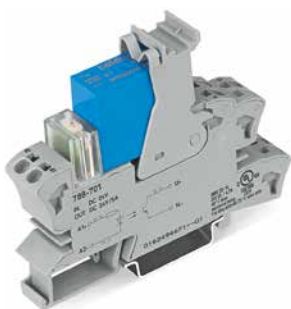
### Standards and Specifications

Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508
--------------------------	--------------------------------------------------------------



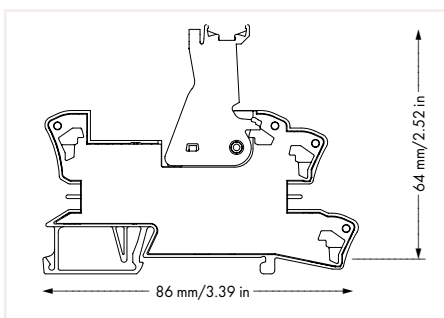
## Solid-State Relay Module

### 788 Series



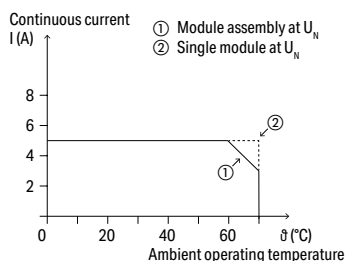
Solid-State Relay Module; Output voltage range: 0 ... 30 VDC; Limiting continuous current: 5 A; 2-wire connection; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	9.3 mA	788-701	10



#### Note:

A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.



Current-Carrying Capacity Curve

#### Control Circuit

Input voltage range (low level)	0 ... 2.5 VDC
Input voltage range (high level)	15 ... 30 VDC

#### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	5 A
Output voltage range	0 ... 30 VDC
Voltage drop (output) max.	≤ 0.3 VDC
Turn-on time	≤ 50 μs
Turn-off time	≤ 600 μs
Switching frequency	≤ 100 Hz

#### Signaling

Status indicator	Red LED
------------------	---------

#### Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

#### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

#### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	64 mm / 2.52 inch
Depth	86 mm / 3.386 inch

#### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

#### Material Data

Weight	47 g
--------	------

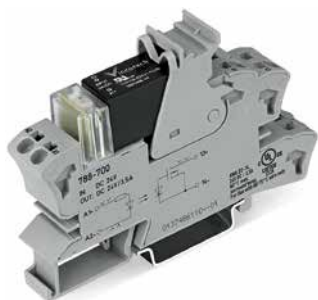
#### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

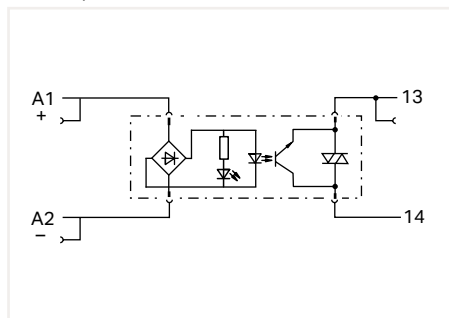
#### Standards and Specifications

Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508 (max. 40 °C/4.7 A)
--------------------------	---------------------------------------------------------------------------------

## Solid-State Relay Module 788 Series

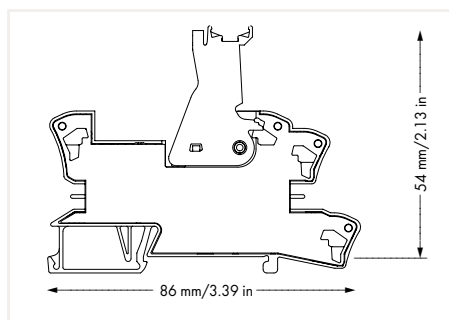


Similar to picture



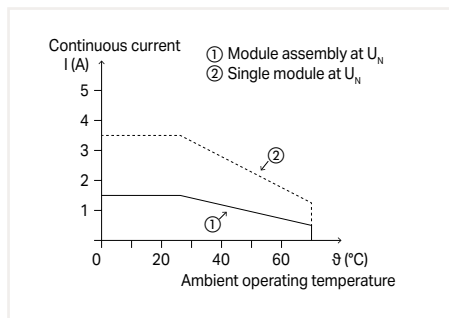
Solid-State Relay Module; Output voltage range: 12 ... 275 VAC; Limiting continuous current: 3.5 A; 2-wire connection; Status indicator: green; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	13 mA	788-730	20



### Note:

Optocouplers and solid-state relays are designed for use in signal processing networks that are not supplied by the low-voltage power grid.



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range (low level)	0 ... 3 VDC
Input voltage range (high level)	10 ... 30 VDC

### Load Circuit

Circuit type	2-wire connection; zero-voltage switching
Limiting continuous current	3.5 A
Output voltage range	12 ... 275 VAC
Voltage drop (output) max.	≤ 1.1 V
Switching current (min.)	1 mA
Turn-on time	≤ 10 μs
Turn-off time	≤ 10 μs
Switching frequency	50 / 60 kHz

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Pollution degree	2
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.13 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	42 g
--------	------

### Environmental Requirements

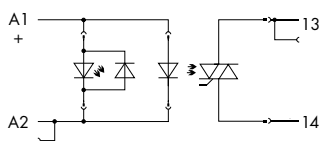
Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61000-6-2; EN 61000-6-3; EN 61373
--------------------------	------------------------------------------------------

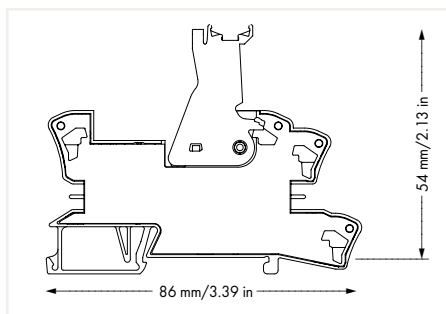
## Solid-State Relay Module

### 788 Series



Solid-State Relay Module; Output voltage range: 24 ... 240 VAC; Limiting continuous current: 1 A; 2-wire connection; Zero-voltage switching; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	7 mA	788-720	20



#### Note:

A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.

#### Control Circuit

Input voltage range (low level)	0 ... 4 VDC
Input voltage range (high level)	18 ... 30 VDC

#### Load Circuit

Circuit type	2-wire connection; zero-voltage switching
Limiting continuous current	1 A
Output voltage range	24 ... 240 VAC
Voltage drop (output) max.	≤ 1.1 VAC
Turn-on time	≤ 10 ms
Turn-off time	≤ 10 ms

#### Signaling

Status indicator	Red LED
------------------	---------

#### Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
Protection type	IP20

#### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

#### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

#### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

#### Material Data

Weight	41.3 g
--------	--------

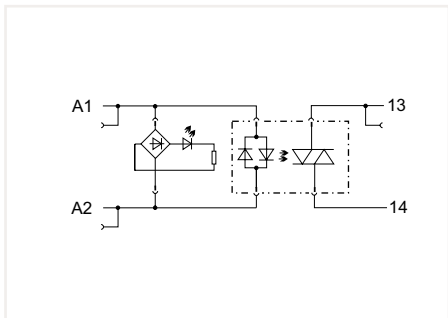
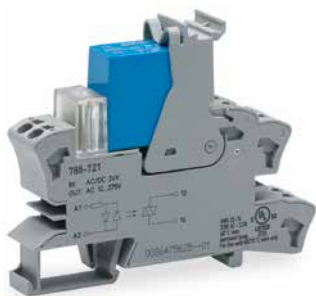
#### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-20 ... +60 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

#### Standards and Specifications

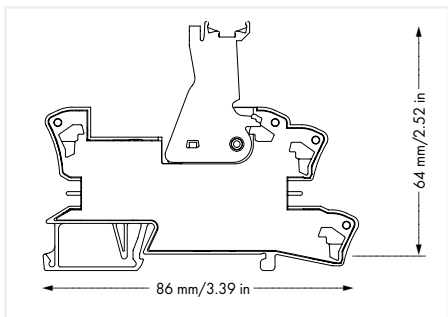
Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508 (max. 40 °C/2.5 A)
--------------------------	------------------------------------------------------------------------------------

# Solid-State Relay Module 788 Series

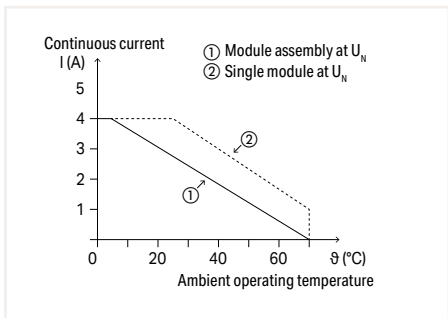


Solid-State Relay Module; Output voltage range: 12 ... 275 VAC; Limiting continuous current: 4 A; 2-wire connection; Zero-voltage switching; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VAC/DC	10 mA	788-721	10



**Note:**  
A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range (low level)	0 ... 2.5 VAC/DC
Input voltage range (high level)	15 ... 30 VAC/DC

### Load Circuit

Circuit type	2-wire connection; zero-voltage switching
Limiting continuous current	4 A
Output voltage range	12 ... 275 VAC (50/60 Hz)
Voltage drop (output) max.	≤ 1.1 VAC
Turn-on time	≤ 10 ms
Turn-off time	≤ 10 ms

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	64 mm / 2.52 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	49.4 g
--------	--------

### Environmental Requirements

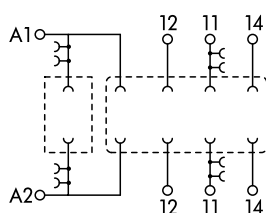
Surrounding air temperature (operation at $U_N$ )	-20 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508 (max. 40 °C/2.5 A)
--------------------------	---------------------------------------------------------------------------------

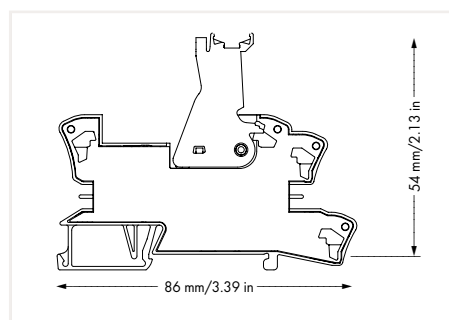
2

## Relay Socket 788 Series



Relay Socket; 1 changeover contact;  
for 15 mm basic relays

Item No.	Pack. Unit
788-100	20



### Control Circuit

Nominal input voltage $U_N$	250 VAC/DC (depends on relay)
Input voltage range	(depends on relay)

### Load Circuit

Number of changeover/switchover contacts	1
Limiting continuous current	16 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC)

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	6 kV <sub>rms</sub> (depends on relay)
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub> (depends on relay)
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	54 mm / 2.126 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	31.25 g
--------	---------

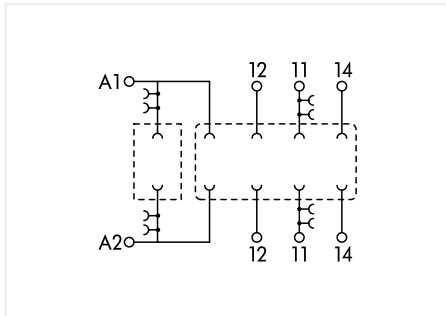
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C (depends on relay)
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

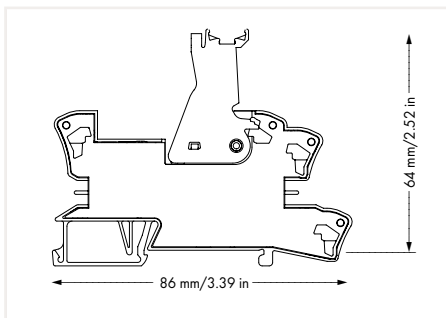
Standards/specifications	EN 60664-1
--------------------------	------------

## Relay Socket 788 Series



Relay Socket; 1 changeover contact;  
for 25 mm basic relays

	Item No.	Pack. Unit
	788-101	15



### Control Circuit

Nominal input voltage $U_N$	250 VAC/DC (depends on relay)
Input voltage range	(depends on relay)

### Load Circuit

Number of changeover/switchover contacts	1
Limiting continuous current	16 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	4000 VA (AC)

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	6 kV <sub>rms</sub> (depends on relay)
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub> (depends on relay)
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	64 mm / 2.52 inch
Depth	86 mm / 3.386 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	31 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C (depends on relay)
Surrounding air temperature (storage)	-40 ... +80 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

## Accessories

2



Accessories for relay modules; Operation status indicator: red

$U_N$	Power consumption at $U_N$	Item No.	Pack. Unit
24 VDC	2.4 mA	788-120	50(2x25)
48 VDC	1.9 mA	788-121	50(2x25)
110 VDC	1.9 mA	788-122	50(2x25)
24 VAC	2.1 mA	788-123	50(2x25)
115 VAC	1.7 mA	788-124	50(2x25)
230 VAC	1.6 mA	788-125	50(2x25)

Twin ferrule; Sleeve for 2 x 1 mm² / 2 x 18 AWG; red, insulated; 12 mm long

Color	Item No.	Pack. Unit
red	216-542	500



Comb-style jumper bar; insulated; 18 A

Description	Item No.	Pack. Unit
2-way	788-113	200 (8x25)
3-way	788-114	100 (4x25)
4-way	788-115	100 (4x25)
6-way	788-116	100 (4x25)
7-way	788-117	100 (4x25)
2-way (1 to 3)	788-118	100 (4x25)

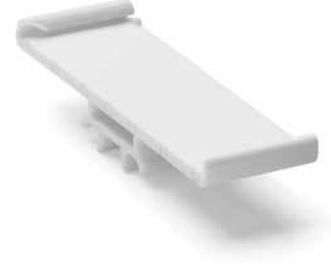
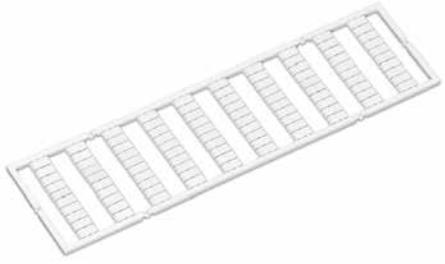
Push-in type jumper bar; light gray; insulated; 18 A

Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)

Operating tool with a partially insulated shaft; Type 2; (3.5 x 0.5) mm blade

	Item No.	Pack. Unit
	210-720	50

## Accessories



WMB marker card; 10 strips with 10 markers; white; with black printing

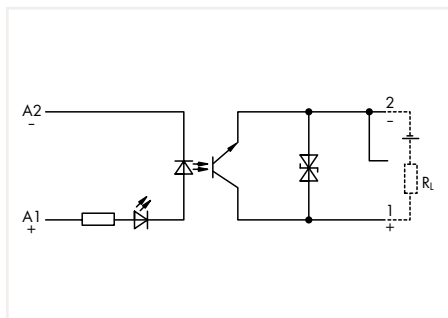
Marking	Item No.	Pack. Unit
plain	793-501	5 cards
1 ... 10 (10 x)	793-502	5 cards
11 ... 20 (10 x)	793-503	5 cards
21 ... 30 (10 x)	793-504	5 cards
31 ... 40 (10 x)	793-505	5 cards
41 ... 50 (10 x)	793-506	5 cards
1 ... 50 (2 x)	793-566	5 cards

Group marker carrier; for WMB and Mini-WSB marker slots; 10 mm wide

	Item No.	Pack. Unit
	209-145	100

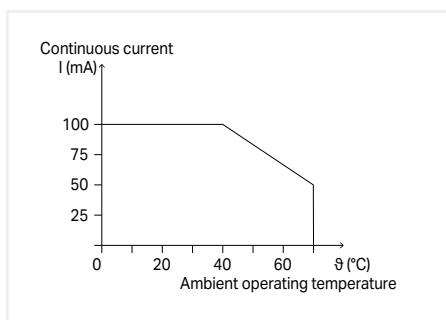
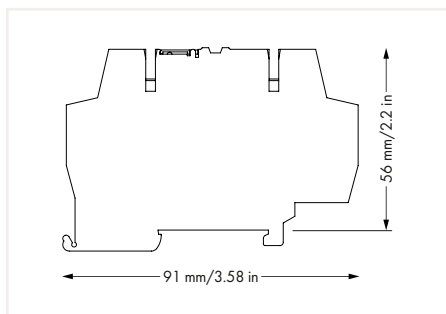


## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 7 ... 60 VDC; Limiting continuous current: 0.1 A; 2-wire connection; for railway applications; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	4 mA	859-791	10



Current-Carrying Capacity Curve

### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	16 ... 30 VDC
Nominal input current at $U_N$	4 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.1 A
Output voltage range	7 ... 60 VDC
Voltage drop (output) max.	≤ 1.5 VDC
Leakage current at rated voltage	≤ 30 $\mu$ A
Turn-on time	≤ 20 $\mu$ s
Turn-off time	≤ 120 $\mu$ s
Switching frequency	≤ 3 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
-------------------------------------------------------	---------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.7 g
--------	--------

### Environmental Requirements

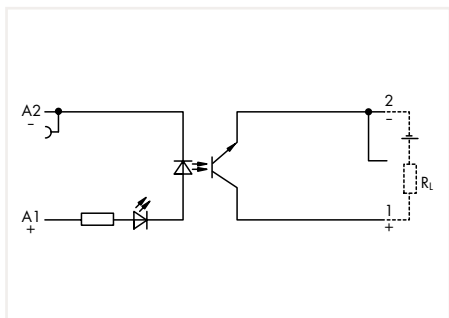
Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 50121-3-2; EN 61373; UL 508
--------------------------	------------------------------------------------------------------------

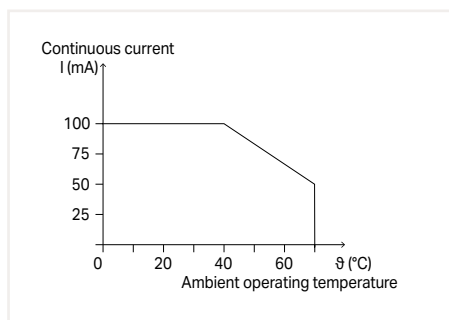
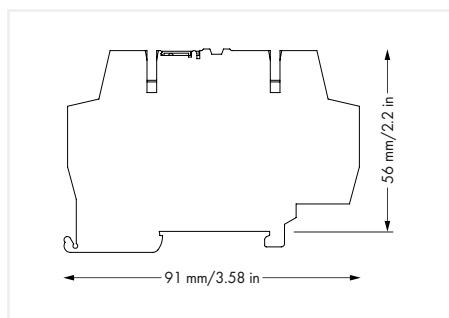
# Optocoupler Module

## 859 Series



Optocoupler Module; Output voltage range: 9 ... 60 VDC; Limiting continuous current: 0.1 A; 2-wire connection; for railway applications; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	4.2 mA	859-794	10



Current-Carrying Capacity Curve

### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	16 ... 30 VDC
Nominal input current at $U_N$	4.2 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.1 A
Output voltage range	9 ... 60 VDC
Voltage drop (output) max.	$\leq 2$ VDC
Leakage current at rated voltage	$\leq 25$ $\mu$ A
Turn-on time	$\leq 20$ $\mu$ s
Turn-off time	$\leq 120$ $\mu$ s
Switching frequency	$\leq 1.5$ kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.4 g
--------	--------

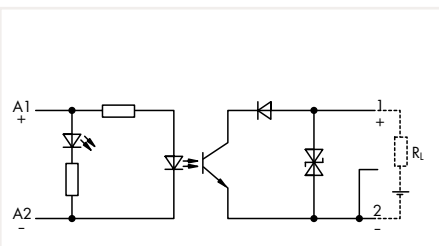
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

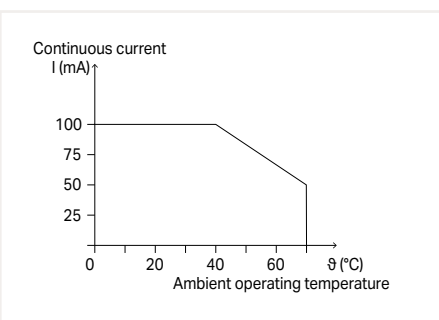
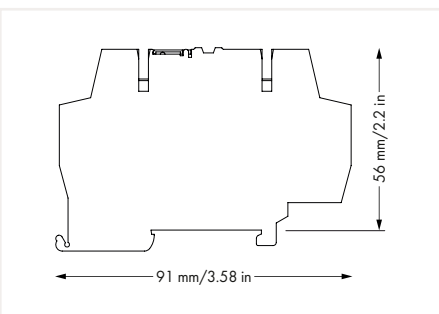
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 50121-3-2; EN 61373; UL 508
--------------------------	------------------------------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 3 ... 30 VDC; Limiting continuous current: 0.1 A; 2-wire connection; for railway applications; Frequency: 10 kHz; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
5 VDC	17 mA	859-795	10



Current-Carrying Capacity Curve

### Control Circuit

Nominal input voltage $U_N$	5 VDC
Input voltage range (low level)	0 ... 0.8 VDC
Input voltage range (high level)	2 ... 6.25 VDC
Nominal input current at $U_N$	17 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.1 A
Output voltage range	3 ... 30 VDC
Voltage drop (output) max.	≤ 1 VDC
Leakage current at rated voltage	≤ 25 $\mu$ A
Turn-on time	≤ 10 $\mu$ s
Turn-off time	≤ 50 $\mu$ s
Switching frequency	≤ 10 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.33 g
--------	---------

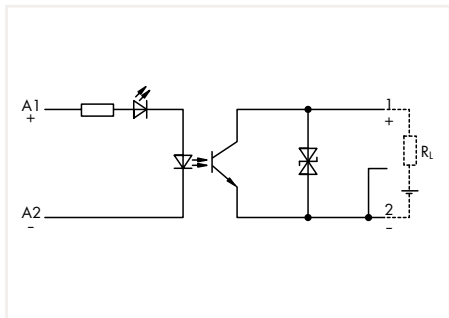
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

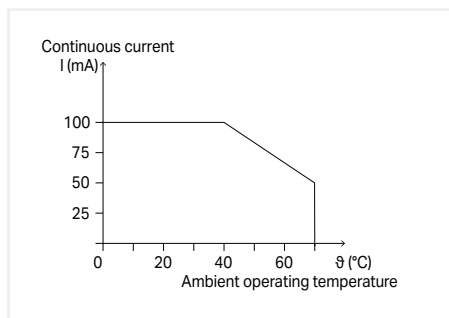
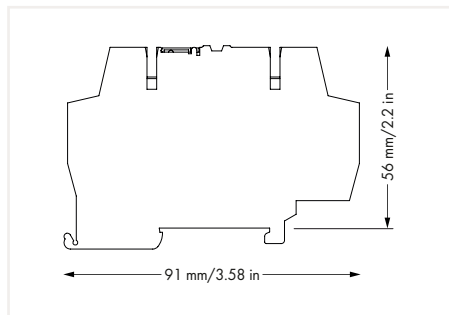
Standards/specifications	EN 60664; EN 61000-6-3; EN 61000-6-4; EN 50121-3-2; EN 61373; UL 508
--------------------------	----------------------------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 3 ... 30 VDC; Limiting continuous current: 0.1 A; 2-wire connection; for railway applications; Frequency: 10 kHz; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	9.2 mA	859-796	10



Current-Carrying Capacity Curve

### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	16.8 ... 30 VDC
Nominal input current at $U_N$	9.2 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.1 A
Output voltage range	3 ... 30 VDC
Voltage drop (output) max.	≤ 1 VDC
Leakage current at rated voltage	≤ 25 $\mu$ A
Turn-on time	≤ 10 $\mu$ s
Turn-off time	≤ 50 $\mu$ s
Switching frequency	≤ 10 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.13 g
--------	---------

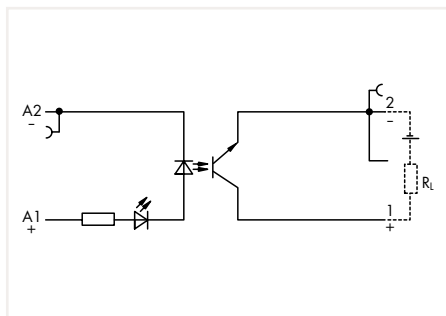
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

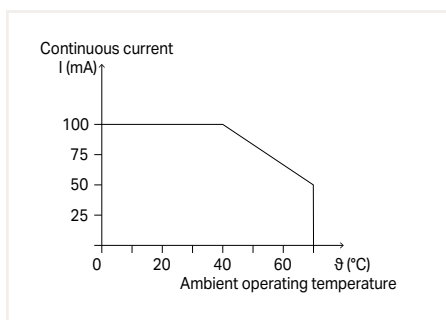
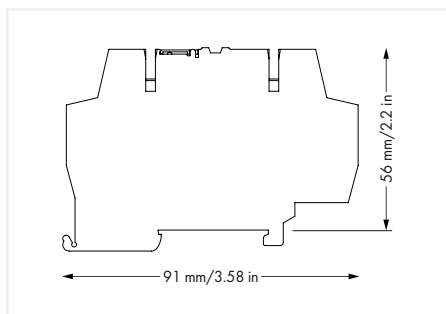
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 50121-3-2; EN 61373; UL 508
--------------------------	------------------------------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 9 ... 60 VDC; Limiting continuous current: 0.1 A; 2-wire connection; for railway applications; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
12 VDC	4 mA	859-798	10



Current-Carrying Capacity Curve

### Control Circuit

Nominal input voltage $U_N$	12 VDC
Input voltage range (low level)	0 ... 4.8 VDC
Input voltage range (high level)	8.4 ... 15 VDC
Nominal input current at $U_N$	4 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.1 A
Output voltage range	9 ... 60 VDC
Voltage drop (output) max.	$\leq 2$ VDC
Turn-on time	$\leq 20$ $\mu$ s
Turn-off time	$\leq 120$ $\mu$ s
Switching frequency	$\leq 1.5$ kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	17.73 g
--------	---------

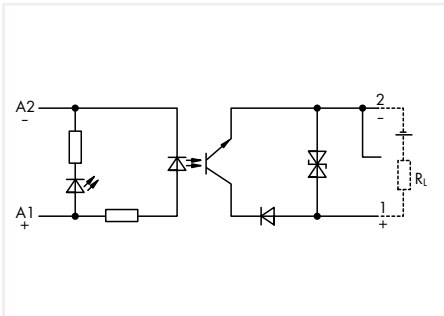
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

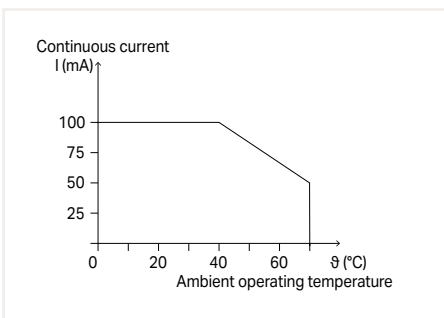
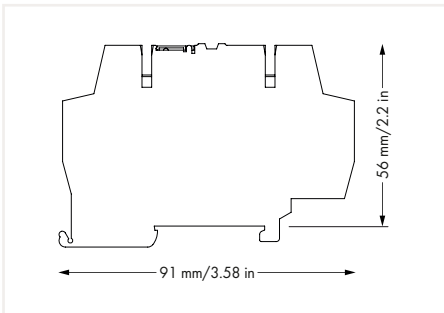
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 50121-3-2; EN 61373
--------------------------	----------------------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range:  
3 ... 60 VDC; Limiting continuous current: 0.1 A;  
2-wire connection; for railway applications;  
Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
5 VDC	7.5 mA	859-793	10



Current-Carrying Capacity Curve

### Control Circuit

Nominal input voltage $U_N$	5 VDC
Input voltage range (low level)	0 ... 0.8 VDC
Input voltage range (high level)	2 ... 6.25 VDC
Nominal input current at $U_N$	7.5 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.1 A
Output voltage range	3 ... 60 VDC
Voltage drop (output) max.	≤ 2.5 VDC
Leakage current at rated voltage	≤ 25 $\mu$ A
Turn-on time	≤ 20 $\mu$ s
Turn-off time	≤ 120 $\mu$ s
Switching frequency	≤ 1.5 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	17.93 g
--------	---------

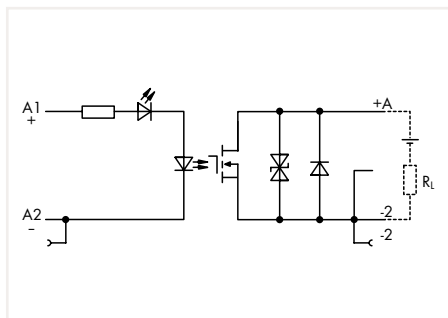
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

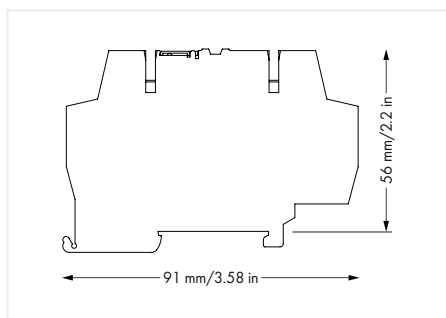
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 50121-3-2; EN 61373; UL 508
--------------------------	---------------------------------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range:  
3 ... 30 VDC; Limiting continuous current: 3 A;  
2-wire connection; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	14 mA	859-730	10



### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	15 ... 27 VDC
Nominal input current at $U_N$	14 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	3 A
Peak output current	25 A
Output voltage range	3 ... 30 VDC
Voltage drop (output) max.	$\leq 0.2$ VDC
Turn-on time	$\leq 25$ $\mu$ s
Turn-off time	$\leq 450$ $\mu$ s
Switching frequency	$\leq 350$ Hz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.6 g
--------	--------

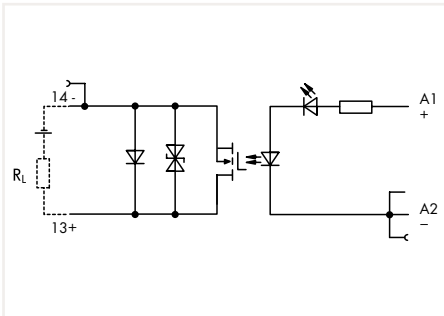
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

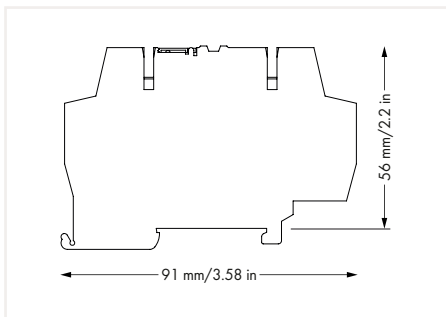
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
--------------------------	----------------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range:  
3 ... 30 VDC; Limiting continuous current: 3 A;  
2-wire connection; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	7 mA	859-740	10



### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 9 VDC
Input voltage range (high level)	19 ... 27 VDC
Nominal input current at $U_N$	7 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	3 A
Peak output current	25 A
Output voltage range	3 ... 30 VDC
Voltage drop (output) max.	≤ 0.2 VDC
Turn-on time	≤ 25 μs
Turn-off time	≤ 450 μs
Switching frequency	≤ 350 Hz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.63 g
--------	---------

### Environmental Requirements

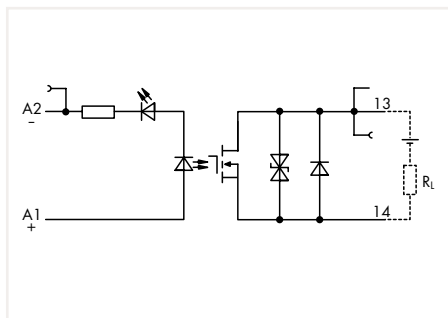
Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
--------------------------	----------------------------------------------------------

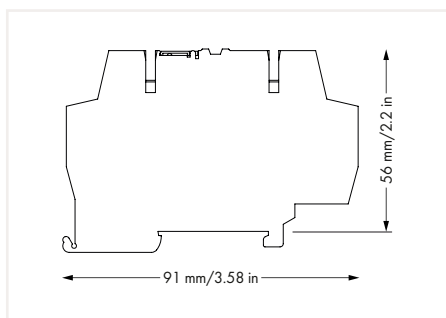


## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range:  
3 ... 30 VDC; Limiting continuous current: 3 A;  
2-wire connection; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	14 mA	859-761	10



### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	15 ... 27 VDC
Nominal input current at $U_N$	14 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	3 A
Peak output current	25 A
Output voltage range	3 ... 30 VDC
Voltage drop (output) max.	$\leq 0.2$ VDC
Turn-on time	$\leq 25$ $\mu$ s
Turn-off time	$\leq 450$ $\mu$ s
Switching frequency	$\leq 350$ Hz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.9 g
--------	--------

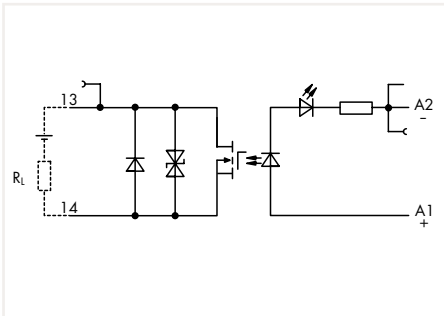
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

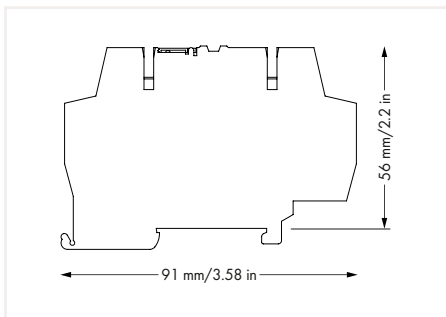
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373
--------------------------	--------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range:  
3 ... 30 VDC; Limiting continuous current: 3 A;  
2-wire connection; Status indicator: yellow; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	7 mA	859-762	10



### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 9 VDC
Input voltage range (high level)	19 ... 27 VDC
Nominal input current at $U_N$	7 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	3 A
Peak output current	25 A
Output voltage range	3 ... 30 VDC
Voltage drop (output) max.	≤ 0.2 VDC
Turn-on time	≤ 25 μs
Turn-off time	≤ 450 μs
Switching frequency	≤ 350 Hz

### Signaling

Status indicator	Yellow LED
------------------	------------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.9 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

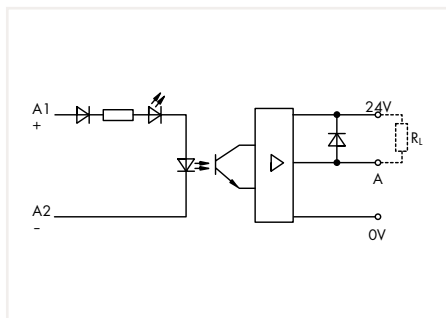
### Standards and Specifications

Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373
--------------------------	--------------------------------------------------

## Optocoupler Module 859 Series

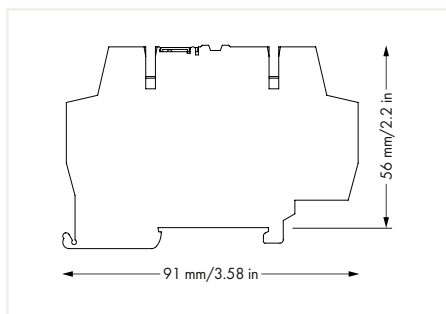


2



Optocoupler Module; Output voltage range:  
10 ... 30 VDC; Limiting continuous current: 3 A;  
3-wire connection; Low-side switching;  
Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	4 mA	859-720	10



### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 3 VDC
Input voltage range (high level)	16 ... 30 VDC
Nominal input current at $U_N$	4 mA

### Load Circuit

Circuit type	3-wire connection; low-side switching
Limiting continuous current	3 A
Peak output current	20 A
Output voltage range	10 ... 30 VDC
Voltage drop (output) max.	$\leq 0.5$ VDC
Leakage current at rated voltage	$\leq 25$ $\mu$ A
Turn-on time	$\leq 30$ $\mu$ s
Turn-off time	$\leq 75$ $\mu$ s
Rise time ( $t_{10-90}$ )	16 $\mu$ s
Drop-out time ( $t_{10-90}$ )	20 $\mu$ s
Switching frequency	$\leq 1$ kHz ( $< 0.5$ A; $\leq 2$ kHz / $< 1$ A; $\leq 1$ kHz / $< 2$ A)

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.53 g
--------	---------

### Environmental Requirements

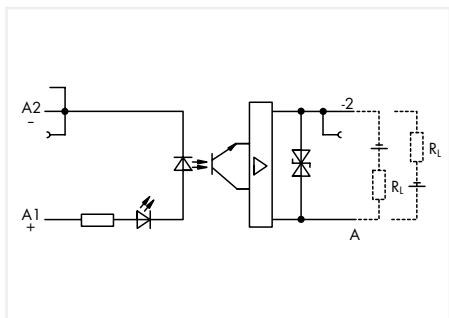
Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
--------------------------	----------------------------------------------------------

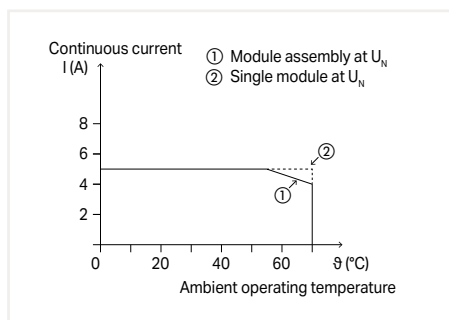
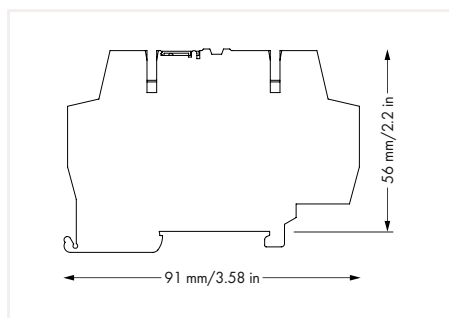
# Optocoupler Module

## 859 Series



Optocoupler Module; Output voltage range:  
3 ... 30 VDC; Limiting continuous current: 5 A;  
2-wire connection; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	3.5 mA	859-737	10



Current-Carrying Capacity Curve

### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	15 ... 30 VDC
Nominal input current at $U_N$	3.5 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	5 A
Peak output current	25 A
Output voltage range	3 ... 30 VDC
Voltage drop (output) max.	≤ 0.2 VDC
Turn-on time	≤ 200 μs
Turn-off time	≤ 450 μs
Switching frequency	≤ 100 Hz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	19.7 g
--------	--------

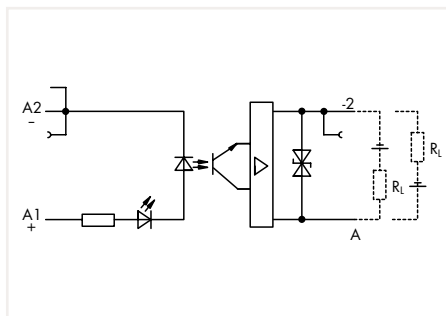
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

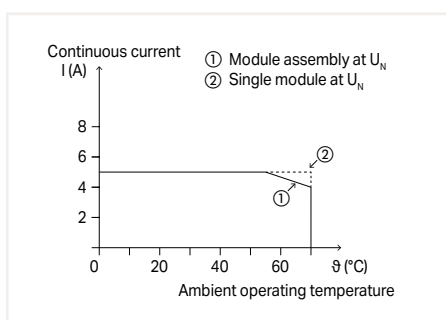
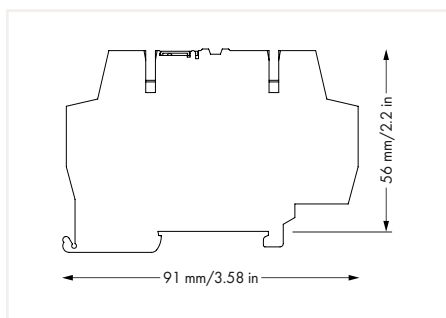
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373
--------------------------	--------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range:  
3 ... 30 VDC; Limiting continuous current: 5 A;  
2-wire connection; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
5 VDC	7.2 mA	859-738	10



Current-Carrying Capacity Curve

### Control Circuit

Nominal input voltage $U_N$	5 VDC
Input voltage range (low level)	0 ... 2 VDC
Input voltage range (high level)	4 ... 6 VDC
Nominal input current at $U_N$	7.2 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	5 A
Peak output current	25 A
Output voltage range	3 ... 30 VDC
Voltage drop (output) max.	≤ 0.2 VDC
Turn-on time	≤ 200 μs
Turn-off time	≤ 450 μs
Switching frequency	≤ 100 Hz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.93 g
--------	---------

### Environmental Requirements

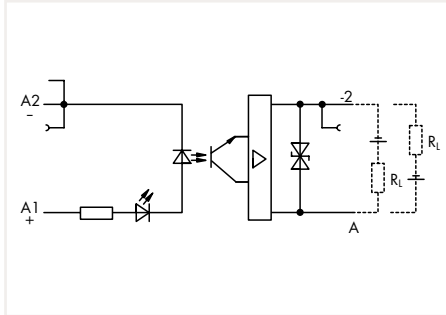
Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373
--------------------------	--------------------------------------------------

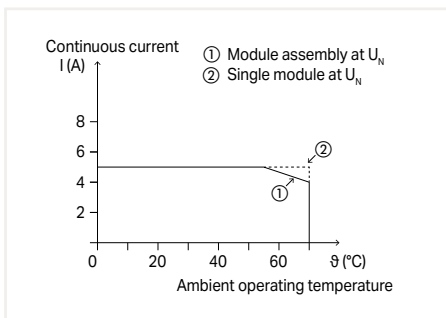
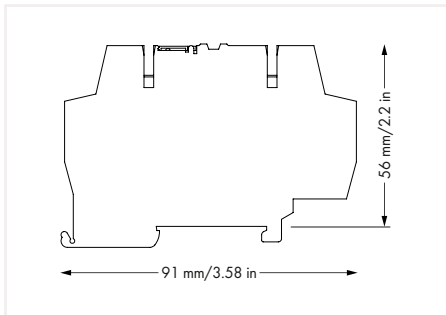
# Optocoupler Module

## 859 Series



Optocoupler Module; Output voltage range:  
3 ... 30 VDC; Limiting continuous current: 5 A;  
2-wire connection; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
12 VDC	3.2 mA	859-739	10



Current-Carrying Capacity Curve

### Control Circuit

Nominal input voltage $U_N$	12 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	9.6 ... 14.4 VDC
Nominal input current at $U_N$	3.2 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	5 A
Peak output current	25 A
Output voltage range	3 ... 30 VDC
Voltage drop (output) max.	≤ 0.2 VDC
Turn-on time	≤ 200 μs
Turn-off time	≤ 450 μs
Switching frequency	≤ 100 Hz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	19.33 g
--------	---------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

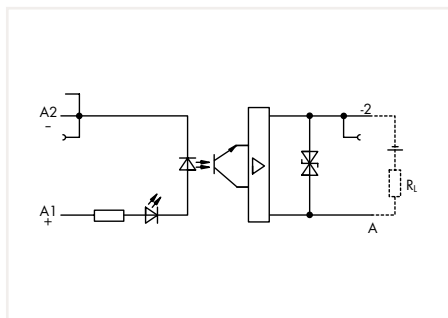
### Standards and Specifications

Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373
--------------------------	--------------------------------------------------

## Optocoupler Module 859 Series

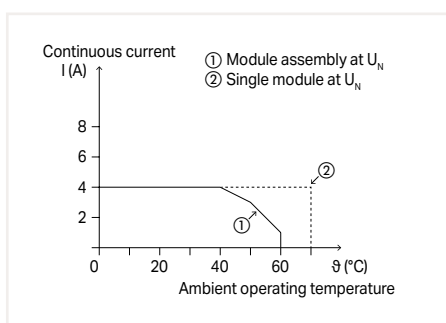
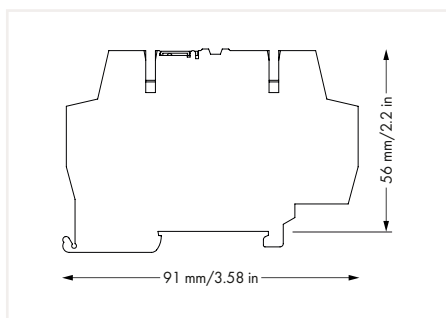


2



Optocoupler Module; Output voltage range:  
10 ... 53 VDC; Limiting continuous current: 4 A;  
2-wire connection; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
12 ... 48 VDC	5 mA	859-744	10



Current-Carrying Capacity Curve

### Control Circuit

Nominal input voltage $U_N$	12 ... 48 VDC
Input voltage range (low level)	0 ... 4 VDC
Input voltage range (high level)	10 ... 53 VDC
Nominal input current at $U_N$	5 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	4 A
Peak output current	30 A
Output voltage range	3 ... 53 VDC
Voltage drop (output) max.	≤ 0.2 VDC
Turn-on time	≤ 200 μs
Turn-off time	≤ 420 μs
Switching frequency	≤ 100 Hz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	19.3 g
--------	--------

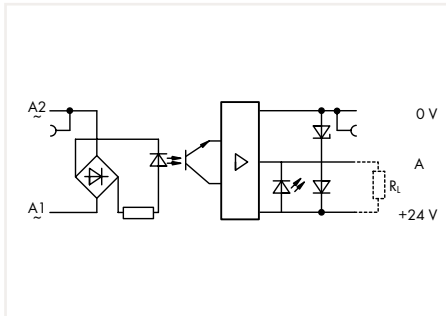
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

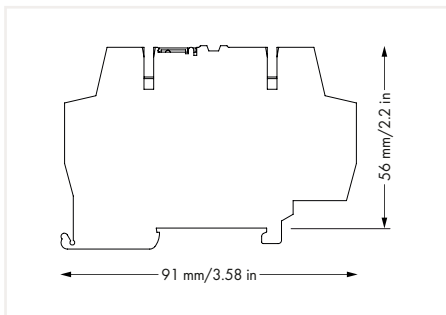
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373
--------------------------	--------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 20 ... 30 VDC; Limiting continuous current: 0.5 A; 3-wire connection; Low-side switching; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
230 VAC	0.6 mA	859-712	10



### Control Circuit

Nominal input voltage $U_N$	230 VAC
Input voltage range (low level)	0 ... 90 VAC
Input voltage range (high level)	175 ... 270 VAC
Nominal input current at $U_N$	0.6 mA

### Load Circuit

Circuit type	3-wire connection; low-side switching
Limiting continuous current	0.5 A
Output voltage range	20 ... 30 VDC
Voltage drop (output) max.	≤ 1.2 VDC
Leakage current at rated voltage	≤ 10 $\mu$ A
Output closed-circuit current (without load) max.	11 mA
Turn-on time	≤ 30 ms
Turn-off time	≤ 30 ms

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	20.4 g
--------	--------

### Environmental Requirements

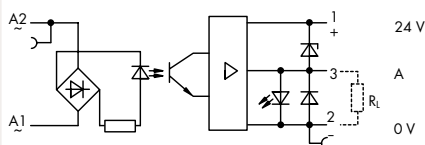
Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
--------------------------	----------------------------------------------------------

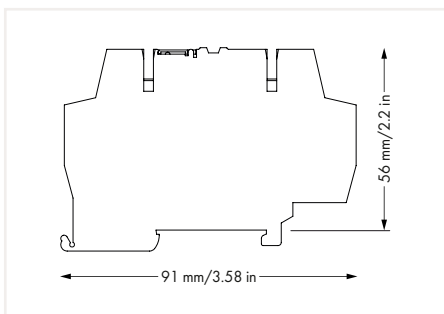


## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 20 ... 30 VDC; Limiting continuous current: 0.5 A; 3-wire connection; High-side switching; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
230 VAC	0.6 mA	859-772	10



### Control Circuit

Nominal input voltage $U_N$	230 VAC
Input voltage range (low level)	0 ... 90 VAC
Input voltage range (high level)	175 ... 270 VAC
Nominal input current at $U_N$	0.6 mA

### Load Circuit

Circuit type	3-wire connection; high-side switching
Limiting continuous current	0.5 A
Output voltage range	20 ... 30 VDC
Voltage drop (output) max.	$\leq 1.2$ VDC
Leakage current at rated voltage	$\leq 10$ $\mu$ A
Output closed-circuit current (without load) max.	12 mA
Turn-on time	$\leq 30$ ms
Turn-off time	$\leq 30$ ms

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	20.7 g
--------	--------

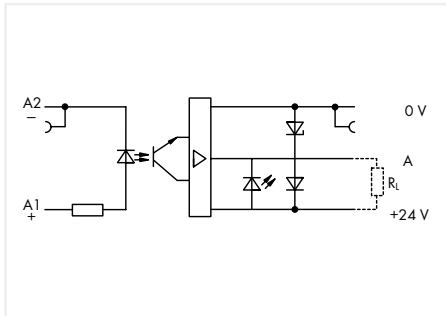
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

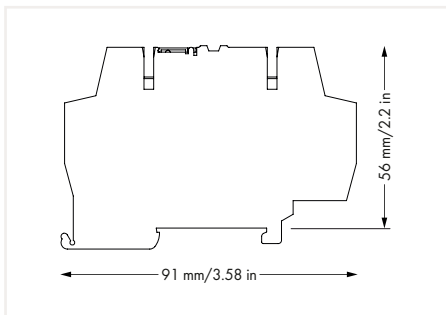
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
--------------------------	----------------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 20 ... 30 VDC; Limiting continuous current: 0.5 A; 3-wire connection; Low-side switching; Frequency: 10 kHz; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
5 VDC	9.6 mA	859-702	1



### Control Circuit

Nominal input voltage $U_N$	5 VDC
Input voltage range (low level)	0 ... 1 VDC
Input voltage range (high level)	4 ... 6.25 VDC
Nominal input current at $U_N$	9.6 mA

### Load Circuit

Circuit type	3-wire connection; low-side switching
Limiting continuous current	0.5 A
Output voltage range	20 ... 30 VDC
Voltage drop (output) max.	≤ 1.2 VDC
Leakage current at rated voltage	≤ 10 $\mu$ A
Output closed-circuit current (without load) max.	11 mA
Turn-on time	≤ 7 $\mu$ s
Turn-off time	≤ 15 $\mu$ s
Switching frequency	≤ 10 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.3 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

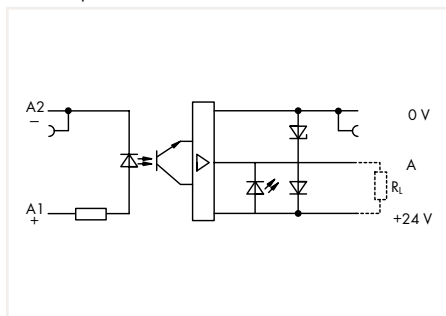
### Standards and Specifications

Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
--------------------------	----------------------------------------------------------

## Optocoupler Module 859 Series

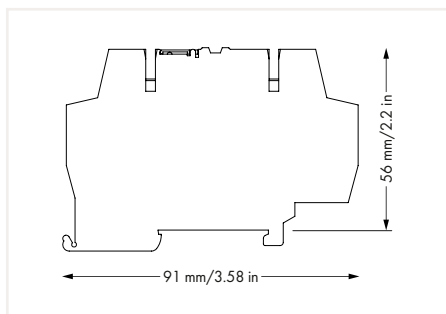


Similar to pictured device



Optocoupler Module; Output voltage range: 20 ... 30 VDC; Limiting continuous current: 0.5 A; 3-wire connection; Low-side switching; Frequency: 10 kHz; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	7.7 mA	859-708	1



### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	19 ... 30 VDC
Nominal input current at $U_N$	7.7 mA

### Load Circuit

Circuit type	3-wire connection; low-side switching
Limiting continuous current	0.5 A
Output voltage range	20 ... 30 VDC
Voltage drop (output) max.	$\leq 1.2$ VDC
Leakage current at rated voltage	$\leq 10$ $\mu$ A
Output closed-circuit current (without load) max.	11 mA
Turn-on time	$\leq 10$ $\mu$ s
Turn-off time	$\leq 10$ $\mu$ s
Switching frequency	$\leq 10$ kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.4 g
--------	--------

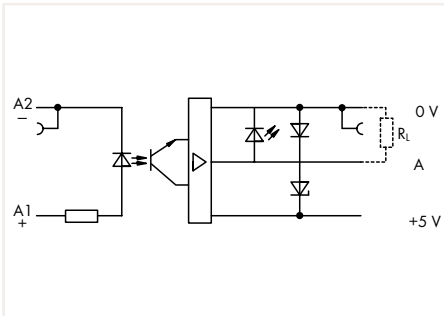
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

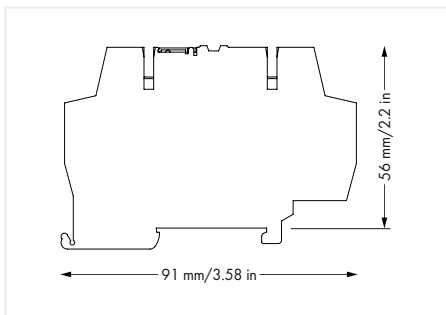
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
--------------------------	----------------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range:  
4 ... 6.25 VDC; Limiting continuous current: 0.5 A;  
3-wire connection; High-side switching; Frequency:  
10 kHz; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
5 VDC	8 mA	859-750	25



### Control Circuit

Nominal input voltage $U_N$	5 VDC
Input voltage range (low level)	0 ... 1 VDC
Input voltage range (high level)	4 ... 6.25 VDC
Nominal input current at $U_N$	8 mA

### Load Circuit

Circuit type	3-wire connection; high-side switching
Limiting continuous current	0.5 A
Peak output current	4 A
Output voltage range	4 ... 6.25 VDC
Voltage drop (output) max.	≤ 1.2 VDC
Leakage current at rated voltage	≤ 10 $\mu$ A
Output closed-circuit current (without load) max.	4.5 mA
Turn-on time	≤ 15 $\mu$ s
Turn-off time	≤ 30 $\mu$ s
Switching frequency	≤ 10 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.3 g
--------	--------

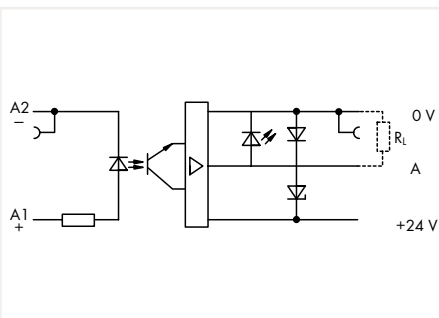
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

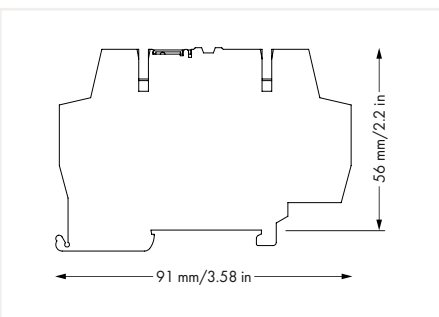
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
--------------------------	----------------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 20 ... 30 VDC; Limiting continuous current: 0.5 A; 3-wire connection; High-side switching; Frequency: 10 kHz; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
5 VDC	10 mA	859-752	1



### Control Circuit

Nominal input voltage $U_N$	5 VDC
Input voltage range (low level)	0 ... 1 VDC
Input voltage range (high level)	4 ... 6 VDC
Nominal input current at $U_N$	10 mA

### Load Circuit

Circuit type	3-wire connection; high-side switching
Limiting continuous current	0.5 A
Output voltage range	20 ... 30 VDC
Voltage drop (output) max.	≤ 1.2 VDC
Leakage current at rated voltage	≤ 10 $\mu$ A
Output closed-circuit current (without load) max.	12.5 mA
Turn-on time	≤ 15 $\mu$ s
Turn-off time	≤ 30 $\mu$ s
Switching frequency	≤ 10 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18 g
--------	------

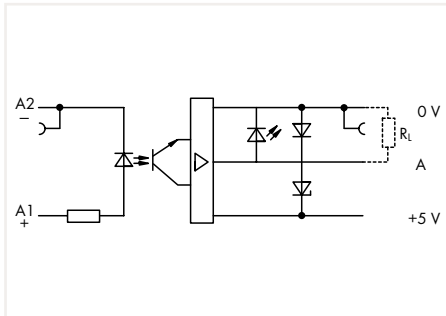
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

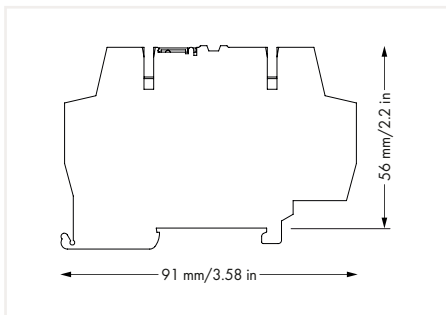
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
--------------------------	----------------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range:  
4 ... 6.25 VDC; Limiting continuous current: 0.5 A;  
3-wire connection; High-side switching; Frequency:  
10 kHz; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	11 mA	859-756	1



### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	18 ... 30 VDC
Nominal input current at $U_N$	11 mA

### Load Circuit

Circuit type	3-wire connection; high-side switching
Limiting continuous current	0.5 A
Output voltage range	4 ... 6.25 VDC
Voltage drop (output) max.	≤ 1.2 VDC
Leakage current at rated voltage	≤ 10 $\mu$ A
Output closed-circuit current (without load) max.	4.5 mA
Turn-on time	≤ 15 $\mu$ s
Turn-off time	≤ 30 $\mu$ s
Switching frequency	≤ 10 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.9 g
--------	--------

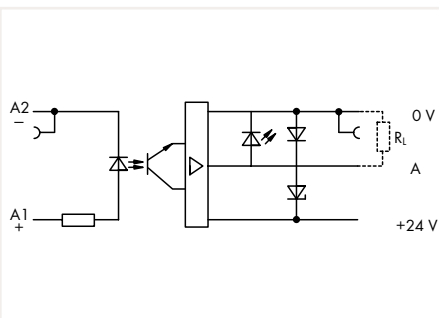
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

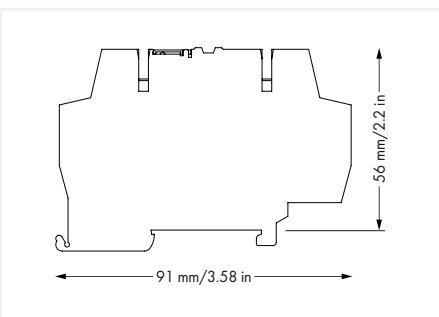
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
--------------------------	----------------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 20 ... 30 VDC; Limiting continuous current: 0.5 A; 3-wire connection; High-side switching; Frequency: 10 kHz; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	8 mA	859-758	10



### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	18 ... 30 VDC
Nominal input current at $U_N$	8 mA

### Load Circuit

Circuit type	3-wire connection; high-side switching
Limiting continuous current	0.5 A
Output voltage range	20 ... 30 VDC
Voltage drop (output) max.	≤ 1.2 VDC
Leakage current at rated voltage	≤ 10 $\mu$ A
Output closed-circuit current (without load) max.	11 mA
Turn-on time	≤ 15 $\mu$ s
Turn-off time	≤ 30 $\mu$ s
Switching frequency	≤ 10 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

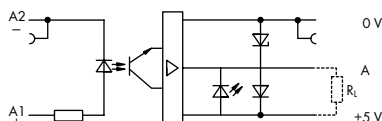
### Standards and Specifications

Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
--------------------------	----------------------------------------------------------



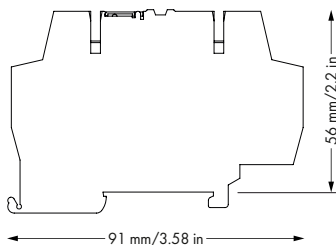


## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 4 ... 6.25 VDC; Limiting continuous current: 0.5 A; 3-wire connection; Low-side switching; Frequency: 10 kHz; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	11 mA	859-706	1



### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	18 ... 30 VDC
Nominal input current at $U_N$	11 mA

### Load Circuit

Circuit type	3-wire connection; low-side switching
Limiting continuous current	0.5 A
Output voltage range	4 ... 6.25 VDC
Voltage drop (output) max.	≤ 1.2 VDC
Leakage current at rated voltage	≤ 10 $\mu$ A
Output closed-circuit current (without load) max.	7 mA
Turn-on time	≤ 7 $\mu$ s
Turn-off time	≤ 15 $\mu$ s
Switching frequency	≤ 10 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

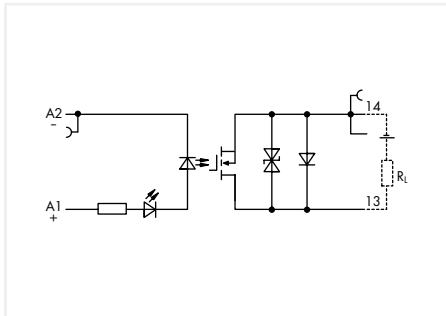
### Standards and Specifications

Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
--------------------------	----------------------------------------------------------

## Optocoupler Module 859 Series

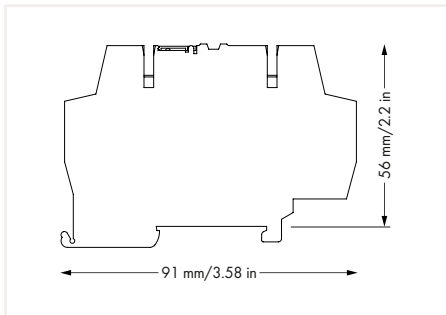


Similar to pictured device



Optocoupler Module; Output voltage range:  
3 ... 30 VDC; Limiting continuous current: 0.5 A;  
2-wire connection; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
12 VDC	9.2 mA	859-797	10



### Control Circuit

Nominal input voltage $U_N$	12 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	9 ... 16 VDC
Nominal input current at $U_N$	9.2 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.5 A
Peak output current	2.7 A
Output voltage range	3 ... 30 VDC
Voltage drop (output) max.	≤ 0.2 VDC
Turn-on time	≤ 15 μs
Turn-off time	≤ 100 μs
Switching frequency	≤ 2.5 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.6 g
--------	--------

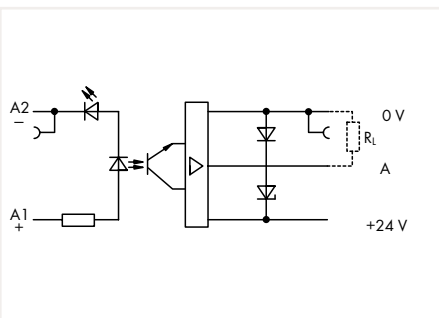
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

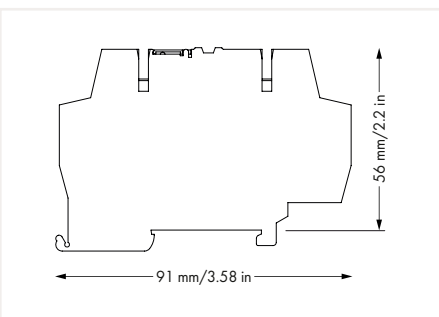
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; UL 508
--------------------------	------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 20 ... 28.8 VDC; Limiting continuous current: 0.1 A; 3-wire connection; High-side switching; Frequency: 100 kHz; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
5 VDC	16.5 mA	859-753	1



### Control Circuit

Nominal input voltage $U_N$	5 VDC
Input voltage range (low level)	0 ... 1 VDC
Input voltage range (high level)	4 ... 6.25 VDC
Nominal input current at $U_N$	16.5 mA

### Load Circuit

Circuit type	3-wire connection; high-side switching
Limiting continuous current	0.1 A
Peak output current	0.8 A
Output voltage range	20 ... 28.8 VDC
Voltage drop (output) max.	$\leq 1.2$ VDC
Leakage current at rated voltage	$\leq 10$ $\mu$ A
Output closed-circuit current (without load) max.	7 mA
Turn-on time	$\leq 0.5$ $\mu$ s
Turn-off time	$\leq 5$ $\mu$ s
Switching frequency	$\leq 100$ kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	15.6 g
--------	--------

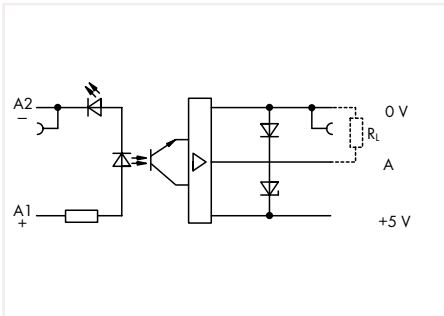
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

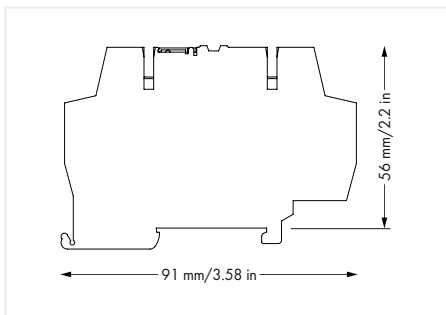
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
--------------------------	----------------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 4 ... 6 VDC;  
Limiting continuous current: 0.1 A; 3-wire connection;  
High-side switching; Frequency: 100 kHz;  
Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	9 mA	859-755	25



### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	20 ... 30 VDC
Nominal input current at $U_N$	9 mA

### Load Circuit

Circuit type	3-wire connection; high-side switching
Limiting continuous current	0.1 A
Peak output current	0.8 A
Output voltage range	4 ... 6 VDC
Voltage drop (output) max.	≤ 0.5 VDC
Leakage current at rated voltage	≤ 10 μA
Output closed-circuit current (without load) max.	7 mA
Turn-on time	≤ 0.5 μs
Turn-off time	≤ 5 μs
Switching frequency	≤ 100 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	18.3 g
--------	--------

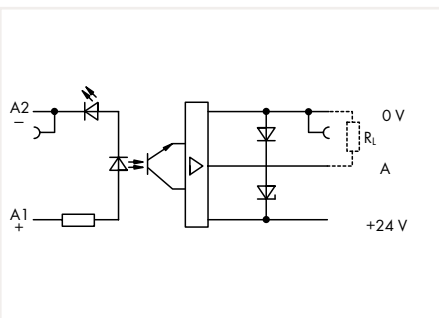
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

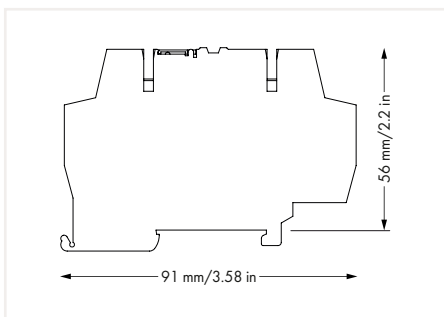
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
--------------------------	----------------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 20 ... 28.8 VDC; Limiting continuous current: 0.1 A; 3-wire connection; High-side switching; Frequency: 100 kHz; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	9 mA	859-759	1



### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	20 ... 30 VDC
Nominal input current at $U_N$	9 mA

### Load Circuit

Circuit type	3-wire connection; high-side switching
Limiting continuous current	0.1 A
Peak output current	0.8 A
Output voltage range	20 ... 28.8 VDC
Voltage drop (output) max.	$\leq 1.2$ VDC
Leakage current at rated voltage	$\leq 10$ $\mu$ A
Output closed-circuit current (without load) max.	7 mA
Turn-on time	$\leq 0.5$ $\mu$ s
Turn-off time	$\leq 2$ $\mu$ s
Switching frequency	$\leq 100$ kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	15.6 g
--------	--------

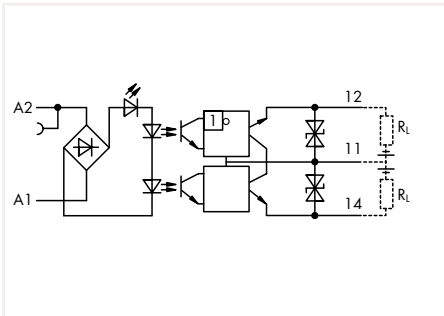
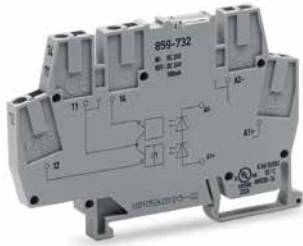
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

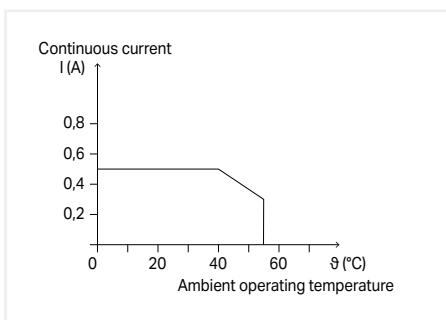
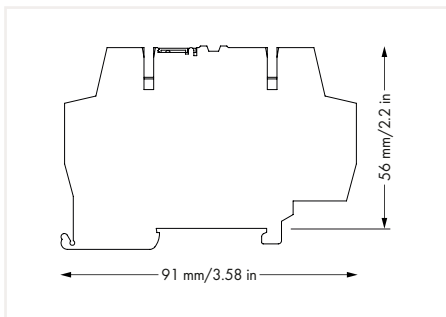
Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373
--------------------------	--------------------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 3 ... 30 VDC; Limiting continuous current: 0.5 A; 1 changeover contact; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	5.3 mA	859-732	1



Current-Carrying Capacity Curve

### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	15 ... 42 VDC
Nominal input current at $U_N$	5.3 mA

### Load Circuit

Circuit type	3-wire connection; changeover contact output
Limiting continuous current	0.5 A
Peak output current	4 A
Output voltage range	3 ... 30 VDC
Voltage drop (output) max.	≤ 1.5 VDC
Turn-on time	≤ 25 μs
Turn-off time	≤ 150 μs
Switching frequency	≤ 1.5 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV <sub>rms</sub>
-------------------------------------------------------	------------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	19.6 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

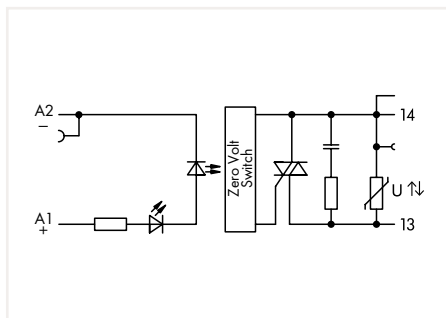
### Standards and Specifications

Standards/specifications	EN 60664-1; EN 61000-6-2; EN 61000-6-3; UL 508
--------------------------	------------------------------------------------

## Optocoupler Module 859 Series

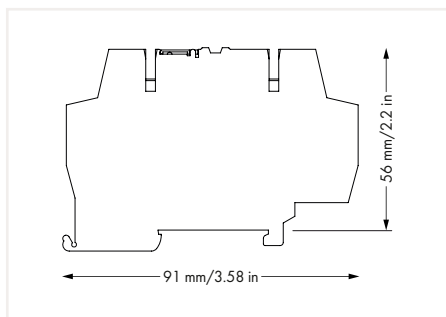


2



Optocoupler Module; Output voltage range: 24 ... 260 VAC; Limiting continuous current: 0.5 A; 2-wire connection; Zero-cross switching; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	6 mA	859-734	1



### Control Circuit

Nominal input voltage $U_N$	24 VDC
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high level)	19 ... 28.8 VDC
Nominal input current at $U_N$	6 mA

### Load Circuit

Circuit type	2-wire connection; zero-voltage switching
Limiting continuous current	0.5 A
Peak output current	30 A
Output voltage range	24 ... 260 VAC (50 ... 60 Hz)
Voltage drop (output) max.	≤ 1.2 VAC
Leakage current at rated voltage	≤ 1 mA
Switching current (min.)	10 mA
Turn-on time	≤ 10 ms
Turn-off time	≤ 10 ms
Mains frequency	50 Hz / 60 Hz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	20.5 g
--------	--------

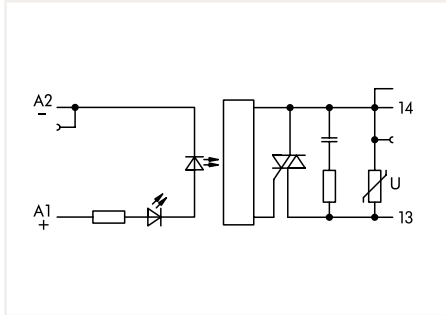
### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

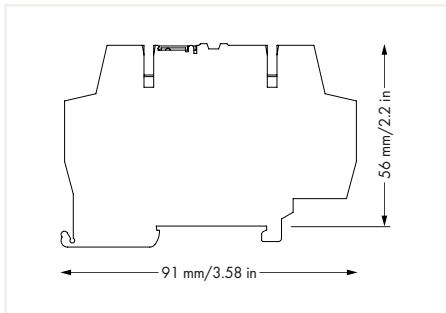
Standards/specifications	EN 61000-6-2; EN 61000-6-3; UL 508
--------------------------	------------------------------------

## Optocoupler Module 859 Series



Optocoupler Module; Output voltage range: 24 ... 260 VAC; Limiting continuous current: 0.5 A; 2-wire connection; Zero-cross switching; Status indicator: red; 6 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
5 VDC	7.7 mA	859-902	1



### Control Circuit

Nominal input voltage $U_N$	5 VDC
Input voltage range (low level)	0 ... 1 VDC
Input voltage range (high level)	4 ... 6.25 VDC
Nominal input current at $U_N$	7.7 mA

### Load Circuit

Circuit type	2-wire connection; zero-voltage switching
Limiting continuous current	0.5 A
Peak output current	30 A
Output voltage range	24 ... 260 VAC (50 ... 60 Hz)
Voltage drop (output) max.	≤ 1.2 VAC
Leakage current at rated voltage	≤ 1 mA
Switching current (min.)	50 mA
Turn-on time	≤ 10 ms
Turn-off time	≤ 10 ms
Mains frequency	50 Hz / 60 Hz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
-------------------------------------------------------	-----------------------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	20.4 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 61000-6-2; EN 61000-6-3; UL 508
--------------------------	------------------------------------



## Accessories

2



Operating tool with a partially insulated shaft; Type 2; (3.5 x 0.5) mm blade

	Item No.	Pack. Unit
	210-720	50



Felt-tip pen; for permanent marking

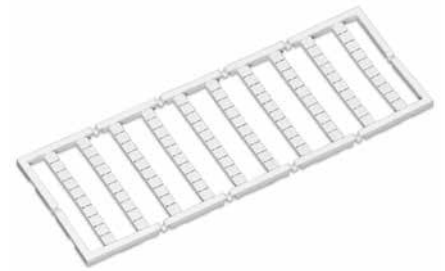
	Item No.	Pack. Unit
	210-110	200



Test pin; 1 mm Ø; with solder connection for test cable

	Item No.	Pack. Unit
	859-500	100

## Accessories



2

End and intermediate plate; 1 mm thick		
	Item No.	Pack. Unit
	859-525	100

Push-in type jumper bar; light gray; insulated; 18 A		
Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)
Item no. suffixes for colored push-in type jumper bars		
yellow	... /000-029	
red	... /000-005	
blue	... /000-006	

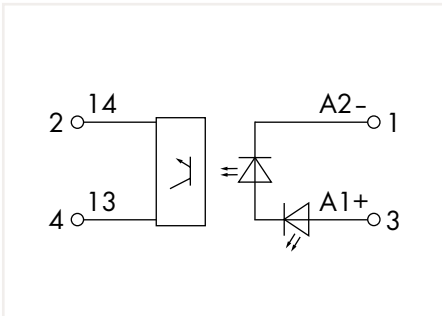
Mini-WSB marker card; Marker width: 5 mm; 10 strips with 10 markers/card		
Marking	Item No.	Pack. Unit
plain	248-501	50
1 ... 10 (10 x)	248-502	50
11 ... 20 (10 x)	248-503	50
21 ... 30 (10 x)	248-504	50
31 ... 40 (10 x)	248-505	50
41 ... 50 (10 x)	248-506	50
1 ... 50 (2 x)	248-566	50
K1 ... K10	248-450	50
K11 ... K20	248-451	50
K100	248-452	50
U1 ... U10	248-453	50
U11 ... U20	248-454	50
U100	248-455	50

# Solid-State Relay 2042 Series



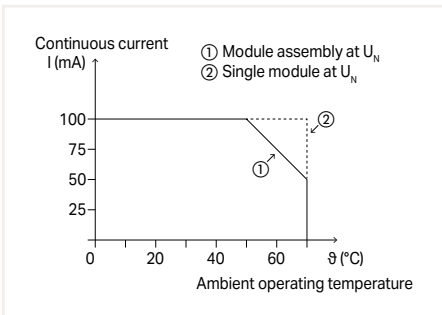
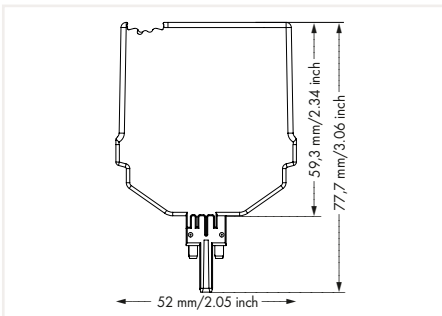
2

Similar to pictured device



Solid-State Relay; Input: 24 VDC; Output: 24 VDC / 0.1 A; 10 mm wide; for railway operations

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC (SELV)	7 mA	2042-7204	1



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range (low level)	0 ... 10 VDC
Input voltage range (high level)	16.8 ... 30 VDC
Input current range	6 ... 8 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.1 A
Nominal output voltage	24 VDC (SELV)
Output Voltage Range	3 ... 60 VDC
Voltage drop (output) max.	≤ 1 VDC
Switching current (min.)	20 μA
Turn-on time	≤ 8 μs
Turn-off time	≤ 14 μs
Switching frequency	≤ 10 kHz

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Pollution Degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20
Overvoltage category	II

### Physical Data

Width	10.3 mm / 0.406 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable relay module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------------

### Material Data

Weight	65.8 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

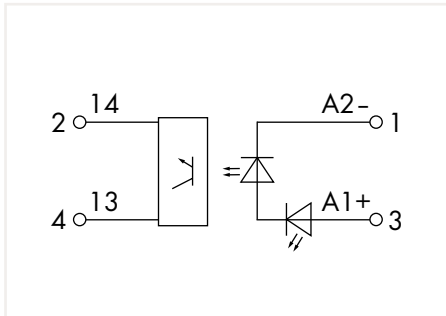
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2; EN 50121-4; EN 61000-6-2; EN 61000-6-3
--------------------------	--------------------------------------------------------------------------------

## Solid-State Relay 2042 Series

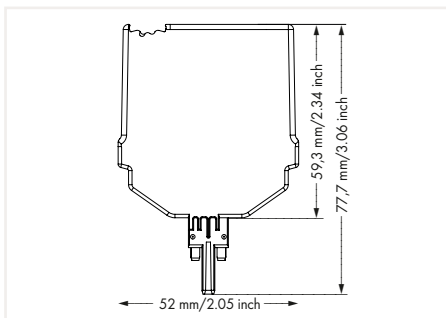


Similar to pictured device



Solid-State Relay; Input: 24 VDC; Output: 3 ... 53 VDC / 0.1 A; 10 mm wide; for railway operations

$U_N$	$I_N$	Item No.	Pack. Unit
48 VDC (SELV)	3 mA	2042-7504	1



### Control Circuit

Input voltage range (low level)	0 ... 6 VDC
Input voltage range (high level)	10 ... 53 VDC
Input current range	3 ... 5 mA

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	4 A
Nominal output voltage	48 VDC (SELV)
Output Voltage Range	0 ... 53 VDC
Voltage drop (output) max.	≤ 1 VDC
Switching current (min.)	20 μA
Turn-on time	≤ 12 μs
Turn-off time	≤ 32 μs
Switching frequency	≤ 300 Hz

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Pollution Degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Protection type	IP20
Overvoltage category	II

### Physical Data

Width	10.3 mm / 0.406 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable relay module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------------

### Material Data

Weight	65.8 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

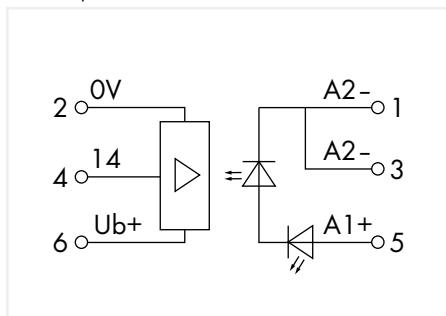
Standards/specifications	EN 61010-2-201; EN 61373; EN 50121-3-2; EN 50121-4; EN 61000-6-2; EN 61000-6-3
--------------------------	--------------------------------------------------------------------------------

## Solid-State Relay 2042 Series



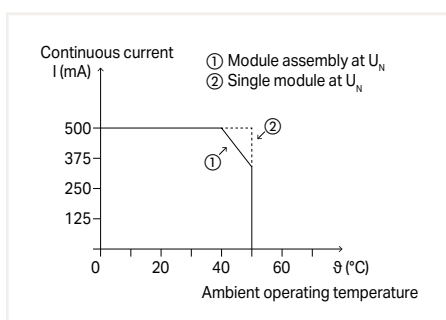
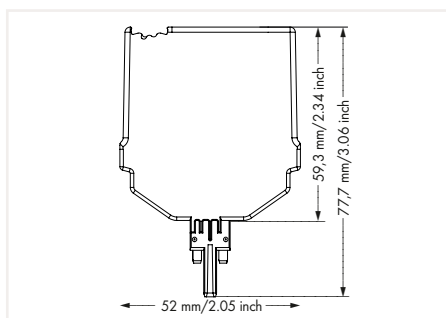
2

Similar to pictured device



Solid-State Relay; Input: 24 VDC; Output: 24 VDC / 1 mA ... 0.5 A; 3-wire connection; 15 mm wide; for railway operations

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC (SELV)	7 mA	2042-7304	1



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range (low level)	0 ... 6 VDC
Input voltage range (high level)	16.8 ... 30 VDC
Input current range	6 ... 8 mA

### Load Circuit

Circuit type	3-wire connection; high-side switching
Limiting continuous current	0.5 A
Nominal output voltage	24 VDC (SELV)
Output Voltage Range	20 ... 30 VDC
Voltage drop (output) max.	≤ 1 VDC
Switching current (min.)	20 μA
Turn-on time	≤ 2 μs
Turn-off time	≤ 4 μs
Switching frequency	≤ 100 kHz

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Pollution Degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Protection type	IP20
Overvoltage category	II

### Physical Data

Width	15.5 mm / 0.61 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable relay module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------------

### Material Data

Weight	69.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +50 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

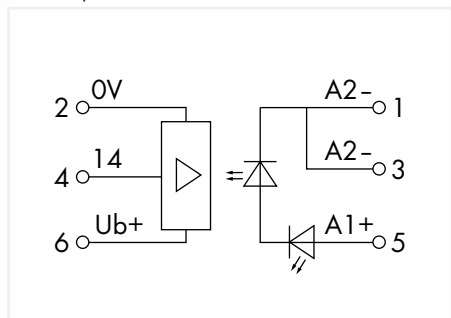
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61373, EN 50121-3-2; EN 50121-4; EN 61000-6-2; EN 61000-6-3
--------------------------	--------------------------------------------------------------------------------

## Solid-State Relay 2042 Series

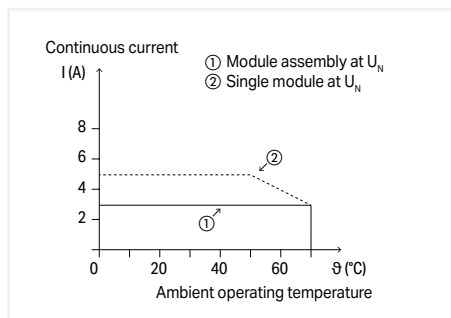
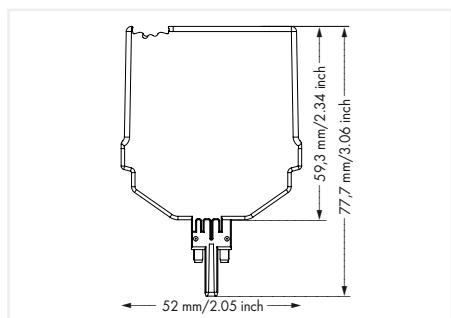


Similar to pictured device



Solid-State Relay; Input: 24 VDC; Output: 24 VDC / 5 A;  
3-wire connection; 15 mm wide; for railway operations

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC (SELV)	7 mA	2042-7604	1



Current-Carrying Capacity Curve

### Control Circuit

Input voltage range (low level)	0 ... 10 VDC
Input voltage range (high level)	16.8 ... 30 VDC
Input current range	6 ... 8 mA

### Load Circuit

Circuit type	3-wire connection; high-side switching
Limiting continuous current	5 A
Nominal output voltage	24 VDC (SELV)
Output Voltage Range	20 VDC
Voltage drop (output) max.	≤ 1 VDC
Switching current (min.)	3 mA
Turn-on time	≤ 10 μs
Turn-off time	≤ 20 μs
Switching frequency	≤ 5 kHz

### Signaling

Status indicator	Green LED
------------------	-----------

### Safety and Protection

Pollution Degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20
Overvoltage category	II

### Physical Data

Width	15.5 mm / 0.61 inch
Height	77.7 mm / 3.059 inch
Height from the surface	59.3 mm / 2.335 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable relay module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------------

### Material Data

Weight	69.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C

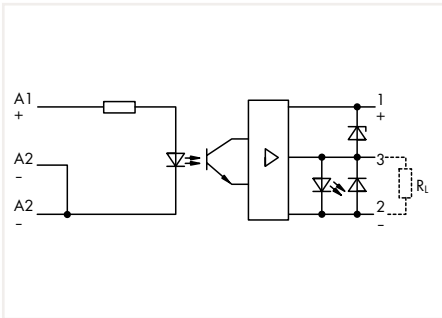
### Standards and Specifications

Standards/specifications	EN 61010-2-201; EN 61373, EN 50121-3-2; EN 50121-4; EN 61000-6-2; EN 61000-6-3
--------------------------	--------------------------------------------------------------------------------

# Optocoupler Module 286 Series

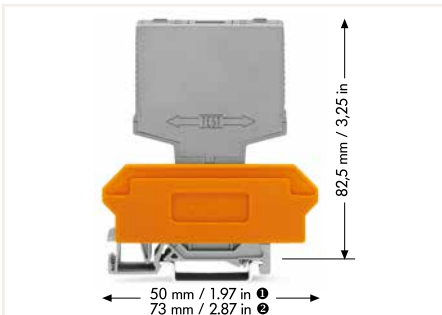


2



Optocoupler Module; Output voltage range: 20 ... 30 VDC; Limiting continuous current: 0.5 A; 3-wire connection; High-side switching; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
5 VDC	14 mA	286-752/002-000	1



### Control Circuit

Input voltage range (high level)	2 ... 6.25 VDC
Input current range	3.3 ... 18.5 mA

### Load Circuit

Circuit type	3-wire connection; high-side switching
Limiting continuous current	0.5 A
Output Voltage Range	20 ... 30 VDC
Voltage drop (output) max.	≤ 1.2 VDC
Leakage current at rated voltage	≤ 2.5 μA
Output closed-circuit current (without load) max.	12 mA
Turn-on time	≤ 5 μs
Turn-off time	≤ 10 μs
Switching frequency	≤ 25 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.25 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	18.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +70 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 6-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-619	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

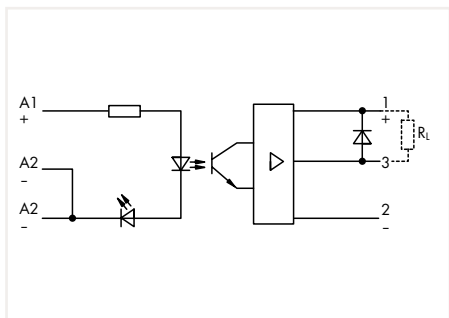
Item No.	Pack. Unit
280-609	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

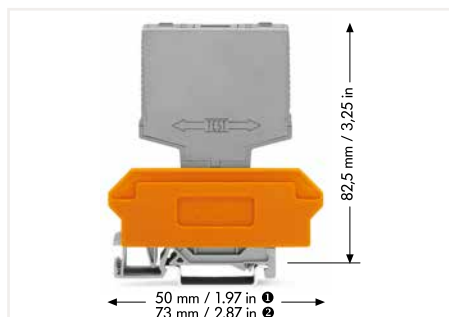
Item No.	Pack. Unit
280-763	25

## Optocoupler Module 286 Series



Optocoupler Module; Output voltage range: 15 ... 40 VDC; Limiting continuous current: 5 A; 3-wire connection; Low-side switching; Frequency: 1 kHz; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	13.5 mA	286-721	1



### Control Circuit

Input voltage range (high level)	15 ... 30 VDC
Input current range	7.5 ... 18 mA

### Load Circuit

Circuit type	3-wire connection; low-side switching
Limiting continuous current	5 A
Output Voltage Range	15 ... 40 VDC
Voltage drop (output) max.	≤ 0.5 VDC
Leakage current at rated voltage	≤ 2.5 μA
Turn-on time	≤ 20 μs
Turn-off time	≤ 80 μs
Switching frequency	≤ 1 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.25 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	29.2 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +40 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 6-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-619	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-609	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

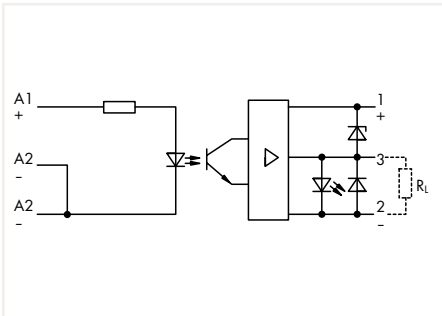
Item No.	Pack. Unit
280-763	25



# Optocoupler Module 286 Series

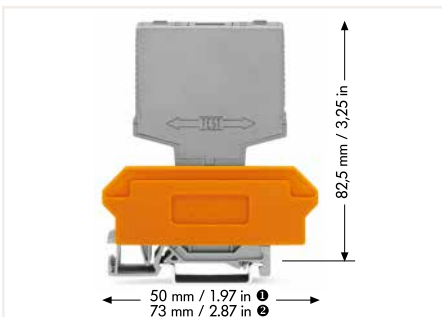


2



Optocoupler Module; Output voltage range: 20 ... 30 VDC; Limiting continuous current: 4 A; 3-wire connection; High-side switching; Frequency: 2.5 kHz; Status indicator: red; 15 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	13.5 mA	286-723	1



### Control Circuit

Input voltage range (high level)	15 ... 30 VDC
Input current range	7.6 ... 15 mA

### Load Circuit

Circuit type	3-wire connection; high-side switching
Limiting continuous current	4 A
Output Voltage Range	20 ... 30 VDC
Voltage drop (output) max.	≤ 1.2 VDC
Leakage current at rated voltage	≤ 2.5 μA
Output closed-circuit current (without load) max.	12 mA
Turn-on time	≤ 15 μs
Turn-off time	≤ 25 μs
Switching frequency	≤ 2.5 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.25 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	26.8 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +40 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 6-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-619	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

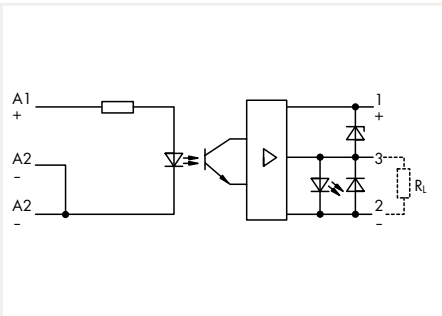
Item No.	Pack. Unit
280-609	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

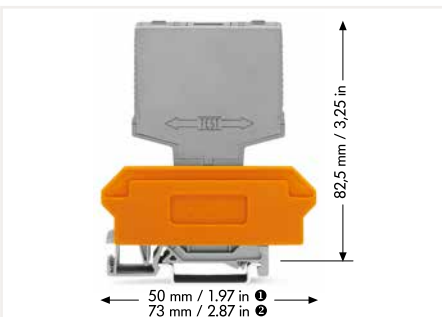
Item No.	Pack. Unit
280-763	25

# Optocoupler Module 286 Series



Optocoupler Module; Output voltage range: 20 ... 30 VDC; Limiting continuous current: 0.5 A; 3-wire connection; High-side switching; Frequency: 25 kHz; Status indicator: red; 15 mm wide

U <sub>N</sub>	I <sub>N</sub>	Item No.	Pack. Unit
24 VDC	15 mA	286-752	1



### Control Circuit

Input voltage range (high level)	12 ... 30 VDC
Input current range	5 ... 20 mA

### Load Circuit

Circuit type	3-wire connection; high-side switching
Limiting continuous current	0.5 A
Output Voltage Range	20 ... 30 VDC
Voltage drop (output) max.	≤ 1.2 VDC
Leakage current at rated voltage	≤ 2.5 μA
Output closed-circuit current (without load) max.	12 mA
Turn-on time	≤ 7 μs
Turn-off time	≤ 15 μs
Switching frequency	≤ 25 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	15 mm / 0.591 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.25 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	17.9 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at U <sub>N</sub> )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +40 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

## Accessories



Terminal block for pluggable modules; 6-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-619	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-609	30



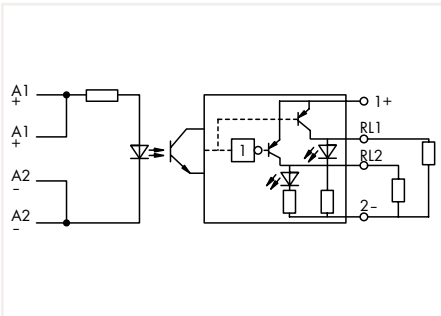
Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-763	25

# Optocoupler Module 286 Series

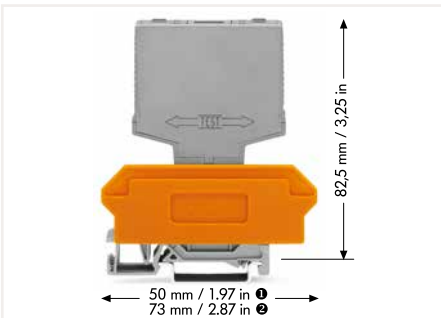


2



Optocoupler Module; with 2 inverted outputs; Output voltage range: 20 ... 30 VDC; Limiting continuous current: 0.5 A; Frequency: 2.5 kHz; 20 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	9 mA	286-790	1



### Control Circuit

Input voltage range (high level)	20 ... 30 VDC
----------------------------------	---------------

### Load Circuit

Circuit type	2-wire connection; 2 inverted outputs
Limiting continuous current	0.5 A
Output Voltage Range	20 ... 30 VDC
Voltage drop (output) max.	≤ 1.2 VDC
Leakage current at rated voltage	≤ 2.5 μA
Turn-on time	≤ 4 μs
Turn-off time	≤ 15 μs
Switching frequency	≤ 2.5 kHz

### Signaling

Status indicator	Red LED
------------------	---------

### Safety and Protection

Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	20 mm / 0.787 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.25 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	32 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +40 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 8-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-638	20



Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-628	20

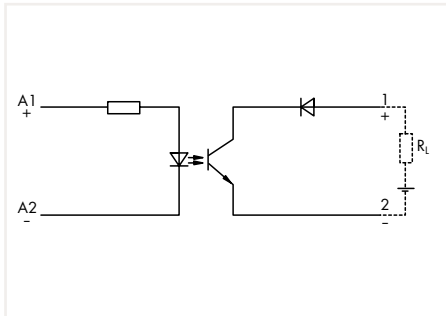


Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-764	20

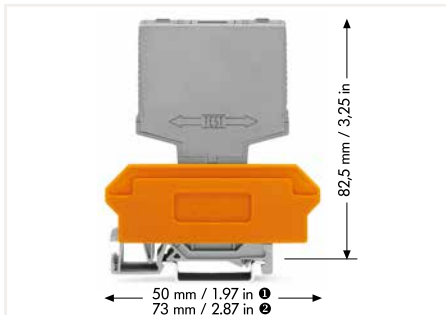
# Optocoupler Module

## 286 Series



Optocoupler Module; Output voltage range: 20 ... 60 VDC; Limiting continuous current: 0.1 A; 2-wire connection; Frequency: 3 kHz; Status indicator: red; 10 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	14 mA	286-791	1



### Control Circuit

Input voltage range (high level)	15 ... 30 VDC
----------------------------------	---------------

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.1 A
Output Voltage Range	20 ... 60 VDC
Voltage drop (output) max.	≤ 2 VDC
Leakage current at rated voltage	≤ 2.5 μA
Turn-on time	≤ 10 μs
Turn-off time	≤ 50 μs
Switching frequency	≤ 3 kHz

### Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.25 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	15.3 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +40 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 4-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-618	40



Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-608	40



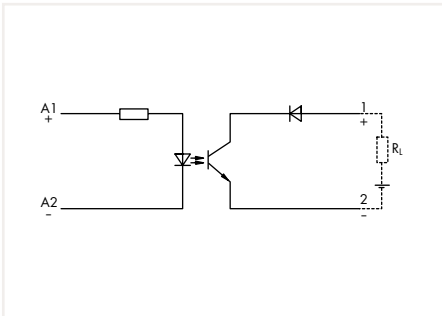
Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-762	30

# Optocoupler Module 286 Series

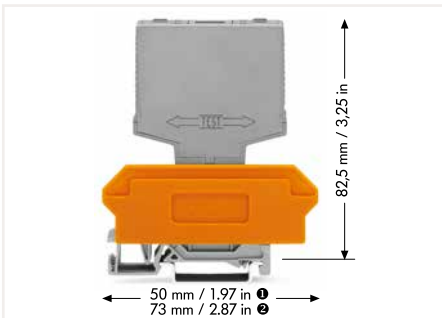


2



Optocoupler Module; Output voltage range: 20 ... 60 VDC; Limiting continuous current: 0.1 A; Frequency: 1.5 kHz; 10 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	4 mA	286-794	1



### Control Circuit

Input voltage range (high level)	18 ... 30 VDC
----------------------------------	---------------

### Load Circuit

Circuit type	2-wire connection
Limiting continuous current	0.1 A
Output Voltage Range	20 ... 60 VDC
Voltage drop (output) max.	≤ 2 VDC
Leakage current at rated voltage	≤ 2.5 μA
Turn-on time	≤ 80 μs
Turn-off time	≤ 100 μs
Switching frequency	≤ 1.5 kHz

### Safety and Protection

Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.25 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	16.3 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +60 °C
Surrounding air temperature (storage)	-25 ... +40 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 4-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-618	40



Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

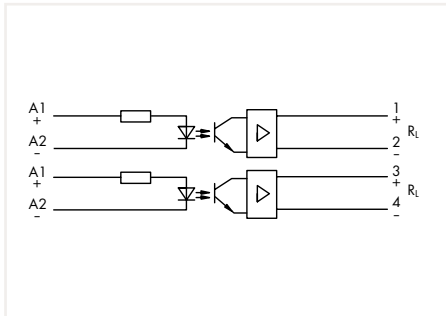
Item No.	Pack. Unit
280-608	40



Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

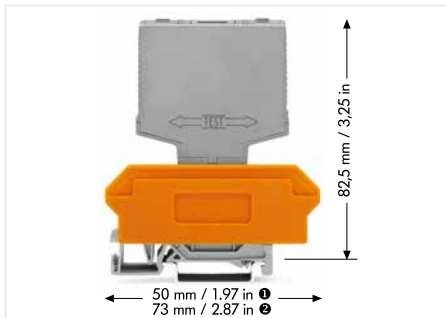
Item No.	Pack. Unit
280-762	30

## Dual-Channel Optocoupler Module 286 Series



Dual-Channel Optocoupler Module; Output voltage range: 20 ... 30 VDC; Limiting continuous current: 0.25 A; Frequency: 1.5 kHz; 20 mm wide

$U_N$	$I_N$	Item No.	Pack. Unit
24 VDC	15 mA	286-792	1



### Control Circuit

Input voltage range (high level)	7.5 ... 30 VDC
----------------------------------	----------------

### Load Circuit

Circuit type	2-channel; 2-wire connection
Limiting continuous current	0.25 A
Output Voltage Range	20 ... 30 VDC
Voltage drop (output) max.	≤ 2.5 VDC
Leakage current at rated voltage	≤ 2.6 μA
Turn-on time	≤ 60 μs
Turn-off time	≤ 120 μs
Switching frequency	≤ 1.5 kHz

### Safety and Protection

Pollution degree	3
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV <sub>rms</sub>
Protection type	IP20

### Physical Data

Width	20 mm / 0.787 inch
Height from upper-edge of DIN-rail	82.5 mm / 3.25 inch
Depth	52 mm / 1.654 inch

### Mechanical Data

Mounting type	Pluggable relay module for terminal block for pluggable modules
---------------	-----------------------------------------------------------------

### Material Data

Weight	23.4 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation at $U_N$ )	-25 ... +40 °C
Surrounding air temperature (storage)	-25 ... +40 °C
Processing temperature	-25 ... +50 °C

### Standards and Specifications

Standards/specifications	EN 60664-1
--------------------------	------------

### Accessories



Terminal block for pluggable modules; 8-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-638	20



Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-628	20

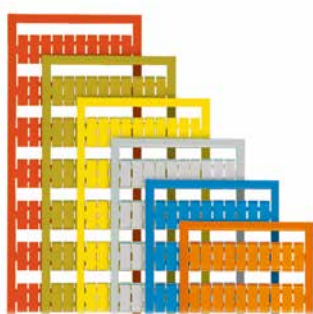


Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-764	20

## Accessories

2



WSB marker card; WSB marker width: 4 mm; 10 strips with 10 markers/card

Marking	Item No.	Pack. Unit
K	209-782	50
1 ... 10 (10 x)	209-702	50
A1; A2; 13; 14	209-952	50
A1; A2; 11; 12	209-953	50
11; 12; 14; A1; A2; A2; 11; 12; 14	209-994	50
12; A1; A2; 24; 11; 14; 21; 22	209-995	50
A1; A1; A2; A2; 11; 12; 13; 14; 23; 24	209-693	50
12; A1; A2; 23; 24; 11; 13; 14; 21; 22	209-691	50
12; A1; A2; 23; 24; 11; 13; 14; 33; 34	209-690	50
14; A1; A2; 33; 34; 13; 23; 24; 43; 44	209-692	50
A1; A2; 32; 31; 34; 42; 41; 12; 11; 14; 22; 21; 24; 44	249-656	50
L+; 1; L-; L-; 11; 12; 13; 14	209-954	50
A1; A2; A3; 11; 12; 14	249-607	50
A1; A1; A2; A2; 12; 11; 11; 14	209-996	50
A1; A1; St; A2; A2; 12; 11; 11; 14	209-601	50
U1; U2; U3; U4; 0V; 12; 11; 11; 14; 14	209-951	50
U	209-789	50
A1; A2; A2; 1; 3; 2	209-685	50
A1; A2; A2; 1; 2; 2	209-686	50
A1+; A1+; A2-; A2-; 1; RL1; RL2; 2	209-955	50
A1+; A1+; A2-; A2-; 1+; 1+; A; 2-	249-651	50
+/-	209-552	50
1; 2; 3; 0V; +UB; OUT; ERR.; 0V	249-622	50
1; 2; 0V; +UB; OUT; ERR.; 0V	249-623	50
Lin; Lin; Lout; Lout; 24V; UA; UA; 0V	209-957	50
Lin; Lin; Lout; 11; 14; 14; Lin; Lin; Lout	249-654	50
lin; lin; lout; lout; 24V; 11; 12; 14; 0V	209-997	50
S	209-682	50
V	209-784	50
F1 ... F10	209-787	50
D	209-783	50
+; -; 1; 2; 3; 13; 14; 4; 5; 6	249-608	50
L; N; Ackn.; Failure; Test; N; 14; 24	249-606	50
A1; A2; Ackn.; Failure; 12; 11; 11; 14	249-653	50

WSB marker card; plain; WSB marker width: 4 mm; 10 strips with 10 markers/card

Color	Item No.	Pack. Unit
○ white	209-701	100
● yellow	209-701/000-002	100
● red	209-701/000-005	100
● blue	209-701/000-006	100
○ gray	209-701/000-007	100
● orange	209-701/000-012	100
● light green	209-701/000-017	100
● green	209-701/000-023	100
● violet	209-701/000-024	100
















# WAGO Isolation Amplifiers and Signal Conditioners

## WAGO Isolation Amplifiers and Signal Conditioners

		Page
	Isolation Amplifiers	
	2857 Series	248
	857 Series	250
	Current and Voltage Signal Conditioners	
	2857 Series	272
	857 Series	274
	Power Signal Conditioners	
	857 Series	284
	2857 Series	286
	Threshold Value Switches	
	2857 Series	292
	857 Series	296
	Temperature Signal Conditioners	
	857 Series	298
	2857 Series	312
	Potentiometer Signal Conditioner	
	857 Series	320
	Frequency Signal Conditioner	
	857 Series	322
	Configuration Software	
	Interface Configuration Software and Configuration App	327
	Accessories	
	Configuration Display, 2857 Series	328
	Bluetooth® Adapter	329
	WAGO USB Communication Cable, 750 Series	330
	Interface Adapter, 857 Series	331
	WAGO Interface Cable, 706 Series	334
	Switched-Mode Power Supply, 787 Series	336
	Supply and Through Module, 857 Series	332
Accessories, 857 Series	338	

# WAGO Isolation Amplifiers Selection Guide

3


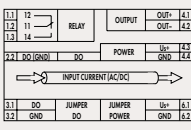

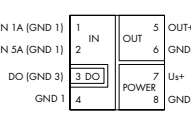

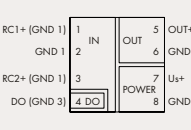

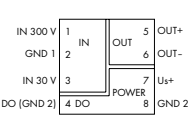

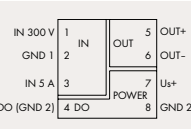

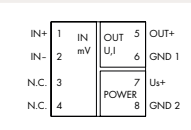

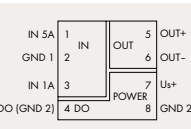

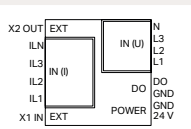

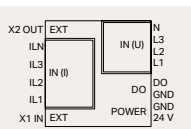

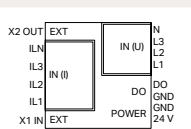
	Image	Description	Circuit Diagram	Input Signal			Power Supply $U_s$
				Current	Voltage	Bipolar Signals (I/U)	
Isolation Amplifiers							
Isolation Amplifiers		Isolation Amplifier; Configurable; with Digital Output		0 ... 1 mA 0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA 0 ... 100 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V 0 ... 220 V	$\pm 1$ mA; $\pm 10$ mA; $\pm 20$ mA; $\pm 100$ mA  $\pm 1$ V; $\pm 10$ V; $\pm 30$ V; $\pm 100$ V; $\pm 200$ V	24 VDC
		Isolation Amplifier; Configurable; with Zero/Span Adjustment		0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		24 VDC
		Isolation Amplifier; Configurable; with Digital Output		0 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	$\pm 20$ mA  $\pm 10$ V	24 VDC
		Isolation Amplifier; Configurable; with Zero/Span Adjustment		$\pm 0.3$ ... $\pm 100$ mA	$\pm 60$ mV ... $\pm 200$ V	$\pm 0.3$ ... $\pm 100$ mA  $\pm 60$ mV ... $\pm 200$ V	24 VDC
		Bipolar Isolation Amplifier		0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	$\pm 10$ mA $\pm 20$ mA  $\pm 5$ V $\pm 10$ V	24 VDC
		Isolation Amplifier; Pre-Configured		0 (4) ... 20 mA  0 ... 20 mA 4 ... 20 mA	0 (2) ... 10 V 0 ... 10 V 0 ... 10 V		24 VDC
Repeater Power Supply		Repeater Power Supply		0 ... 20 mA 4 ... 20 mA			24 VDC
Signal Splitters		Signal Splitter; with Current Output		0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		24 VDC
		Signal Splitter; with Voltage/Current Output		0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		24 VDC
Passive Isolators		Loop-Powered Isolation Amplifier		0 ... 5 mA 0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 1 V 0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	$\pm 5$ mA $\pm 10$ mA $\pm 20$ mA $\pm 1$ V; $\pm 5$ V $\pm 10$ V $\pm 20$ V	via output circuit
		Passive Isolator; 1-Channel		0 (4) ... 20 mA			via input circuit
		Passive Isolator; 2-Channel		2 x 0 (4) ... 20 mA			via input circuit

Output Signal			Configuration	Specialty Functions	Item No.	Page
Current	Voltage	Bipolar Signals (I/U)				
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	±10 mA ± 20 mA  ±5 V ±10 V	DIP switch; Interface configuration software/app/display	Digital output (DO); Clipping; Simulation	2857-401	248
0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch	Zero/span adjustment	857-400	250
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch; Interface configuration software/app	Digital output (DO); Clipping	857-401	252
0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	±10 mA ± 20 mA  ±5 V ±10 V	DIP switch; Push/slide switch	Clipping; Zero/span adjustment	857-402	254
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	±10 mA ± 20 mA  ±5 V ±10 V	DIP switch	Zero/span adjustment	857-409	256
0 (4) ... 20 mA	0 (2) ... 10 V				857-411	258
0 ... 20 mA		857-412	259			
4 ... 20 mA		857-413	260			
		857-414	260			
		857-415	261			
		857-416	261			
0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch		857-420	262
2 x 0 (4) ... 20 mA			DIP switch		857-423	264
2 x 0 ... 20 mA 4 ... 20 mA	2 x 0 ... 10 V 2 ... 10 V		DIP switch		857-424	266
4 ... 20 mA			DIP switch	Zero/span adjustment	857-450	268
0 (4) ... 20 mA					857-451	270
2 x 0 (4) ... 20 mA					857-452	271

3

# WAGO Current and Voltage Signal Conditioners Selection Guide

3

Image	Description	Circuit Diagram	Input Signal			Power Supply U <sub>s</sub>
			Current	Voltage	Bipolar Signals (I/U)	
Current and Voltage Signal Conditioners						
	Through-Hole Current Signal Conditioner		100 A AC/DC			24 VDC
	Current Signal Conditioner		1 A AC/DC 5 A AC/DC			24 VDC
	Current Signal Conditioner; for Rogowski Coils		Rogowski coils 500 AAC 2000 AAC			24 VDC
	Voltage Signal Conditioner		300 V AC/DC			24 VDC
	Power Signal Conditioner		300 V AC/DC (5 A)			24 VDC
	Milivolt Signal Conditioner			0 ... 200 mV 0 ... 1000 mV	±100 mV	24 VDC
	Current Signal Conditioner		0 ... 5 A AC/DC (IN 1; block arrangement); 0 ... 6 A AC/DC (IN 1; individual arrangement); 0 ... 1 A AC/DC (IN 2)			24 VDC
	3-Phase Power Measurement Module		4 x 1 AAC	3 x 300 VAC		24 VDC
	3-Phase Power Measurement Module		4 x 5 AAC	3 x 300 VAC		24 VDC
	3-Phase Power Measurement Module		Rogowski coils 4x 4000 AAC	3 x 300 VAC		24 VDC

Current and Voltage Signal Conditioners

Output Signal			Configuration	Specialty Functions	Item No.	Page
Current	Voltage	Bipolar Signals (I/U)				
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	±10 mA ± 20 mA ±5 V ±10 V	DIP switch; Interface configuration software/app/display	Digital output (DO); Clipping; Zero/span adjustment; Simulation	2857-550	272
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch; Interface configuration software/app	Digital output (DO); Clipping	857-550	274
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch; Interface configuration software/app	Digital output (DO); Clipping	857-552	278
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch; Interface configuration software/app	Digital output (DO); Clipping	857-560	280
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch; Interface configuration software/app	Digital output (DO); Clipping	857-569	284
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch; Interface configuration software/app	Clipping	857-819	282
0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA (can be inverted, also bipolar)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V (can be inverted, also bipolar)		DIP switch; Interface configuration software		857-551	276
			Interface configuration software		2857-570/ 024-001	286
			Interface configuration software		2857-570/ 024-005	288
			Interface configuration software		2857-570/ 024-000	290

# WAGO Temperature Signal Conditioners Selection Guide

3

Image	Description	Circuit Diagram	Input Signal	Sensor Connection	Power Supply U <sub>S</sub>
<b>Temperature Signal Conditioners</b>					
	Temperature Signal Conditioner; for Pt and Resistance Sensors		Pt sensors: Pt100, Pt200, Pt500, Pt1000; Resistance sensors: 0 ... 1 kΩ; 0 ... 4.5 kΩ	2-, 3-, 4-wire connection	24 VDC
	Temperature Signal Conditioner; for Pt and Resistance Sensors		Pt sensors: Pt100, Pt200, Pt500, Pt1000; Resistance sensors: 0 ... 1 kΩ; 0 ... 4.5 kΩ	2-, 3-, 4-wire connection	24 VDC
	Temperature Signal Conditioner; for Pt46 and Cu53 Sensors		Pt46; Cu53	2-, 3-, 4-wire connection	24 VDC
	Temperature Signal Conditioner; for Thermocouples		Thermocouples: Type J, K		24 VDC
	Temperature Signal Conditioner; for Thermocouples		Thermocouples: Type J, K, E, R, N, S, T, B, S		24 VDC
	Temperature Signal Conditioner; for Thermocouples		Thermocouples: Type K, S, B, R		24 VDC
	Loop-Powered RTD Temperature Signal Conditioner		Pt sensors: Pt100, Pt200, Pt500, Pt1000; Resistance sensors: 0 ... 1 kΩ; 0 ... 4.5 kΩ	2-, 3-, 4-wire connection	via output circuit
	Temperature Signal Conditioner; for Ni Sensors		Ni sensors: Ni100, Ni120, Ni200, Ni500, Ni1000	2-, 3-, 4-wire connection	24 VDC
	Temperature Signal Conditioner; for KTY Sensors		KTY sensors	2-wire connection	24 VDC
	RTD/TC Temperature Signal Conditioner; Analog		RTD sensors; Potentiometers; Resistors; Thermocouples	2-, 3-, 4-wire connection; Differential measurement; Potentiometer	9.6 ... 31.2 VDC
	RTD/TC Temperature Signal Conditioner; Serial		RTD sensors; Potentiometers; Resistors; Thermocouples	2-, 3-, 4-wire connection; Differential measurement; Potentiometer	9.6 ... 31.2 VDC



Sensor Temperature Range	Output Signal			Configuration	Specialty Functions	Item No.	Page
	Current	Voltage	RS-485				
-200 ... +850 °C	0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch	Clipping	857-800	298
-200 ... +850 °C	0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch; Configuration software/app	Clipping	857-801	300
-200 ... +300 °C (Pt46) 0 ... +180 °C (Cu53)	0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch		857-808	302
Type J: -150 ... +1200 °C; Type K: -150 ... +1350 °C	0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch	Clipping	857-810	304
Type J: -150 ... +1200 °C; Type K: -150 ... +1350 °C	0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch; Configuration software/app	Clipping	857-811	306
Type K: -150 ... +1200 °C; Type S: 0 ... +1600 °C; Type B: 600 ... +1800 °C; Type R: 0 ... +1600 °C	0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch		857-812	308
-200 ... +850 °C	4 ... 20 mA 20 ... 4 mA			DIP switch		857-815	310
	0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch	Clipping	857-818	316
	0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		DIP switch	Digital output (DO); Clipping	857-820	318
-200 ... +850 °C; 0 ... 10 kΩ; Type J: -210 ... +1200 °C; Type K: -200 ... +1372 °C	-24 ... +24 mA (load impedance ≤ 600 Ω)	-12 ... +12 V (load impedance ≥ 2 kΩ)		Configuration software/ display	Digital output DO; Relay with 1 changeover contact (250 VAC / 6 A); Simulation	2857-535	312
-200 ... +850 °C; 0 ... 10 kΩ; Type J: -210 ... +1200 °C; Type K: -200 ... +1372 °C			Modbus RTU	Configuration software/ display; Rotary encoder switch	Relay with 1 changeover con- tact (250 VAC / 6 A); Simulation	2857-535/ 000-001	314



# WAGO Signal Conditioners with Specialty Functions

## WAGO Threshold Value Switches

### Selection Guide


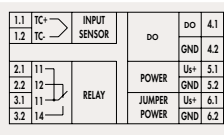
Image	Description	Circuit Diagrams	Input Signal	
			Current	Frequencies
Frequency Signal Conditioner				
	Frequency Signal Conditioner			Frequency signals; NAMUR/NPN or PNP sensors 0.1 ... 120 kHz


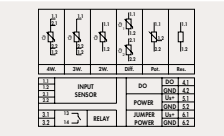

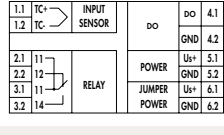

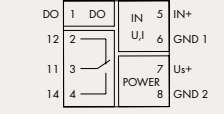

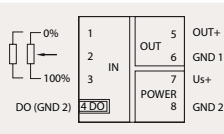
Image	Description	Circuit Diagrams	Input Signal			
			Current	Voltage	Bipolar Signals (I/U)	Sensors
Threshold Value Switches						
	RTD Threshold Value Switch					0 ... 100 kΩ; Pt100; Pt200; Pt500; Pt1000; Pt5000; Pt10,000; Pt10 ... 20,000
	Thermocouple Threshold Value Switch					Type J, K, E, N, R, S, T, B, C
	Analog Threshold Value Switch		0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V; 0 ... 15 V; 0 ... 30 V	±10 mA ±20 mA  ±5 V ±10 V	

Image	Description	Circuit Diagrams	Input Signal	
			Potentiometers	Resistors
Signal Conditioners with Specialty Functions				
	Potentiometer Signal Conditioner		0 ... 100 kΩ	10 ... 100 kΩ

3

Power Supply $U_s$	Output Signal		Configuration	Specialty Functions	Item No.	Page
	Current	Voltage				
24 VDC	0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	DIP switch; Interface configuration software/app	Clipping	857-500	322

Power Supply $U_s$	Output Signal		Configuration	Specialty Functions	Item No.	Page
	Relay (1 changeover contact)	Relay (1 make contact)				
24 VDC		250 VAC 6 A	DIP switch; Interface configuration software/app/display	Digital output DO; Relay with 1 make contact (250 VAC / 6 A); Simulation	2857-533	292
24 VDC	250 VAC 6 A		DIP switch; Interface configuration software/app/display	Digital output DO; Relay with 1 changeover contact (250 VAC / 6 A); Simulation	2857-534	294
24 VDC	250 VAC 6 A		DIP switch; Push/slide switch; Interface configuration software/app	Digital output DO; Relay with 1 changeover contact (250 VAC/6 A)	857-531	296

Power Supply $U_s$	Output Signal		Configuration	Specialty Functions	Item No.	Page
	Current	Voltage				
24 VDC	0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	DIP switch; Push/slide switch; Interface configuration software/app	Clipping	857-809	320

# Approvals Overview

3

Approvals									Item Description	Item Number	Page
IECEX	ATEX	Marine Approvals						ANSI/ISA 12.12.01			
		PRS (Polski Rejestr Statkow)	NKK (Nippon Kaiji Kyokai)	GL (German Lloyd)	DNV (Det Norske Veritas)	BV (Bureau Veritas)					
<b>Isolation Amplifiers</b>									Isolation Amplifier; Configurable; with Digital Output	2857-401	248
■	■	■	■	■	■	■	■	■	Isolation Amplifier; Configurable; with Zero/Span Adjustment	857-400	250
■	■	■	■	■	■	■	■	■	Isolation Amplifier; Configurable; with Digital Output	857-401	252
■	■	■	■	■	■	■	■	■	Isolation Amplifier; Configurable; with Zero/Span Adjustment	857-402	254
■	■	■	■	■	■	■	■	■	Bipolar Isolation Amplifier	857-409	256
■	■	■	■	■	■	■	■	■	Isolation Amplifier; Pre-Configured	857-411	258
■	■	■	■	■	■	■	■	■	Isolation Amplifier; Pre-Configured	857-412	259
■	■	■	■	■	■	■	■	■	Isolation Amplifier; Pre-Configured	857-413	260
■	■	■	■	■	■	■	■	■	Isolation Amplifier; Pre-Configured	857-414	260
■	■	■	■	■	■	■	■	■	Isolation Amplifier; Pre-Configured	857-415	261
■	■	■	■	■	■	■	■	■	Isolation Amplifier; Pre-Configured	857-416	261
■	■	■	■	■	■	■	■	■	Repeater Power Supply	857-420	262
■	■	■	■	■	■	■	■	■	Signal Splitter	857-423	264
■	■	■	■	■	■	■	■	■	Signal Splitter (I/U)	857-424	266
■	■	■	■	■	■	■	■	■	Loop-Powered Isolation Amplifier	857-450	268
■	■	■	■	■	■	■	■	■	Passive Isolator; 1-Channel	857-451	270
■	■	■	■	■	■	■	■	■	Passive Isolator; 2-Channel	857-452	271
<b>Current and Voltage Signal Conditioners</b>									Through-Hole Current Signal Conditioner	2857-550	272
■	■	■	■	■	■	■	■	■	Current Signal Conditioner	857-550	274
■	■	■	■	■	■	■	■	■	Current Signal Conditioner; for Rogowski Coils	857-552	278
■	■	■	■	■	■	■	■	■	Voltage Signal Conditioner	857-560	280
■	■	■	■	■	■	■	■	■	Power Signal Conditioner	857-569	284
■	■	■	■	■	■	■	■	■	Milivolt Signal Conditioner	857-819	282
■	■	■	■	■	■	■	■	■	Current Signal Conditioner	857-551	276
■	■	■	■	■	■	■	■	■	3-Phase Power Signal Conditioner; 1 A	2857-570/024-001	286
■	■	■	■	■	■	■	■	■	3-Phase Power Signal Conditioner; 5 A	2857-570/024-005	288
■	■	■	■	■	■	■	■	■	3-Phase Power Signal Conditioner; RC	2857-570/024-000	290
<b>Temperature Signal Conditioners</b>									Temperature Signal Conditioner; for Pt and Resistance Sensors	857-800	298
■	■	■	■	■	■	■	■	■	Temperature Signal Conditioner; for Pt and Resistance Sensors	857-801	300
■	■	■	■	■	■	■	■	■	Temperature Signal Conditioner; for Thermocouples	857-810	304
■	■	■	■	■	■	■	■	■	Temperature Signal Conditioner; for Thermocouples	857-811	306
■	■	■	■	■	■	■	■	■	Temperature Signal Conditioner; for Thermocouples	857-812	308
■	■	■	■	■	■	■	■	■	Temperature Signal Conditioner; for Pt46 and Cu53 Sensors	857-808	302
■	■	■	■	■	■	■	■	■	Loop-Powered RTD Temperature Signal Conditioner	857-815	310
■	■	■	■	■	■	■	■	■	Temperature Signal Conditioner; for Ni Sensors	857-818	316
■	■	■	■	■	■	■	■	■	Temperature Signal Conditioner; for KTY Sensors	857-820	318
■	■	■	■	■	■	■	■	■	RTD/TC Temperature Signal Conditioner; Analog	2857-535	312
■	■	■	■	■	■	■	■	■	RTD/TC Temperature Signal Conditioner; Serial	2857-535/000-001	314
<b>Threshold Value Switches</b>									RTD Threshold Value Switch	2857-533	292
■	■	■	■	■	■	■	■	■	Thermocouple Threshold Value Switch	2857-534	294
■	■	■	■	■	■	■	■	■	Analog Threshold Value Switch	857-531	296
<b>Specialty Functions</b>									Frequency Signal Conditioner	857-500	322
■	■	■	■	■	■	■	■	■	Potentiometer Signal Conditioner	857-809	320
<b>Accessories</b>									Supply and Through Module	857-979	332
■	■	■	■	■	■	■	■	■	Interface Adapter for System Wiring	857-980	331

# Signs and Symbols

## Specialty Functions:



Zero/span adjustment



Clipping capability



Digital output (DO)



Relay, 1 changeover contact



Relay, 1 make contact



Simulation

## Configuration:



DIP switch



Rotary coding switch



Interface configuration software



Interface configuration app



Interface configuration display



Push/slide switch

# Isolation Amplifier; Configurable; with Digital Output

## 2857 Series

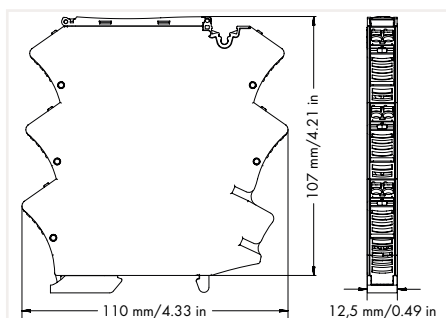


3

1.1	U+	INPUT VOLTAGE	OUTPUT	OUT+	4.1
1.2	U-			OUT-	4.2
2.1	I+	INPUT CURRENT	POWER	U <sub>s</sub> +	5.1
2.2	I-			GND	5.2
3.1	DO (GND)	DO DI (HOLD)	JUMPER POWER	U <sub>s</sub> +	6.1
3.2	DI (GND)			GND	6.2

Isolation Amplifier; Bipolar current and voltage input signal; Bipolar current and voltage output signal; Digital output; Supply voltage: 24 VDC; Module width: 12.5 mm

	Item No.	Pack. Unit
	2857-401	1



### Short description:

WAGO's isolation amplifier converts, amplifies, filters, and electrically isolates analog signals.

### Features:

- Analog unipolar/bipolar signals at both input and output
- Digital signal output reacts to configured measurement range limits (configurable on/off switching delay and threshold value switch function with up to two threshold values)
- Digital HOLD input freezes the output signal
- Clipping capability provides analog signal limitation to output end values
- Adjustable software/hardware filter
- Input/output response simulation via configuration display
- Safe 3-way isolation with 4 kV test voltage per EN 61140

### Note:

Additional setting options via interface configuration software/app

» Configuration software	Page 326
» Configuration app	Page 327
» Configuration display	Page 328
» Accessories	Page 338

### Configuration

Configuration options: DIP switch; Interface configuration software; Interface configuration app; Configuration display

### Input

Input signal type	Voltage; Current
Input signal (voltage)	$\pm 1$ V; 0 ... 1 V; $\pm 5$ V; 0 ... 5 V; 1 ... 5 V; $\pm 10$ V; 0 ... 10 V; 2 ... 10 V; $\pm 30$ V; 0 ... 30 V; $\pm 100$ V; 0 ... 100 V; $\pm 200$ V; 0 ... 220 V
Input signal (current)	$\pm 1$ mA; 0 ... 1 mA; $\pm 10$ mA; 0 ... 10 mA; 2 ... 10 mA; $\pm 20$ mA; 0 ... 20 mA; 4 ... 20 mA; $\pm 100$ mA; 0 ... 100 mA
Input resistance (current input)	$\leq 50 \Omega$
Input resistance (voltage input)	$\geq 1 \text{ M}\Omega$
Input current (max.)	$\pm 120$ mA
Input voltage (max.)	$\pm 250$ V

### Input – Digital

Hold signal: 11.8 V ... U<sub>s</sub>

### Output

Output signal type	Current; Voltage
Output signal (voltage)	$\pm 5$ V; 0 ... 5 V; 1 ... 5 V; $\pm 10$ V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	$\pm 10$ mA; 0 ... 10 mA; 2 ... 10 mA; $\pm 20$ mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	$\geq 1 \text{ k}\Omega$
Load impedance (current output)	$\leq 600 \Omega$

### Output – Digital

Max. switching voltage (DO)	Supply voltage applied: $-0.3$ V
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 or 2 (adjustable)
Configurable rise/fall delay time (DO)	0 ... 60 s (via software)

### Signal Processing

Limit frequency	10 kHz / 5 kHz / 100 Hz / 30 Hz (configurable via DIP switch or software)
Software filter; adjustable	Moving average value (filter level: 30)
Step response (typ.)	1 ms

### Measurement Error

Transmission error (typ.)	$\leq 0.1$ % of upper-range value
Temperature coefficient	$\leq 0.01\%/K$

### Power Supply

Nominal supply voltage U <sub>s</sub>	24 VDC
Supply voltage range	$\pm 30$ %
Power consumption at nominal supply voltage	$\leq 70$ mA (+ IDO)

### Safety and Protection

Test voltage (input/output/supply)	4 kV AC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
WAGO Connector	picoMAX® 5.0
Solid conductor	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Fine-stranded conductor	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	12.5 mm / 0.492 inch
Height from upper-edge of DIN-rail	107 mm / 4.213 inch
Depth	110 mm / 4.331 inch

### Mechanical Data

Mounting type: DIN-35 rail

### Material Data

Weight: 85.9 g

Specialty Functions:



Configuration via:



**Environmental Requirements**

Surrounding air temperature (operation)	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

**Standards and Specifications**

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-4; EN 61326-2-3; EN 50121-3-2
Standards/specifications	EN 60664-1; EN 61373

**2857-401**

DIP Switch Adjustability

● = ON **Default**

DIP Switch S1

Input													
1	Signal	2	Polarity	3	4	5	Range / mA	Range / V	6	Inverted Characteristic	7	8	Limit Frequency
	Current		Unipolar				0 ... 20	0 ... 10		Not inverted			10 kHz
●	Voltage	●	Bipolar *	●			0 ... 1	0 ... 1	●	Inverted	●		5 kHz
					●		0 ... 5	0 ... 5				●	100 Hz
				●	●		0 ... 10	1 ... 5				●	30 Hz
						●	2 ... 10	2 ... 10					
				●		●	4 ... 20	0 ... 30					
					●	●	0 ... 50	0 ... 100					
				●	●	●	0 ... 100	0 ... 220					

DIP Switch S1

Output				DIP Switch S2			
9	Signal	10	Polarity	1	2	Range / mA	Range / V
	Current		Unipolar			0 ... 20	0 ... 10
●	Voltage	●	Bipolar *	●		4 ... 20	2 ... 10
					●	0 ... 10	0 ... 5
				●	●	2 ... 10	1 ... 5

DIP Switch S2

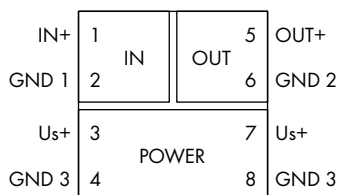
Output						Digital Output (DO)	
3	4	Measuring Range Underflow		Measuring Range Overflow		5	6
		Lower limit of output range -5% **		Upper limit of output range +2.5% **			
●		Lower limit of output range		Upper limit of output range +2.5%		●	
	●	Lower limit of output range		Upper limit of output range			●
	●	Lower limit of output range -5%		Upper limit of output range +5%		●	●

\* Bipolar only applies to ranges starting with 0.

\*\* acc. to NAMUR NE 43

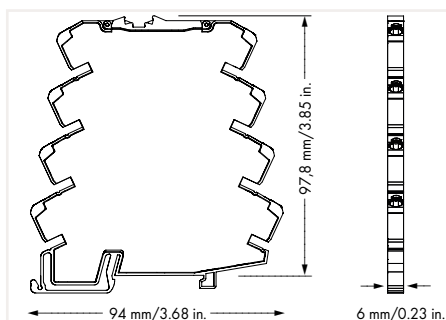
## Isolation Amplifier; Configurable; with Zero/Span Adjustment

### 857 Series



Isolation Amplifier; Current and voltage input signal; Current and voltage output signal; Zero/span adjustment; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-400	1



#### Short description:

WAGO's configurable isolation amplifier converts, amplifies, filters, and electrically isolates standard analog signals.

#### Features:

- Zero/span adjustment across the entire measurement range
- Calibrated measurement range switching
- Switchable limit frequency
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

#### Specialty Functions:



#### Configuration via:



#### Configuration

Configuration options	DIP switch
-----------------------	------------

#### Input

Input signal type	Voltage; Current
Input signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V (calibrated switching)
Input signal (current)	0 ... 20 mA; 4 ... 20 mA (calibrated switching)
Input resistance (current input)	≤ 50 Ω
Input resistance (voltage input)	≥ 1 MΩ
Zero/span adjustment	±3 % of upper range value

#### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V (calibrated switching)
Output signal (current)	0 ... 20 mA; 4 ... 20 mA; 0 ... 10 mA; 2 ... 10 mA (calibrated switching)
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

#### Signal Processing

Limit frequency	100 Hz / 5 kHz (configurable via DIP switch)
Step response (typ.)	3.5 ms (100 Hz); 100 μs (5 kHz)

#### Measurement Error

Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K

#### Power Supply

Nominal supply voltage U <sub>s</sub>	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 25 mA

#### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

#### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

#### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

#### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

#### Material Data

Weight	36.8 g
--------	--------

#### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

#### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

857-400

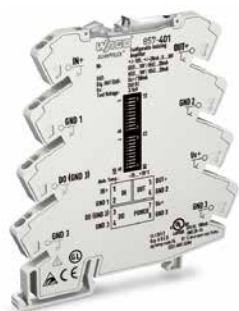
DIP Switch Adjustability

● = ON Default

DIP Switch S1 (2-fold)		DIP Switch S2 (6-fold)					Max. Operating Frequency		
Input Signal		Output Signal							
1	2	1	2	3	4	5	6		
●	0 ... 20 mA					●	0 ... 20 mA	●	5 kHz
							4 ... 20 mA		100 Hz
		●	●				0 ... 10 V		
		●	●		●		2 ... 10 V		
		●	●	●			0 ... 5 V		
		●	●	●	●		1 ... 5 V		
●	4 ... 20 mA					●	0 ... 20 mA		
							4 ... 20 mA		
		●	●			●	0 ... 10 V		
		●	●		●		2 ... 10 V		
		●	●	●		●	0 ... 5 V		
		●	●	●			1 ... 5 V		
●	0 ... 10 V					●	0 ... 20 mA		
							4 ... 20 mA		
		●	●				0 ... 10 V		
		●	●		●		2 ... 10 V		
		●	●	●			0 ... 5 V		
		●	●	●	●		1 ... 5 V		
●	2 ... 10 V					●	0 ... 20 mA		
							4 ... 20 mA		
		●	●			●	0 ... 10 V		
		●	●		●		2 ... 10 V		
		●	●	●		●	0 ... 5 V		
		●	●	●			1 ... 5 V		
	0 ... 5 V					●	0 ... 20 mA		
							4 ... 20 mA		
		●	●				0 ... 10 V		
		●	●		●		2 ... 10 V		
		●	●	●			0 ... 5 V		
		●	●	●	●		1 ... 5 V		
	1 ... 5 V					●	0 ... 20 mA		
							4 ... 20 mA		
		●	●			●	0 ... 10 V		
		●	●		●		2 ... 10 V		
		●	●	●		●	0 ... 5 V		
		●	●	●			1 ... 5 V		



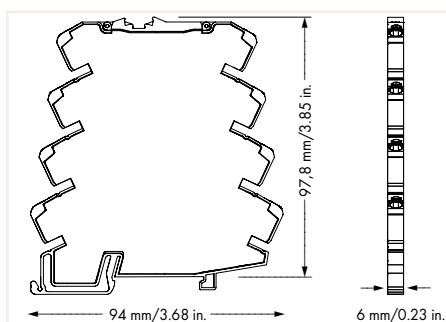
## Isolation Amplifier; Configurable; with Digital Output 857 Series



IN+	1	IN	5	OUT+
GND 1	2	U; I	6	GND 2
DO	3	DO	7	U <sub>S</sub> +
GND 3	4	POWER	8	GND 3

Isolation Amplifier; Current and voltage input signal; Current and voltage output signal; Digital output; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-401	1



### Short description:

WAGO's configurable isolation amplifier converts, amplifies, filters, and electrically isolates standard analog signals.

### Features:

- PC configuration interface
- Digital switching output
- Calibrated measurement range switching
- Unipolar/bipolar standard analog signals at input
- Switchable clipping
- Limitation of standard analog signals to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Specialty Functions:



### Configuration via:



» Configuration software	Page 326
» Configuration app	Page 327
» Accessories	Page 338

### Configuration

Configuration options	DIP switch; Interface configuration software; Interface configuration app
-----------------------	---------------------------------------------------------------------------

### Input

Input signal type	Voltage; Current
Input signal (voltage)	±10 V; 0 ... 30 V
Input signal (current)	±20 mA
Input resistance (current input)	≤ 200 Ω
Input resistance (voltage input)	≥ 100 kΩ
Input current (max.)	22 mA
Input voltage (max.)	31 V
Measurement span (voltage)	1 V
Measurement span (current)	2 mA

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 2 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

### Output – Digital

Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 (adjustable)

### Signal Processing

Step response (typ.)	8 ms
----------------------	------

### Measurement Error

Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K

### Power Supply

Nominal supply voltage U <sub>S</sub>	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA (+ IDO)

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	37.04 g
--------	---------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-1; EN 50121-3-2
EMC emission of interference	EN 61000-6-3; EN 61326-1
Standards/specifications	EN 61373

857-401

DIP Switch Adjustability

● = ON Default

Input Signal Start Value													Input Signal End Value																					
DIP S1													DIP S2																					
1	2	3	4	5	6	7	V	mA	2	3	4	5	6	7	V	mA	8	9	10	1	2	3	V	mA	8	9	10	1	2	3	V	mA		
●							0	0							●	5.5	11	●							10	20	●					●	5.5	11
●							-10	-20	●						●	6	12	●							-10	-20	●					●	6	12
	●						-9.5	-19		●					●	6.5	13	●							-9.5	-19	●					●	6.5	13
	●	●					-9	-18	●	●					●	7	14	●	●						-9	-18	●	●				●	7	14
			●				-8.5	-17			●				●	7.5	15	●		●					-8.5	-17	●		●			●	7.5	15
	●		●				-8	-16	●		●				●	8	16	●			●				-8	-16	●		●			●	8	16
		●	●				-7.5	-15		●	●				●	8.5	17	●	●						-7.5	-15	●	●				●	8.5	17
	●	●	●				-7	-14	●	●	●				●	9	18	●	●	●					-7	-14	●	●	●			●	9	18
				●			-6.5	-13				●			●	9.5	19	●							-6.5	-13	●		●			●	9.5	19
	●		●	●			-6	-12	●			●			●	10	20	●		●					-6	-12	●		●			●	10	20
		●	●	●			-5.5	-11		●	●				●	10.5		●	●	●					-5.5	-11	●	●	●			●	10.5	
	●	●	●	●			-5	-10	●	●	●				●	11		●	●	●					-5	-10	●	●	●			●	11	
			●	●			-4.5	-9			●	●			●	11.5		●	●	●					-4.5	-9	●	●	●			●	11.5	
	●	●	●	●			-4	-8	●		●	●			●	12		●	●	●					-4	-8	●	●	●			●	12	
		●	●	●			-3.5	-7		●	●	●			●	13		●	●	●					-3.5	-7	●	●	●			●	13	
	●	●	●	●			-3	-6	●	●	●	●			●	14		●	●	●					-3	-6	●	●	●			●	14	
				●			-2.5	-5				●	●		●	15		●	●	●					-2.5	-5	●	●	●			●	15	
	●			●			-2	-4	●			●	●		●	16		●	●	●					-2	-4	●					●	16	
		●		●			-1.5	-3		●			●	●	●	17		●	●	●					-1.5	-3	●					●	17	
	●	●		●			-1	-2	●	●			●	●	●	18		●	●	●					-1	-2	●	●				●	18	
			●	●			-0.5	-1			●		●	●	●	19		●	●	●					-0.5	-1	●		●			●	19	
	●	●	●	●			0	0	●		●	●	●		●	20		●	●	●					0	0	●		●			●	20	
		●	●	●			0.5	1		●	●	●	●		●	21		●	●	●					0.5	1	●		●			●	21	
	●	●	●	●			1	2	●	●	●	●			●	22		●	●	●					1	2	●	●	●			●	22	
			●	●			1.5	3			●	●	●		●	23		●	●	●					1.5	3	●		●			●	23	
	●			●	●		2	4	●			●	●		●	24		●	●	●					2	4	●					●	24	
		●		●	●		2.5	5		●		●	●		●	25		●	●	●					2.5	5	●		●			●	25	
	●	●		●	●		3	6	●	●	●	●			●	26		●	●	●					3	6	●	●	●			●	26	
			●	●	●		3.5	7			●	●	●		●	27		●	●	●					3.5	7	●		●			●	27	
	●		●	●	●		4	8	●		●	●	●		●	28		●	●	●					4	8	●		●			●	28	
		●	●	●	●		4.5	9		●	●	●	●		●	29		●	●	●					4.5	9	●	●	●			●	29	
	●	●	●	●	●		5	10	●	●	●	●	●		●	30		●	●	●					5	10	●	●	●			●	30	

DIP Switch S2

Output Signal				Measuring Range Underflow		Measuring Range Overflow		Digital Output DO Signaling		
4	5	6	7	8						
●			0 ... 20 mA		Lower limit of output range	Upper limit of output range			DO not active	
●			4 ... 20 mA		-5 % *	+2.5 % *				
	●		0 ... 10 mA	●	Lower limit of output range	Upper limit of output range		●	GND → U <sub>N</sub> (switching)	
	●	●	2 ... 10 mA		Lower limit of output range	Upper limit of output range		●	U <sub>N</sub> → GND (switching)	
●			0 ... 10 V		Lower limit of output range	Upper limit of output range		●		
●	●		2 ... 10 V	●	Lower limit of output range	Upper limit of output range		●		
●		●	0 ... 5 V		Lower limit of output range	Upper limit of output range				
●	●	●	1 ... 5 V	●	Lower limit of output range	Upper limit of output range				

\*acc. to NAMUR NE 43

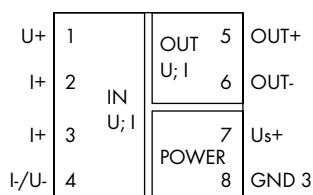
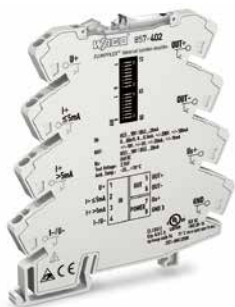
Digital Output DO/Signaling

The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

In order to increase the switching current of the DO, the latter may be expanded by a relay. Thanks to the common housing shape for the 857 Series, for example, a 857-304 Relay can be snapped in next to it. This output can be quickly and easily expanded to a switching current of 6A by simply using an adjacent jumper (859-402).

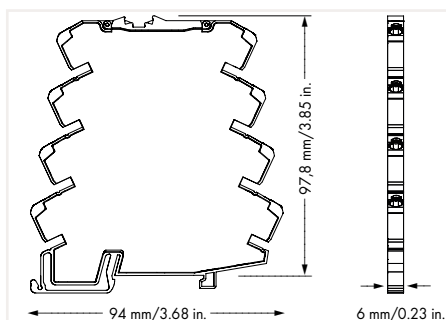
## Isolation Amplifier; Configurable; with Zero/Span Adjustment

### 857 Series



Isolation Amplifier; Current and voltage input signal; Bipolar current and voltage output signal; Zero/span adjustment; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-402	1



#### Short description:

This isolation amplifier converts standard unipolar/bipolar signals, as well as amplifies, filters and electrically isolates standard analog signals.

#### Features:

- Overload protection of current input via resettable fuse
- Zero/span adjustment across the entire measurement range (via push/slide switch)
- Calibrated measurement range switching for all 456 signals
- Unipolar/bipolar standard analog signals at both input/output
- Switchable limit frequency
- Switchable clipping
- Limitation of standard analog signals to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

#### Configuration

Configuration options      DIP switch; Push/slide switch

#### Input

Input signal type	Voltage; Current
Input signal (voltage)	±60 mV; 0 ... 60 mV; ±100 mV; 0 ... 100 mV; ±150 mV; 0 ... 150 mV; ±300 mV; 0 ... 300 mV; ±500 mV; 0 ... 500 mV; ±1 V; 0 ... 1 V; ±5 V; 0 ... 5 V; 1 ... 5 V; ±10 V; 0 ... 10 V; 2 ... 10 V; ±100 V; 0 ... 100 V; ±200 V; 0 ... 200 V
Input signal (current)	±0.3 mA; 0 ... 0.3 mA; ±1 mA; 0 ... 1 mA; ±5 mA; 0 ... 5 mA; ±10 mA; 0 ... 10 mA; 2 ... 10 mA; ±20 mA; 0 ... 20 mA; 4 ... 20 mA; ±50 mA; 0 ... 50 mA; ±100 mA; 0 ... 100 mA
Input resistance (current input)	10 Ω (≥ 5 mA); 100 Ω (≤ 5 mA)
Input resistance (voltage input)	1 MΩ
Zero/span adjustment	Adjustable via push/slide switch

#### Output

Output signal type	Current; Voltage
Output signal (voltage)	±5 V; 0 ... 5 V; 1 ... 5 V; ±10 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	±10 mA; 0 ... 10 mA; 2 ... 10 mA; ±20 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

#### Signal Processing

Limit frequency	100 Hz / 5 kHz (configurable via DIP switch)
Step response (typ.)	3.5 ms (100 Hz); 100 μs (5 kHz)

#### Measurement Error

Transmission error (typ.)	≤ 0.08 % of upper-range value
Temperature coefficient	≤ 0.01%/K

#### Power Supply

Nominal supply voltage $U_s$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA

#### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

#### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

#### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

#### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

#### Material Data

Weight	38.4 g
--------	--------

#### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

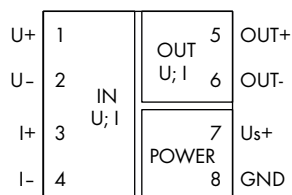
#### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4



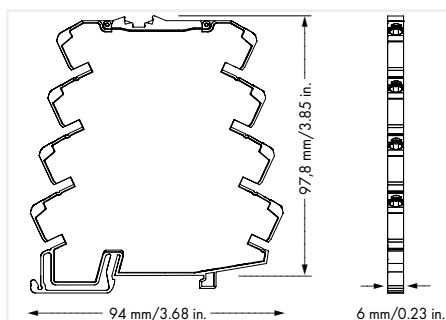
## Isolation Amplifier; Configurable; with Zero/Span Adjustment

### 857 Series



Isolation Amplifier; Bipolar current and voltage input signal; Bipolar current and voltage output signal; Zero/span adjustment; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-409	1



**Short description:**  
WAGO's bipolar isolation amplifier converts, amplifies, filters, and electrically isolates standard unipolar/bipolar analog signals.

#### Features:

- Overload protection of current input via resettable fuse
- Zero/span adjustment across the entire measurement range
- Calibrated measurement range switching
- Unipolar/bipolar standard analog signals at both input/output
- Switchable limit frequency
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

#### Specialty Functions:



Configuration via:



Configuration	
Configuration options	DIP switch
Input	
Input signal type	Voltage; Current
Input signal (voltage)	$\pm 5$ V; 0 ... 5 V; 1 ... 5 V; $\pm 10$ V; 0 ... 10 V; 2 ... 10 V
Input signal (current)	$\pm 10$ mA; 0 ... 10 mA; 2 ... 10 mA; $\pm 20$ mA; 0 ... 20 mA; 4 ... 20 mA
Input resistance (current input)	$\leq 50 \Omega$ (approx.)
Input resistance (voltage input)	1 M $\Omega$ (approx.)
Input current (max.)	50 mA
Input voltage (max.)	32 V
Zero/span adjustment	$\pm 5$ % of upper range value

Output	
Output signal type	Current; Voltage
Output signal (voltage)	$\pm 5$ V; 0 ... 5 V; 1 ... 5 V; $\pm 10$ V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	$\pm 10$ mA; 0 ... 10 mA; 2 ... 10 mA; $\pm 20$ mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	$\geq 2$ k $\Omega$
Load impedance (current output)	$\leq 600 \Omega$
Residual ripple	$\leq 10$ mV (rms)

Signal Processing	
Limit frequency	100 Hz / 5 kHz (configurable via DIP switch)
Step response (typ.)	3.5 ms (100 Hz); 60 $\mu$ s (5 kHz)

Measurement Error	
Transmission error (typ.)	$\leq 0.1$ % of upper-range value
Temperature coefficient	$\leq 0.01\%/K$

Power Supply	
Nominal supply voltage U <sub>s</sub>	24 VDC
Supply voltage range	$\pm 30$ %
Power consumption at nominal supply voltage	$\leq 25$ mA

Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

Connection Data	
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Weight	38.4 g

Environmental Requirements	
Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-3

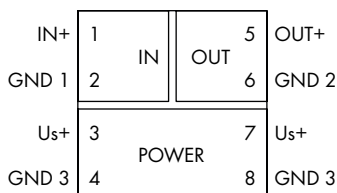
857-409

DIP Switch Adjustability

● = ON Default

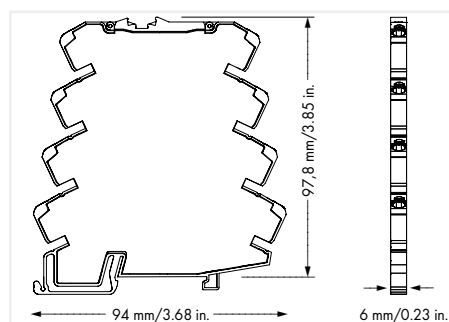
DIP Switch S1 (4-fold)				DIP Switch S2 (6-fold)							
Input Signal				Output Signal					Max. Operating Frequency		
1	2	3	4	1	2	3	4	5	6		
●								●		±20 mA	5 kHz
●	●						●	●		±10 mA	100 Hz
●				●	●	●	●	●		±10 V	
●	●			●	●	●	●			±5 V	
										0 ... 20 mA	
		●						●		4 ... 20 mA	
	●					●				0 ... 10 mA	
	●	●				●	●			2 ... 10 mA	
					●	●				0 ... 10 V	
		●			●	●		●		2 ... 10 V	
	●				●	●	●			0 ... 5 V	
	●	●			●	●	●	●		1 ... 5 V	

## Isolation Amplifier; Pre-Configured; Current Input; Current Output 857 Series



Isolation Amplifier; Current input signal: 0 (4) ... 20 mA;  
Current output signal: 0 (4) ... 20 mA; Supply voltage: 24 VDC;  
Module width: 6 mm wide

Item No.	Pack. Unit
857-411	1



### Short description:

WAGO's pre-configured isolation amplifier converts, amplifies, filters, and electrically isolates standard analog signals.

### Features:

- Input/output: current or voltage signal
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Configuration	
Configuration options	Pre-configured

Input	
Input signal type	Current
Input signal (current)	0 ... 20 mA; 4 ... 20 mA
Input resistance (current input)	≤ 50 Ω
Input current (max.)	50 mA

Output	
Output signal type	Current
Output signal (current)	0 ... 20 mA; 4 ... 20 mA
Load impedance (current output)	≤ 600 Ω

Signal Processing	
Limit frequency	100 Hz
Step response (typ.)	3.5 ms

Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K

Power Supply	
Nominal supply voltage $U_s$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 25 mA

Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

Connection Data	
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

Mechanical Data	
Mounting type	DIN-35 rail

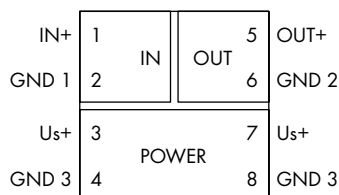
Material Data	
Weight	36.1 g

Environmental Requirements	
Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

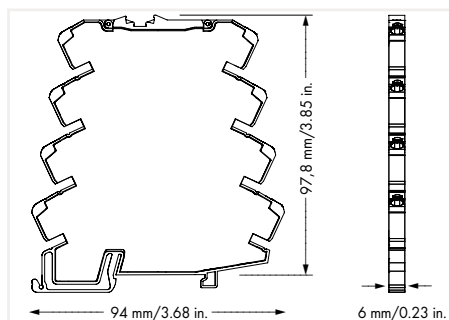
# Isolation Amplifier; Pre-Configured; Voltage Input; Voltage Output

## 857 Series



Isolation Amplifier; Voltage input signal: 0 (2) ... 10 V;  
Voltage output signal: 0 (2) ... 10 V; Supply voltage: 24 VDC;  
Module width: 6 mm

Item No.	Pack. Unit
857-412	1



### Short description:

WAGO's pre-configured isolation amplifier converts, amplifies, filters, and electrically isolates standard analog signals.

### Features:

- Input/output: current or voltage signal
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Configuration

Configuration options	Pre-configured
-----------------------	----------------

### Input

Input signal type	Voltage
Input signal (voltage)	0 ... 10 V; 2 ... 10 V
Input resistance (voltage input)	≥ 100 kΩ
Input voltage (max.)	30 V

### Output

Output signal type	Voltage
Output signal (voltage)	0 ... 10 V; 2 ... 10 V
Load impedance (voltage output)	≥ 2 kΩ

### Signal Processing

Limit frequency	100 Hz
Step response (typ.)	3.5 ms

### Measurement Error

Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K

### Power Supply

Nominal supply voltage $U_S$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 25 mA

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	35.6 g
--------	--------

### Environmental Requirements

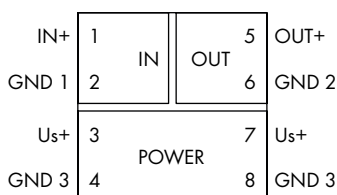
Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

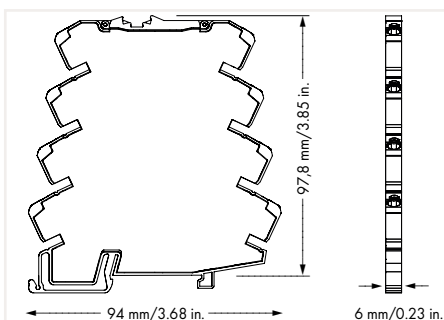


## Isolation Amplifier; Pre-Configured; Voltage Input; Current Output 857 Series



Isolation Amplifier; Voltage input signal: 0 ... 10 V; Supply voltage: 24 VDC; Module width: 6 mm

Output Signal	Item No.	Pack. Unit
0 ... 20 mA	857-413	1
4 ... 20 mA	857-414	1



### Short description:

WAGO's pre-configured isolation amplifier converts, amplifies, filters, and electrically isolates standard analog signals.

### Features:

- Input/output: current or voltage signal
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Configuration

Configuration options	Pre-configured
-----------------------	----------------

### Input

Input signal type	Voltage
Input signal (voltage)	0 ... 10 V
Input resistance (voltage input)	≥ 100 kΩ
Input voltage (max.)	30 V

### Output

Output signal type	Current
Load impedance (current output)	≤ 600 Ω

### Signal Processing

Limit frequency	100 Hz
Step response (typ.)	3.5 ms

### Measurement Error

Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K

### Power Supply

Nominal supply voltage $U_s$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 25 mA

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	36.01 g
--------	---------

### Environmental Requirements

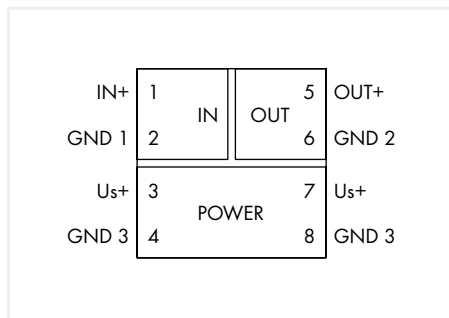
Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

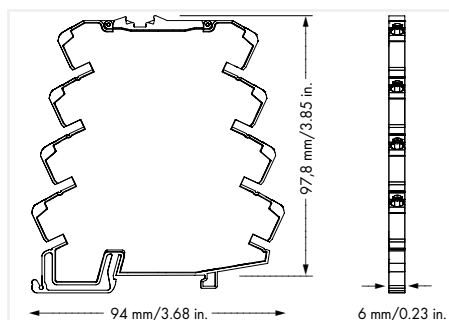
# Isolation Amplifier; Pre-Configured; Current Input; Voltage Output

## 857 Series



Isolation Amplifier; Voltage output signal: 0 ... 10 V;  
Supply voltage: 24 VDC; Module width: 6 mm

Input Signal	Item No.	Pack. Unit
0 ... 20 mA	857-415	1
4 ... 20 mA	857-416	1



### Short description:

WAGO's pre-configured isolation amplifier converts, amplifies, filters, and electrically isolates standard analog signals.

### Features:

- Input/output: current or voltage signal
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Configuration

Configuration options	Pre-configured
-----------------------	----------------

### Input

Input signal type	Current
Input resistance (current input)	≤ 50 Ω
Input current (max.)	50 mA

### Output

Output signal type	Voltage
Output signal (voltage)	0 ... 10 V
Load impedance (voltage output)	≥ 2 kΩ

### Signal Processing

Limit frequency	100 Hz
Step response (typ.)	3.5 ms

### Measurement Error

Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K

### Power Supply

Nominal supply voltage $U_s$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 25 mA

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	35.31 g
--------	---------

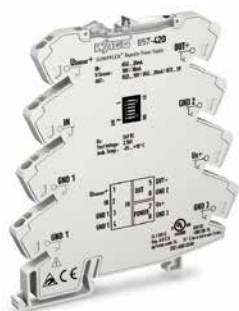
### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

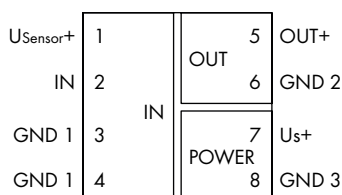
### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

## Isolation Amplifier; Configurable; with Current and Voltage Output 857 Series

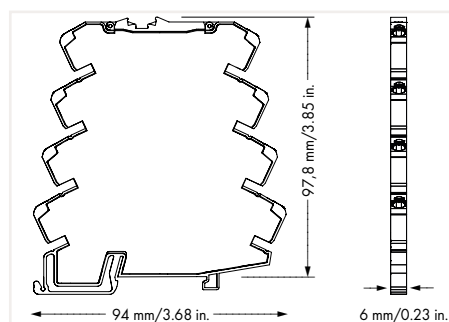


3



Isolation Amplifier; Current input signal; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-420	1



### Short description:

WAGO's repeater power supply provides the power required for 2- or 3-wire field transmitters, and electrically isolates analog signals.

### Features:

- Power supply to SMART transmitters
- Calibrated measurement range switching
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Configuration via:



### Configuration

Configuration options	DIP switch
-----------------------	------------

### Input

Input signal type	Current
Input signal (current)	0 ... 20 mA; 4 ... 20 mA (calibrated switching)
Input resistance (current input)	≤ 50 Ω
Input current (max.)	50 mA
Sensor supply	U <sub>S</sub> = 18 V; 30 mA

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V (calibrated switching)
Output signal (current)	0 ... 20 mA; 4 ... 20 mA (calibrated switching)
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω
Offset	≤ 20 μA
Residual ripple	≤ 10 mV (rms)

### Signal Processing

Limit frequency	100 Hz
Step response (typ.)	3.5 ms

### Measurement Error

Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K

### Power Supply

Nominal supply voltage U <sub>S</sub>	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 45 mA

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	37 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

Conformity marking	CE
--------------------	----

857-420

DIP Switch Adjustability

● = ON Default

DIP Switch S1 (6-fold)

1	2	3	4	5	6	Input Signal	Output Signal
					n.c.	0 ... 20 mA	0 ... 20 mA
			●		n.c.	0 ... 20 mA	4 ... 20 mA
●	●				n.c.	0 ... 20 mA	0 ... 10 V
●	●		●		n.c.	0 ... 20 mA	2 ... 10 V
●	●	●			n.c.	0 ... 20 mA	0 ... 5 V
●	●	●	●		n.c.	0 ... 20 mA	1 ... 5 V
				●	n.c.	4 ... 20 mA	0 ... 20 mA
					n.c.	4 ... 20 mA	4 ... 20 mA
●	●			●	n.c.	4 ... 20 mA	0 ... 10 V
●	●				n.c.	4 ... 20 mA	2 ... 10 V
●	●	●		●	n.c.	4 ... 20 mA	0 ... 5 V
●	●	●			n.c.	4 ... 20 mA	1 ... 5 V

## Isolation Amplifier; Configurable; with 2 Current Outputs 857 Series

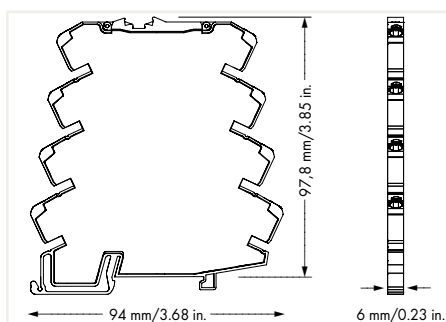


3

IN+	1	IN	5	OUT 1+
GND 1	2		6	GND 2
OUT 2+	3	OUT 2	7	U <sub>s</sub> +
GND 4	4		8	GND 3
				POWER

Isolation Amplifier; Current and voltage input signal;  
2x current output signal; Supply voltage: 24 VDC;  
Module width: 6 mm

Item No.	Pack. Unit
857-423	1



### Short description:

WAGO's signal splitter converts, amplifies, filters, and electrically isolates standard analog signals.

### Features:

- Two configurable current outputs
- Calibrated measurement range switching
- Switchable limit frequency
- Safe 4-way isolation with 2.5 kV test voltage per EN 61140

### Configuration via:



### Configuration

Configuration options	DIP switch
-----------------------	------------

### Input

Input signal type	Voltage; Current
Input signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V (calibrated switching)
Input signal (current)	0 ... 20 mA; 4 ... 20 mA (calibrated switching)
Input resistance (current input)	≤ 50 Ω
Input resistance (voltage input)	≥ 100 kΩ

### Output

Output signal type	Current
Output signal (current)	0 ... 20 mA; 4 ... 20 mA (calibrated switching)
Load impedance (current output)	≤ 300 Ω

### Signal Processing

Limit frequency	100 Hz / 1 kHz (configurable via DIP switch)
Step response (typ.)	3.5 ms (100 Hz); 300 μs (1 kHz)

### Measurement Error

Transmission error (typ.)	≤ 0.1 % of upper-range value
Transmission error (max.)	≤ 0.2 % of upper-range value
Temperature coefficient	≤ 0.01%/K

### Power Supply

Nominal supply voltage U <sub>s</sub>	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 35 mA

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	40.6 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

857-423

DIP Switch Adjustability

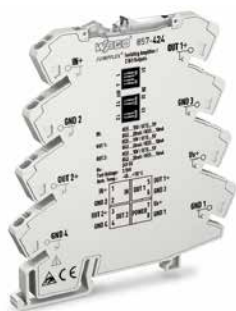
= ON  Default

DIP Switch S1 (6-fold)

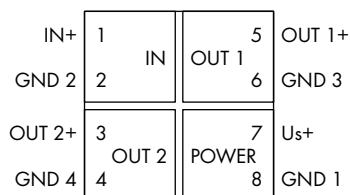
Input Signal			Max. Operating Frequency	Output Signal 1		Output Signal 2	
1	2	3	4	5	6	7	8
•							
	•						
		•					
			•				
				•			
					•		
						•	
							•

## Isolation Amplifier; Configurable; with Current and Voltage Output

### 857 Series

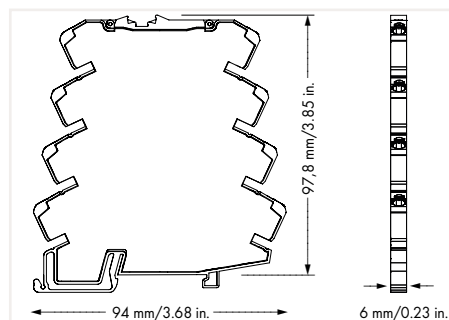


3



Isolation Amplifier; Current and voltage input signal;  
Current and voltage output signal; Supply voltage:  
24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-424	1



#### Short description:

WAGO's signal splitter converts, amplifies, filters, and electrically isolates standard analog signals. In addition, the input signal is split into two separate outputs.

#### Features:

- Two configurable voltage/current outputs
- Switchable limit frequency
- Safe 4-way isolation with 3 kV test voltage per EN 61010-1

#### Configuration via:



#### Configuration

Configuration options	DIP switch
-----------------------	------------

#### Input

Input signal type	Voltage; Current
Input signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 1 V; 0 ... 10 V; 2 ... 10 V
Input signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Input resistance (current input)	≤ 50 Ω
Input resistance (voltage input)	≥ 100 kΩ
Input current (max.)	50 mA
Input voltage (max.)	30 V

#### Output

Output signal type	Voltage; Current
Output signal (voltage)	0 ... 10 V; 2 ... 10 V (calibrated switching)
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA (calibrated switching)
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

#### Signal Processing

Limit frequency	100 Hz / 1 kHz (configurable via DIP switch)
Step response (typ.)	3.5 ms (100 Hz); 300 μs (1 kHz)

#### Measurement Error

Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K

#### Power Supply

Nominal supply voltage U <sub>S</sub>	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 35 mA

#### Safety and Protection

Test voltage (input/output/supply)	3 kVAC; 50 Hz; 1 min
Protection type	IP20

#### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

#### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

#### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

#### Material Data

Weight	41.5 g
--------	--------

#### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Operating altitude (max.)	2000 m

#### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-1; EN 50121-3-2
EMC emission of interference	EN 61000-6-3; EN 61326-1; EN 50121-3-2
Standards/specifications	EN 61010-1; EN 61373

857-424

DIP Switch Adjustability

= ON  Default

DIP Switch S1 (4 positions)

Input Signal			4	Max. Operating Frequency
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		> 1 kHz
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	100 Hz
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

DIP Switch S2 (2 positions)

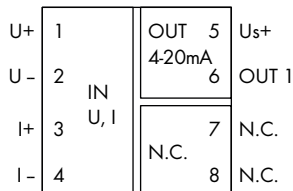
Output Signal 1	
<input checked="" type="checkbox"/>	0 ... 10 V
<input checked="" type="checkbox"/>	2 ... 10 V
<input type="checkbox"/>	0 ... 20 mA
<input checked="" type="checkbox"/>	4 ... 20 mA

DIP Switch S3 (2 positions)

Output Signal 2	
<input checked="" type="checkbox"/>	0 ... 10 V
<input checked="" type="checkbox"/>	2 ... 10 V
<input type="checkbox"/>	0 ... 20 mA
<input checked="" type="checkbox"/>	4 ... 20 mA

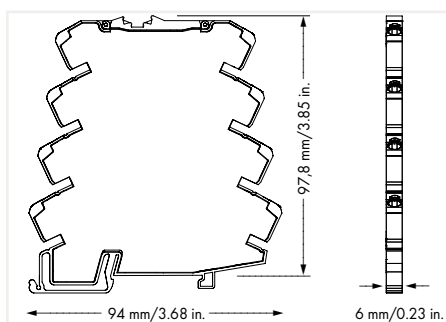


## Loop-Powered Isolation Amplifier 857 Series



Loop-Powered Isolation Amplifier; Bipolar current and voltage input signal; Current output signal; Power via input; Module width: 6 mm

Item No.	Pack. Unit
857-450	1



### Short description:

WAGO's loop-powered isolation amplifier converts, amplifies, filters, and electrically isolates standard unipolar/bipolar analog signals.

### Features:

- No additional supply voltage required
- Zero/span adjustment
- Standard unipolar/bipolar analog signals at input
- Calibrated measurement range switching
- Switchable limit frequency
- Safe 2-way isolation with 2.5 kV test voltage per EN 61140

### Specialty Functions:



### Configuration via:



### Configuration

Configuration options	DIP switch
-----------------------	------------

### Input

Input signal type	Voltage; Current
Input signal (voltage)	$\pm 1$ V; 0 ... 1 V; $\pm 2$ V; 0 ... 2 V; $\pm 5$ V; 0 ... 5 V; 1 ... 5 V; $\pm 10$ V; 0 ... 10 V; 2 ... 10 V; $\pm 20$ V
Input signal (current)	$\pm 5$ mA; 0 ... 5 mA; $\pm 10$ mA; 0 ... 10 mA; 2 ... 10 mA; $\pm 20$ mA; 0 ... 20 mA; 4 ... 20 mA
Input resistance (current input)	$\leq 50 \Omega$
Input resistance (voltage input)	$\geq 1$ M $\Omega$
Input current (max.)	50 mA
Input voltage (max.)	30 V
Zero/span adjustment	$\pm 5$ % of upper range value

### Output

Output signal type	Current
Output signal (current)	4 ... 20 mA
Load impedance (current output)	$\leq 600 \Omega$

### Signal Processing

Limit frequency	100 Hz / 30 Hz (configurable via DIP switch)
Step response (typ.)	3.5 ms

### Measurement Error

Transmission error (typ.)	$\leq 0.1$ % of upper-range value
Temperature coefficient	$\leq 0.01$ %/K

### Power Supply

Supply voltage	8 ... 30 VDC (power derived from the output circuit)
----------------	------------------------------------------------------

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	37.9 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-3

857-450

DIP Switch Adjustability

● = ON Default

DIP switch (6 positions)

Input Signal					Output Signal	Max. Operating Frequency		
1	2	3	4	5		6		
					4 ... 20 mA	4 ... 20 mA		
●		●	●		0 ... 20 mA		●	100 Hz
●		●	●	●	±20 mA			30 Hz
●		●			2 ... 10 mA			
●			●		0 ... 10 mA			
●			●	●	±10 mA			
●					0 ... 5 mA			
●				●	±5 mA			
	●	●	●		0 ... 20 V			
	●	●	●	●	±20 V			
	●	●			2 ... 10 V			
	●		●		0 ... 10 V			
	●		●	●	±10 V			
	●				1 ... 5 V			
		●	●		0 ... 5 V			
		●	●	●	±5 V			
		●			0 ... 2 V			
		●		●	±2 V			
			●		0 ... 1 V			
			●	●	±1 V			

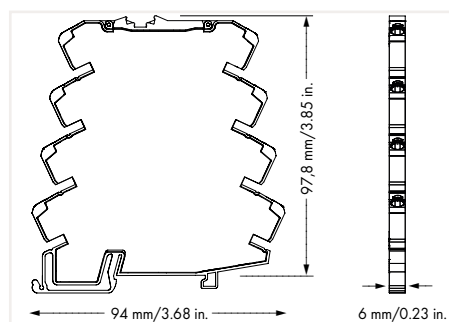
## Passive Isolator; 1-Channel 857 Series



IN+	1	IN	5	OUT+
GND 1	2	OUT	6	GND 2
N.C.	3		7	N.C.
N.C.	4		8	N.C.

Passive Isolator; 1-channel; Current input signal; Current output signal; Power via input; Module width: 6 mm wide

Item No.	Pack. Unit
857-451	1



### Short description:

WAGO's passive isolator (1-channel) electrically isolates and filters 0(4)–20 mA standard analog signals, while drawing power for signal transmission from the input circuit. The connected sensor supplies the passive isolator with the required power to energize the connected load.

### Features:

- No additional supply voltage required
- Safe 2-way isolation with 2.5 kV test voltage per EN 61140

### Configuration

Configuration options	Pre-configured
-----------------------	----------------

### Input

Input signal type	Current
Input signal (current)	0 ... 20 mA; 4 ... 20 mA
Voltage drop at input	≤ 2.5 V at 20 mA (output)
Input current (max.)	40 mA
Input voltage (max.)	20 V
Response threshold	200 µA

### Output

Output signal type	Current
Output signal (current)	0 ... 20 mA; 4 ... 20 mA
Load impedance (current output)	≤ 600 Ω (temperature range restrictions may occur)

### Signal Processing

Limit frequency	100 Hz
Step response (typ.)	3.5 ms

### Measurement Error

Transmission error (typ.)	≤ 0.1 % of upper-range value
Load error	≤ 0.05 % (of upper-range value; per 100 Ω load)
Temperature coefficient	≤ 0.01 %/K

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm² / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	34.2 g
--------	--------

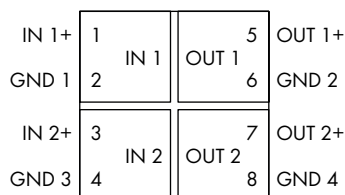
### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

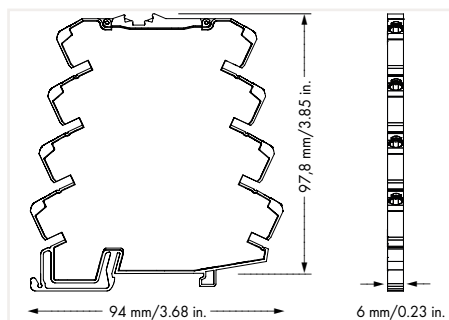
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

## Passive Isolator; 2-Channel 857 Series



Passive Isolator; 2-channel; Current input signal;  
2 x Current output signal; Power via input; Module width:  
6 mm wide

Item No.	Pack. Unit
857-452	1



### Short description:

WAGO's passive isolator (2-channel) electrically isolates and filters 0(4)–20 mA standard analog signals, while drawing power for signal transmission from the input circuit. The connected sensor supplies the passive isolator with the required power to energize the connected load.

### Features:

- No additional supply voltage required
- Safe 2-way isolation with 2.5 kV test voltage per EN 61140

### Configuration

Configuration options	Pre-configured
-----------------------	----------------

### Input

Input signal type	Current
Input signal (current)	0 ... 20 mA; 4 ... 20 mA
Voltage drop at input	≤ 2.5 V at 20 mA (output)
Input current (max.)	40 mA
Input voltage (max.)	20 V
Response threshold	200 µA

### Output

Output signal type	Current
Output signal (current)	0 ... 20 mA; 4 ... 20 mA
Load impedance (current output)	≤ 600 Ω (temperature range restrictions may occur)

### Signal Processing

Limit frequency	100 Hz
Step response (typ.)	3.5 ms

### Measurement Error

Transmission error (typ.)	≤ 0.1 % of upper-range value
Load error	≤ 0.05 % (of upper-range value; per 100 Ω load)
Temperature coefficient	≤ 0.01 %/K

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	62 g
--------	------

### Environmental Requirements

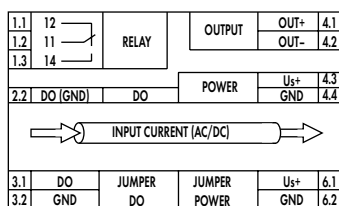
Surrounding air temperature (operation)	–25 ... +70 °C
Surrounding air temperature (storage)	–40 ... +85 °C

### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

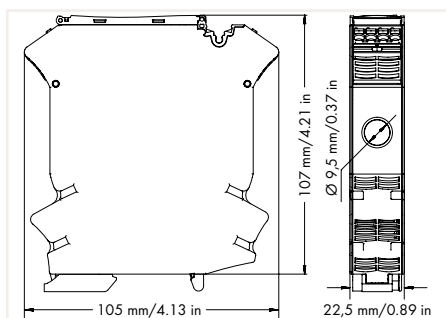
# Current Signal Conditioner; Configurable; with Digital and Relay Output

## 857 Series



Current Signal Conditioner; Current input signal: 100 A AC/DC; Current and voltage output signal; Digital and relay output; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	2857-550	1



### Short description:

WAGO's current signal conditioner measures AC/DC currents up to 100 A and converts the measured current into a standard analog signal at the output.

### Features:

- Both digital signal output and relay with changeover contact react to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Clipping capability provides analog signal limitation to output end values
- Adjustable software filter
- Input/output response simulation via configuration display
- Safe 3-way isolation with 3 kV test voltage per EN 61010-1

### Note:

Additional setting options via interface configuration software/app

» Configuration software	Page 326
» Configuration app	Page 327
» Configuration display	Page 328
» Accessories	Page 338

### Configuration

Configuration options: DIP switch; Interface configuration software; Interface configuration app; Configuration display

### Input

Input signal type	Current
Input signal (current)	0.5 ... 100 AAC; -100 ... +100 ADC
Frequency range	15 ... 1000 Hz
Input current (max.)	100 A AC/DC
Response threshold	500 mA (AC); 250 mA (DC)
Resolution	10 mA

### Output

Output signal type	Current; Voltage
Output signal (voltage)	±5 V; 0 ... 5 V; 1 ... 5 V; ±10 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	±10 mA; 0 ... 10 mA; 2 ... 10 mA; ±20 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	≥ 1 kΩ
Load impedance (current output)	≤ 600 Ω

### Output – Digital

Max. switching voltage (DO)	Supply voltage applied: -0.3 V
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 or 2 (adjustable)
Configurable rise/fall delay time (DO)	0 ... 60 s (via software)

### Output – Relay

Number of changeover/switchover contacts	1
Contact material (relay)	AgNi (gold-plated)
Switching voltage (max.)	250 VAC
Limiting continuous current (relay; module assembly)	6 A (≤ 60 °C); 3 A (60 ... +70 °C)
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	4 ms
Bounce time (typ.)	8 ms
Number of switching thresholds (relay)	1 or 2 (adjustable)
Configurable rise/fall delay time (relay)	0 ... 60 s (via software)

### Signal Processing

Measurement method	True RMS measurement; Arithmetic mean value
Limit frequency	3.3 kHz
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	60 ms (DC; for software filter 3/default setting); 250 ms (AC)

### Measurement Error

Transmission error (max.)	≤ 1 % (of the full scale value)
Temperature coefficient	≤ 0.01 %/K

### Power Supply

Nominal supply voltage U <sub>s</sub>	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 50 mA (+ IDO)

### Safety and Protection

Test voltage (input/output/supply)	3 kVAC; 50 Hz; 1 min
Test voltage (measuring circuit/output)	4 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
WAGO Connector	picoMAX® 5.0
Solid conductor	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Fine-stranded conductor	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Feedthrough for measurement conductor	9.5 mm Ø

Specialty Functions:



Configuration via:



**Geometric Data**

Width	22.5 mm / 0.886 inch
Height from upper-edge of DIN-rail	107 mm / 4.213 inch
Depth	105 mm / 4.134 inch

**Mechanical Data**

Mounting type	DIN-35 rail
---------------	-------------

**Material Data**

Weight	102.94 g
--------	----------

**Environmental Requirements**

Surrounding air temperature (operation)	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

**Standards and Specifications**

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-4; EN 61326-2-3; EN 50121-3-2
Standards/specifications	EN 61010-1; EN 61373

2857-550

DIP Switch Adjustability

● = ON Default

DIP Switch S1

Measurement method		Filter		Analog Output, Inverted		Output Signal (Bipolar for Arithmetic Mean Value)		
1	2	3	4	5	6	Analog Output		
True RMS	inactive	Not inverted	●	●	●	(±) 10 ... 20 mA		
● Arithmetic mean value (Output signal bipolar)	● active	● Inverted	●	●	●	4 ... 20 mA		
			●			(±) 0 ... 10 V		
			●	●		2 ... 10 V		
					●	(±) 10 ... 10 mA		
					●	2 ... 10 mA		
			●		●	(±) 10 ... 5 V		
			●	●	●	1 ... 5 V		

DIP Switch S1

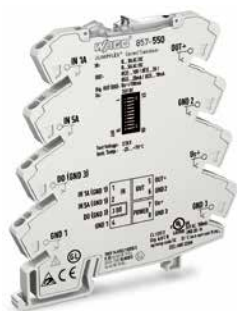
7	8	Measurement Range Underflow	Measurement Range Overflow	Overcurrent (Input Signal End Value + 20 %)	Digital Output (DO)/ Relay	
					9	10
		Lower limit of output range -5% *	Upper limit of output range +2.5% *	Upper limit of output range +5%		Off
●		Lower limit of output range	Upper limit of output range +2.5%	Upper limit of output range +5%	●	DO U <sub>s</sub> + switching – Relay pulls in
●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range -5 %	●	DO GND switching – Relay drops out
●	●	Lower limit of output range -5%	Upper limit of output range +5%	Upper limit of output range	●	Off

\*acc. to NAMUR NE 43

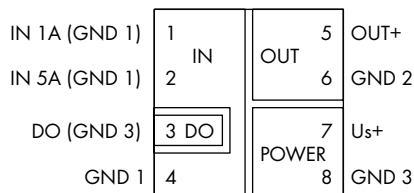
DIP Switch S2

Start Value				End Value		
1	2	3	4	5	6	7
A / % (RMS)				A / %		
Software configuration (0)				Software configuration (-100)		
Software configuration (100)				Software configuration (100)		
●				●		
	●				●	
●	●			●	●	
		●				●
●		●		●	●	
●	●			●	●	●
		●	●			
●		●	●			
●	●	●				
●	●	●	●			

## Current Signal Conditioner; Configurable; with Digital Output 857 Series

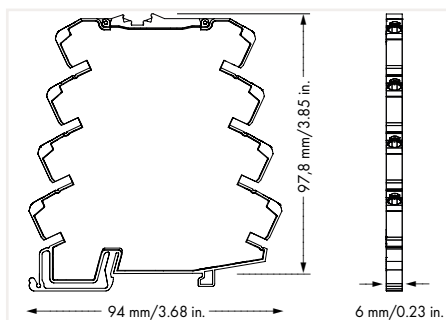


3



Current Signal Conditioner; Current input signal:  
5 A AC/DC; Current and voltage output signal; Digital  
output; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-550	1



### Short description:

WAGO's current signal conditioner measures both 0–1 A and 0–5 A AC/DC currents, converting the input signal to an standard analog signal at the output.

### Features:

- PC configuration interface
- True RMS measurement or arithmetic mean value
- Digital switching output (configurable switching thresholds)
- Switchable filter function
- Calibrated measurement range switching
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140
- Extremely fast response times
- Measurement range overflow indication

### Note:

Additional setting options via interface configuration software/app

### Configuration

Configuration options	DIP switch; Interface configuration software; Interface configuration app
-----------------------	---------------------------------------------------------------------------

### Input

Input signal type	Current
Input signal (current)	0 ... 1 A AC/DC (IN 1); 0 ... 5 A AC/DC (IN 2)
Frequency range	16 ... 400 Hz
Input resistance (current input)	10 mΩ (IN 1); 47 mΩ (IN 2)
Input current (max.)	10 A (IN 1; 5 s); 15 A (IN 2; 5 s)
Response threshold	2 mA (IN 1); 4 mA (IN 2)

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	≥ 2 kΩ (temperature range restrictions may occur)
Load impedance (current output)	≤ 600 Ω (temperature range restrictions may occur)

### Output – Digital

Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 (adjustable)

### Signal Processing

Measurement method	True RMS measurement; Arithmetic mean value
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	60 ms

### Measurement Error

Transmission error (typ.)	≤ 0.1 % of upper-range value
Transmission error (max.)	≤ 0.4 % of upper-range value
Temperature coefficient	≤ 0.01 %/K

### Power Supply

Nominal supply voltage $U_s$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA (+ IDO)

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

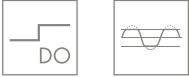
Weight	64 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation)	-25 °C ... +70 °C (at nominal current)
Surrounding air temperature (storage)	-40 ... +85 °C

» Configuration software	Page 326
» Configuration app	Page 327
» Accessories	Page 338

Specialty Functions:



Configuration via:



Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

857-550

DIP Switch Adjustability

= ON  Default

DIP Switch S1

Input Signal		Measurement Method	Filter	Output Signal		
1	2	3	4	5	6	
5 A	Mean square value	off				0 ... 20 mA
• 1 A	• Arithmetic mean value	• active		•		4 ... 20 mA
				•		0 ... 10 V
				•	•	2 ... 10 V
					•	0 ... 10 mA
					•	2 ... 10 mA
				•	•	0 ... 5 V
				•	•	1 ... 5 V

Filter:

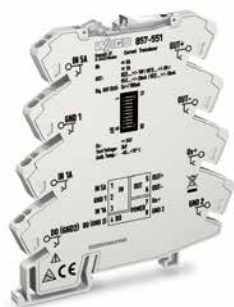
The filter function allows a low-pass filter to be switched on in order to mask or "smooth out" oscillating measured values (e.g., during trailing edge flows).

DIP Switch S1

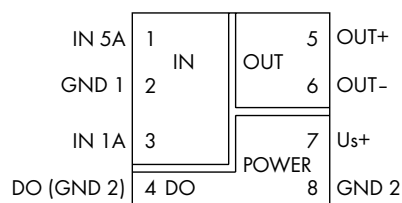
7	8	Measurement Range Underflow	Measurement Range Overflow	Overcurrent (Input Signal - End Value + 20%)	9	10	Digit Output DO Signaling
		Lower limit of measurement range -5 %*	Upper limit of measurement range +2.5 %*	Upper limit of measurement range +5 %*			DO not active
•		Lower limit of measurement range	Upper limit of measurement range +2.5 %	Upper limit of measurement range +5 %		•	DO U <sub>s</sub> + switching
	•	Lower limit of measurement range	Upper limit of measurement range	Lower limit of measurement range	•	•	DO GND switching
	•	Lower limit of measurement range	Upper limit of measurement range	Upper limit of measurement range			*acc. to NAMUR NE 43



## Current Signal Conditioner; Configurable; with Digital Output Serie 857

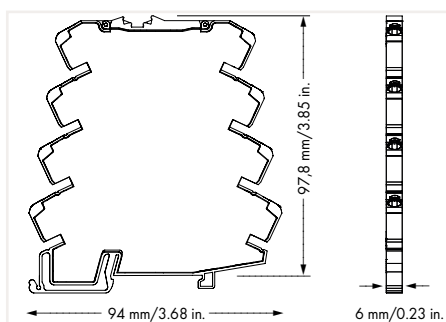


3



Current Signal Conditioner; Current input signal: 5 A AC/DC; Current and voltage output signal; Digital output; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-551	1



### Short description:

WAGO's current signal conditioner measures AC/DC currents up to 5 A, converting the input signal to a standard analog signal at the output.

### Features:

- Two isolated measurement inputs for 1 and 5 A AC/DC
- RMS measurement or arithmetic mean value
- A digital signal output reacts to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Switchable filter function
- Safe 3-way isolation with 3 kV test voltage per DIN EN 61010-1

### Notes:

- Additional setting options via interface configuration software
- In the present network, ensure that the neutral conductor is not dangerously active!

### Configuration

Configuration options      DIP switch; Interface configuration software

### Input

Input signal type	Current
Input signal (current)	0 ... 5 A AC/DC (IN 1; Individual arrangement); 0 ... 6 A AC/DC (IN 1; Block arrangement); 0 ... 1 A AC/DC (IN 2)
Frequency range	16 ... 200 Hz
Input resistance (current input)	47 mΩ (IN 1); 10 mΩ (IN 2)
Input current (max.)	6.2 A (IN 1; permanent); 15 A (IN 1; 5 s); 2 A (IN 2; permanent); 10 A (IN 2; 5 s)
Response threshold	10 mA (IN 1); 2 mA (IN 2)
Resolution	1 mA (IN 1); 0.5 mA (IN 2)

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V (can be inverted, also bipolar)
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA (can be inverted, also bipolar)
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

### Output – Digital

Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 or 2 (adjustable)
Configurable rise/fall delay time (DO)	0 ... 60 s (via software)

### Signal Processing

Measurement method	RMS measurement; Arithmetic mean value
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	60 ms (with software filter 3)
Step response (max.)	250 ms

### Measurement Error

Transmission error (max.)	≤ 0.5 % (of the full scale value)
Temperature coefficient	≤ 0.01 %/K

### Power Supply

Nominal supply voltage US	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 46 mA (+ IDO)

### Safety and Protection

Test voltage (input/output/supply)	3 kV AC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

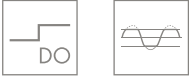
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

» Configuration software      Page 326

» Accessories      Page 338

Specialty Functions:



Configuration via:



**Material Data**

Weight 55 g

**Environmental Requirements**

Surrounding air temperature (operation) -40 °C ... +70 °C (at nominal current)

Surrounding air temperature (storage) -40 ... +85 °C

Operating altitude (max.) 2000 m

**Standards and Specifications**

Conformity marking CE

EMC immunity to interference EN 61000-6-2; EN 61326-1

EMC emission of interference EN 61000-6-3; EN 61326-1

Standards/specifications EN 61010-1; EN 61010-2-201

857-551

DIP Switch Adjustability

● = ON **Default**

DIP Switch S1

1	2	Input	3	Measurement Method	4	Filter
		5 A		Effective value (RMS)		off
	●	2.5 A	●	Arithmetic mean value (bipolar output)	●	active
	●	1 A				
	● ●	0.5 A				

DIP Switch S1

5	6	7	Output Signal Range (Bipolar for Arithmetic Mean Value)
			(+/-) 0 ... 20 mA
	●		4 ... 20 mA
	●		(+/-) 0 ... 10 V
	● ●		2 ... 10 V
		●	(+/-) 0 ... 10 mA
	● ●		2 ... 10 mA
	●	●	(+/-) 0 ... 5 V
	● ● ●		1 ... 5 V

DIP Switch S1

8	9	Measurement Range Underflow	Measurement Range Overflow	10	Digital Output DO Signaling
		Lower limit of measurement range +2.5 % <sup>1</sup>	Upper limit of measurement range -5 % <sup>1</sup>		DO V <sub>s</sub> + switching
	●	Lower limit of measurement range +2.5 %	Upper limit of measurement range	●	DO GND switching
	●	Lower limit of measurement range	Upper limit of measurement range		
	● ●	Lower limit of measuring range	Upper limit of measuring range -5 %		

<sup>1</sup>acc. to NAMUR NE 43

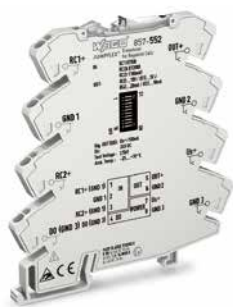
Filter

The filter function allows a low-pass filter to be switched on in order to mask or "smooth out" oscillating measured values (e.g., during trailing edge flows).

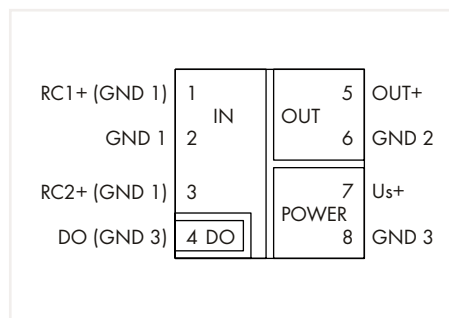
Digital Output DO/Signaling

The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

## Current Signal Conditioner; Configurable; Input for Rogowski Coils 857 Series

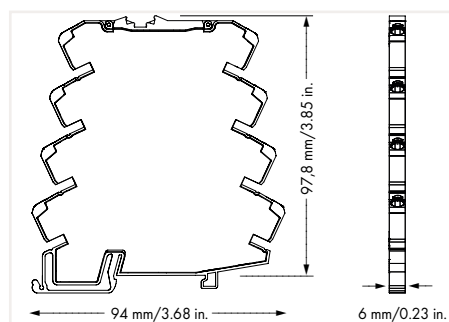


3



Current Signal Conditioner; Input for Rogowski coils;  
Current and voltage output signal; Digital output; Sup-  
ply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-552	1



### Short description:

WAGO's rogowski signal conditioner records RMS values from alternating currents via Rogowski coil, converting the input signal into an standard analog signal on the output side.

### Features:

- PC configuration interface
- Supports different Rogowski coil types
- Digital switching output (configurable switching thresholds)
- True RMS measurement (TRMS)
- Configurable output signal
- Configuration via DIP switch
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140
- No current bar interruption during installation
- Measurement range overflow indication

### Note:

Additional setting options via interface configuration software/app

» Configuration software	Page 326
» Configuration app	Page 327
» Accessories	Page 338

### Configuration

Configuration options	DIP switch; Interface configuration software; Interface configuration app
-----------------------	---------------------------------------------------------------------------

### Input

Input signal type	Voltage
Input signal (voltage)	50 Hz sinusoidal signals: 10.05 mVAC (RC1); 40.2 mVAC (RC2A); 90 mVAC (RC2B)
Sensitivity	RC2B: 22.5 mV/kA
Measurement range (current)	500 AAC (RC1); 2000 AAC (RC2A); 4000 AAC (RC2B)
Frequency range	50 Hz (sinusoidal signals)
Response threshold	≤ 1 % (of measurement range nominal value)
Resolution	250 mA (RC1); 1 A (RC2A); 1.5 A (RC2B)

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	≥ 1 kΩ
Load impedance (current output)	≤ 600 Ω

### Output – Digital

Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 (adjustable)

### Signal Processing

Measurement method	True RMS measurement (TRMS)
Limit frequency	2 kHz
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	60 ms

### Measurement Error

Transmission error (max.)	≤ 1 % (of the full scale value)
Temperature coefficient	≤ 0.01 %/K

### Power Supply

Nominal supply voltage $U_s$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA (+ IDO)

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	35.1 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

Specialty Functions:



Configuration via:



Standards and Specifications

Conformity marking

CE

857-552

DIP Switch Adjustability

● = ON **Default**

DIP Switch S1

Input Signal		RC Configuration Input		Filter		Output Signal		
1	2	3	4	5	6			
RC1 = RT500 from LEM	RC2A = RT2000 from LEM	off				0 ... 20 mA		
● RC2	● RC2B = 22.5 mV/kA	● active		●		4 ... 20 mA		
				●		0 ... 10 V		
				●	●	2 ... 10 V		
					●	0 ... 10 mA		
					●	●	2 ... 10 mA	
				●		0 ... 5 V		
				●	●	1 ... 5 V		

Filter:

The filter function allows a low-pass filter to be switched on in order to mask or "smooth out" oscillating measured values (e.g., during trailing edge flows).

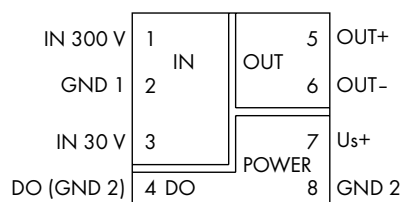
DIP Switch S1

7	8	Measurement Range Underflow	Measurement Range Overflow	Overcurrent (Input Signal – End Value + 20%)	9	10	Digital Output DO Signaling
		Lower limit of measurement range +5 %*	Upper limit of measurement range +2.5 %*	Upper limit of measurement range +5 %*			DO not active
●		Lower limit of measurement range	Upper limit of measurement range +2.5 %	Upper limit of measurement range +5 %		●	DO U <sub>S</sub> + switching
	●	Lower limit of measurement range	Upper limit of measurement range	Lower limit of measurement range	●	●	DO GND switching
●	●	Lower limit of measurement range	Upper limit of measurement range	Upper limit of measurement range			*acc. to NAMUR NE 43

## Voltage Signal Conditioner; Configurable; with Digital Output 857 Series

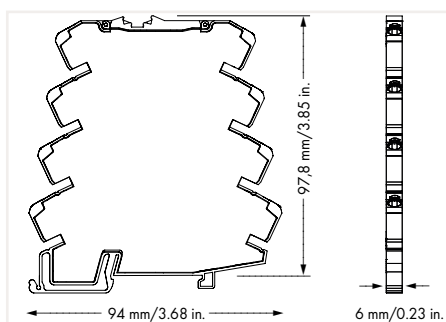


3



Voltage Signal Conditioner; Voltage input signal; Current and voltage output signal; Digital output; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-560	1



### Short description:

WAGO's voltage signal conditioner measures AC/DC voltages up to 300 V, converting the input signal into a standard analog signal at the output.

### Features:

- Two isolated measurement inputs for 30 and 300 V AC/DC
- RMS measurement or arithmetic mean value
- A digital signal output reacts to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Switchable filter function
- Safe 3-way isolation with 3 kV test voltage per DIN EN 61010-1

### Configuration

Configuration options	DIP switch; Interface configuration software; Interface configuration app
-----------------------	---------------------------------------------------------------------------

### Input

Input signal type	Voltage
Input signal (voltage)	300 V AC/DC (IN 1); 30 V AC/DC (IN 2)
Frequency range	10 ... 100 Hz (AC)
Input resistance (voltage input)	≥ 300 kΩ
Input voltage (max.)	600 V (IN 1; permanent); 60 V (IN 2; permanent)
Response threshold	300 mV (IN 1); 30 mV (IN 2)
Resolution	30 mV (IN 1); 3 mV (IN 2)

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V (can be inverted, also bipolar)
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA (can be inverted, also bipolar)
Load impedance (voltage output)	≥ 1 kΩ
Load impedance (current output)	≤ 600 Ω

### Output – Digital

Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 or 2 (adjustable)
Configurable rise/fall delay time (DO)	0 ... 60 s (via software)

### Signal Processing

Measurement method	RMS measurement; Arithmetic mean value
Limit frequency	2 kHz
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	30 ms

### Measurement Error

Transmission error (max.)	≤ 0.5 % (of the full scale value)
Temperature coefficient	≤ 0.01 %/K

### Power Supply

Nominal supply voltage $U_s$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 46 mA (+ IDO)

### Safety and Protection

Test voltage (input/output/supply)	3 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

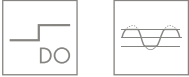
Weight	39.1 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 °C ... +70 °C (at nominal current)
Surrounding air temperature (storage)	-40 ... +85 °C
Operating altitude (max.)	2000 m

» Configuration software	Page 326
» Configuration app	Page 327
» Accessories	Page 338

Specialty Functions:



Configuration via:



Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-3; EN 61326-2-3; EN 50121-3-2
Standards/specifications	EN 61010-1; EN 61373

857-560

DIP Switch Adjustability

● = ON Default

DIP Switch S1

1	2	Input	3	Measurement Method	4	Filter
		300 V		Effective value (RMS)		off
●		150 V	●	Arithmetic mean value (bipolar output)	●	active
●		30 V				
●	●	15 V				

DIP Switch S1

5	6	7	Output Signal Range (Bipolar for Arithmetic Mean Value)
			(+/-) 0 ... 20 mA
●			4 ... 20 mA
●			(+/-) 0 ... 10 V
●	●		2 ... 10 V
		●	(+/-) 0 ... 10 mA
●	●		2 ... 10 mA
●	●		(+/-) 0 ... 5 V
●	●	●	1 ... 5 V

DIP Switch S1

8	9	Measurement Range Underflow	Measurement Range Overflow	10	Digital Output DO/ Signaling
		Lower limit of measurement range -5 %*	Upper limit of measurement range +2.5 %*		DO V <sub>s</sub> + switching
●		Lower limit of measurement range	Upper limit of measurement range +2.5 %	●	DO GND switching
	●	Lower limit of measurement range	Upper limit of measurement range		
●	●	Lower limit of measurement range	Upper limit of measurement range		

\*acc. to NAMUR NE 43

Filter

The filter function allows a low-pass filter to be switched on in order to mask or "smooth out" oscillating measured values (e.g., during trailing edge flows).

Digital Output DO/Signaling

The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

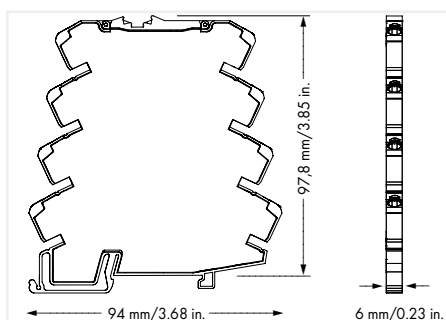
## Voltage Signal Conditioner; Configurable 857 Series



IN+	1	IN mV	OUT	5	OUT+
IN-	2		U <sub>I</sub>	6	GND 1
N.C.	3	POWER		7	U <sub>S</sub> +
N.C.	4			8	GND 2

Voltage Signal Conditioner; Bipolar voltage input signal;  
Current and voltage output signal; Supply voltage:  
24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-819	1



### Short description:

WAGO's voltage signal conditioner converts millivolt signals (at the input) into a standard analog signal at the output.

### Features:

- PC configuration interface
- Calibrated measurement range switching
- Switchable clipping
- Limitation of standard analog signal to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Note:

Additional setting options via interface configuration software/app

### Configuration

Configuration options	DIP switch; Interface configuration software; Interface configuration app
-----------------------	------------------------------------------------------------------------------

### Input

Input signal type	Voltage
Input signal (voltage)	±100 mV; 0 ... 200 mV; 0 ... 300 mV; 0 ... 400 mV; 0 ... 500 mV; 0 ... 600 mV; 0 ... 700 mV; 0 ... 800 mV; 0 ... 900 mV; 0 ... 1 V
Input resistance (voltage input)	≥ 1 mΩ
Input voltage (max.)	±31.2 VDC
Measurement span (voltage)	10 mV

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

### Signal Processing

Step response (typ.)	50 ms
----------------------	-------

### Measurement Error

Transmission error (typ.)	≤ 0.1 % at full measurement span
Temperature coefficient	≤ 0.01 %/K

### Power Supply

Nominal supply voltage U <sub>s</sub>	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	36.3 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

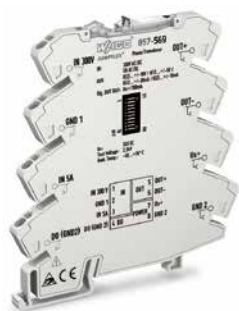
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

» Configuration software	Page 326
» Configuration app	Page 327
» Accessories	Page 338

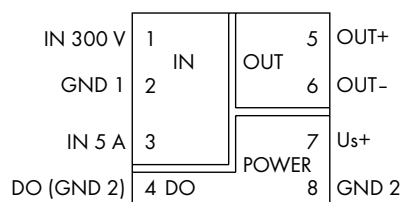




## Power Signal Conditioner; Configurable; with Digital Output 857 Series

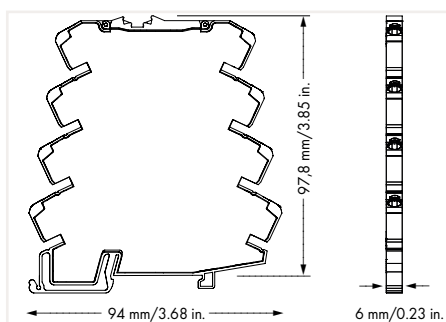


3



Power Signal Conditioner; 300 VAC / 5 A; Current and voltage output signal; Digital output; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-569	1



### Short description:

WAGO's power signal conditioner measures both AC/DC voltages and currents, converting the input signal into a standard analog signal at the output. Measured value processing can be switched between RMS value or arithmetic mean value and between effective, apparent or reactive power, and phase angle.

### Features:

- Two isolated measurement inputs for both AC/DC voltages and currents
- RMS measurement or arithmetic mean value
- A digital signal output reacts to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Switchable filter function
- Safe 3-way isolation with 3 kV test voltage per DIN EN 61010-1

### Configuration

Configuration options: DIP switch; Interface configuration software; Interface configuration app

### Input

Input signal type	Voltage; Current
Input signal (voltage)	300 V AC/DC (IN 1)
Input signal (current)	0 ... 5 A AC/DC (IN 2)
Frequency range	15 ... 70 Hz (AC)
Input resistance (current input)	≤ 10 mΩ
Input resistance (voltage input)	≥ 300 kΩ
Input current (max.)	10 A AC/DC (IN 2; permanent)
Input voltage (max.)	600 V (IN 1; permanent)
Response threshold	300 mV (IN 1); 10 mA (IN 2)
Resolution	30 mV (IN 1); 1 mA (IN 2)

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V (can be inverted, also bipolar)
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA (can be inverted, also bipolar)
Load impedance (voltage output)	≥ 1 kΩ
Load impedance (current output)	≤ 600 Ω

### Output – Digital

Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 or 2 (adjustable)
Configurable rise/fall delay time (DO)	0 ... 60 s (via software)

### Signal Processing

Measurement method	RMS measurement; Arithmetic mean value
Limit frequency	2 kHz
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	100 ms

### Measurement Error

Transmission error (max.)	≤ 0.5 % (of the full scale value)
Temperature coefficient	≤ 0.01 %/K

### Power Supply

Nominal supply voltage $U_s$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 46 mA (+ IDO)

### Safety and Protection

Test voltage (input/output/supply)	3 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

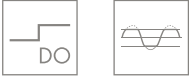
Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	39.2 g
--------	--------

» Configuration software	Page 326
» Configuration app	Page 327
» Accessories	Page 338

Specialty Functions:



Configuration via:



**Environmental Requirements**

Surrounding air temperature (operation)	-25 °C ... +70 °C (at nominal current)
Surrounding air temperature (storage)	-40 ... +85 °C
Operating altitude (max.)	2000 m

**Standards and Specifications**

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-3; EN 61326-2-3; EN 50121-3-2
Standards/specifications	EN 61010-1; EN 61373

857-569

DIP Switch Adjustability

= ON  **Default**

DIP Switch S1

1	2	Measured Variable	3	4	Filter
		Effective power	Not assigned		Off
		<ul style="list-style-type: none"> <li>• Apparent power</li> <li>• Reactive power</li> <li>• Power factor</li> </ul>			<ul style="list-style-type: none"> <li>• Active</li> </ul>

DIP Switch S1

5	6	7	Output Signal Range
			0 ... 20 mA
		•	4 ... 20 mA
		•	0 ... 10 V
		• •	2 ... 10 V
		•	0 ... 10 mA
		• •	2 ... 10 mA
		•	0 ... 5 V
		• •	1 ... 5 V

DIP Switch S1

8	9	Measurement Range Underflow	Measurement Range Overflow	10	Digit Output DO/Signaling
		Lower limit of measurement range -5 %*	Upper limit of measurement range +2.5 %*		DO V <sub>s</sub> + switching
		• Lower limit of measurement range	• Upper limit of measurement range +2.5 %	•	DO GND switching
		• Lower limit of measurement range	• Upper limit of measurement range		
		• Lower limit of measurement range	• Upper limit of measurement range		

\*acc. to NAMUR NE 43

Filter:

The filter function allows a low-pass filter to be switched on in order to mask or "smooth out" oscillating measured values (e.g., during trailing edge flows).

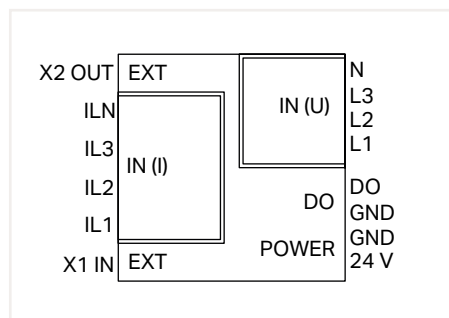
Digital Output DO/Signaling:

The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

## 3-Phase Power Measurement Module; 3 x 400 / 690 V; 1 A; Modbus RTU Serie 2857



3



3-Phase Power Measurement Module;  
3 x 400 / 690 V; 1 A; Modbus RTU

Item No.	Pack. Unit
2857-570/024-001	1

### Short description:

WAGO's 3-phase power measurement module in a DIN-rail-mount enclosure measures electrical data in three-phase supply networks – remotely from the control level.

Measured variables such as active/apparent/reactive power, energy consumption, power factor, phase angle and frequency can be accessed via Modbus® Interface. In addition, the measured variables can be stored on a microSD card.

### Features:

- Current measurement via 1A current transformer
- Mobile measurement and storage of measured values on microSD card
- Configuration and display of measured values during operation via configuration interface
- Compact device in DIN-rail-mount enclosure saves space used for building technology
- Communication of measured values via Modbus® Interface
- Configurable digital signal output as pulse output

### Note:

- Additional setting options via interface configuration software

### Specialty Functions:



### Configuration via:



### Configuration

Configuration options	Interface configuration software
-----------------------	----------------------------------

### Input

Input signal type	Voltage; Current
Network configuration	3-phase power measurement with N-conductor (4 conductors); 3-phase power measurement with N-conductor (3 conductors)
Input signal (voltage)	3 x 400 VAC ( $U_{LN}$ ); 3 x 690 VAC ( $U_{LL}$ )
Input signal (current)	4 x 1 AAC (current transformer)
Frequency range	45 ... 65 Hz (Harmonics analysis: 0 ... 3.3 kHz)
Input resistance (voltage input)	1.5 M $\Omega$
Input resistance (current input)	22 m $\Omega$
Input voltage (max.)	400 VAC ( $U_{LN}$ ); 690 VAC ( $U_{LL}$ )
Input current (max.)	1 AAC
Response threshold	10 mA
Resolution (current)	10 mA

### Output – Digital

Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Configurable functions (DO)	Threshold value switch; S0 interface (pulse output)

### Communication

Communication	Modbus RTU
Interface	RS-485 (2-wire) via RJ-45
Number of participants (max.)	32
Addressing	Via interface configuration software

### Signal Processing

Measurement method	True RMS measurement (measured value acquisition with 8 kHz)
Measured variables (calculated)	Line-to-line voltage; Power output; Energy; Power factors; Mains frequency; Harmonic analysis (up to the 41st harmonic); Total harmonic distortion (THD)
Signal form	Any periodic signals (considering the threshold frequencies)
Limit frequency	15.9 kHz
Type of memory card	WAGO 758-879/000-3102 (microSD; 2 GB)

### Measurement Error

Transmission error (max.)	$\leq 0.5\%$ for current and voltage (of the full scale value)
---------------------------	----------------------------------------------------------------

### Power Supply

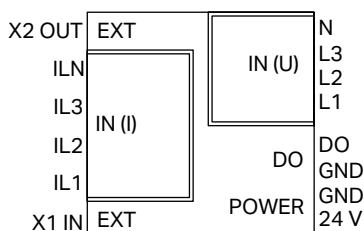
Nominal supply voltage $U_S$	24 VDC (SELV)
Supply voltage range	$\pm 30\%$
Power consumption at nominal supply voltage	$\leq 50$ mA (+ $I_{D0}$ )

### Safety and Protection

Test voltage (input/output/supply)	3.51 kV AC; 50 Hz; 1 min
Safe isolation (input/supply and communication)	Per EN 61010-1
Requirement (N input)	Shall not be dangerously active
Requirement (IL, input)	Coils/converters with basic insulation
External/Neutral conductor voltage	600 V AC/DC
Overvoltage category	III
Pollution degree	2
Protection type	IP20

Connection Data	
Connection type	Voltage
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	WAGO 804 Series
Solid conductor	0.25 ... 2.5 mm <sup>2</sup> / 20 ... 12 AWG
Fine-stranded conductor	0.25 ... 2.5 mm <sup>2</sup> / 22 ... 12 AWG
Strip length	10 ... 11 mm / 0.39 ... 0.43 inch
Connection type 2	Current/Power supply/DO
Connection technology 2	Push-in CAGE CLAMP®
WAGO Connector 2	WAGO 805 Series
Solid conductor 2	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 16 AWG
Fine-stranded conductor 2	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 16 AWG
Strip length 2	9 ... 10 mm / 0.35 ... 0.39 inch
Connection type 3	Modbus® communication
Connector	2 x RJ-45 (daisy chain configuration)
Geometric Data	
Width	72 mm / 2.835 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	118 g
Environmental Requirements	
Surrounding air temperature (operation)	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Relative humidity	5 ... 95 % (non-condensing)
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-3
Standards/specifications	EN 61010-1

## 3-Phase Power Measurement Module; 3 x 400 / 690 V; 5 A; Modbus RTU Serie 2857



3-Phase Power Measurement Module;  
3 x 400 / 690 V; 5 A; Modbus RTU

Item No.	Pack. Unit
2857-570/024-005	1

### Short description:

WAGO's 3-phase power measurement module in a DIN-rail-mount enclosure measures electrical data in three-phase supply networks – remotely from the control level. Measured variables such as active/apparent/reactive power, energy consumption, power factor, phase angle and frequency can be accessed via Modbus® Interface. In addition, the measured variables can be stored on a microSD card.

### Features:

- Current measurement via 5A current transformer
- Mobile measurement and storage of measured values on microSD card
- Configuration and display of measured values during operation via configuration interface
- Compact device in DIN-rail-mount enclosure saves space used for building technology
- Communication of measured values via Modbus® Interface
- Configurable digital signal output as pulse output

### Note:

- Additional setting options via interface configuration software

### Specialty Functions:



### Configuration via:



### Configuration

Configuration options	Interface configuration software
-----------------------	----------------------------------

### Input

Input signal type	Voltage; Current
Network configuration	3-phase power measurement with N-conductor (4 conductors); 3-phase power measurement with N-conductor (3 conductors)
Input signal (voltage)	3 x 400 VAC ( $U_{LN}$ ); 3 x 690 VAC ( $U_{LL}$ )
Input signal (current)	4 x 5 AAC (current transformer)
Frequency range	45 ... 65 Hz (Harmonics analysis: 0 ... 3.3 kHz)
Input resistance (voltage input)	1.5 M $\Omega$
Input resistance (current input)	22 m $\Omega$
Input voltage (max.)	400 VAC ( $U_{LN}$ ); 690 VAC ( $U_{LL}$ )
Input current (max.)	5 AAC
Response threshold	5 mA
Resolution (current)	0.15 mA

### Output – Digital

Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Configurable functions (DO)	Threshold value switch; S0 interface (pulse output)

### Communication

Communication	Modbus RTU
Interface	RS-485 (2-wire) via RJ-45
Number of participants (max.)	32
Addressing	Via interface configuration software

### Signal Processing

Measurement method	True RMS measurement (measured value acquisition with 8 kHz)
Measured variables (calculated)	Line-to-line voltage; Power output; Energy; Power factors; Mains frequency; Harmonic analysis (up to the 41st harmonic); Total harmonic distortion (THD)
Signal form	Any periodic signals (considering the threshold frequencies)
Limit frequency	15.9 kHz
Type of memory card	WAGO 758-879/000-3102 (microSD; 2 GB)

### Measurement Error

Transmission error (max.)	$\leq 0.5\%$ for current and voltage (of the full scale value)
---------------------------	----------------------------------------------------------------

### Power Supply

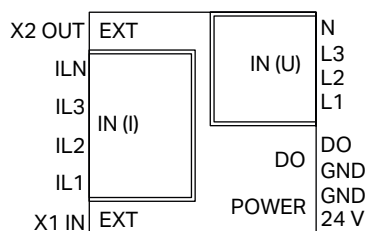
Nominal supply voltage $U_s$	24 VDC (SELV)
Supply voltage range	$\pm 30\%$
Power consumption at nominal supply voltage	$\leq 50$ mA (+ $I_{bo}$ )

### Safety and Protection

Test voltage (input/output/supply)	3.51 kV AC; 50 Hz; 1 min
Safe isolation (input/supply and communication)	Per EN 61010-1
Requirement (N input)	Shall not be dangerously active
Requirement (IL, input)	Coils/converters with basic insulation
External/Neutral conductor voltage	600 V AC/DC
Overvoltage category	III
Pollution degree	2
Protection type	IP20

Connection Data	
Connection type	Voltage
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	WAGO 804 Series
Solid conductor	0.25 ... 2.5 mm <sup>2</sup> / 20 ... 12 AWG
Fine-stranded conductor	0.25 ... 2.5 mm <sup>2</sup> / 22 ... 12 AWG
Strip length	10 ... 11 mm / 0.39 ... 0.43 inch
Connection type 2	Current/Power supply/DO
Connection technology 2	Push-in CAGE CLAMP®
WAGO Connector 2	WAGO 805 Series
Solid conductor 2	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 16 AWG
Fine-stranded conductor 2	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 16 AWG
Strip length 2	9 ... 10 mm / 0.35 ... 0.39 inch
Connection type 3	Modbus® communication
Connector	2 x RJ-45 (daisy chain configuration)
Geometric Data	
Width	72 mm / 2.835 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	118 g
Environmental Requirements	
Surrounding air temperature (operation)	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Relative humidity	5 ... 95 % (non-condensing)
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-3
Standards/specifications	EN 61010-1

## 3-Phase Power Measurement Module; 3 x 400 / 690 V; RC; Modbus RTU Serie 2857



3-Phase Power Measurement Module;  
3 x 400 / 690 V; RC; Modbus RTU

Item No.	Pack. Unit
2857-570/024-000	1

### Short description:

WAGO's 3-phase power measurement module in a DIN-rail-mount enclosure measures electrical data in three-phase supply networks – remotely from the control level. Measured variables such as active/apparent/reactive power, energy consumption, power factor, phase angle and frequency can be accessed via Modbus® Interface. In addition, the measured variables can be stored on a microSD card.

### Features:

- Current measurement via Rogowski Coils RC xxx
- Mobile measurement and storage of measured values on microSD card
- Configuration and display of measured values during operation via configuration interface
- Compact device in DIN-rail-mount enclosure saves space used for building technology
- Communication of measured values via Modbus® Interface
- Configurable digital signal output as pulse output

### Note:

- Additional setting options via interface configuration software

### Specialty Functions:



### Configuration via:



### Configuration

Configuration options	Interface configuration software
-----------------------	----------------------------------

### Input

Input signal type	Voltage; Current
Network configuration	3-phase power measurement with N-conductor (4 conductors); 3-phase power measurement with N-conductor (3 conductors)
Input signal (voltage)	3 x 400 VAC ( $U_{LN}$ ); 3 x 690 VAC ( $U_{LL}$ ); 4 x 90 mVAC (WAGO Rogowski Coils RC xxx)
Sensitivity	22.5 mV/kA (WAGO Rogowski Coils RC xxx)
Measurement range (current)	4 x 4000 AAC (WAGO Rogowski Coils RC xxx)
Frequency range	45 ... 65 Hz (Harmonics analysis: 0 ... 3.3 kHz)

### Output – Digital

Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Configurable functions (DO)	Threshold value switch; SO interface (pulse output)

### Communication

Communication	Modbus RTU
Interface	RS-485 (2-wire) via RJ-45
Number of participants (max.)	32
Addressing	Via interface configuration software

### Signal Processing

Measurement method	True RMS measurement (measured value acquisition with 8 kHz)
Measured variables (calculated)	Line-to-line voltage; Power output; Energy; Power factors; Mains frequency; Harmonic analysis (up to the 41st harmonic); Total harmonic distortion (THD)
Signal form	Any periodic signals (considering the threshold frequencies)
Limit frequency	15.9 kHz
Type of memory card	WAGO 758-879/000-3102 (microSD; 2 GB)

### Measurement Error

Transmission error (max.)	≤ 0.5 % for current and voltage (of the full scale value)
---------------------------	-----------------------------------------------------------

### Power Supply

Nominal supply voltage $U_s$	24 VDC (SELV)
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 50 mA (+ $I_{D0}$ )

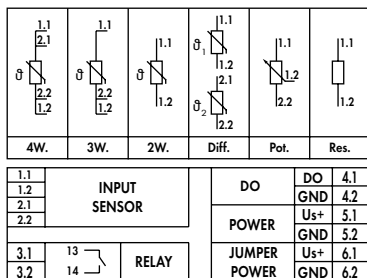
### Safety and Protection

Test voltage (input/output/supply)	3.51 kV AC; 50 Hz; 1 min
Safe isolation (input/supply and communication)	Per EN 61010-1
Requirement (N input)	Shall not be dangerously active
Requirement ( $I_{Lx}$ input)	Coils/converters with basic insulation
External/Neutral conductor voltage	600 V AC/DC
Overvoltage category	III
Pollution degree	2
Protection type	IP20

Connection Data	
Connection type	Voltage
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	WAGO 804 Series
Solid conductor	0.25 ... 2.5 mm <sup>2</sup> / 20 ... 12 AWG
Fine-stranded conductor	0.25 ... 2.5 mm <sup>2</sup> / 22 ... 12 AWG
Strip length	10 ... 11 mm / 0.39 ... 0.43 inch
Connection type 2	Current/Power supply/DO
Connection technology 2	Push-in CAGE CLAMP®
WAGO Connector 2	WAGO 805 Series
Solid conductor 2	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 16 AWG
Fine-stranded conductor 2	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 16 AWG
Strip length 2	9 ... 10 mm / 0.35 ... 0.39 inch
Connection type 3	Modbus® communication
Connector	2 x RJ-45 (daisy chain configuration)
Geometric Data	
Width	72 mm / 2.835 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	118 g
Environmental Requirements	
Surrounding air temperature (operation)	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Relative humidity	5 ... 95 % (non-condensing)
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-3
Standards/specifications	EN 61010-1

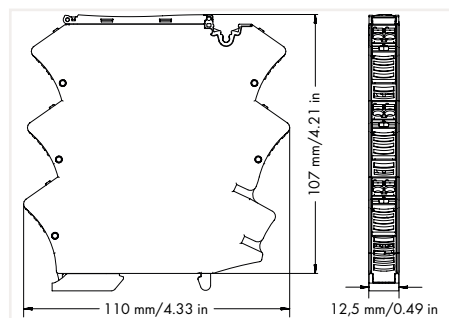


## RTD Threshold Value Switch; Configurable 857 Series



Threshold Value Switch; RTD sensors; Relay/1 make contact; Digital output; Supply voltage: 24 VDC; Module width: 12.5 mm

Item No.	Pack. Unit
2857-533	1



### Short description:

WAGO's RTD threshold value switch for RTD sensors, potentiometers and resistors monitors and reports signals of up to two switching thresholds.

### Features:

- Both digital signal output and relay with make contact react to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Configurable RTD factor
- Adjustable software filter
- Input/output response simulation via configuration display
- Safe 3-way isolation with 4 kV test voltage per EN 61140

### Note:

Additional setting options via interface configuration software/app

» Configuration software	Page 326
» Configuration app	Page 327
» Configuration display	Page 328
» Accessories	Page 338

### Configuration

Configuration options: DIP switch; Interface configuration software; Interface configuration app; Configuration display

### Input

Input signal type: Resistor; TC sensors; Frequency

### Input – RTD Sensors

Sensor types (RTD): Pt100; Pt200; Pt500; Pt1000; Pt5000; Pt10000; Pt10 ... Pt20000  
 Sensor connection: 2-wire; 3-wire; 4-wire; differential  
 Sensor power supply (RTD) max.: ≤ 0.5 mA  
 Temperature measurement range (RTD): -200 ... +850 °C

### Input – Resistors

Input range (resistor): 0 ... 100 kΩ  
 Input range (potentiometer): 0 ... 100 kΩ

### Output – Digital

Max. switching voltage (DO): Supply voltage applied: -0.3 V  
 Max. continuous current (DO): 100 mA (no internal restriction)  
 Number of switching thresholds (DO): 1 or 2 (adjustable)  
 Configurable rise/fall delay time (DO): 0 ... 60 s (via software)

### Output – Relay

Number of make contacts/switch-on contacts: 1  
 Contact material (relay): AgNi (gold-plated)  
 Switching voltage (max.): 250 VAC  
 Limiting continuous current (relay; module assembly): 6 A (≤ 60 °C); 3 A (60 ... +70 °C)  
 Dielectric strength, open contact (AC, 1 min): 1 kV<sub>rms</sub>  
 Pull-in time (typ.): 8 ms  
 Drop-out time (typ.): 4 ms  
 Bounce time (typ.): 8 ms  
 Number of switching thresholds (relay): 1 or 2 (adjustable)  
 Configurable rise/fall delay time (relay): 0 ... 60 s (via software)

### Signal Processing

Software filter (adjustable): Moving average value (filter level: 30)  
 Step response (typ.): 60 ms (2-wire); 360 ms (3-wire); 540 ms (4-wire); 360 ms (potentiometer)

### Measurement Error

Transmission error (max.): ±1 K  
 Temperature coefficient: ≤ 0.01 %/K

### Power Supply

Nominal supply voltage U<sub>s</sub>: 24 VDC  
 Supply voltage range: ±30 %  
 Power consumption at nominal supply voltage: ≤ 40 mA (+ IDO)

### Safety and Protection

Test voltage (input/output/supply): 4 kVAC; 50 Hz; 1 min  
 Protection type: IP20

### Connection Data

Connection technology: Push-in CAGE CLAMP®  
 WAGO Connector: picoMAX® 5.0  
 Solid conductor: 0.2 ... 2.5 mm<sup>2</sup> / 24 ... 12 AWG  
 Fine-stranded conductor: 0.2 ... 2.5 mm<sup>2</sup> / 24 ... 12 AWG  
 Strip length: 9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width: 12.5 mm / 0.492 inch  
 Height from upper-edge of DIN-rail: 107 mm / 4.213 inch  
 Depth: 110 mm / 4.331 inch

### Mechanical Data

Mounting type: DIN-35 rail

Specialty Functions:



Configuration via:



**Material Data**

Weight 86.5 g

**Environmental Requirements**

Surrounding air temperature (operation) -40 ... +70 °C  
 Surrounding air temperature (storage) -40 ... +85 °C

**Standards and Specifications**

Conformity marking CE  
 EMC immunity to interference EN 61000-6-2; EN 61326-2-3; EN 50121-3-2  
 EMC emission of interference EN 61000-6-4; EN 61326-2-3; EN 50121-3-2  
 Standards/specifications EN 61010-1; EN 61373

2857-533

DIP Switch Adjustability

● = ON **Default**

DIP Switch S1

Sensor Type			Connection Technology		Hysteresis		Rise/Fall Delay Relay/ DO			Reserve
1	2	3	4	5	6	T / K	7	8	9	10
						3				0
●						5				1
	●								●	2
●	●								●	3
		●								4
●	●								●	5
		●							●	8
●	●								●	10

DIP Switch S2

Start Value					End Value										
1	2	3	4	5	Temperature / °C	Resistance / Ω	Potentiometer Position	6	7	8	9	10	Temperature / °C	Resistance / Ω	Potentiometer Position
					0	OFF	OFF						100	OFF	OFF
●					OFF	10	0 %	●					OFF	10	0 %
	●				-200	15	5 %		●				-200	15	5 %
●	●				-150	22	10 %	●	●				-150	22	10 %
		●			-100	33	15 %			●			-100	33	15 %
●	●				-50	47	20 %	●	●				-50	47	20 %
	●	●			-10	68	25 %		●	●			-10	68	25 %
●	●	●			10	100	30 %	●	●	●			10	100	30 %
			●		20	120	35 %				●		20	120	35 %
●			●		30	150	40 %	●			●		30	150	40 %
	●		●		40	220	45 %		●		●		40	220	45 %
●	●		●		50	330	50 %	●	●		●		50	330	50 %
		●	●		60	470	55 %			●	●		60	470	55 %
●	●	●			70	560	60 %	●		●	●		70	560	60 %
	●	●	●		80	680	65 %		●	●	●		80	680	65 %
●	●	●	●		90	1000	70 %	●	●	●	●		90	1000	70 %
			●		100	1200	75 %					●	100	1200	75 %
●			●		150	1500	80 %	●			●		150	1500	80 %
	●		●		200	2200	85 %		●		●		200	2200	85 %
●	●		●		250	3300	90 %	●	●		●		250	3300	90 %
		●	●		300	4700	95 %			●	●		300	4700	95 %
●	●		●		350	5600	100 %	●		●	●		350	5600	100 %
	●	●	●		400	6800	OFF		●	●	●		400	6800	OFF
●	●	●	●		450	10000	OFF	●	●	●	●		450	10000	OFF
		●	●		500	12000	OFF				●	●	500	12000	OFF
●		●	●		550	15000	OFF	●			●	●	550	15000	OFF
	●	●	●		600	22000	OFF		●		●	●	600	22000	OFF
●	●	●	●		650	33000	OFF	●	●		●	●	650	33000	OFF
		●	●	●	700	47000	OFF			●	●	●	700	47000	OFF
●	●	●	●		750	56000	OFF	●		●	●	●	750	56000	OFF
	●	●	●	●	800	68000	OFF		●	●	●	●	800	68000	OFF
●	●	●	●	●	850	100000	OFF	●	●	●	●	●	850	100000	OFF

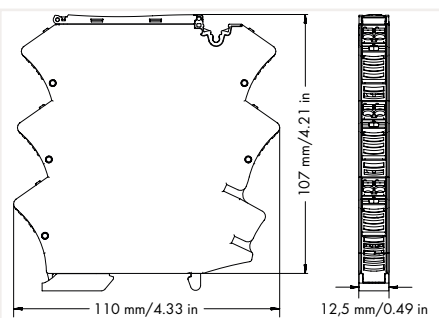
## Threshold Value Switch; Thermocouples; Configurable 857 Series



1.1	TC+	INPUT SENSOR	DO	DO	4.1
1.2	TC-			GND	4.2
2.1	11	RELAY	POWER	Us+	5.1
2.2	12			GND	5.2
3.1	11		JUMPER	Us+	6.1
3.2	14		POWER	GND	6.2

Threshold Value Switch; Thermocouple; Relay/1 change-over contact; Digital output; Supply voltage: 24 VDC; Module width: 12.5 mm

	Item No.	Pack. Unit
	2857-534	1



### Short description:

WAGO's thermocouple threshold value switch for TC sensors monitors and reports signals of up to two switching thresholds.

### Features:

- Both digital signal output and relay with changeover contact react to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Adjustable software filter
- Input/output response simulation via configuration display
- Safe 3-way isolation with 4 kV test voltage per EN 61140

### Note:

Additional setting options via interface configuration software/app

### Configuration

Configuration options: DIP switch; Interface configuration software; Interface configuration app; Configuration display

### Input

Input signal type: TC sensors; Type J, K, E, N, R, S, T, B, C

### Input – TC Sensors

Sensor types (TC): Type J, K, E, N, R, S, T, B, C  
 Temperature measurement range (TC): -210 ... +1200 °C (Type J); -200 ... +1372 °C (Type K)  
 Cold junction compensation: ON/OFF (default: ON)  
 Cold junction error: 3 K (2 K typ.)

### Output – Digital

Max. switching voltage (DO): Supply voltage applied: -0.3 V  
 Max. continuous current (DO): 100 mA (no internal restriction)  
 Number of switching thresholds (DO): 1 or 2 (adjustable)  
 Configurable rise/fall delay time (DO): 0 ... 60 s (via software)

### Output – Relay

Number of changeover/switchover contacts: 1  
 Contact material (relay): AgNi (gold-plated)  
 Switching voltage (max.): 250 VAC  
 Limiting continuous current (relay; module assembly): 6 A ( $\leq 60$  °C); 3 A (60 ... +70 °C)  
 Dielectric strength, open contact (AC, 1 min): 1 kV<sub>rms</sub>  
 Pull-in time (typ.): 8 ms  
 Drop-out time (typ.): 4 ms  
 Bounce time (typ.): 8 ms  
 Number of switching thresholds (relay): 1 or 2 (adjustable)  
 Configurable rise/fall delay time (relay): 0 ... 60 s (via software)

### Signal Processing

Software filter (adjustable): Moving average value (filter level: 30)  
 Step response (typ.): 60 ms (cold junction compensation OFF); 360 ms (cold junction compensation ON)

### Measurement Error

Transmission error (max.):  $\pm 1$  K  
 Temperature coefficient:  $\leq 0.01$  %/K

### Power Supply

Nominal supply voltage  $U_s$ : 24 VDC  
 Supply voltage range:  $\pm 30$  %  
 Power consumption at nominal supply voltage:  $\leq 40$  mA (+ IDO)

### Safety and Protection

Test voltage (input/output/supply): 4 kVAC; 50 Hz; 1 min  
 Protection type: IP20

### Connection Data

Connection technology: Push-in CAGE CLAMP®  
 WAGO Connector: picoMAX® 5.0  
 Solid conductor: 0.2 ... 2.5 mm<sup>2</sup> / 24 ... 12 AWG  
 Fine-stranded conductor: 0.2 ... 2.5 mm<sup>2</sup> / 24 ... 12 AWG  
 Strip length: 9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width: 12.5 mm / 0.492 inch  
 Height from upper-edge of DIN-rail: 107 mm / 4.213 inch  
 Depth: 110 mm / 4.331 inch

### Mechanical Data

Mounting type: DIN-35 rail

### Material Data

Weight: 105.8 g

» Configuration software	Page 326
» Configuration app	Page 327
» Configuration display	Page 328
» Accessories	Page 338

Specialty Functions:



Configuration via:



**Environmental Requirements**

Surrounding air temperature (operation)	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

**Standards and Specifications**

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-4; EN 61326-2-3; EN 50121-3-2
Standards/specifications	EN 61010-1; EN 61373

**2857-534**

DIP Switch Adjustability

● = ON Default

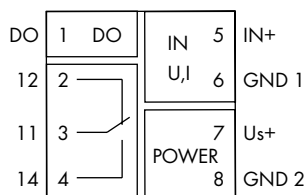
DIP Switch S1

Sensor Type					Cold Junction Compensation		Hysteresis		Rise/Fall Delay Relay/ DO			Reserve	
1	2	3	4	Typ	5	6	T / K	7	8	9	t / s	10	Reserve
				J	ON		3				0		
●				K	OFF	●	5	●			1		
	●			E					●		2		
●	●			R					●	●	3		
		●		N						●	4		
●	●			S					●	●	5		
	●	●		T						●	8		
●	●	●		B					●	●	10		
			●	C									

DIP Switch S2

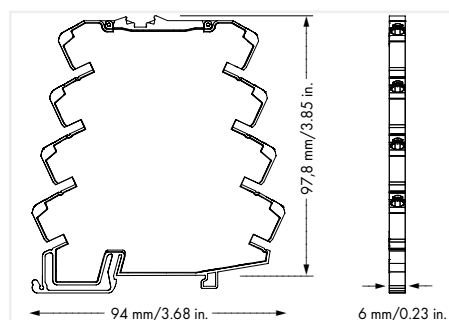
Start Value					End Value									
1	2	3	4	5	Temperature / °C	6	7	8	9	10	Temperature / °C			
					0						100			
●					OFF	●					OFF			
	●				-200		●				-200			
●	●				-150		●	●			-150			
		●			-100			●			-100			
●	●				-50		●	●			-50			
	●	●			50			●	●		50			
●	●	●			100		●	●	●		100			
			●		150					●	150			
●			●		200		●		●		200			
	●		●		250			●	●		250			
●	●		●		300		●	●	●		300			
		●	●		350				●	●	350			
●	●	●			400		●	●	●		400			
	●	●	●		450			●	●	●	450			
●	●	●	●		500		●	●	●	●	500			
				●	550					●	550			
●			●		600		●			●	600			
	●		●		650			●		●	650			
●	●		●		700		●	●		●	700			
		●	●		750				●	●	750			
●	●		●		800		●		●	●	800			
	●	●	●		850			●	●	●	850			
●	●	●	●		900		●	●	●	●	900			
			●	●	950					●	950			
●		●	●		1000		●		●	●	1000			
	●		●		1050			●		●	1050			
●	●		●		1100		●	●	●	●	1100			
		●	●	●	1150				●	●	1150			
●	●	●	●		1200		●	●	●	●	1200			
	●	●	●	●	1300			●	●	●	1300			
●	●	●	●	●	1400		●	●	●	●	1400			

## Threshold Value Switch; Configurable; with Analog Input and Changeover Relay Output 857 Series



Threshold Value Switch; Analog values; Relay/1 changeover contact; Digital switching output; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-531	1



### Short description:

WAGO's threshold value switch for analog signals monitors standard analog signals and reports signals exceeding a preset threshold.

### Features:

- PC configuration interface
- Digital switching output
- Changeover contact relay output
- Calibrated measurement range switching
- Threshold value configuration via DIP switch and teach-in function via push/slide switch
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Note:

Additional setting options via interface configuration software/app

» Configuration software	Page 326
» Configuration App	Page 327
» Accessories	Page 338

### Configuration

Configuration options	DIP switch; Interface configuration software; Interface configuration app; Push/slide switch
-----------------------	----------------------------------------------------------------------------------------------

### Input

Input signal type	Voltage; Current
Input signal (voltage)	$\pm 10$ V; 0 ... 30 V
Input signal (current)	$\pm 20$ mA
Input resistance (current input)	$\leq 200$ $\Omega$
Input resistance (voltage input)	$\geq 100$ k $\Omega$
Input current (max.)	22 mA
Input voltage (max.)	31 V

### Output – Digital

Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 (adjustable)
Configurable rise/fall delay time (DO)	10 s

### Output – Relay

Number of changeover/switchover contacts	1
Switching voltage (max.)	250 VAC
Limiting continuous current (relay; module assembly)	6 A ( $\leq 60$ °C); 2 A (60 ... +70 °C)
Switching power (resistive) max.	1250 VA AC
Drop-out time (typ.)	4 ms
Number of switching thresholds (relay)	1 or 2 (adjustable)
Configurable rise/fall delay time (relay)	0 ... 30 s (via software)

### Signal Processing

Step response (typ.)	16 ms
----------------------	-------

### Measurement Error

Transmission error (typ.)	$\leq 0.1$ % of upper-range value
Temperature coefficient	$\leq 0.01$ %/K

### Power Supply

Nominal supply voltage U <sub>s</sub>	24 VDC
Supply voltage range	$\pm 30$ %
Power consumption at nominal supply voltage	$\leq 25$ mA (+ IDO)

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	38.6 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

Specialty Functions:



Configuration via:



**Standards and Specifications**

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61131-2; EN 61326-1
EMC emission of interference	EN 61000-6-4; EN 61131-2; EN 61326-1
Standards/specifications	EN 61373

857-531

DIP Switch Adjustability

● = ON Default

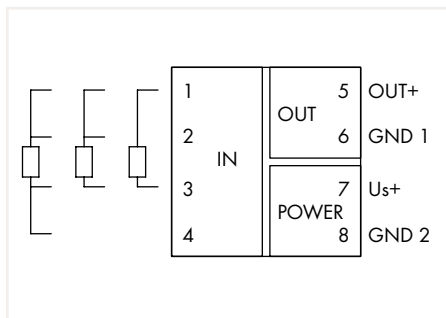
DIP-Switch S1

Input Signal Limits ±0.25 V; ±0.5 mA				Hysteresis	
1	2	3	4	5	
					±10 V
●				●	5 mV; 10 µA
					10 mV, 20 µA
	●				0 ... 10 V
		●			2 ... 10 V
	●	●			0 ... 5 V
			●		1 ... 5 V
	●		●		±5 V
		●	●		0 ... 15 V
	●	●	●		0 ... 30 V
●					±20 mA
●	●				0 ... 20 mA
●		●			4 ... 20 mA
●	●	●			0 ... 10 mA
●			●		2 ... 10 mA
●	●		●		±10 mA

DIP Switch S1

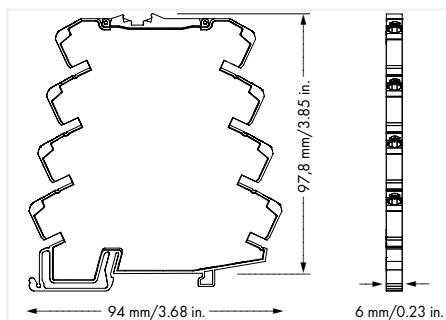
Configurable Rise/Fall Delay Time in sec.			Digital Output DO Signaling	
6	7	8	9	10
				DO not active
●				● GND → U <sub>N</sub> (switching)
	●			● ● U <sub>N</sub> → GND (switching)
●	●			
		●		
●		●		
	●	●		
●	●	●		

## Temperature Signal Conditioner; Configurable; for RTD Sensors 857 Series



Temperature Signal Conditioner for Pt Sensors; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-800	1



### Short description:

WAGO's temperature signal conditioner records Pt100, Pt200, Pt500, and Pt1000 sensors, as well as resistors up to 4.5 kOhm, converting the temperature signal into a standard analog signal at the output.

### Features:

- For Pt100, Pt200, Pt500 and Pt1000 sensors, as well as resistors up to 4.5 kOhm
- 2-, 3- and 4-wire connection technology
- Calibrated measurement range switching
- Detects sensor wire break/short circuit
- Detects measurement range underflow/overflow
- Switchable clipping
- Limitation of standard analog signal to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Configuration	
Configuration options	DIP switch

Input	
Input signal type	Pt sensors; Resistor

Input – RTD Sensors	
Sensor types (RTD)	Pt100; Pt200; Pt500; Pt1000
Sensor connection	2-wire; 3-wire; 4-wire (switchable)
Sensor power supply (RTD) max.	≤ 0.5 mA
Temperature measurement range (RTD)	-200 ... +850 °C

Input – Resistors	
Input range (resistor)	0 ... 1 kΩ; 0 ... 4.5 kΩ

Output	
Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

Signal Processing	
Step response (typ.)	180 ms (2-wire); 360 ms (3-wire)

Measurement Error	
Transmission error (typ.)	≤ 0.1 % at full measurement span
Transmission error for the set measurement range	≤ ((10 K/set measurement range [K]) + 0.1) %
Temperature coefficient	≤ 0.02 %/K

Power Supply	
Nominal supply voltage $U_s$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA

Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

Connection Data	
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Weight	35.3 g

Environmental Requirements	
Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

Specialty Functions:



Configuration via:



857-800

DIP Switch Adjustability

● = ON Default

DIP Switch S1

Wire Connection		Sensor Type			Output Signal					Measurement Range Underflow	Measurement Range Overflow	Wire Break	Short Circuit
1	2	3	4	5	6	7	8	9	10				
●	2 Leiter	●	●		Pt100	●	●	●	●	Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *	Lower limit of output range - 12.5 % *
●	3 Leiter	●	●		Pt200	●	●	●	●	Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *	Lower limit of output range - 12.5 % *
●	4 Leiter	●	●		Pt500	●	●	●	●	Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %	Lower limit of output range
		●	●		Pt1000	●	●	●	●	Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %	Lower limit of output range
				●	1 kΩ	●	●	●	●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	Upper limit of output range + 5 %
				●	4,5 kΩ	●	●	●	●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	Upper limit of output range + 5 %
						●	●	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
						●	●	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
						●	●	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range

\* acc. to NAMUR NE 43

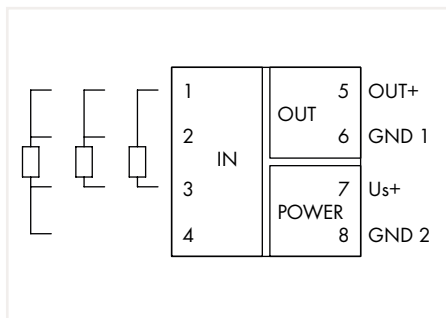
DIP Switch S2

Start Temperature				End Temperature																																	
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F								
				0	32							100	212							●	75	167						●	210	410				●	●	475	887
●				-200	-328	●						0	32	●						●	80	176	●					●	220	428	●			●	●	500	932
●	●			-175	-283	●						5	41	●						●	85	185	●	●				●	230	446	●			●	●	525	997
●	●	●		-150	-238	●	●					10	50	●	●					●	90	194	●	●				●	240	464	●	●		●	●	550	1022
	●			-125	-193			●				15	59			●				●	95	203			●			●	250	482			●	●	●	575	1067
●	●			-100	-148	●	●					20	68	●		●				●	100	212	●	●				●	260	500	●		●	●	●	600	1112
	●	●		-90	-130	●	●					25	77		●	●				●	110	230		●	●			●	270	518		●	●	●	●	625	1157
●	●	●		-80	-112	●	●	●				30	86	●	●	●				●	120	248	●	●	●			●	280	536	●	●	●	●	●	650	1202
		●		-70	-94			●				35	95			●	●			●	130	266			●			●	290	554			●	●	●	675	1247
●		●		-60	-76	●		●				40	104	●		●	●			●	140	284	●		●			●	300	572	●		●	●	●	700	1292
	●	●		-50	-58		●	●				45	113		●	●	●			●	150	302		●	●			●	325	617		●	●	●	●	725	1337
●	●			-40	-40	●	●	●				50	122	●	●	●	●			●	160	320	●	●	●			●	350	662	●	●	●	●	●	750	1382
		●	●	-30	-22			●	●			55	131			●	●	●		●	170	338			●	●		●	375	707			●	●	●	775	1427
●		●	●	-20	-4	●		●	●			60	140	●		●	●			●	180	356	●	●	●			●	400	752	●		●	●	●	800	1472
		●	●	-10	14			●	●	●		65	149			●	●	●		●	190	374		●	●	●		●	425	797			●	●	●	825	1517
●	●	●	●	0	32	●	●	●	●			70	158	●	●	●	●	●		●	200	392	●	●	●	●		●	450	842	●	●	●	●	●	850	1562

The minimum distance from the start temperature to the end temperature may not fall short of 50K degrees on the Celsius (C) scale or 122K degrees on the Fahrenheit (F) scale.

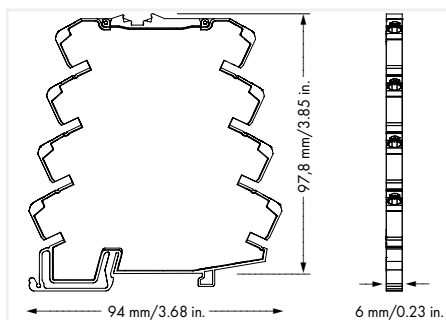


## Temperature Signal Conditioner; Configurable; for RTD Sensors 857 Series



Temperature Signal Conditioner for Pt Sensors; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-801	1



### Short description:

WAGO's temperature signal conditioner records Pt100, Pt200, Pt500, and Pt1000 sensors, as well as resistors up to 4.5 kOhm, converting the temperature signal into a standard analog signal at the output.

### Features:

- PC configuration interface
- For Pt100, Pt200, Pt500 and Pt1000 sensors, as well as resistors up to 4.5 kOhm
- 2-, 3- and 4-wire connection technology
- Detects calibrated measurement range switching
- Detects sensor wire break/short circuit
- Measurement range underflow/overflow
- Switchable clipping
- Limitation of standard analog signal to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Note:

Additional setting options as well as output signal inversion via interface configuration software or interface configuration app

» Configuration software	Page 326
» Configuration App	Page 327
» Accessories	Page 338

### Configuration

Configuration options	DIP switch; Interface configuration software; Interface configuration app
-----------------------	---------------------------------------------------------------------------

### Input

Input signal type	Pt sensors; Resistor
-------------------	----------------------

### Input – RTD Sensors

Sensor types (RTD)	Pt100; Pt200; Pt500; Pt1000
Sensor connection	2-wire, 3-wire, 4-wire (switchable)
Sensor power supply (RTD) max.	≤ 0.5 mA
Temperature measurement range (RTD)	-200 ... +850 °C
Measurement span (RTD) min.	50 K

### Input – Resistors

Input range (resistor)	0 ... 1 kΩ; 0 ... 4.5 kΩ
Measurement span (min.)	50 Ω

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

### Signal Processing

Step response (typ.)	180 ms (2-wire); 360 ms (3-wire)
----------------------	----------------------------------

### Measurement Error

Transmission error (typ.)	≤ 0.1 % at full measurement span
Transmission error for the set measurement range	≤ ((10 K/set measurement range [K]) + 0.1) %
Temperature coefficient	≤ 0.02 %/K

### Power Supply

Nominal supply voltage Us	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	35.1 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

Specialty Functions:



Configuration via:



857-801

DIP Switch Adjustability

● = ON    **Default**

DIP Switch S1

Wire Connection		Sensor Type			Output Signal					Measurement Range Underflow	Measurement Range Overflow	Wire Break	Short Circuit
1	2	3	4	5	6	7	8	9	10				
●	2-wire	●	●		Pt100	●	●	●		Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *	Lower limit of output range - 12.5 % *
●	3-wire	●	●		Pt200	●	●	●		Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %	Lower limit of output range
●	4-wire	●	●		Pt500	●	●	●	●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	Lower limit of output range
		●	●		Pt1000	●	●	●	●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	Upper limit of output range + 5 %
				●	1 kΩ	●	●	●	●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	Upper limit of output range + 5 %
				●	4,5 kΩ	●	●	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
						●	●	●	●				
						●	●	●	●				
						●	●	●	●				
						●	●	●	●				

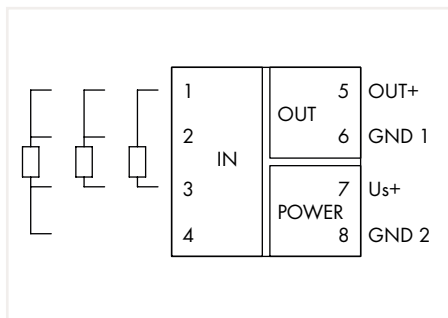
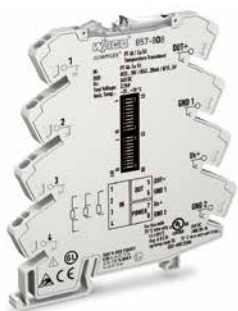
\* acc. to NAMUR NE 43

DIP Switch S2

Start Temperature				End Temperature																																
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F							
				0	32							100	212								75	167							210	410					475	887
●				-200	-328	●						0	32	●							80	176	●					220	428	●				500	932	
●	●			-175	-283	●						5	41	●							85	185	●					230	446	●				525	997	
●	●	●		-150	-238	●	●					10	50	●	●						90	194	●	●				240	464	●	●			550	1022	
	●			-125	-193			●				15	59			●					95	203			●			250	482			●		575	1067	
●	●			-100	-148	●		●				20	68	●		●					100	212	●		●			260	500	●		●		600	1112	
	●	●		-90	-130	●	●					25	77		●	●					110	230		●	●			270	518		●	●		625	1157	
●	●	●		-80	-112	●	●	●				30	86	●	●	●					120	248	●	●	●			280	536	●	●	●		650	1202	
		●		-70	-94			●				35	95			●	●				130	266			●			290	554			●	●	675	1247	
●		●		-60	-76	●		●				40	104	●		●	●				140	284	●		●			300	572	●		●	●	700	1292	
	●	●		-50	-58		●	●				45	113		●	●	●				150	302		●	●			325	617		●	●	●	725	1337	
●	●		●	-40	-40	●	●	●				50	122	●	●	●	●				160	320	●	●	●			350	662	●	●	●	●	750	1382	
		●	●	-30	-22			●	●			55	131			●	●	●			170	338			●	●		375	707		●	●	●	775	1427	
●		●	●	-20	-4	●		●	●			60	140	●		●	●	●			180	356	●	●	●			400	752	●		●	●	800	1472	
	●	●	●	-10	14			●	●	●		65	149		●	●	●	●			190	374		●	●	●		425	797		●	●	●	825	1517	
●	●	●	●	0	32	●	●	●	●			70	158	●	●	●	●	●			200	392	●	●	●	●		450	842	●	●	●	●	850	1562	

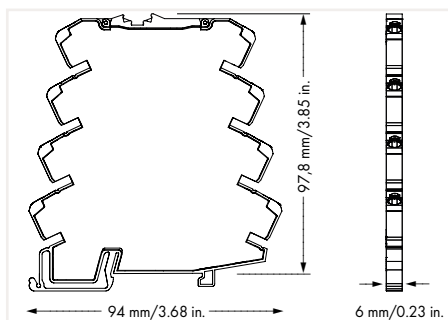
The minimum distance from the start temperature to the end temperature may not fall short of 50K degrees on the Celsius (C) scale or 122K degrees on the Fahrenheit (F) scale.

## Temperature Signal Conditioner; Configurable; for RTD Sensors 857 Series



Temperature Signal Conditioner for RTD Sensors; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-808	1



### Short description:

WAGO's temperature signal conditioner records signals from Pt46 and Cu53 sensors and converts the temperature signal into a standard analog signal at the output.

### Features:

- 2-, 3- and 4-wire connection technology
- Calibrated measurement range switching
- Detects sensor wire break/short circuit
- Detects measurement range underflow/overflow
- Clipping function limits the standard analog signal to the upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Configuration via:



### Configuration

Configuration options	DIP switch
-----------------------	------------

### Input

Input signal type	Pt sensors; Cu sensors
-------------------	------------------------

### Input – RTD Sensors

Sensor types (RTD)	Pt46; Cu53
Sensor connection	2-wire, 3-wire, 4-wire (switchable)
Sensor power supply (RTD) max.	≤ 0.5 mA
Temperature measurement range (RTD)	-200 ... +300 °C (Pt46); 0 ... +180 °C (Cu53)
Measurement span (RTD) min.	50 K

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

### Signal Processing

Step response (typ.)	180 ms (2-wire); 360 ms (3-wire)
----------------------	----------------------------------

### Measurement Error

Transmission error (typ.)	≤ 0.1 % at full measurement span
Transmission error for the set measurement range	≤ ((10 K/set measurement range [K]) + 0.1) %
Temperature coefficient	≤ 0.02 %/K

### Power Supply

Nominal supply voltage $U_s$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	35.4 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

857-808

DIP Switch Adjustability

● = ON Default

DIP Switch S1

Wire Connection		Sensor Type			Output Signal							Measurement Range Underflow	Measurement Range Overflow	Wire Break	Short Circuit
1	2	3	4	5	6	7	8	9	10						
	2-wire			Pt46								Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *	Lower limit of output range - 12.5 % *
●	3-wire	●		Cu53	●							Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %	Lower limit of output range
	4-wire					●				●		Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	Upper limit of output range + 5 %
						●	●			●		Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	Lower limit of output range
							●	●		●		Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
							●	●		●		Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
						●	●	●		●		Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range

\* acc. to NAMUR NE 43

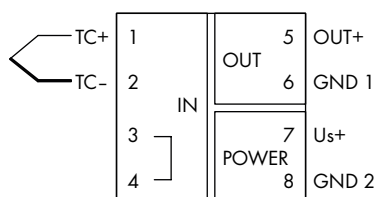
DIP Switch S2

Start Temperature										End Temperature																			
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F
				0	32							100	212							●	75	167					●	210	410
●				-200	-328	●						0	32	●						●	80	176	●				●	220	428
	●			-175	-283		●					5	41		●					●	85	185		●			●	230	446
●	●			-150	-238	●	●					10	50	●	●					●	90	194	●	●			●	240	464
		●		-125	-193			●				15	59			●				●	95	203			●		●	250	482
●	●			-100	-148	●	●					20	68	●	●	●				●	100	212	●	●			●	260	500
	●	●		-90	-130		●	●				25	77		●	●	●			●	110	230		●	●		●	270	518
●	●	●		-80	-112	●	●	●				30	86	●	●	●				●	120	248	●	●	●		●	280	536
			●	-70	-94				●			35	95							●	130	266				●	●	290	554
●			●	-60	-76	●			●			40	104	●						●	140	284	●			●	●	300	572
	●	●		-50	-58		●	●				45	113		●					●	150	302							
●	●		●	-40	-40	●	●		●			50	122	●	●					●	160	320							
		●	●	-30	-22			●	●			55	131			●	●	●		●	170	338							
●		●	●	-20	-4	●		●	●			60	140	●		●	●	●		●	180	356							
	●	●	●	-10	14		●	●	●			65	149		●	●	●	●		●	190	374							
●	●	●	●	0	32	●	●	●	●			70	158	●	●	●	●	●		●	200	392							

## Temperature Signal Conditioner; Configurable; for Thermocouples 857 Series

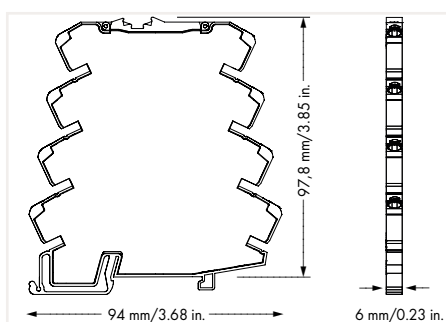


3



Temperature Signal Conditioner for Thermocouples;  
Current and voltage output signal; Supply voltage:  
24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-810	1



### Short description:

WAGO's temperature signal conditioner records signals from thermocouples (type J, K) and converts the temperature signal into a standard analog signal at the output.

### Features:

- For type J and K thermocouples
- Cold junction compensation (ON/OFF)
- Calibrated measurement range switching
- Detects a sensor wire break
- Detects measurement range underflow/overflow
- Switchable clipping
- Limitation of standard analog signal to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Specialty Functions:



### Configuration via:



Configuration	
Configuration options	DIP switch

Input	
Input signal type	TC sensors

Input – TC Sensors	
Sensor types (TC)	Type J; Type K
Temperature measurement range (TC)	-150 ... +1200 °C (Type J); -150 ... +1350 °C (Type K)
Measurement min. (TC)	100 K
Cold junction compensation	ON/OFF (default: ON)
Cold junction error	3 K (2 K typ.)

Output	
Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

Signal Processing	
Step response (typ.)	60 ms (cold junction compensation OFF); 120 ms (cold junction compensation ON)

Measurement Error	
Transmission error (typ.)	≤ 0.1% at max. measurement span (type J, K)
Transmission error for the set measurement range	≤ (150 K/set measurement range [K]) %
Temperature coefficient	≤ 0.04 %/K

Power Supply	
Nominal supply voltage $U_s$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA

Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

Connection Data	
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Weight	35.5 g

Environmental Requirements	
Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

857-810

DIP Switch Adjustability

● = ON **Default**

DIP Switch S1

Cold Junction Compensation		Sensor type			Output signal						Measurement Range Underflow	Measurement Range Overflow	Wire Break
1	2	3	4	5	6	7	8						
on			J					0 ... 20 mA			Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *
● off	●		K	●				4 ... 20 mA			Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %
					●			0 ... 10 mA	●		Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %
					●	●		2 ... 10 mA		●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %
						●		0 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %
					●	●		2 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %
						●	●	0 ... 5 V		●	Lower limit of output range	Upper limit of output range	Lower limit of output range
					●	●	●	1 ... 5 V		●	Lower limit of output range	Upper limit of output range	Lower limit of output range

DIP 9 and 10 n.c.

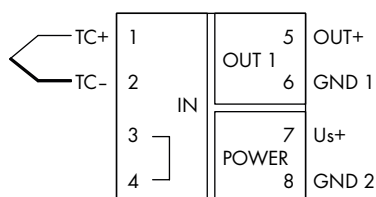
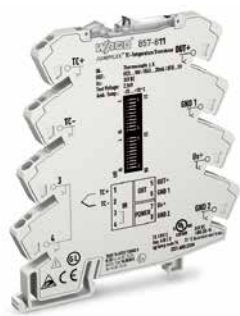
\* acc. to NAMUR NE 43

DIP Switch S2

Start Temperature				End Temperature																															
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F						
				0	32							1000	1832								225	437							625	1157				1025	1877
●				-200	-328	●						0	32	●							250	482	●					650	1202	●			1050	1922	
	●			-175	-283		●					10	50		●						275	527		●				675	1247		●		1075	1967	
●	●			-150	-283	●	●					20	68	●	●						300	572	●	●				700	1292	●	●		1100	2012	
		●		-125	-193			●				30	86			●					325	617			●			725	1337			●	1125	2057	
●	●			-100	-148	●		●				40	104	●		●					350	662	●		●			750	1382	●		●	1150	2102	
		●	●	-90	-130		●	●				50	122		●	●					375	707		●	●			775	1427		●	●	1175	2147	
●	●	●		-80	-112	●	●	●				60	140	●	●	●					400	752	●	●	●			800	1472	●	●	●	1200	2192	
			●	-70	-94				●			70	158				●				425	797				●		825	1517			●	1225	2237	
●			●	-60	-76			●				80	176	●		●					450	842	●		●			850	1562	●		●	1250	2282	
	●		●	-50	-58		●	●				90	194		●	●					475	887		●	●			875	1607		●	●	1275	2327	
●	●	●		-40	-40	●	●	●				100	212	●	●	●					500	932	●	●	●			900	1652	●	●	●	1300	2372	
		●	●	-30	-22			●	●			125	257			●	●				525	977			●	●		925	1697			●	●	1325	2417
●	●	●		-20	-4	●		●	●			150	302	●		●	●				550	1022	●		●	●		950	1742	●		●	●	1350	2462
		●	●	-10	14		●	●	●			175	347		●	●	●				575	1067		●	●	●		975	1787		●	●	●	1375	2507
●	●	●	●	0	32	●	●	●	●			200	392	●	●	●	●				600	1112	●	●	●	●		1000	1832	●	●	●	●	1400	2552

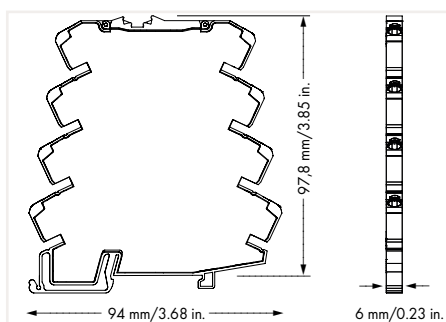
The minimum distance from the start temperature to the end temperature may not fall short of 100K degrees on the Celsius (C) scale or 212K degrees on the Fahrenheit (F) scale.

## Temperature Signal Conditioner; Configurable; for Thermocouples 857 Series



Temperature Signal Conditioner for Thermocouples;  
Current and voltage output signal; Supply voltage:  
24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-811	1



### Short description:

WAGO's temperature signal conditioner records signals from thermocouples of type J and K (E, R, N, S, T, B, C) and converts the temperature signal into a standard analog signal.

### Features:

- PC configuration interface
- For thermocouples of type J and K (E, R, N, S, T, B, C)
- Cold junction compensation (ON/OFF)
- Calibrated measurement range switching
- Detects a sensor wire break
- Detects measurement range underflow/overflow
- Switchable clipping
- Limitation of standard analog signal to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Note:

Additional setting options as well as output signal inversion via interface configuration software or interface configuration app

### Configuration

Configuration options	DIP switch; Interface configuration software; Interface configuration app
-----------------------	---------------------------------------------------------------------------

### Input

Input signal type	TC sensors
-------------------	------------

### Input – TC Sensors

Sensor types (TC)	Type J; Type K
Temperature measurement range (TC)	-150 ... +1200 °C (Type J); -150 ... +1350 °C (Type K)
Measurement min. (TC)	100 K
Cold junction compensation	ON/OFF (default: ON)
Cold junction error	3 K (2 K typ.)

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

### Signal Processing

Step response (typ.)	60 ms (cold junction compensation OFF); 120 ms (cold junction compensation ON)
----------------------	--------------------------------------------------------------------------------

### Measurement Error

Transmission error (typ.)	≤ 0.1% at max. measurement span (type J, K)
Transmission error for the set measurement range	≤ (150 K/set measurement range [K]) %
Temperature coefficient	≤ 0.04 %/K

### Power Supply

Nominal supply voltage $U_s$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	36 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

» Configuration software	Page 326
» Configuration App	Page 327
» Accessories	Page 338

Specialty Functions:



Configuration via:



857-811

DIP Switch Adjustability

● = ON Default

DIP Switch S1

Cold Junction Compensation		Sensor Type		Output Signal						Measurement Range Underflow	Measurement Range Overflow	Wire Break
1		2	3	4	5	6	7	8				
●	ein		J						Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *	
	aus	●	K	●					Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %	
					●				Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	
					●	●			Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	
						●			Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	
						●	●		Lower limit of output range	Upper limit of output range	Lower limit of output range	
					●	●	●		Lower limit of output range	Upper limit of output range	Lower limit of output range	

DIP 9 and 10 n.c.

\* acc. to NAMUR NE 43

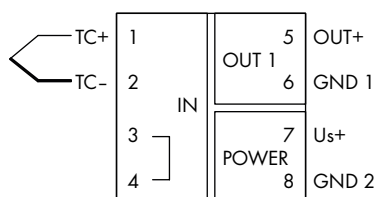
DIP Switch S2

Start Temperature				End Temperature																														
1	2	3	4	°C		°F		5	6	7	8	9	10	°C		°F		5	6	7	8	9	10	°C		°F								
				0	32									1000	1832			●							●	625	1157			●	●	1025	1877	
●				-200	-328	●								0	32	●		●							●	650	1202	●		●	●	1050	1922	
	●			-175	-283		●							10	50	●		●							●	675	1247		●	●	●	1075	1967	
●	●			-150	-283	●	●							20	68	●	●								●	700	1292	●	●		●	●	1100	2012
		●		-125	-193			●						30	86			●							●	725	1337		●	●	●	1125	2057	
●	●			-100	-148	●	●							40	104	●	●	●							●	750	1382	●	●	●	●	1150	2102	
		●	●	-90	-130		●	●						50	122		●	●	●						●	775	1427	●	●	●	●	1175	2147	
●	●	●		-80	-112	●	●	●						60	140	●	●	●	●						●	800	1472	●	●	●	●	1200	2192	
			●	-70	-94			●						70	158			●	●						●	825	1517			●	●	●	1225	2237
●			●	-60	-76	●		●						80	176	●		●	●						●	850	1562	●		●	●	●	1250	2282
		●	●	-50	-58		●	●						90	194		●	●	●						●	875	1607		●	●	●	●	1275	2327
●	●		●	-40	-40	●	●	●						100	212	●	●	●	●						●	900	1652	●	●	●	●	●	1300	2372
		●	●	-30	-22			●	●					125	257			●	●	●					●	925	1697		●	●	●	●	1325	2417
●	●	●		-20	-4	●		●	●					150	302	●		●	●	●					●	950	1742	●	●	●	●	●	1350	2462
		●	●	-10	14		●	●	●					175	347		●	●	●	●					●	975	1787	●	●	●	●	●	1375	2507
●	●	●	●	0	32	●	●	●	●					200	392	●	●	●	●	●					●	1000	1832	●	●	●	●	●	1400	2552

The minimum distance from the start temperature to the end temperature may not fall short of 100K degrees on the Celsius (C) scale or 212K degrees on the Fahrenheit (F) scale.

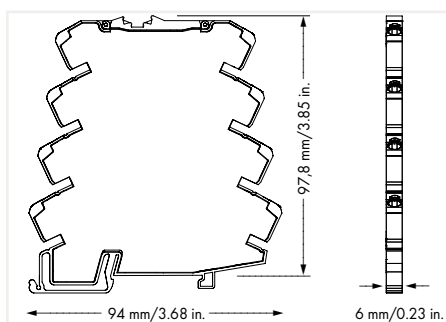


## Temperature Signal Conditioner; Configurable; for Thermocouples 857 Series



Temperature Signal Conditioner for Thermocouples;  
Current and voltage output signal; Supply voltage:  
24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-812	1



### Short description:

WAGO's temperature signal conditioner records signals from thermocouples (type K, S, B, R) and converts the temperature signal into a standard analog signal at the output.

### Features:

- For thermocouples of type K, S, B and R
- Cold junction compensation (ON/OFF)
- Calibrated measurement range switching
- Detects a sensor wire break
- Detects measurement range underflow/overflow
- Clipping function limits the standard analog signal to the upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Configuration via:



Configuration	
Configuration options	DIP switch

Input	
Input signal type	TC sensors

Input – TC Sensors	
Sensor types (TC)	Type K, S, B, R
Temperature measurement range (TC)	0 ... +1200 °C (Type K); 0 ... +1600 °C (Type S); 600 ... +1800 °C (Type B); 0 ... +1600 °C (Type R)
Cold junction compensation	ON/OFF (default: ON)
Cold junction error	3 K (2 K typ.)

Output	
Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

Signal Processing	
Step response (typ.)	60 ms (cold junction compensation OFF); 120 ms (cold junction compensation ON)

Measurement Error	
Transmission error (typ.)	≤ 0.1 % at full measurement span
Transmission error for the set measurement range	≤ (150 K/set measurement range [K]) %
Temperature coefficient	≤ 0.04 %/K

Power Supply	
Nominal supply voltage $U_s$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA

Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

Connection Data	
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Weight	35.7 g

Environmental Requirements	
Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

857-812

DIP Switch Adjustability

● = ON Default

DIP Switch S1

Cold Junction Compensation		Sensor Type		Output Signal						Measurement Range Underflow	Measurement Range Overflow	Wire Break
1		2	3	4	5	6	7	8				
●	Ein			K					0 ... 20 mA	Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *
	Aus	●		S	●				4 ... 20 mA	Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %
			●	B		●			0 ... 10 mA	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %
			●	R	●	●			2 ... 10 mA	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %
						●			0 ... 10 V	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %
						●	●		2 ... 10 V	Lower limit of output range	Upper limit of output range	Lower limit of output range
						●	●		0 ... 5 V			
						●	●	●	1 ... 5 V			

DIP Switch S1 (9) n.c.

\* acc. to NAMUR NE 43

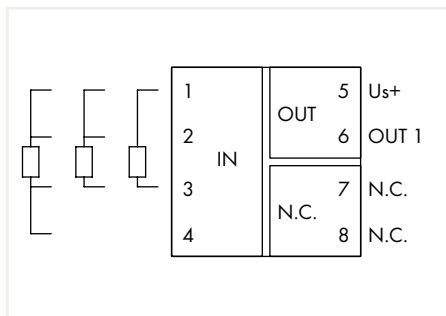
DIP Switch S1+S2

Start Temperature					End Temperature																		
S1	S2				°C	°F	S2				°C	°F	S2				°C	°F					
10	1	2	3	4			5	6	7	8	9	10			5	6	7	8	9	10			
					0	32							1000	1832	●		●		●			1000	1832
●					50	122	●						0	32		●	●		●			1050	1922
	●				100	212		●					50	122	●	●	●		●			1100	2012
●	●				150	302	●	●					100	212				●	●			1150	2102
		●			200	392			●				150	302	●			●	●			1200	2192
●		●			250	482	●		●				200	392		●		●	●			1250	2282
	●	●			300	572		●	●				250	482	●	●		●	●			1300	2372
●	●	●			350	662	●	●	●				300	572			●	●	●			1350	2462
			●		400	752				●			350	662	●		●	●	●			1400	2552
●			●		450	842	●			●			400	752		●	●	●	●			1450	2642
	●		●		500	932		●		●			450	842	●	●	●	●	●			1500	2732
●	●		●		550	1022	●	●		●			500	932						●		1550	2822
		●	●		600	1112			●	●			550	1022	●						●	1600	2912
●		●	●		650	1202	●		●	●			600	1112		●					●	1650	3002
	●	●	●		700	1292		●	●	●			650	1202	●	●					●	1700	3092
●	●	●	●		750	1382	●	●	●	●			700	1292			●				●	1750	3182
			●		800	1472					●		750	1382	●		●				●	1800	3272
●			●		850	1562	●				●		800	1472									
	●		●		900	1652		●			●		850	1562									
●	●		●		950	1742	●	●			●		900	1652									
		●	●		1000	1832			●		●		950	1742									

## Temperature Signal Conditioner; Configurable; for RTD Sensors 857 Series

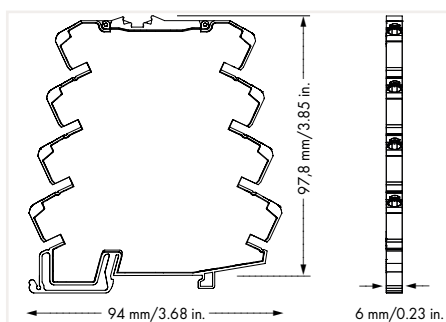


3



Temperature Signal Conditioner for RTD Sensors;  
Current and voltage output signal; Loop-powered RTD;  
Module width: 6 mm

Item No.	Pack. Unit
857-815	1



### Short description:

WAGO's loop-powered RTD temperature signal conditioner records sensors (Pt100, Pt200, Pt500, Pt1000) and resistors up to 4.5 k $\Omega$ , converting the temperature signal into a standard analog signal at the output. The loop-powered RTD temperature signal conditioner provides safe isolation between input and output with 3 kV test voltage per EN 61010-1.

### Features:

- No additional supply voltage required
- For Pt100, Pt200, Pt500 and Pt1000 sensors, as well as resistors up to 4.5 k $\Omega$
- 2-, 3- and 4-wire connection technology
- Calibrated measurement range switching
- Detects sensor wire break/short circuit
- Safe 2-way isolation with 2.5 kV test voltage per EN 61010-1

### Configuration via:



Configuration	
Configuration options	DIP switches

Input	
Input signal type	Pt sensors; resistor
Input current (max.)	50 mA
Input voltage (max.)	30 VDC

Input – RTD Sensors	
Sensor types (RTD)	Pt100; Pt200; Pt500; Pt1000
Sensor connection	2-wire, 3-wire, 4-wire (switchable)
Sensor power supply (RTD) max.	$\leq 0.5$ mA
Temperature measurement range (RTD)	-200 ... +850 °C
Measurement span (RTD) min.	50 K

Input – Resistors	
Input range (resistor)	0 ... 1 k $\Omega$ ; 0 ... 4.5 k $\Omega$

Output	
Output signal type	Current
Output signal (current)	4 ... 20 mA; 20 ... 4 mA
Load impedance (current output)	See derating graph

Signal Processing	
Step response (typ.)	1000 ms

Measurement Error	
Transmission error (typ.)	$\leq 0.1$ % at full measurement span
Transmission error for the set measurement range	$\leq ((40 \text{ K}/\text{set measurement range [K]} + 0.1) \%$
Temperature coefficient	$\leq 0.02$ %/K

Power Supply	
Supply voltage	8 ... 30 VDC (power derived from the output circuit)

Safety and Protection	
Test voltage (input/output)	3 kVAC; 50 Hz; 1 min
Protection type	IP20

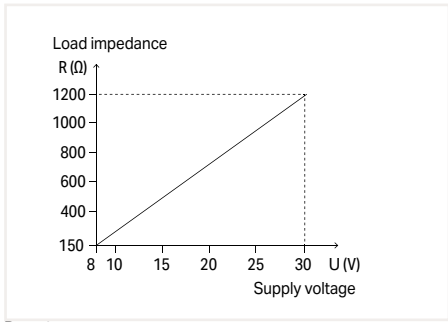
Connection Data	
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Weight	39.8 g

Environmental Requirements	
Surrounding air temperature (operation)	-25 ... +70 °C (at nominal current)
Surrounding air temperature (storage)	-40 ... +85 °C
Relative humidity	5 ... 95 % (no condensation permissible)
Operating altitude (max.)	2000 m



Derating

Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-1; EN 50121-3-2
EMC emission of interference	EN 61000-6-3; EN 61326-1; EN 50121-3-2
Standards/specifications	EN 61010-1; EN 61373

857-815

DIP Switch Adjustability

● = ON Default

DIP Switch S1

Sensor Connection		Sensor Type		Output Signal		N.C.		Measurement Range Underflow		Measurement Range Overflow		Wire Break		Short Circuit	
1	2	3	4	5	6	7	8	9	10						
●	2-wire	●			Pt100	●				Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *	Lower limit of output range - 12.5 % *		
●	3-wire	●			Pt200	●				Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %	Lower limit of output range		
●	4-wire	●			Pt500			●		Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	Upper limit of output range + 5 %		
●	2-wire	●			Pt1000			●		Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	Upper limit of output range + 5 %		
				●	1 kΩ			●		Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range		
				●	4,5 kΩ			●		Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range		

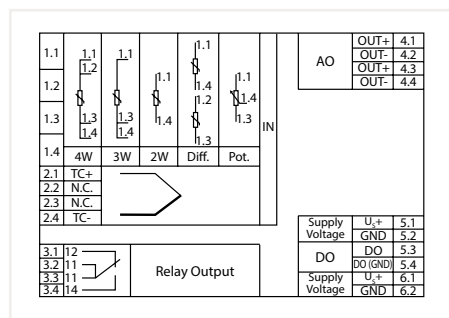
\* acc. to NAMUR NE 43

DIP Switch S2

Output Signal Start Temperature				Output Signal End Temperature																																		
1	2	3	4	°C		°F		5	6	7	8	9	10	°C		°F		5	6	7	8	9	10	°C		°F												
				0	32									100	212									75	167			●	210	410					●	●	475	887
●				-200	-328	●								0	32	●								80	176	●		●	220	428	●				●	●	500	932
	●			-175	-283		●							5	41	●								85	185	●		●	230	446	●				●	●	525	997
●	●			-150	-238	●	●							10	50	●	●							90	194	●	●	●	240	464	●	●			●	●	550	1022
	●			-125	-193		●							15	59		●							95	203		●	●	250	482		●			●	●	575	1067
●	●			-100	-148	●	●							20	68	●	●							100	212	●	●	●	260	500	●	●			●	●	600	1112
	●	●		-90	-130		●							25	77		●							110	230		●	●	270	518		●	●		●	●	625	1157
●	●	●		-80	-112	●	●							30	86	●	●							120	248	●	●	●	280	536	●	●	●		●	●	650	1202
	●			-70	-94		●							35	95		●							130	266		●	●	290	554		●	●		●	●	675	1247
●		●		-60	-76	●								40	104	●								140	284	●		●	300	572	●				●	●	700	1292
	●			-50	-58		●							45	113		●							150	302		●	●	325	617		●	●		●	●	725	1337
●	●			-40	-40	●	●							50	122	●	●							160	320	●	●	●	350	662	●	●			●	●	750	1382
	●	●		-30	-22		●							55	131		●							170	338		●	●	375	707		●	●		●	●	775	1427
●	●	●		-20	-4	●								60	140	●								180	356	●		●	400	752	●		●		●	●	800	1472
	●	●		-10	14		●							65	149		●							190	374		●	●	425	797		●	●		●	●	825	1517
●	●	●		0	32	●	●							70	158	●	●							200	392	●	●	●	450	842	●	●			●	●	850	1562

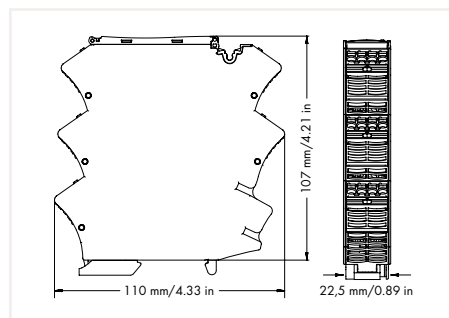
The measurement span must have the following min. magnitude:  
 • in the Celsius scale (°C): 50 K  
 • in the Fahrenheit scale (°F): 90 K

# Temperature Signal Conditioner; Configurable; for RTD and TC Sensors; Analog 857 Series



## RTD/TC Temperature Signal Conditioner; analog

Item No.	Pack. Unit
2857-535	1



### Short description:

WAGO's RTD TC temperature signal conditioner for RTD sensors, potentiometers, resistors and thermocouples monitors and reports signals of up to two switching thresholds. The sensor and status information that is collected is also converted to a standard analog signal.

### Features:

- A relay with changeover contact reacts to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Configurable Pt factor
- Adjustable software filter
- Simulation of input/output response via interface configuration display
- Input of customer-specific sensors via interface configuration software
- Safe 3-way isolation with 3 kV test voltage per EN 61010-1
- Analog unipolar/bipolar signals (current/voltage) at output
- Additional digital signal output for configured measurement range limits
- Adjustable transfer characteristic

» Configuration software	Page 326
» Configuration display	Page 327
» Accessories	Page 338

## Configuration

Configuration options Interface configuration software; configuration display

## Input

Input signal type RTD sensors; Potentiometers; Resistors; TC sensors

## Input – RTD Sensors

Sensor types (RTD) Pt10 ... Pt2000 (expandable)  
 Sensor connection 2-wire; 3-wire; 4-wire; differential; potentiometer  
 Sensor power supply (RTD) max. ≤ 0.5 mA  
 Temperature measurement range (RTD) -200 ... +850 °C  
 Measurement span (RTD) min. 50 K

## Input – TC Sensors

Sensor types (TC) Type J, K, E, R, N, S, T, B, C  
 Temperature measurement range (TC) -210 ... +1200 °C (Type J); -200 ... +1372 °C (Type K); -200 ... +1000 °C (Type E); 250 ... 1768 °C (Type R); -200 ... +1300 °C (Type N); -50 ... +1664 °C (Type S); -200 ... +400 °C (Type T); 250 ... 1820 °C (Type B); 0 ... 2320 °C (Type C)  
 Measurement min. (TC) 100 K  
 Cold junction compensation ON/OFF (default: ON)  
 Cold junction error 3 K (2 K typ.)

## Input – Resistors

Input range (resistor) 0 ... 10 kΩ  
 Input range (potentiometer) 0 ... 10 kΩ  
 Measurement span (min.) 50 Ω

## Output

Output signal type Current; Voltage  
 Output signal (voltage) ±12 V  
 Output signal (current) ±24 mA  
 Load impedance (voltage output) ≥ 2 kΩ  
 Load impedance (current output) ≤ 600 Ω

## Output – Digital

Max. switching voltage (DO) Supply voltage applied: -0.3 V  
 Max. continuous current (DO) 100 mA (no internal restriction)  
 Number of switching thresholds (DO) 1 or 2 (adjustable)  
 Configurable rise/fall delay time (DO) 0 ... 60 s (via software)

## Output – Relay

Number of changeover/switchover contacts 1  
 Switching voltage (max.) 250 VAC  
 Limiting continuous current (relay; module assembly) 6 A (≤ 60 °C); 3 A (60 ... +70 °C)  
 Dielectric strength, open contact (AC, 1 min) 1 kV<sub>rms</sub>  
 Number of switching thresholds (relay) 1 or 2 (adjustable)  
 Configurable rise/fall delay time (relay) 0 ... 60 s (via software)

## Signal Processing

Software filter (adjustable) Moving average value (filter level: 30)  
 Step response (typ.) 130 ms (2-wire); 700 ms (3-wire); 700 ms (4-wire); 600 ms (differential); 500 ms (potentiometer); 150 ms (cold junction compensation OFF); 400 ms (cold junction compensation ON)

## Measurement Error

Transmission error (typ.) ≤ 0.1 % at full measurement span  
 Transmission error for the set measurement range ≤ (100 K/set measurement range [K]) %  
 Temperature coefficient ≤ 0.01 %/K

## Power Supply

Nominal supply voltage U<sub>s</sub> 24 VDC  
 Supply voltage range -60 ... +30 %  
 Power consumption at nominal supply voltage ≤ 70 mA (+ IDO)

## Specialty Functions:



## Configuration via:

**Safety and Protection**

Rated voltage	250 VAC/DC
Pollution degree	2
Test voltage (input/output/supply)	3 kVAC; 50 Hz; 1 min
Overvoltage category	II
Safe isolation	Input/relay contact/output/supply per EN 61010-1
Protection type	IP20

**Connection Data**

Connection technology	Push-in CAGE CLAMP®
WAGO Connector	picoMAX® 5.0
Solid conductor	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Fine-stranded conductor	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

**Geometric Data**

Width	22.5 mm / 0.886 inch
Height from upper-edge of DIN-rail	107 mm / 4.213 inch
Depth	110 mm / 4.331 inch

**Mechanical Data**

Mounting type	DIN-35 rail
---------------	-------------

**Material Data**

Weight	126.9 g
--------	---------

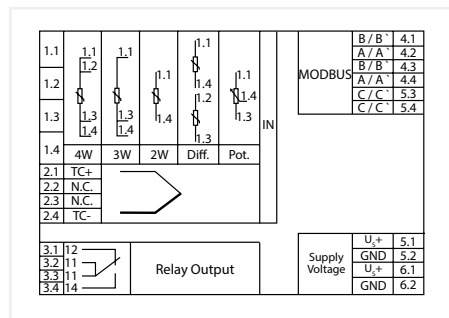
**Environmental Requirements**

Surrounding air temperature (operation)	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Relative humidity	5 ... 95 % (non-condensing)
Operating altitude (max.)	2000 m

**Standards and Specifications**

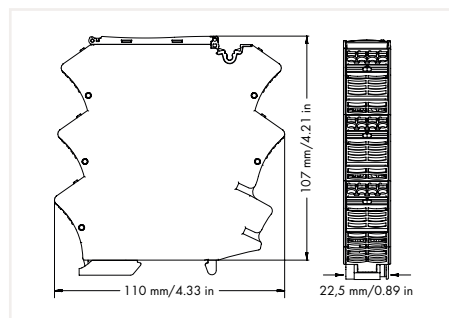
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3
EMC emission of interference	EN 61000-6-3; EN 61326-2-3
Standards/specifications	EN 61010-1; EN 61373

## Temperature Signal Conditioner; Configurable; for RTD and TC Sensors; Serial 857 Series



### RTD/TC Temperature Signal Conditioner; serial

Item No.	Pack. Unit
2857-535/000-001	1



### Short description:

WAGO's RTD TC temperature signal conditioner for RTD sensors, potentiometers, resistors and thermocouples monitors and reports signals of up to two switching thresholds. The sensor and status information that is collected is also made available to a higher-order device (e.g., a PLC) via a bus connection.

### Features:

- A relay with changeover contact reacts to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Configurable Pt factor
- Adjustable software filter
- Simulation of input/output response via interface configuration display
- Input of customer-specific sensors via the interface configuration software
- Safe 3-way isolation with 3 kV test voltage per EN 61010-1
- RS-485 interface with Modbus protocol at the output
- Terminating resistor can be adjusted at the output
- Adjustable transfer characteristic

### Configuration

Configuration options	Interface configuration software; Configuration display; Rotary encoder switch
-----------------------	--------------------------------------------------------------------------------

### Input

Input signal type	RTD sensors; Potentiometers; Resistors; TC sensors
-------------------	----------------------------------------------------

### Input – RTD Sensors

Sensor types (RTD)	Pt10 ... Pt2000 (expandable)
Sensor connection	2-wire; 3-wire; 4-wire; differential; potentiometer
Sensor power supply (RTD) max.	≤ 0.5 mA
Temperature measurement range (RTD)	-200 ... +850 °C
Measurement span (RTD) min.	50 K

### Input – TC Sensors

Sensor types (TC)	Type J, K, E, R, N, S, T, B, C
Temperature measurement range (TC)	-210 ... +1200 °C (Type J); -200 ... +1372 °C (Type K); -200 ... +1000 °C (Type E); 250 ... 1768 °C (Type R); -200 ... +1300 °C (Type N); -50 ... +1664 °C (Type S); -200 ... +400 °C (Type T); 250 ... 1820 °C (Type B); 0 ... 2320 °C (Type C)
Measurement min. (TC)	100 K
Cold junction compensation	ON/OFF (default: ON)
Cold junction error	3 K (2 K typ.)

### Input – Resistors

Input range (resistor)	0 ... 10 kΩ
Input range (potentiometer)	0 ... 10 kΩ
Measurement span (min.)	50 Ω

### Output – Relay

Number of changeover/switchover contacts	1
Switching voltage (max.)	250 VAC
Limiting continuous current (relay; module assembly)	6 A (≤ 60 °C); 3 A (60 ... +70 °C)
Dielectric strength, open contact (AC, 1 min)	1 kV <sub>rms</sub>
Number of switching thresholds (relay)	1 or 2 (adjustable)
Configurable rise/fall delay time (relay)	0 ... 60 s (via software)

### Communication

Communication	Modbus RTU
Interface	RS-485 (2-wire)
Number of participants (max.)	64

### Signal Processing

Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	130 ms (2-wire); 700 ms (3-wire); 700 ms (4-wire); 600 ms (differential); 500 ms (potentiometer); 150 ms (cold junction compensation OFF); 400 ms (cold junction compensation ON)

### Measurement Error

Transmission error (typ.)	≤ 0.1 % at full measurement span
Transmission error for the set measurement range	≤ (100 K/set measurement range [K]) %
Temperature coefficient	≤ 0.01 %/K

### Power Supply

Nominal supply voltage U <sub>s</sub>	24 VDC
Supply voltage range	-60 ... +30 %
Power consumption at nominal supply voltage	≤ 50 mA

» Configuration software	Page 326
» Configuration display	Page 327
» Accessories	Page 338

## Specialty Functions:



## Configuration via:



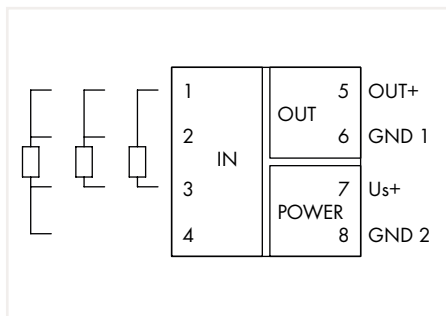
Safety and Protection	
Rated voltage	250 VAC/DC
Pollution degree	2
Test voltage (input/output/supply)	3 kVAC; 50 Hz; 1 min
Overvoltage category	II
Safe isolation	Input/relay contact/output/supply per EN 61010-1
Protection type	IP20
Connection Data	
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	picoMAX® 5.0
Solid conductor	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Fine-stranded conductor	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Geometric Data	
Width	22.5 mm / 0.886 inch
Height from upper-edge of DIN-rail	107 mm / 4.213 inch
Depth	110 mm / 4.331 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	127.83 g
Environmental Requirements	
Surrounding air temperature (operation)	-40 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Relative humidity	5 ... 95 % (non-condensing)
Operating altitude (max.)	2000 m
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3
EMC emission of interference	EN 61000-6-3; EN 61326-2-3
Standards/specifications	EN 61010-1; EN 61373



## Temperature Signal Conditioner; Configurable; for Ni Sensors 857 Series

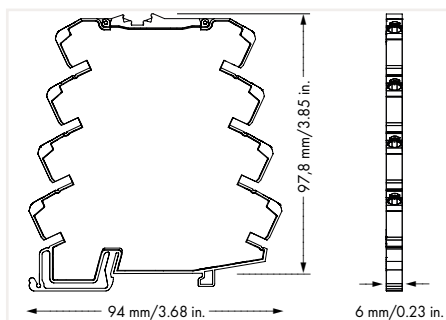


3



Temperature Signal Conditioner for Ni Sensors; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-818	1



### Short description:

WAGO's Ni temperature signal conditioner (Ni = nickel) records signals from Ni sensors featuring all standard characteristics and converts the temperature signal into a standard analog signal at the output.

### Features:

- For Ni100, Ni120, Ni200; Ni500 und Ni1000 sensors
- Calibrated measurement range switching
- Switchable clipping
- Limitation of standard analog signal to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Specialty Functions:



### Configuration via:



### Configuration

Configuration options	DIP switch
-----------------------	------------

### Input

Input signal type	Ni sensors
Input voltage (max.)	±31.2 VDC

### Input – RTD Sensors

Sensor types (RTD)	Ni100; Ni120; Ni200; Ni500; Ni1000
Sensor connection	2-wire, 3-wire, 4-wire (switchable)

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

### Signal Processing

Step response (typ.)	60 ms (2-wire); 120 ms (3-wire); 30 ms (4-wire)
----------------------	-------------------------------------------------

### Measurement Error

Transmission error (typ.)	≤ 0.1 % of upper-range value
---------------------------	------------------------------

### Power Supply

Nominal supply voltage $U_s$	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	34.9 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

857-818

DIP Switch Adjustability

● = ON Default

DIP Switch S1

Connection Technology		Temperature Coefficient		Sensor Type		
1	2	3	4	5	6	7
	2-wire			6178 ppm/K *1		Ni100
●	3-wire	●		5000 ppm/K	●	Ni120
	4-wire		●	6720 ppm/K		● Ni200
		●	●	6370 ppm/K	●	● Ni500
					●	Ni1000

\*1 6178 ppm/K acc. to DIN 4376

DIP Switch S1      DIP Switch S2

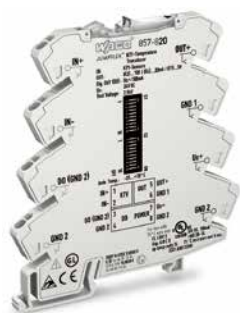
Start Temperature					End Temperature																		
8	9	10	°C		1	2	3	4	5	T / °C	1	2	3	4	5	T / °C	1	2	3	4	5	T / °C	
			0							100	●	●				100		●	●			●	210
●			-60	●						0			●	●		110	●	●	●			●	220
	●		-50		●					10	●		●	●		120					●	●	230
●	●		-40	●	●					20		●	●	●		130	●				●	●	240
		●	-30			●				30	●	●	●	●		140					●	●	250
●	●		-20	●	●					40					●	150	●	●			●	●	260
	●	●	-10		●	●				50	●					160					●	●	270
●	●	●	0	●	●	●				60		●				170	●				●	●	280
								●		70	●	●				180		●	●	●	●	●	290
								●		80			●			190	●	●	●	●	●	●	300
								●		90	●	●				200							

DIP Switch S2

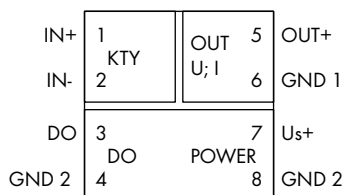
Output Signal			9	10	Measurement Range Underflow	Measurement Range Overflow	Wire Break	Short Circuit
6	7	8						
		0 ... 20 mA			Lower limit of output range -5 % **2	Upper limit of output range +2.5 %*2	Upper limit of output range +5 %*2	Lower limit of output range -12.5 % **2
●		4 ... 20 mA						
	●	0 ... 10 mA			Lower limit of output range	Upper limit of output range +2.5 %	Upper limit of output range +5 %	Lower limit of output range
●	●	2 ... 10 mA		●				
		0 ... 10 V			Lower limit of output range	Upper limit of output range	Upper limit of output range +5 %	Upper limit of output range +5 %
●	●	2 ... 10 V		●				
		0 ... 5 V			Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
●	●	1 ... 5 V		●				

\* but not when lower limit of output range = 0 V or 0 mA  
\*\*2 acc. to NAMUR NE 43

## KTY Signal Conditioner; Configurable 857 Series

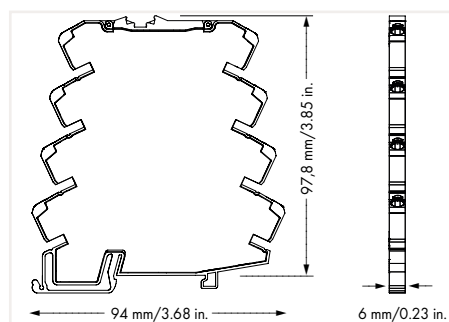


3



Temperature Signal Conditioner for KTY Sensors; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-820	1



### Short description:

WAGO's KTY temperature signal conditioner records signals from KTY sensors featuring all standard characteristics and converts the temperature signal into a standard analog signal at the output.

### Features:

- Supports all standard KTY sensors
- Calibrated measurement range switching
- Switchable clipping
- Limitation of standard analog signal to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Specialty Functions:



### Configuration via:



### Configuration

Configuration options	DIP switch
-----------------------	------------

### Input

Input signal type	KTY sensors
Input voltage (max.)	±30 VDC

### Input – KTY Sensors

Sensor types (KTY)	KTY81-110; KTY81-120; KTY81-121; KTY81-122; KTY81-150; KTY81-210; KTY81-220; KTY81-221; KTY81-222; KTY81-250; KTY82-110; KTY82-120; KTY82-121; KTY82-122; KTY82-150; KTY82-220; KTY82-221; KTY82-222; KTY82-250; KTY83-110; KTY83-120; KTY83-121; KTY83-122; KTY83-150; KTY83-151; KTY84-130; KTY84-150; KTY84-151; KTY16; KTY19; ST13; ST20
--------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Sensor connection	2-wire
-------------------	--------

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

### Output – Digital

Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)

### Signal Processing

Step response (typ.)	50 ms
----------------------	-------

### Measurement Error

Transmission error (typ.)	≤ 0.1 % of upper-range value
---------------------------	------------------------------

### Power Supply

Nominal supply voltage Us	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA (+ IDO)

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	35.5 g
--------	--------

### Environmental Requirements

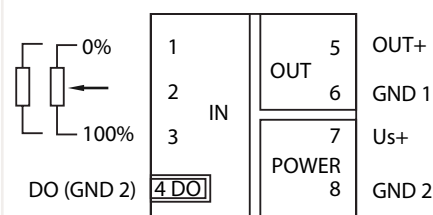
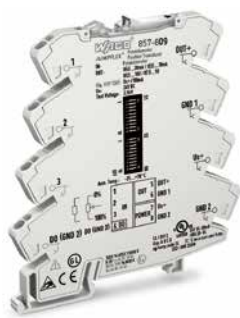
Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

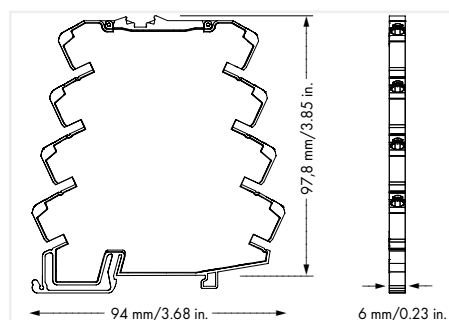


## Potentiometer Signal Conditioner; Configurable 857 Series



Potentiometer Position Signal Conditioner; Current and voltage output signal; Digital output; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-809	1



### Short description:

WAGO's potentiometer signal conditioner records resistance signals (e.g., from potentiometers) and converts them into a standard analog signal. The device is supplied with 24 VDC (nominal voltage). It is set via DIP switch or push/slide switch.

### Features:

- PC configuration interface
- Calibrated measurement range switching
- Automatic potentiometer identification
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Note:

Additional setting options via interface configuration software/app

» Configuration software	Page 326
» Configuration App	Page 327
» Accessories	Page 338

### Configuration

Configuration options	DIP switch; Interface configuration software; Interface configuration app; Push/slide switch
-----------------------	----------------------------------------------------------------------------------------------

### Input

Input signal type	Potentiometer; Resistor
-------------------	-------------------------

### Input – Resistors

Input range (resistor)	10 $\Omega$ ... 100 k $\Omega$
Input range (potentiometer)	100 $\Omega$ ... 100 k $\Omega$
Potentiometer supply voltage (max.)	2.5 V
Measurement range (min.)	100 $\Omega$

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	$\geq 2$ k $\Omega$
Load impedance (current output)	$\leq 600$ $\Omega$

### Output – Digital

Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 (adjustable)

### Signal Processing

Step response (typ.)	32 ms
----------------------	-------

### Measurement Error

Transmission error (typ.)	$\leq 0.1$ % of upper-range value
Temperature coefficient	$\leq 0.01$ %/K

### Power Supply

Nominal supply voltage $U_s$	24 VDC
Supply voltage range	$\pm 30$ %
Power consumption at nominal supply voltage	$\leq 40$ mA (+ IDO)

### Safety and Protection

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	36.6 g
--------	--------

### Environmental Requirements

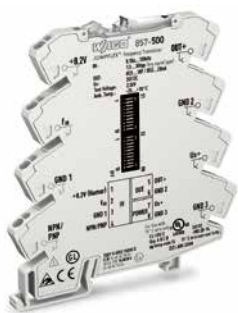
Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

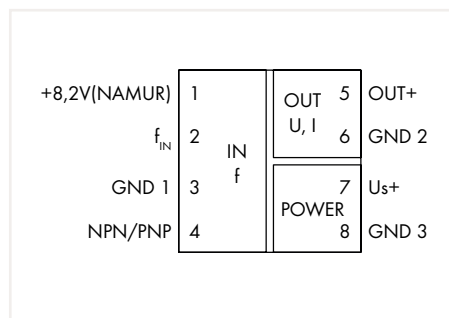
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4



## Frequency Signal Conditioner; Configurable 857 Series

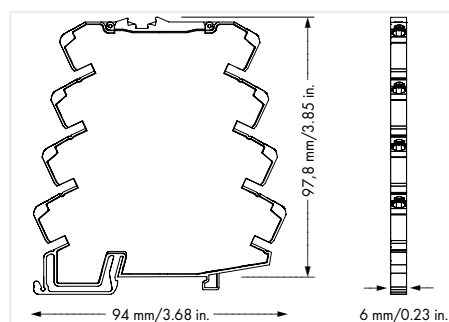


3



Frequency Signal Conditioner; Current and voltage output signals; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-500	1



### Short description:

WAGO's frequency signal conditioner collects 0.1–120 kHz signals from NAMUR, NPN or PNP sensors and converts them into a standard analog signal.

### Features:

- PC configuration interface
- Signal acquisition from NAMUR, NPN or PNP sensors
- Calibrated measurement range switching
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

### Specialty Functions:



### Configuration via:



### Configuration

Configuration options: DIP switch; Interface configuration software; Interface configuration app

### Input

Input signal type: Frequency generators; NAMUR sensors; NPN/PNP transistor outputs; Mechanical contact (dry contact)

### Input – Sensor Type 1

Sensor type 1: Frequency generator; NPN/PNP transistor output with pull-up or pull-down resistor

Measurement range (frequency) 1	0.1 Hz ... 120 kHz
Pulse length 1	$\geq 1 \mu\text{s}$
Measurement span 1 (min.)	10 Hz
Signal level	1.5 V; 10 V; 20 V (switchable)
Input voltage (max.)	$\pm 31.2 \text{ VDC}$
Signal form	Any
Coupling	AC/DC (adjustable; AC above 10 Hz)
Input resistance 1	10 k $\Omega$

### Input – Sensor Type 2

Sensor type 2: NAMUR sensor per DIN EN 50227

Measurement range (frequency) 2	0.1 Hz ... 1 kHz
Pulse length 2	$\geq 500$
Measurement span 2 (min.)	10 Hz
Sensor supply	8.2 VDC
Signal current (0)	$\leq 1.2 \text{ mA}$
Signal current (1)	$\geq 2.1 \text{ mA}$
Hysteresis	0.45 mA
Short-circuit current	$\leq 14 \text{ mA}$
Short circuit monitoring	$\geq 4.7 \text{ mA}$
Wire break monitoring	$\leq 0.2 \text{ mA}$
Input resistance 2	$\leq 600 \Omega$

### Input – Sensor Type 3

Sensor type 3: NPN/PNP transistor output without pull-up or pull-down resistor; Mechanical contact (dry contact)

Measurement range (frequency) 3	0.1 Hz ... 20 kHz
Pulse length 3	$\geq 25 \mu\text{s}$
Measurement span 3 (min.)	100 Hz
Open-circuit voltage	5 VDC
NPN residual voltage	$\leq 1.5 \text{ V}$
PNP switching voltage	$\geq 7.5 \text{ V}$ (+ residual voltage UCE sat)

### Output

Output signal type	Current; Voltage
Output signal (voltage)	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal (current)	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (voltage output)	$\geq 2 \text{ k}\Omega$
Load impedance (current output)	$\leq 600 \Omega$

### Signal Processing

Conversion time: Peak-time measurement method (> 400 Hz): < 20 ms;  
Pulse time measurement method (< 400 Hz): < 200  $\mu\text{s}$  +  $T_{\text{Cycle duration}}$

### Measurement Error

Transmission error (typ.)	$\leq 0.1 \%$ of upper-range value
Temperature coefficient	$\leq 0.01 \%/K$

### Power Supply

Nominal supply voltage Us	24 VDC
Supply voltage range	$\pm 30 \%$
Power consumption at nominal supply voltage	$\leq 40 \text{ mA}$

» Configuration software	Page 326
» Configuration App	Page 327
» Accessories	Page 338

Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
Connection Data	
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	36.2 g
Environmental Requirements	
Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4



# Frequency Signal Conditioner; Configurable 857 Series

857-500

DIP Switch Adjustability

● = ON Default

DIP Switch S1

Source Input		Coupling	Operation with Disturbed Frequency Signals for Acceptable Signal Level (applies only to $f_{in}$ input)	
1	2	3	4	5
			High	Low
Frequency generator or NPN/PNP transistor outputs with pull-up or pull-down resistor		AC/DC	> 1.5 V	< 0.4 V
●	NAMUR	● AC (without DC), see Figure 1	> 10 V	< 8 V
●	NPN/PNP transistor outputs without pull-up or pull-down resistor input		> 20 V	< 16 V
●	Dry Contact		> 1.5 V	< 0.4 V

DIP Switch S1

DIP Switch S2

Input Start Value					Frequency/Hz	Input End Value					Frequency/Hz
6	7	8	9	10		1	2	3	4	5	
					100						1000
●					0.1	●					0.1
	●				1		●				1
●	●				100	●	●				100
		●			200			●			200
●		●			300	●	●				300
	●	●			400		●	●			400
●	●	●			500	●	●	●			500
			●		600				●		600
●		●	●		700	●			●		700
	●	●			800		●	●			800
●	●	●			900	●	●	●			900
			●		1000			●	●		1000
●	●	●			2000	●	●	●			2000
	●	●	●		3000		●	●	●		3000
●	●	●			4000	●	●	●	●		4000
			●		5000					●	5000
●		●	●		6000	●				●	6000
	●		●		7000		●			●	7000
●	●		●		8000	●	●			●	8000
		●	●		9000			●		●	9000
●	●	●	●		10000	●	●	●		●	10000
	●	●	●		20000		●	●	●		20000
●	●	●		●	30000	●	●	●		●	30000
			●	●	40000				●	●	40000
●		●	●	●	50000	●		●	●		50000
	●	●	●		60000		●	●	●		60000
●	●	●	●		70000	●	●	●	●		70000
		●	●	●	80000			●	●	●	80000
●	●	●	●		90000	●	●	●	●		90000
	●	●	●	●	100000		●	●	●	●	100000
●	●	●	●	●	120000	●	●	●	●	●	120000

DIP Switch S2

Output Signal			9	10	Measurement Range Underflow	Measurement Range Overflow	Only for NAMUR Sensors	
6	7	8					Wire Break	Short Circuit
		0 ... 20 mA	●	●	Lower limit of output range* -5 %	Upper limit of output range* +2.5 %	Upper limit of output range* 5 %	Lower limit of output range* -12.5 %
●		4 ... 20 mA					Upper limit of output range 5 %	Lower limit of output range
		0 ... 10 mA	●	●	Lower limit of output range	Upper limit of output range +2.5 %	Upper limit of output range 5 %	Lower limit of output range
●	●	2 ... 10 mA					Upper limit of output range 5 %	Lower limit of output range
		0 ... 10 V	●	●	Lower limit of output range	Upper limit of output range	Upper limit of output range 5 %	Upper limit of output range 5 %
●	●	2 ... 10 V					Upper limit of output range 5 %	Lower limit of output range
		0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range	Ausgangsbereichsanfang	Lower limit of output range
●	●	1 ... 5 V					Ausgangsbereichsanfang	Lower limit of output range

\*acc. to NAMUR NE 43

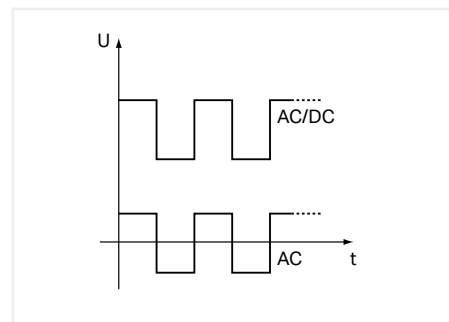


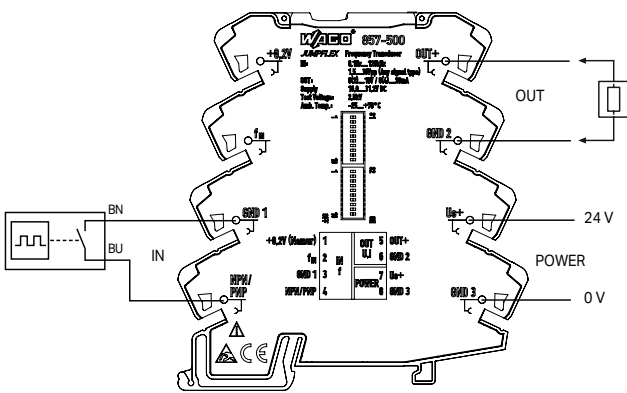
Figure 1: Coupling

3

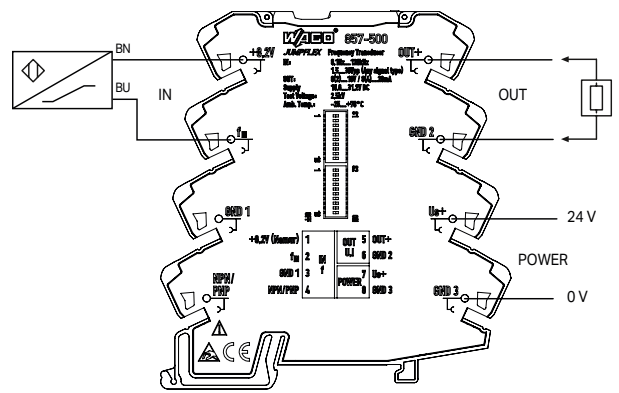
857-500

Wiring Material

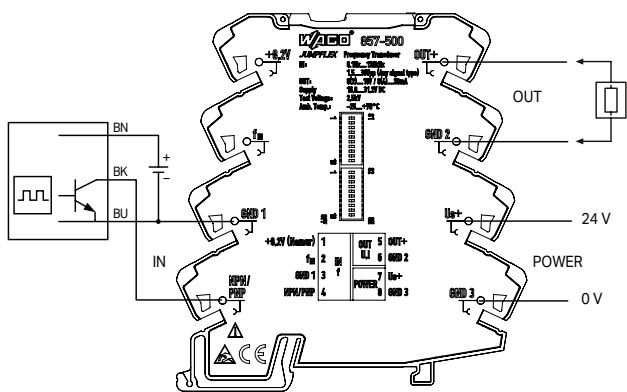
2-Wire DC (Mechanical Contact)



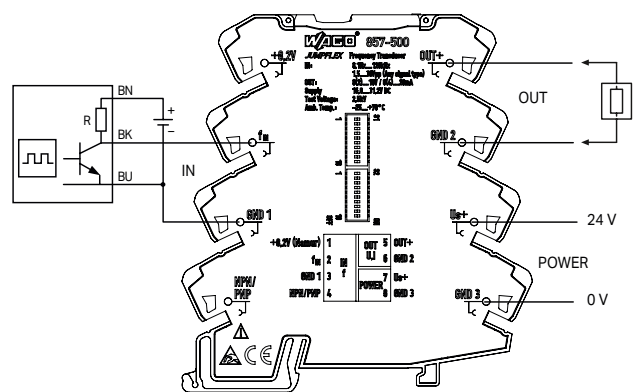
2-Wire DC NAMUR Sensor



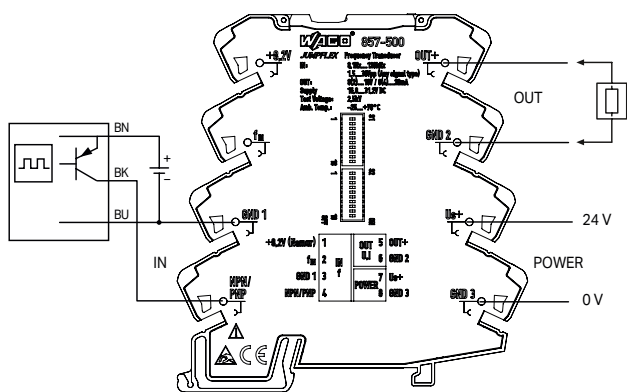
NPN Transistor Output



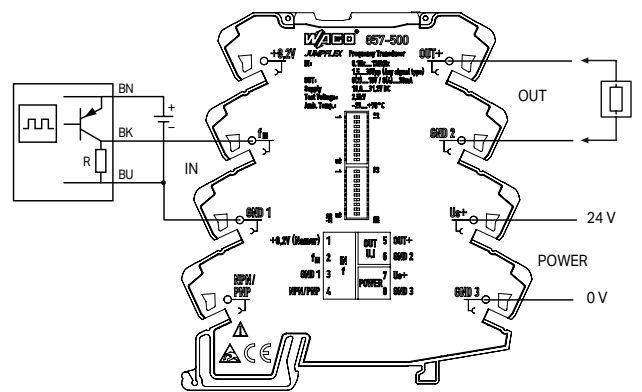
NPN Transistor Output with Pull-Up Resistor



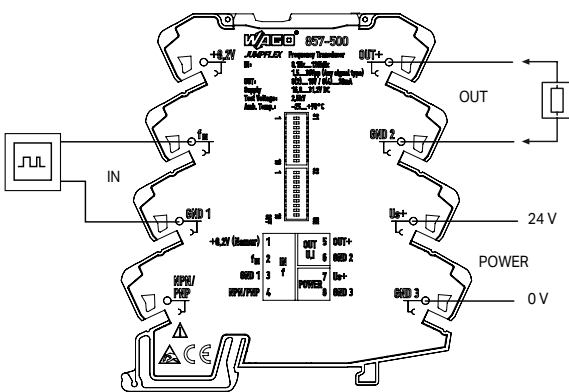
PNP Transistor Output



PNP Transistor Output with Pull-Down Resistor



Frequency Generator



## Interface Configuration Software

All signal conditioners offer user-friendly configuration at a glance using the interface configuration software.

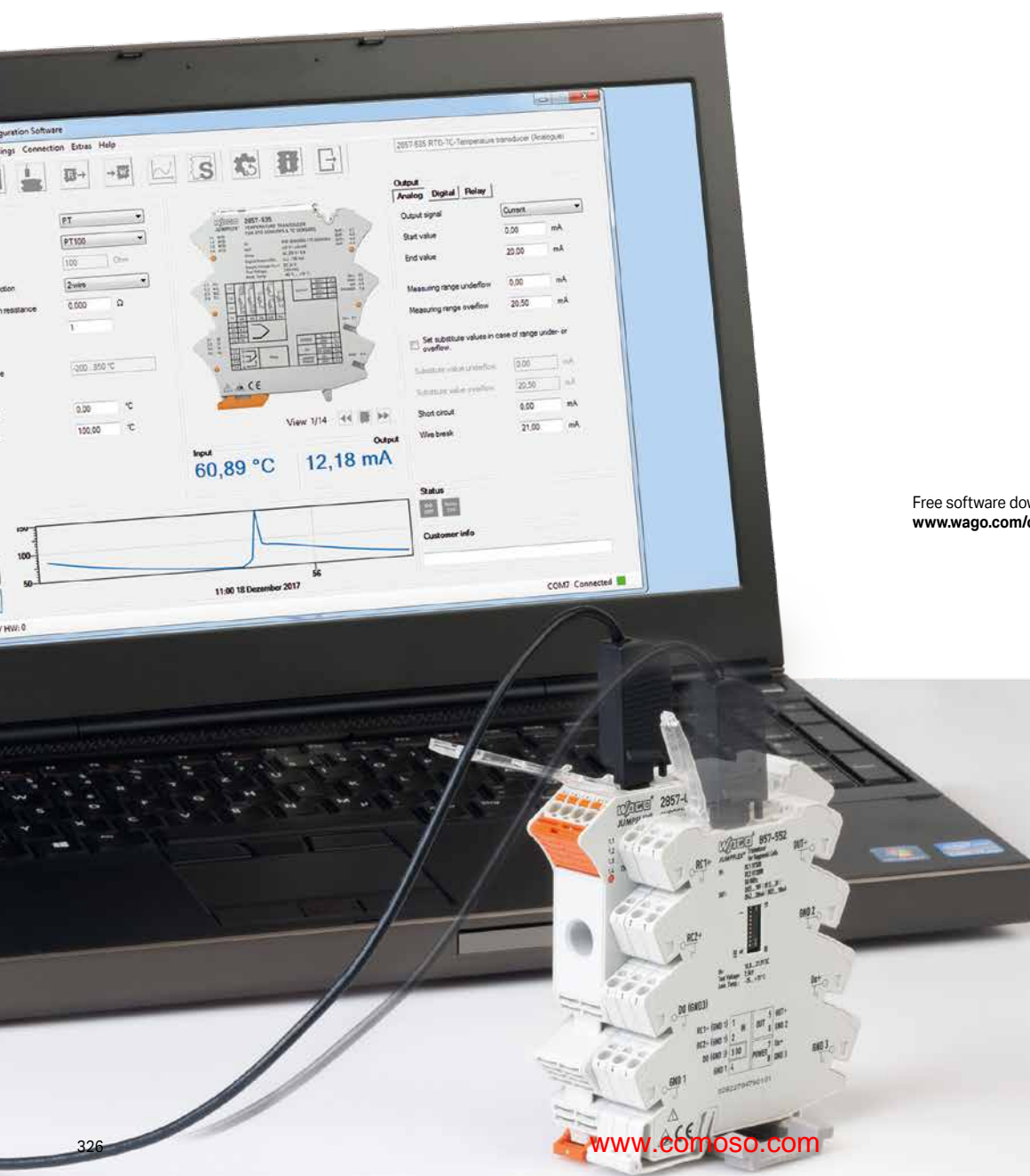
All devices marked with the software symbol can be configured accordingly via the software.



### Software features:

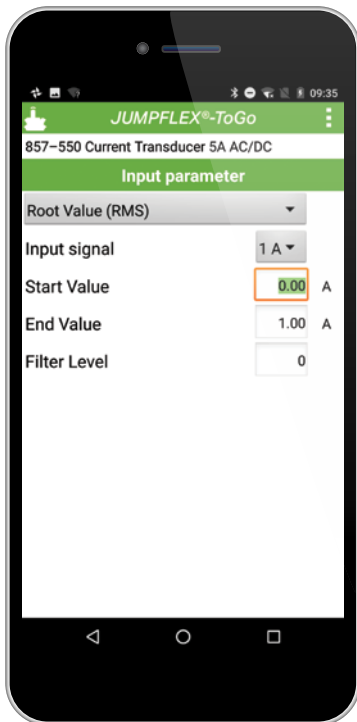
- Simulation of input and output parameters (2857 Series)
- Automatic module recognition
- Configuration and visualization of process values
- Parameterization of the digital switch output (threshold functionality)
- Communication via WAGO USB Service Cable (750-923) or WAGO Bluetooth® Adapter (750-921), pluggable on both series
- Creation of configuration reports
- Backup of configuration settings

3



Free software download at:  
[www.wago.com/configuration-software](http://www.wago.com/configuration-software)

# JUMPFLEX®-ToGo Configuration App



(Android smartphone)

The JUMPFLEX®-ToGo App brings the power of PC-based configuration software to your Android mobile device.

All devices marked with the app symbol can be configured accordingly via the app.

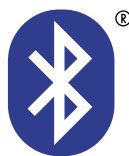


- App features:**
- Configuration of input and output parameters with a stroke of the finger
  - Simple display of configuration data and current value
  - Communication via WAGO Bluetooth® Adapter (750-921)

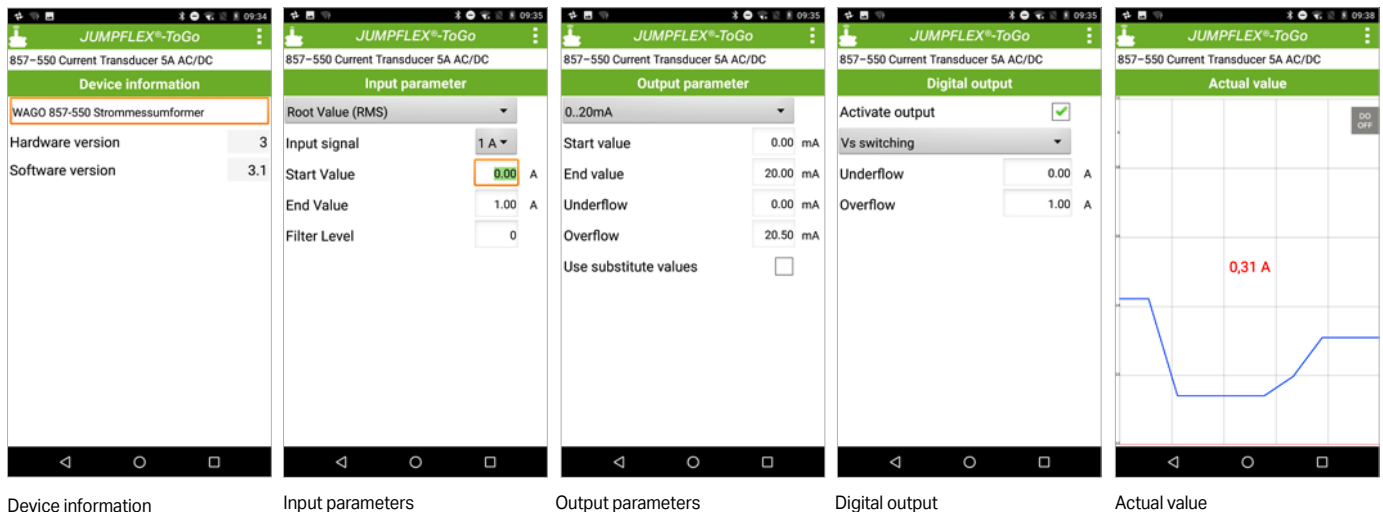
3



Free download from Google Play Store



Bluetooth® Adapter, 750-921



Device information

Input parameters

Output parameters

Digital output

Actual value

## Configuration Display 2857 Series



### Configuration Display

Item No.	Pack. Unit
2857-900	1

#### Features:

- Easy mounting on 2857 Series devices
- Automatic module recognition
- Capacitive user interface with slider function
- Intuitive menu navigation
- Multicolor backlight for status indication
- Device configuration and process value visualization
- Easy copying of device configuration

All devices marked with the display symbol can be configured accordingly via the display.



### Operating Data

Operating voltage	3.3 VDC
Power consumption	≤ 60 mA

### Geometric Data

Width	22 mm / 0.866 inch
Height	13 mm / 0.512 inch
Depth	59 mm / 2.323 inch

### Mechanical Data

Mounting type	Pluggable module
---------------	------------------

### Material Data

Weight	24.3 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-30 ... +80 °C
Relative humidity	10 ... 90 % (non-condensing)
Operating altitude (max.)	2000 m

### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-4; EN 61326-2-3; EN 50121-3-2
Standards/specifications	EN 61373



Housing width: 22.5 mm

Housing width: 12.5 mm

## Bluetooth® Adapter 750 Series



Bluetooth® Adapter		
	Item No.	Pack. Unit
	750-921	1

### Bluetooth® Adapter in Connection with 750 Series

The *Bluetooth®* Adapter wirelessly connects a notebook computer with *Bluetooth®* functionality to the service interface of the coupler/controller. It also provides an active connection to a programmable fieldbus controller.

As a cable substitute, the *Bluetooth®* Adapter allows communication between two fieldbus controllers, as well as between fieldbus couplers/controllers via WAGO software tools (e.g., WAGO-I/O-CHECK, WAGO-I/O-PRO).

Configurable coexistence properties ensure trouble-free operation in the presence of other radio systems.

### Bluetooth® Adapter in Connection with 857 Series

The *Bluetooth®* Adapter wirelessly connects a notebook computer with *Bluetooth®* functionality to the service interface of a configurable 857 Series Module.

As a cable substitute, the *Bluetooth®* adapter allows communication between modules and the WAGO software tool (WAGOframe) or configuration app for Android-based end-devices.

If required, adapter configuration may be performed via AT commands.

The adapter is supplied via both service interface and power supply of coupler/controller or module.

Technical Data	
Security encryption	128-bit encryption
Radio technology	Bluetooth® 2.1
Frequency band	ISM band, 2402 ... 2483 MHz
Security authentication	Pin code or configurable access list
Supported profiles	Serial Port Profile (SPP)
Type of communication	Peer-to-peer connection
Coexistence	Frequency hopping spread spectrum (FHSS); Adaptive frequency hopping (AFH); Adaptive transmission power with configurable upper limit; Configurable channel blacklist; Supports coexistence optimized inquiry (transmission time ≤ 0.1 s; transmission cycle ≥ 2.9 s)
Transmission range	20 m in open air (Class 2)
Antenna	Integrated
Receiver sensitivity	-82 dBm
Baud rate	9600 ... 115,000 bps
Current consumption (system supply)	60 mA
Indicators	Operating mode

Connection Data	
Contact type	4-pole male connector
Connection type	4-pole male connector

Geometric Data	
Width	15 mm / 0.591 inch
Height	50 mm / 1.969 inch
Depth	19 mm / 0.748 inch

Material Data	
Color	light gray
Weight	16.6 g
Conformity marking	CE

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +60 °C
Protection type	IP20



Application example: 750 Series



Application example: 857 Series

## WAGO USB Communication Cable 750 Series



### Configuration Cable; USB connection

Length	Item No.	Pack. Unit
2.5 m	750-923	1
5.0 m	750-923/000-001	1

The WAGO USB Communication Cable connects a PC (notebook) to both the service interface of the 857/2857 Series Signal Conditioners and the configuration interface of WAGO's I/O fieldbus couplers/controllers.

#### Notice:

Using the WAGO 759-923 USB Communication Cable in combination with select programmable fieldbus controllers requires the specific firmware versions listed below (or higher):

750-841: version 12 and higher

750-872/0020-0000: version 2 and higher

### Technical Data

Connection type	4-pole male connector; USB plug (type A)
Number of poles	4
Supported operating systems	Windows XP (SP3 or higher); Windows 7

### Geometric Data

Width	15 mm / 0.591 inch
Height	50 mm / 1.97 inch
Depth	19 mm / 0.748 inch

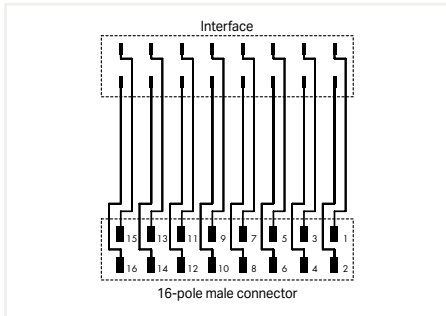
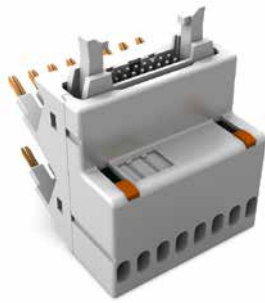
### Mechanical Data

Weight	64.8 g
Color	black

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Protection type	IP20
EMC immunity to interference	Per EN 61000-4-3, EN 61000-4-6
EMC emission of interference	Per EN 55022

## Interface Adapter 857 Series



Interface Adapter; with 16-pole ribbon cable connector (DIN 41651); analog

	Item No.	Pack. Unit
	857-980	1

Electrical Data	
Inputs/Outputs	8-channel analog input or output
Circuit type	Analog
Limiting continuous current	1 A
Contact resistance	≤ 20 mΩ

Safety and Protection	
Pollution degree	2
Overvoltage category	III
Test voltage	500 VAC; 50 Hz; 1 min

Connection Data	
Connection type 1	System
Pole number 1	16
Connector 1	DIN 41651 male connector
Performance level 1	3
Connection type 2	Field
Pole number 2	16
Design 2	Plug for jumper slot

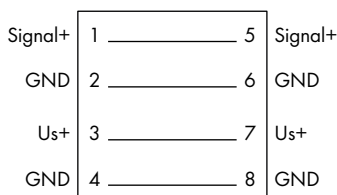
Mechanical Data	
Mounting type	Pluggable module

Material Data	
Weight	41.4 g

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

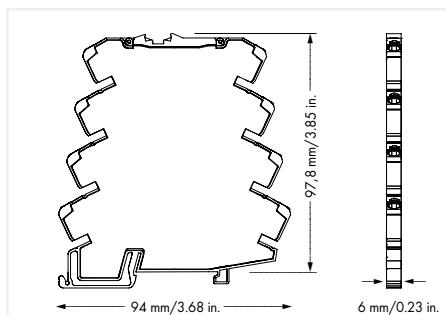


## Supply and Through Module 857 Series



### Supply and Through Module

Item No.	Pack. Unit
857-979	25



#### Short description:

WAGO's supply and through module transmits electrically isolated signals, e.g., in conjunction with the 857-980 Interface Adapter for analog signals (Item No. 857-980). When used as a supply module, it transmits the power from the connected clamping points to the adjacent modules via push-in type jumper bars.

### Electrical Data

Operating voltage	≤ 33 V AC/DC
Continuous current (max.)	8 A
Contact resistance	≤ 10 Ω

### Safety and Protection

Protection type	IP20
-----------------	------

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Geometric Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

### Mechanical Data

Mounting type	DIN-35 rail
Protection type	IP20

### Material Data

Weight	28.8 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

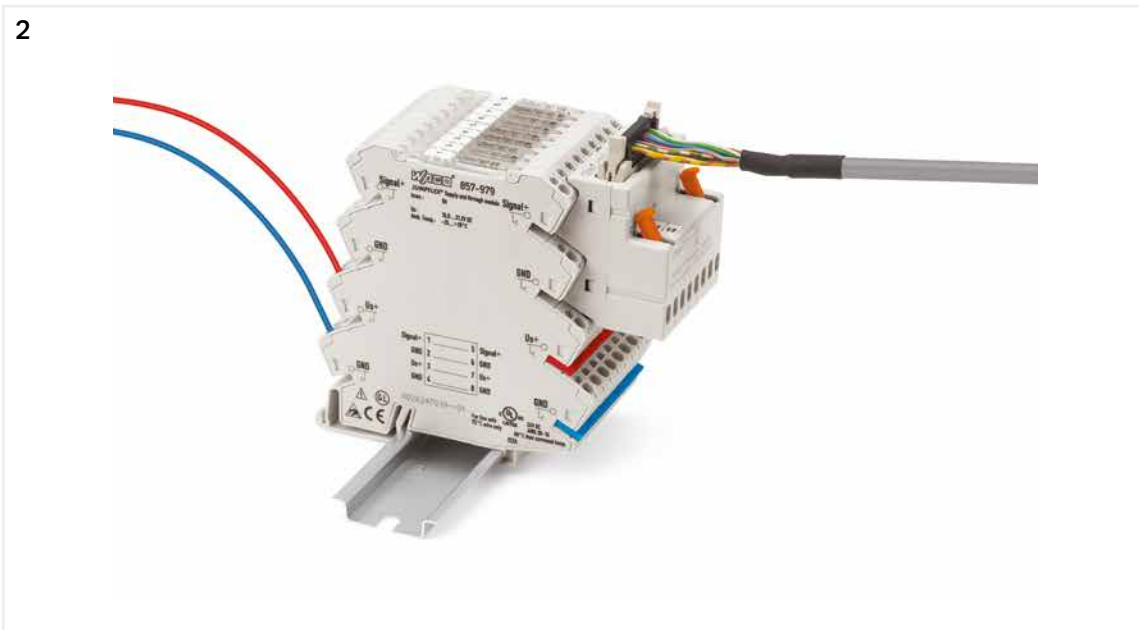
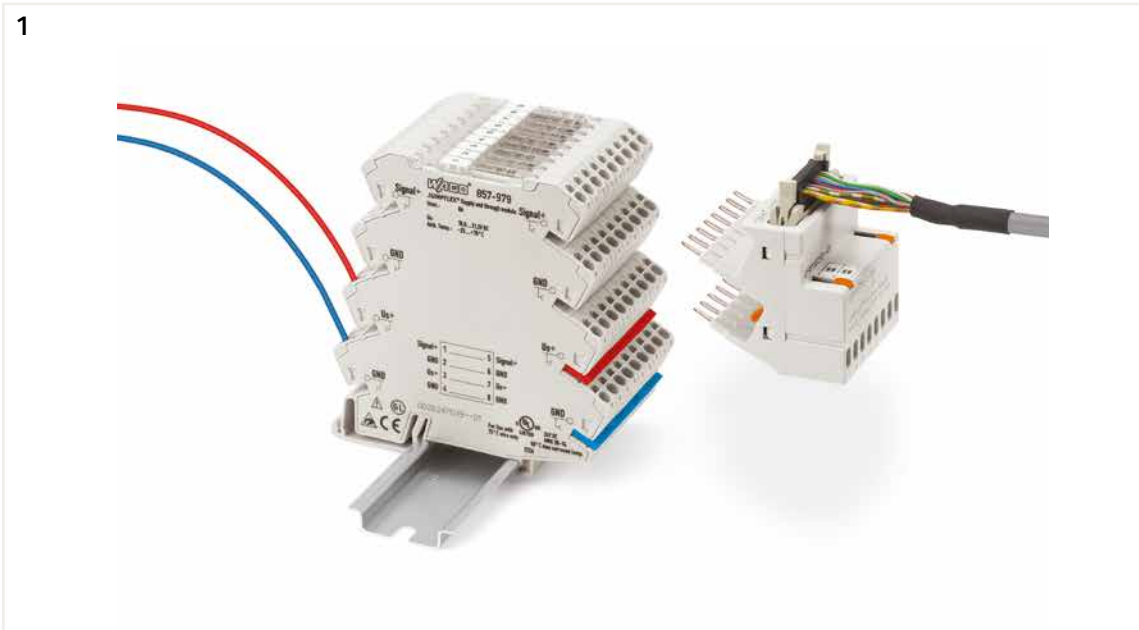
Conformity marking	CE
--------------------	----

**857-979**

**Application example:**

Power supply for 8 modules with plugged interface adapter

- WAGO interface adapter, 857-980
- WAGO ribbon cable, 706-100/1602-200, 16-pole socket/open-ended
- Push-in type jumper bar, 9-way, 859-409



## Connection Cable; Paired with an Interface Adapter

### 706 Series



#### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

#### Safety and Protection

Degree of protection	IP20
----------------------	------

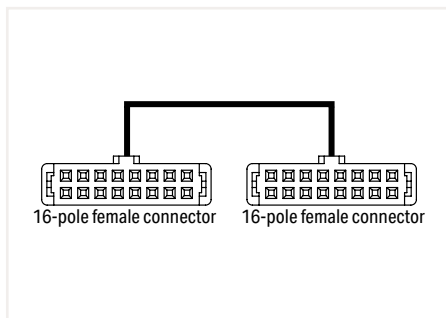
#### Connection Data

Connectors	2 x 16-pole DIN 41651 connector
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

#### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
-----------------------------------------	----------------

3



Connection Cable; 16-pole;  
DIN 41651 connector; 16-pole; DIN 41651 connector;  
Conductor cross section: 0.14 mm<sup>2</sup>/24 AWG

Length	Item No.	Pack. Unit
1 m	706-753/301-100	1
2 m	706-753/301-200	1
3 m	706-753/301-300	1

WAGO's 16-pole connection cables transmit the signal one-to-one from the 16-pole connector and are available in 1-, 2- and 3-meter lengths. Signal transmission from the 857-980 Interface Adapter is also possible.

They are suitable for system wiring when paired with WAGO's Interface Adapter (Item No. 857-980).

#### Note:

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

## Connection Cable; Paired with an Interface Adapter

### 706 Series



Connection Cable; 16-pole;  
DIN 41651 connector; open-ended; Conductor cross  
section: 0.14 mm<sup>2</sup>/24 AWG; UR components

Length	Item No.	Pack. Unit
2 m	706-100/1602-200	1

Color Coding		HE 10 16-pole
acc. to DIN VDE 47100		Contact Number
white		1
brown		2
green		3
yellow		4
gray		5
pink		6
blue		7
red		8
black		9
violet		10
gray/pink		11
red/blue		12
white/green		13
brown/green		14
white/yellow		15
yellow/brown		16

**Note:**

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

#### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

#### Safety and Protection

Degree of protection	IP20
----------------------	------

#### Connection Data

Connectors	1 x 16-pole connector per DIN 41651; open-ended
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

#### Physical Data

Cable length	2 m
--------------	-----

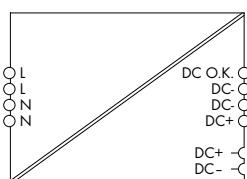
#### Material Data

Weight	202 g
--------	-------

#### Environmental Requirements

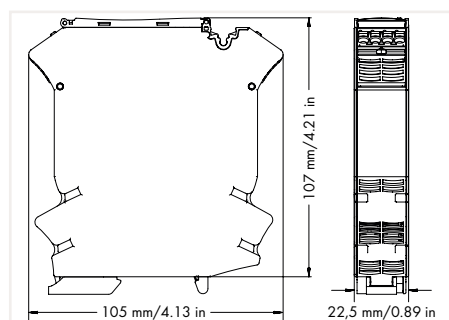
Surrounding air temperature (operation)	-25 ... +70 °C
-----------------------------------------	----------------

## Switched-Mode Power Supply in 2857 Series Housing 787 Series



Switched-Mode Power Supply; for signal conditioners;  
1-phase; Output voltage: 24 VDC; Output current: 1 A

Item No.	Pack. Unit
787-2852	1



- Switched-mode power supply in 22.5 mm wide 2857 Series housing, same profile as 2857 and 857 Series Signal Conditioners
- Both 24 VDC and 0 V output voltage can be easily supplied to adjacent modules via 859-4xx Jumpers
- Pluggable *picoMAX*® connection technology
- Natural convection cooling
- DC OK message as active signal output (24 VDC; 20 mA)
- Integrated redundancy diode enables easy fail-safe power supply via parallel connection of two power supplies
- Approvals for worldwide applications with modules (pending)

Input	
Phases	1
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 0.28$ A (240 VAC; nominal load); $\leq 0.49$ A (100 VAC; nominal load)
Discharge current	$\leq 1$ mA
Inrush current	$\leq 30$ A
Power factor	$\geq 0.6$ (230 VAC, nominal load; per EN 61000-3-2)
Power factor correction (PFC)	None
Mains failure hold-up time	$\geq 20$ ms (100 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC (SELV)
Default setting	24 VDC
Nominal output current $I_{o, \text{nom}}$	1 A
Nominal output power	24 W
Adjustment accuracy	2 %
Deviation; Dynamic load change: 10 ... 90 %	1 %
Residual ripple	$\leq 100$ mV (peak-to-peak)
Current limitation	$1.1 \times I_{o, \text{nom}}$ typ.
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Overload LED (red); 1 x active DC OK signal output (24 VDC; 20 mA)
Status indication	Green LED ( $U_o > 21.5$ V); Red LED (overload)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 1$ W (230 VAC; no load); $\leq 4.3$ W (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 5$ W (100 VAC / 24 VDC; 1 A)
Efficiency	$\geq 86$ % (230 VAC; nominal load); $\geq 84$ % (110 VAC, nominal load);

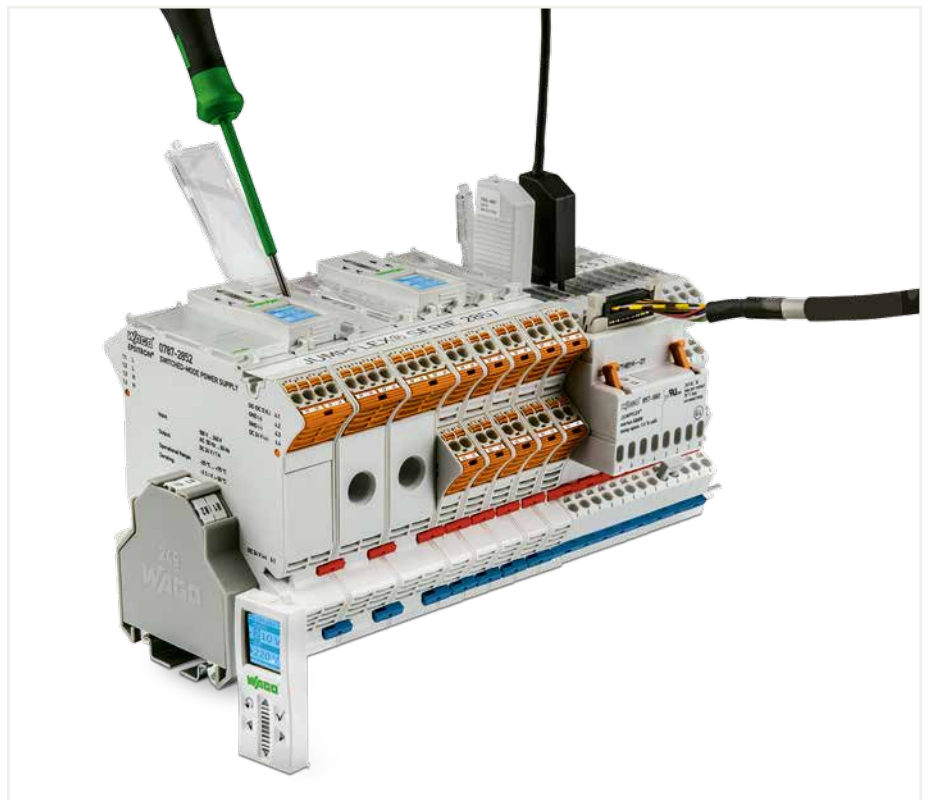
Fuse Protection	
Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

Safety and Protection	
Isolation voltage (pri.-sec.)	4.242 kVDC
Pollution degree	2
Protection class	II
Protection type	IP20 (per EN 60529)
Feedback voltage	$\leq 60$ VDC
Transient suppression (primary)	Varistor
Overvoltage protection (secondary)	Internal protective circuit; $\leq 29$ ... 31 VDC (in the event of a fault)
Short-circuit-protected	Yes
Open-circuit-proof	Yes
Parallel operation	Yes, for two devices of the same type
Series operation	Yes, for two devices of the same type
MTBF	$> 500,000$ h (at $+25$ °C per IEC 61709)

Connection Data	
Number of jumper slots	4
Connection type 1	Input/output/signaling
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	<i>picoMAX</i> ® 5.0
Solid conductor	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 10 AWG
Fine-stranded conductor	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 10 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

Geometric Data	
Width	22.5 mm / 0.89 inch
Height from upper-edge of DIN-rail	107 mm / 4.21 inch
Depth	105 mm / 4.13 inch
Mechanical Data	
Mounting type	DIN-35 rail (EN 60715)
Protection type	IP20 (per EN 60529)
Material Data	
Weight	1.1 g
Environmental Requirements	
Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-25 ... +85 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-2 %/K (> +60 °C)
Climatic category	3K3 (per EN 60721)
Standards and Specifications	
Conformity marking	CE
Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 60950-1; UL 60950*; cULus 508*; ANSI-ISA 12.12.01 (Class I Div 2)*; ATEX/IEC Ex*; DNV GL (*pending)

3



Application example

## Accessories



3

Push-in type jumper bar; light gray; insulated; 18 A		
Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)

Comb-style jumper bar; insulated		
	Item No.	Pack. Unit
2-way	281-482	100

Operating tool with a partially insulated shaft; Type 2; Blade: 3.5 x 0.5 mm		
	Item No.	Pack. Unit
	210-720	1

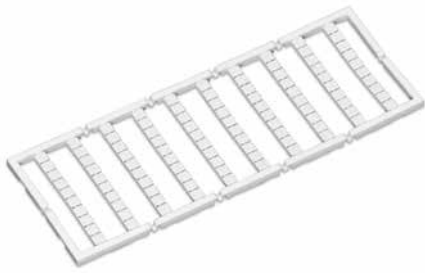
Item no. suffixes for colored push-in type jumper bars	
	Item No.
yellow	... /000-029
red	... /000-005
blue	... /000-006



End stop		
Width	Item No.	Pack. Unit
6 mm	249-116	1
10 mm	249-117	1
14 mm	249-197	1

Test pin		
	Item No.	Pack. Unit
	735-500	1

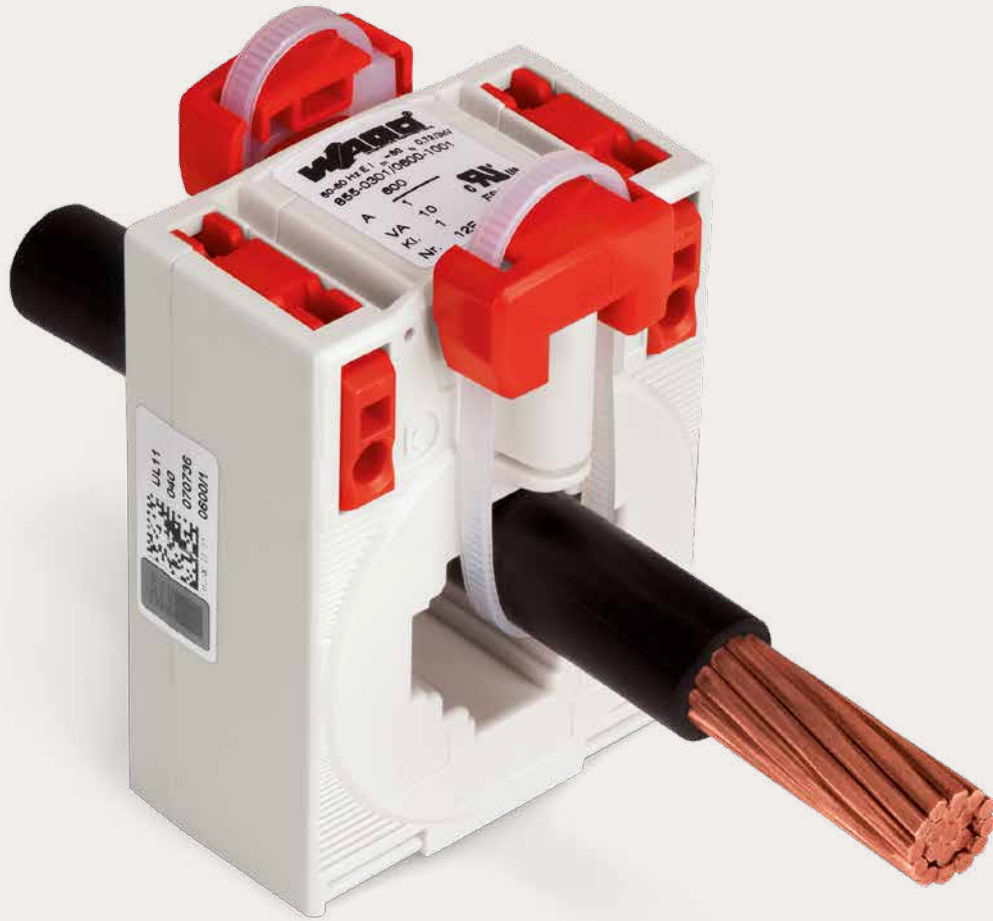
## Marking



WMB Multi Marking System		
Marking	Item No.	Pack. Unit
plain	793-501	5 cards
1 ... 10 (10 x)	793-502	5 cards
11 ... 20 (10 x)	793-503	5 cards
21 ... 30 (10 x)	793-504	5 cards
31 ... 40 (10 x)	793-505	5 cards
41 ... 50 (10 x)	793-506	5 cards
1 ... 50 (2 x)	793-566	5 cards








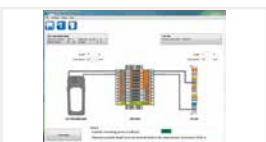
Marking Strip for TOPJOB® S; white; plain; 11 mm wide		
	Item No.	Pack. Unit
50 m reel	2009-110	1








# WAGO Current and Energy Measurement Technology

## WAGO Current and Energy Measurement Technology

		Page
	Current Transformers	
	Plug-In Current Transformers; with CAGE CLAMP® Connection Technology; 855 Series	344
	Plug-In Current Transformers; with <i>picoMAX</i> ® Connection Technology; 855 Series	348
	Split-Core Current Transformers; 855 Series	350
	Rogowski Coils	
	855 Series	354
	Terminal Block Assemblies for Current and Voltage Transformers 2007 Series	356
	Current Sensors with Bus Connection	
	789 Series	358
	Accessories	364
	Power Taps 855 Series	375
	Current and Voltage Taps 855 Series	381
	Power and Energy Measurement 750 Series	384
	Line Length Calculation for Current Transformers	386


## Selection Guide: Current Transformers

Current Transformers; 855 Series	Split-Core Current Transformers	Plug-In Current Transformers; with CAGE CLAMP® Connection Technology
		
Application	Retrofits	New systems
Coil bobbin	Separable	Closed
Connection technology	Connection cable (color coded)	CAGE CLAMP®
Mounting	Round cable (insulated); Copper current bar (insulated)	Round cable; Copper current bar; DIN-rail; Mounting plate
Compatibility with other WAGO components	750-493; (750-493/000-001) 750-494; (750-494/000-001) 750-495; (750-495/000-001) 857-550	
Primary rated current	60 ... 1000 A	50 ... 2500 A
Secondary rated current	1 A / 5 A	1 A / 5 A
Accuracy class	0.5; 1 or 3	1 or 3
Surrounding air temperature	-10 ... +55 °C	-5 ... +50 °C
Standards	EN 61869-2	EN 61869-2
Approvals	-	
Page	350	344

\*In the measurement range 0.8 to 32 A and in combination with WAGO's 3-phase power measurement modules, the accuracy class 0.5 is met per EN 61869-2.

**Plug-In Current Transformers; with a *picoMAX*® Pluggable Connector** **Rogowski Coils RC70 / RC 125 / RC 175**



New systems		Retrofits
Closed		Bayonet connector, separable
<i>picoMAX</i> ®		Connection cable
Round cables; DIN-rail; Mounting plate		Round cable; Copper current bar
750-493 750-494 750-495 857-550		750-495/000-002 857-552
32 A	35 A / 64 A	Up to 4000 A
320 mA	1 A	22.5 mV / kA
0.5*	1	0.5
-10 ... +55 °C		-40 ... +80 °C
EN 61869-2		EN 61010-1/EN 61869-2
-		UL
348		354

## Plug-In Current Transformer; with CAGE CLAMP® Connection 855 Series



### Short description:

WAGO's plug-in units (855 Series) are inductive, single-conductor current transformers. Due to the measurement principle used, these current transformers are exclusively designed for AC network applications.

### Features:

- Screwless CAGE CLAMP® connection technology
- Several mounting options available
- Vibration- and shock-resistant
- High mechanical retention forces
- High current-carrying capacity
- Continuous overload of 120% the nominal primary current
- Low-voltage current transformer for operating voltages up to max. 1.2 kV
- For 690 V power networks
- UL recognized components

Input – Current Transformer	
Rated continuous thermal current $I_{cth}$	1.2 x $I_N$
Rated short-time thermal current $I_{th}$	60 x $I_N/1$ s (max. 100 kA/1 s)
Overcurrent limiting factor	FS5 / FS10 (type dependent; see type plate inscription)
Rated frequency	50 ... 60 Hz

Safety and Protection	
Test voltage	6 kVAC; 50 Hz; 1 min
Highest voltage for equipment $U_m$	3.75 kVAC <sub>rms</sub>

Connection Data	
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 4 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 4 mm <sup>2</sup> / 28 ... 12 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

Mechanical Data	
Mounting type	Current transformer (closed); Installation on mounting plate; Mounting on DIN-rail via carrier rail adapter; Mounting on round cable

Material Data	
Insulation class	E

Environmental Requirements	
Surrounding air temperature (operation)	-5 ... +50 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Operating altitude (max.)	1000 m

Standards and Specifications	
Conformity marking	CE
Standards/specifications	EN 61869-1; EN 61869-2; UL: E356480

### Accessories



Carrier rail adapter for plug-in current transformers (855-3xx/xxxx-xxxx and 855-4xx/xxxx-xxxx)

Item No.	Pack. Unit
855-9900	1



Quick-mount kit for plug-in current transformers with CAGE CLAMP® connections

Item No.	Pack. Unit
855-9910	1



3-phase power measurement module

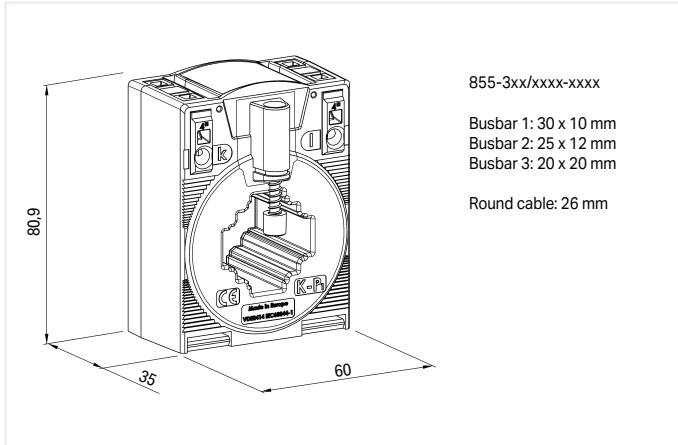
Rated Voltage	Item No.	Pack. Unit
480 VAC	750-493	1
480 VAC	750-494	1
690 VAC	750-495	1



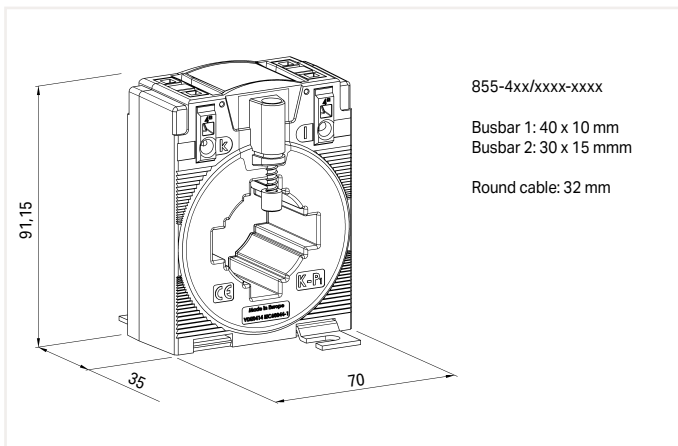
Operating tool with a partially insulated shaft; Type 1; Blade: (3.5 x 0.4) mm

Item No.	Pack. Unit
210-720	1

# Plug-In Current Transformer; with CAGE CLAMP® Connection 855 Series

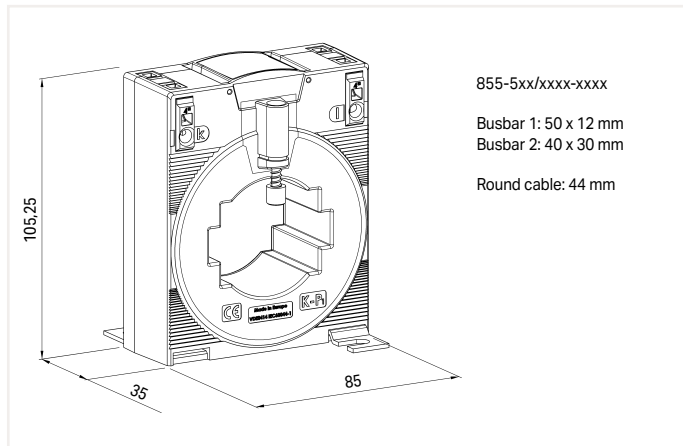


Plug-In Current Transformer; with CAGE CLAMP® Connection					
Primary Rated Current	Secondary Rated Current	Rated Power	Accuracy Class	Item No.	Pack. Unit
50 A	1 A	1.25 VA	3	855-301/050-103	1
50 A	5 A	1.25 VA	3	855-305/050-103	1
60 A	1 A	1.25 VA	1	855-301/060-101	1
60 A	5 A	1.25 VA	1	855-305/060-101	1
75 A	1 A	2.5 VA	1	855-301/075-201	1
75 A	5 A	2.5 VA	1	855-305/075-201	1
100 A	1 A	2.5 VA	1	855-301/100-201	1
100 A	5 A	2.5 VA	1	855-305/100-201	1
150 A	1 A	5 VA	1	855-301/150-501	1
150 A	5 A	5 VA	1	855-305/150-501	1
200 A	1 A	5 VA	1	855-301/200-501	1
200 A	5 A	5 VA	1	855-305/200-501	1
250 A	1 A	5 VA	1	855-301/250-501	1
250 A	5 A	5 VA	1	855-305/250-501	1
300 A	5 A	5 VA	1	855-305/300-501	1
400 A	1 A	10 VA	1	855-301/400-1001	1
400 A	5 A	10 VA	1	855-305/400-1001	1
600 A	1 A	10 VA	1	855-301/600-1001	1
600 A	5 A	10 VA	1	855-305/600-1001	1



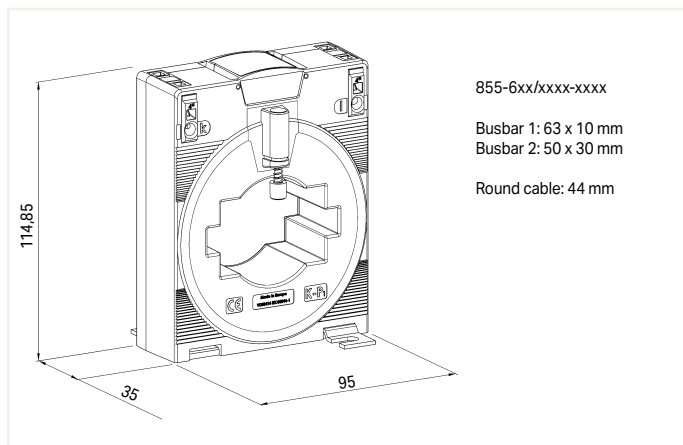
Plug-In Current Transformer; with CAGE CLAMP® Connection					
Primary Rated Current	Secondary Rated Current	Rated Power	Accuracy Class	Item No.	Pack. Unit
250 A	1 A	5 VA	1	855-401/250-501	1
250 A	5 A	5 VA	1	855-405/250-501	1
400 A	1 A	5 VA	1	855-401/400-501	1
400 A	5 A	5 VA	1	855-405/400-501	1
600 A	1 A	5 VA	1	855-401/600-501	1
750 A	5 A	5 VA	1	855-405/750-501	1

## Plug-In Current Transformer; with CAGE CLAMP® Connection 855 Series



Plug-In Current Transformer; with CAGE CLAMP® Connection					
Primary Rated Current	Secondary Rated Current	Rated Power	Accuracy Class	Item No.	Pack. Unit
400 A	1 A	10 VA	1	855-501/400-1001	1
400 A	5 A	10 VA	1	855-505/400-1001	1
600 A	1 A	10 VA	1	855-501/600-1001	1
600 A	5 A	10 VA	1	855-505/600-1001	1
800 A	1 A	10 VA	1	855-501/800-1001	1
800 A	5 A	10 VA	1	855-505/800-1001	1
1000 A	1 A	10 VA	1	855-501/1000-1001	1
1000 A	5 A	10 VA	1	855-505/1000-1001	1

4

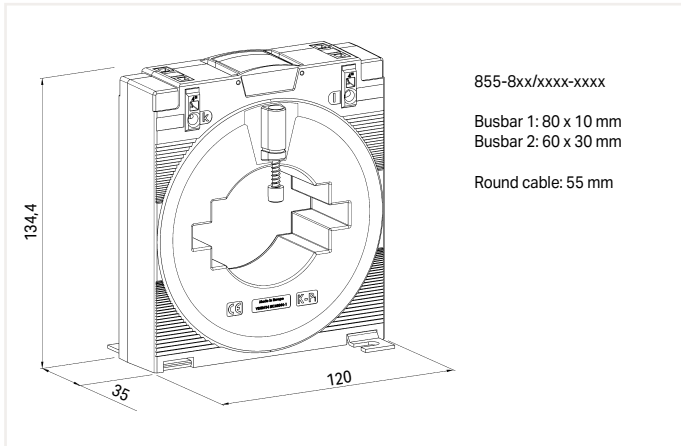


Plug-In Current Transformer; with CAGE CLAMP® Connection					
Primary Rated Current	Secondary Rated Current	Rated Power	Accuracy Class	Item No.	Pack. Unit
1500 A	5 A	5 VA	1	855-605/1500-501	1
1500 A	1 A	5 VA	1	855-601/1500-501	1

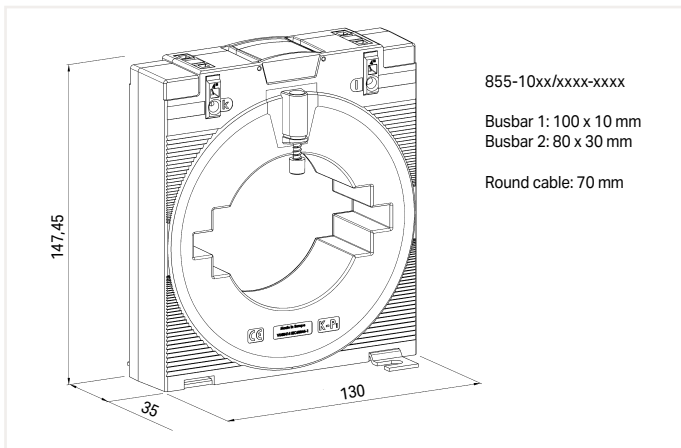
# Plug-In Current Transformer; with CAGE CLAMP® Connection 855 Series



Plug-In Current Transformer; with CAGE CLAMP® Connection					
Primary Rated Current	Secondary Rated Current	Rated Power	Accuracy Class	Item No.	Pack. Unit
1000 A	1 A	10 VA	1	855-801/1000-1001	1
2000 A	5 A	10 VA	1	855-805/2000-1001	1
2000 A	1 A	10 VA	1	855-801/2000-1001	1



Plug-In Current Transformer; with CAGE CLAMP® Connection					
Primary Rated Current	Secondary Rated Current	Rated Power	Accuracy Class	Item No.	Pack. Unit
2500 A	5 A	10 VA	1	855-1005/2500-1001	1
2500 A	1 A	10 VA	1	855-1001/2500-1001	1



4

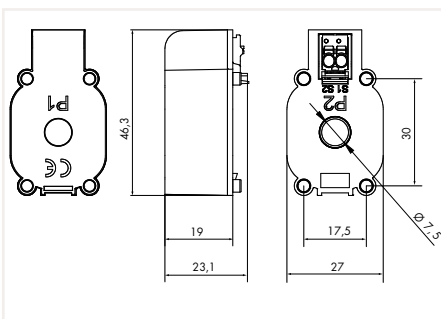


## Plug-In Current Transformer; with a *picoMAX*® Pluggable Connector 855 Series



Plug-In Current Transformer with *picoMAX*® Connection Technology; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1

Prim. Rated Current	Item No.	Pack. Unit
35 A	855-2701/035-001	15 (1)
64 A	855-2701/064-001	15 (1)



### Short description:

WAGO's plug-in units (855 Series) are inductive, single-conductor current transformers. Due to the measurement principle used, these current transformers are exclusively designed for AC network applications.

### Features:

- First current transformer with *picoMAX*® connection technology
- Also suitable for space-restricted applications
- Simple assembly permits 17.5 mm phase spacing, allowing perfect adjustment to any circuit breaker
- Easy mount on DIN-rail or panels via carrier rail adapter
- Converts current from 64 A or 35 A to 1 A
- Accuracy class: 1

### Input – Current Transformer

Rated continuous thermal current $I_{cth}$	100 %
Rated short-time thermal current $I_{th}$	60 x $I_{cth}$ /1 s
Rated surge current $I_{dyn}$	2.5 x $I_{th}$
Rated frequency	50 ... 60 Hz

### Output – Current Transformer

Secondary rated current	1 A
Rated Power	0.2 VA

### Measurement error

Accuracy class	1
----------------	---

### Safety and Protection

Test voltage	3 kVAC; 50 Hz; 1 min
Protection type	IP20
Highest voltage for equipment $U_m$	720 VAC

### Connection Data

Connection technology	Push-in CAGE CLAMP®
WAGO Connector	<i>picoMAX</i> ® 3.5, 2091-1122
Solid conductor	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 14 AWG
Fine-stranded conductor	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch
Feedthrough for measurement conductor	7.5 mm Ø

### Geometric Data

Width	27 mm / 1.063 inch
Height	46 mm / 1.811 inch
Depth	23 mm / 0.906 inch

### Mechanical Data

Mounting type	Current transformer (closed); Mounting on DIN-rail via carrier rail adapter; Mounting on round cable
---------------	------------------------------------------------------------------------------------------------------

### Material Data

Insulation class	E
Housing material	PA 66

### Environmental Requirements

Surrounding air temperature (operation)	-10 ... +55 °C
Surrounding air temperature (storage)	-20 ... +70 °C
Relative humidity	5 ... 85 % (non-condensing)
Operating altitude (max.)	2000 m

### Standards and Specifications

Conformity marking	CE
Standards/specifications	EN 61869-1; EN 61869-2; UL

### Accessories



Carrier rail adapter; for plug-in current transformer

Item No.	Pack. Unit
855-9927	1



Operating tool with a partially insulated shaft; Type 1; Blade: (2.5 x 0.4) mm

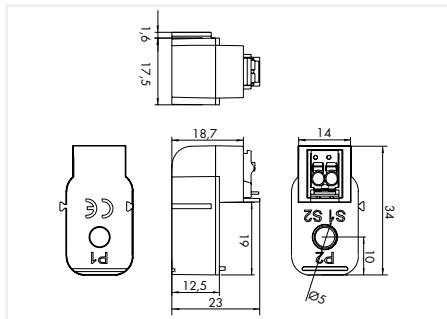
Item No.	Pack. Unit
210-719	1

## Plug-In Current Transformer; with a *picoMAX*® Pluggable Connector 855 Series



Plug-In Current Transformer; Primary rated current: 32 A; Secondary rated current: 320 mA

	Item No.	Pack. Unit
	855-1700/032-000	15 (1)



### Short description:

The *picoMAX*® Plug-In Current Transformer with low-power output is specifically tailored to WAGO's 750 Series 3-Phase Power Measurement Modules.

### Features:

- First *picoMAX*® Plug-In Current Transformer with low power output
- Assembly via side latches
- Can be mounted directly on an ECB

### Notes:

- The 855-1700/032-000 Plug-In Current Transformer is exclusive to the WAGO-I/O-SYSTEM and shall only be used with WAGO's 750 Series 3-Phase Power Measurement Modules.
- WAGO recommends the following conductor cross section and length: 1.5 mm<sup>2</sup> (14 AWG) and maximum 3.0 m at the output

\*Measurement range: 0.8 to 32 A in combination with the three-phase power measurement modules (750-493/494/495)

\*\*Testing adheres to EN 61869-2 with a conversion ratio of 16 A/0.16 A (accuracy class: 0.5) and an extended primary current of 200%.

### Input – Current Transformer

Primary rated current	32 A
Rated short-time thermal current $I_{th}$	2 kA/0.1 s
Rated surge current $I_{dyn}$	2.5 x $I_{th}$
Rated frequency	50 ... 60 Hz

### Output – Current Transformer

Secondary rated current	0.32 A
Rated Power	0.01 VA

### Measurement error

Accuracy class	0,5
----------------	-----

### Safety and Protection

Test voltage	3 kVAC; 50 Hz; 1 min
Protection type	IP20
Highest voltage for equipment $U_m$	720 VAC

### Connection Data

Connection technology	Push-in CAGE CLAMP®
WAGO Connector	<i>picoMAX</i> ® 3.5, 2091-1122
Solid conductor	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 14 AWG
Fine-stranded conductor	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch
Feedthrough for measurement conductor	5.0 mm Ø

### Geometric Data

Width	17 mm / 0.669 inch
Height	34 mm / 1.339 inch
Depth	23 mm / 0.906 inch

### Mechanical Data

Mounting type	Current transformer (closed); Mounting on round cable
---------------	-------------------------------------------------------

### Material Data

Insulation class	E
Housing material	PA 66
Weight	11 g

### Environmental Requirements

Surrounding air temperature (operation)	-10 ... +55 °C
Surrounding air temperature (storage)	-20 ... +70 °C
Relative humidity	5 ... 85 % (non-condensing)
Operating altitude (max.)	2000 m

### Standards and Specifications

Standards/specifications	EN 61869-1; EN 61869-2
--------------------------	------------------------

### Accessories



### 3-phase power measurement module

Rated Voltage	Item No.	Pack. Unit
480 VAC	750-493	1
480 VAC	750-494	1
690 VAC	750-495	1



### Operating tool with a partially insulated shaft; Type 1; Blade: (2.5 x 0.4) mm

Item No.	Pack. Unit
210-719	1

## Split-Core Current Transformers

### 855 Series



#### Short description:

WAGO's compact split-core current transformers are ideal for retrofitting existing systems. They are perfect for applications in which the current path must not be disrupted.

The transformer's accuracy permits extremely precise current measurements. The split-core current transformers are capable of supplying the specified rated power at the end of the secondary cable. All transformers are supplied with color-coded cables. Two UV-resistant cable ties are also included for secure and easy mounting.

#### Features:

- Current ratios from 60 A up to 1000 A (primary side) and 1 A or 5 A (secondary side)
- No measuring cable interruption
- Ideal for use in very confined spaces
- Rapid mounting
- For use around insulated cables up to 42 mm diameter
- Compact and hinged
- Color-coded connecting cables up to 5 m

#### Input – Current Transformer

Rated continuous thermal current $I_{cth}$	100 %
Rated short-time thermal current $I_{th}$	$60 \times I_{cth} / 1 \text{ s}$
Rated surge current $I_{dyn}$	$2.5 \times I_{th}$
Rated frequency	50 ... 60 Hz

#### Safety and Protection

Test voltage	3 kVAC; 50 Hz; 1 min
Protection type	IP20
Highest voltage for equipment $U_m$	720 VAC

#### Mechanical Data

Mounting type	Split-core current transformer
---------------	--------------------------------

#### Material Data

Insulation class	E
Flammability class per UL94	V2
Housing material	PA 66

#### Environmental Requirements

Surrounding air temperature (operation)	-10 ... +55 °C
Surrounding air temperature (storage)	-20 ... +70 °C
Relative humidity	5 ... 85 % (non-condensing)
Operating altitude (max.)	2000 m

#### Standards and Specifications

Conformity marking	CE
Standards/specifications	EN 61869-1; EN 61869-2

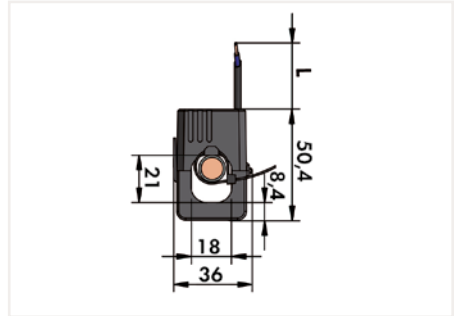
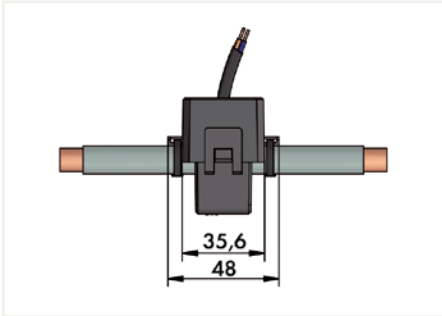


# Split-Core Current Transformers 855 Series



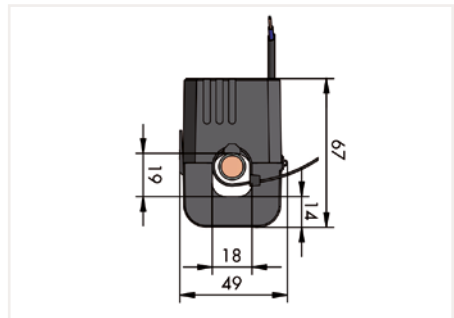
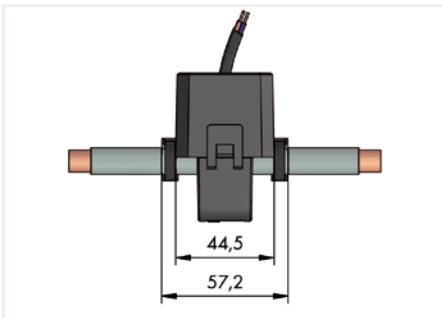
Split-Core Current Transformer; Feedthrough for measurement conductor: 18 mm Ø

Prim. Rated Current	Sec. Rated Current	Rated Power	Accuracy class	Cable Length	Conductor Cross Section	Item No.	Pack. Unit
60 A	1 A	0.2 VA	3	3 m	0.5 mm <sup>2</sup>	855-3001/060-003	1
100 A	1 A	0.2 VA	3	3 m	0.5 mm <sup>2</sup>	855-3001/100-003	1
200 A	1 A	0.2 VA	1	3 m	0.5 mm <sup>2</sup>	855-3001/200-001	1
250 A	1 A	0.2 VA	1	3 m	0.5 mm <sup>2</sup>	855-3001/250-001	1



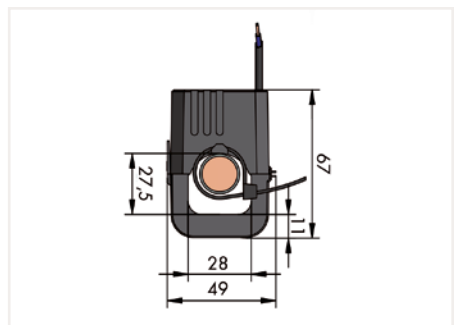
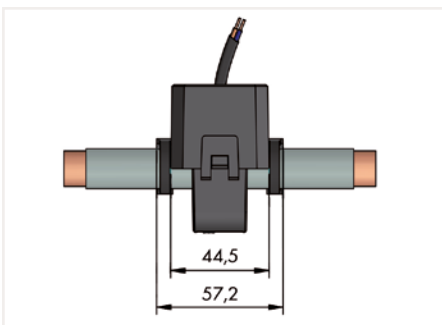
Split-Core Current Transformer; Feedthrough for measurement conductor: 18 mm Ø

Prim. Rated Current	Sec. Rated Current	Rated Power	Accuracy class	Cable Length	Conductor Cross Section	Item No.	Pack. Unit
100 A	1 A	0.2 VA	1	3 m	0.5 mm <sup>2</sup>	855-4001/100-001	1
150 A	1 A	0.2 VA	1	3 m	0.5 mm <sup>2</sup>	855-4001/150-001	1
150 A	5 A	1 VA	1	0.5 m	1.5 mm <sup>2</sup>	855-4005/150-101	1
200 A	1 A	0.2 VA	0,5	3 m	0.5 mm <sup>2</sup>	855-4001/200-001	1



Split-Core Current Transformer; Feedthrough for measurement conductor: 28 mm Ø

Prim. Rated Current	Sec. Rated Current	Rated Power	Accuracy class	Cable Length	Conductor Cross Section	Item No.	Pack. Unit
200 A	1 A	0.2 VA	1	3 m	0.5 mm <sup>2</sup>	855-4101/200-001	1
250 A	1 A	0.2 VA	1	3 m	0.5 mm <sup>2</sup>	855-4101/250-001	1
250 A	5 A	1 VA	1	0.5 m	1.5 mm <sup>2</sup>	855-4105/250-101	1
400 A	1 A	0.2 VA	1	3 m	0.5 mm <sup>2</sup>	855-4101/400-001	1
400 A	5 A	1 VA	1	0.5 m	1.5 mm <sup>2</sup>	855-4105/400-101	1



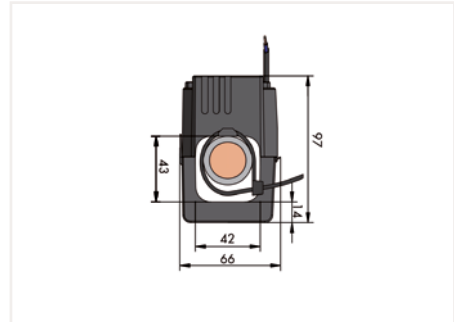
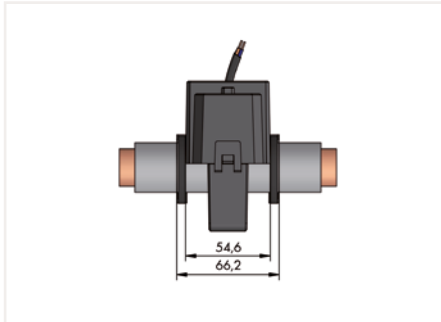
4

# Split-Core Current Transformers 855 Series



Split-Core Current Transformer; Feedthrough for measurement conductor: 42 mm Ø

Prim. Rated Current	Sec. Rated Current	Rated Power	Accuracy class	Cable Length	Conductor Cross Section	Item No.	Pack. Unit
250 A	1 A	0.5 VA	1	5 m	0.5 mm <sup>2</sup>	855-5001/250-001	1
400 A	1 A	0.5 VA	0,5	5 m	0.5 mm <sup>2</sup>	855-5001/400-000	1
400 A	5 A	0.5 VA	1	3 m	1.5 mm <sup>2</sup>	855-5005/400-001	1
600 A	1 A	0.5 VA	0,5	5 m	0.5 mm <sup>2</sup>	855-5001/600-000	1
600 A	5 A	0.5 VA	0,5	3 m	1.5 mm <sup>2</sup>	855-5005/600-000	1
1000 A	1 A	0.5 VA	0,5	5 m	0.5 mm <sup>2</sup>	855-5001/1000-000	1
1000 A	5 A	0.5 VA	0,5	3 m	1.5 mm <sup>2</sup>	855-5005/1000-000	1

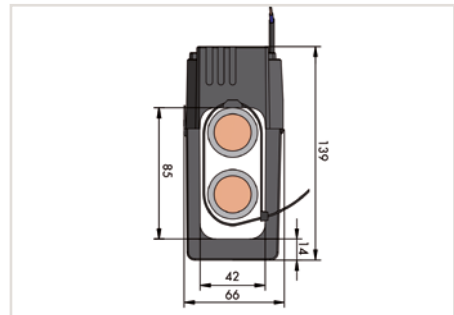
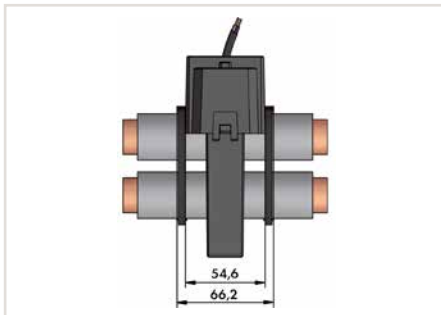


4



Split-Core Current Transformer; Feedthrough for measurement conductor: 42 mm Ø

Prim. Rated Current	Sec. Rated Current	Rated Power	Accuracy class	Cable Length	Conductor Cross Section	Item No.	Pack. Unit
1000 A	1 A	0.5 VA	0,5	5 m	0.5 mm <sup>2</sup>	855-5101/1000-000	1
1000 A	5 A	0.5 VA	0,5	3 m	1.5 mm <sup>2</sup>	855-5105/1000-000	1





## Rogowski Coil; RC 70, RC 125 and RC 175 855 Series



### Short description:

WAGO's Rogowski coils are closed-air coils featuring a non-magnetic split core that can be connected to WAGO products (857-552; 750-495/000-002; 2857-570/024-000).

Easy mounting of the Rogowski coils allows existing systems to be retrofitted without time-consuming installation or process interruption.

### Features:

- Rated insulation voltage: 1000 V Cat. III/600 V Cat. IV
- Accuracy class: 0.5 (per EN 61869-2)
- Degree of protection: IP67
- Measurement coil diameter: 70, 125 or 175 mm
- Length of signal lines: 1.5 m or 4.5 m
- Surrounding air temperature: -40 ... +80°C
- Sealable bayonet connector
- Anchor points for cable ties

### Note:

The specifications for the primary rated current refer to a combination with the WAGO Modules (857-552 and 750-495/000-002). Rogowski technology allows the coils to measure a wide primary current range of up to 10,000 A without loss of accuracy, because there are no saturation effects.

The requirements for standards EN 61869-1, EN 61869-2, EN 61869-6 and EN 61869-10 are only partially met, as there are fundamental differences with current transformers for a Rogowski coil.

### Input – Current Transformer

Primary rated current	4000 A (in combination with WAGO products)
Rated short-time thermal current $I_{th}$	300 kA at 50 Hz
Rated frequency	50 ... 60 Hz

### Output

Sensitivity	22.5 mV/kA at 50 Hz
Output signal (max.)	30 VDC

### Measurement error

Accuracy class	0.5
Positioning error	±0.32 %

### Safety and Protection

Rated insulation voltage	1000 V <sub>rms</sub> AC (Cat. III); 600 V <sub>rms</sub> AC (Cat. IV)
Test voltage for isolation	7.4 kVAC; 50 Hz; 1 min
Impulse withstand voltage (1.2/50 µs)	12.8 kV
Protection type	IP67

### Mechanical Data

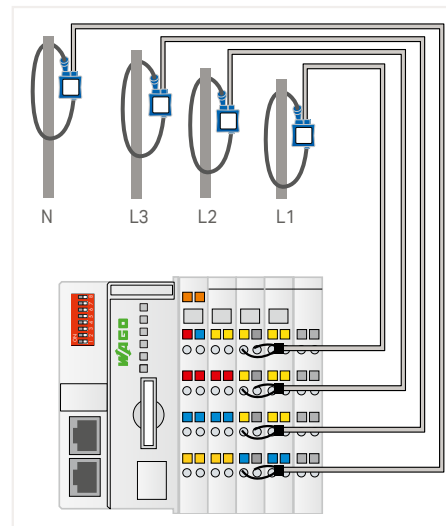
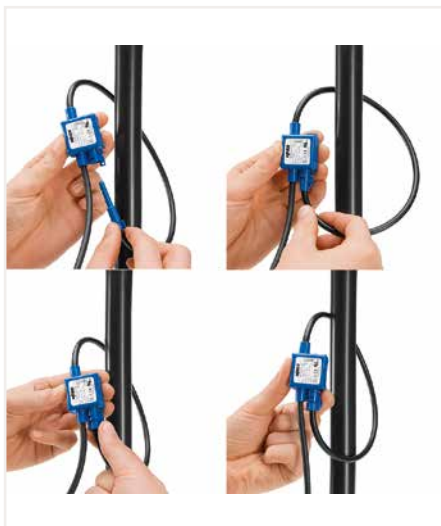
Mounting type	Split-core current transformer (suspended)
---------------	--------------------------------------------

### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +80 °C
Surrounding air temperature (storage)	-40 ... +80 °C
Relative humidity	≤ 90 % (no condensation permissible)
Operating altitude (max.)	2000 m

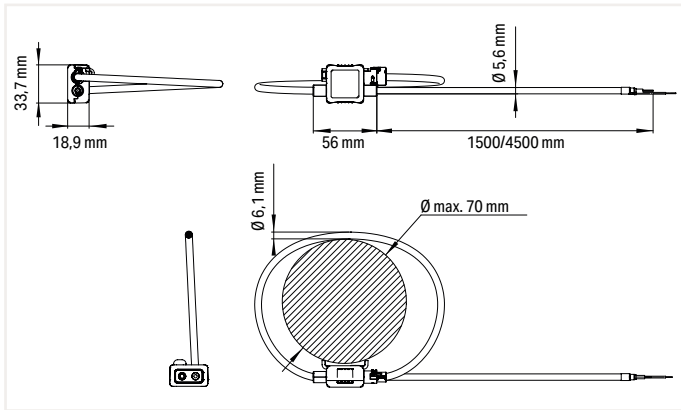
### Standards and Specifications

Conformity marking	CE
Standards/specifications	EN 61010-1; EN 61010-2-32; EN 61869-1; EN 61869-2; EN 61869-6; EN 61869-10; UL 61010-1



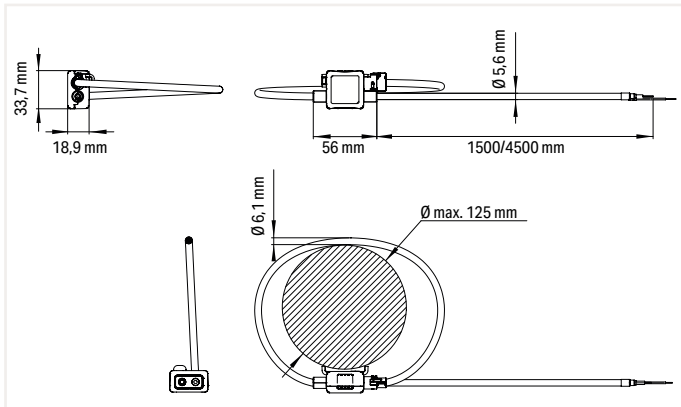
Direct connection of Rogowski coils to the three-phase power measurement module (750-495/000-002)

# Rogowski Coil; RC 70, RC 125 and RC 175 855 Series



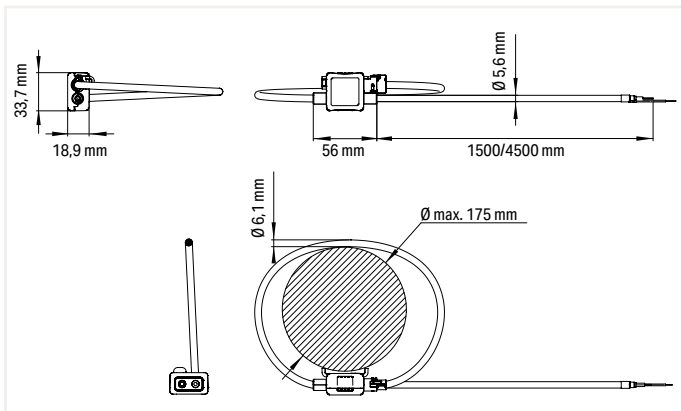
Rogowski Coil; Primary rated current: 4000 A; Output signal: 22.5 mV per kA; Accuracy class: 1; Feedthrough for measurement conductor: 70 mm Ø

Mutual Inductance M	Cable Length	Item No.	Pack. Unit
71.98 mH	1.5 m	855-9150/2000-701	1
71.98 mH	4.5 m	855-9450/2000-701	1



Rogowski Coil; Primary rated current: 4000 A; Output signal: 22.5 mV per kA; Accuracy class: 1; Feedthrough for measurement conductor: 125 mm Ø

Mutual Inductance M	Cable Length	Item No.	Pack. Unit
72.14 mH	1.5 m	855-9150/2000-1251	1
72.14 mH	4.5 m	855-9450/2000-1251	1



Rogowski Coil; Primary rated current: 4000 A; Output signal: 22.5 mV per kA; Accuracy class: 1; Feedthrough for measurement conductor: 175 mm Ø

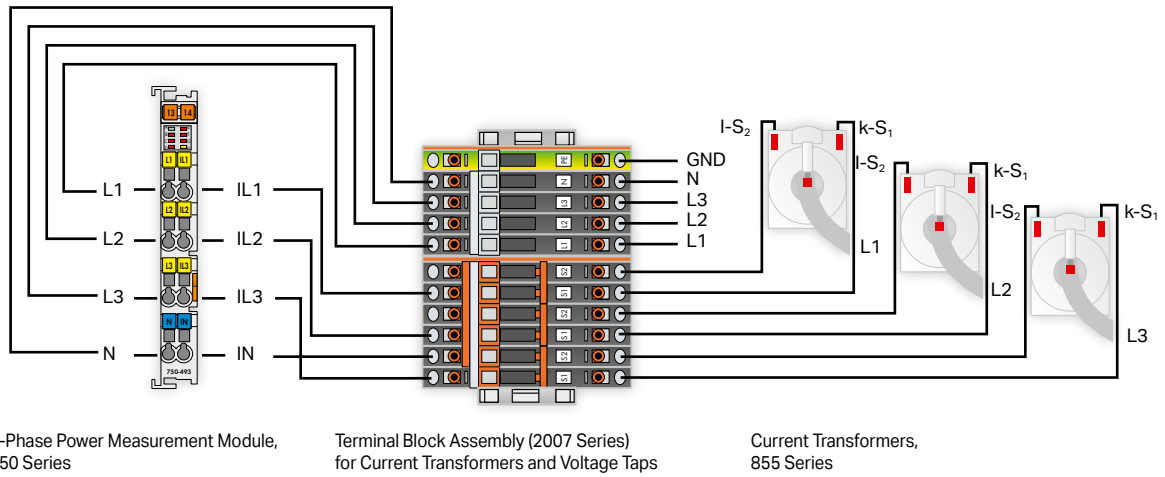
Mutual Inductance M	Cable Length	Item No.	Pack. Unit
72.31 mH	1.5 m	855-9150/2000-1751	1
72.31 mH	4.5 m	855-9450/2000-1751	1

4

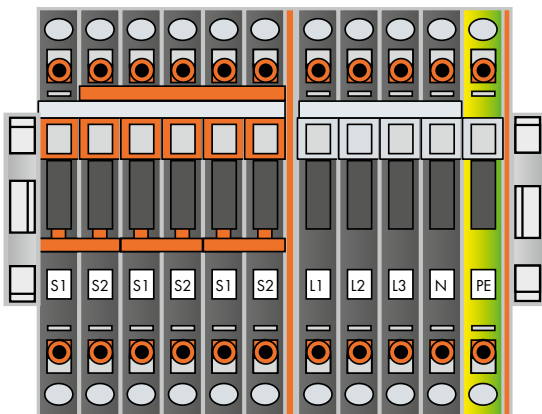


# Terminal Block Assemblies for Current and Voltage Transformers For Fast and Easy Connections

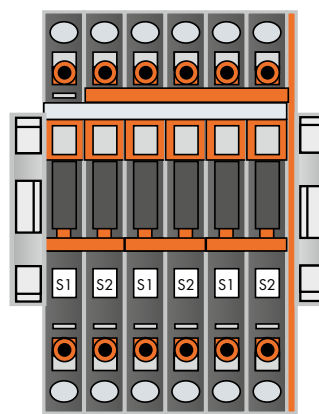
4



Pre-assembled terminal block assembly for easily connecting and short-circuiting current transformers, suitable for three-phase power measurement modules (750-493 and 750-494)



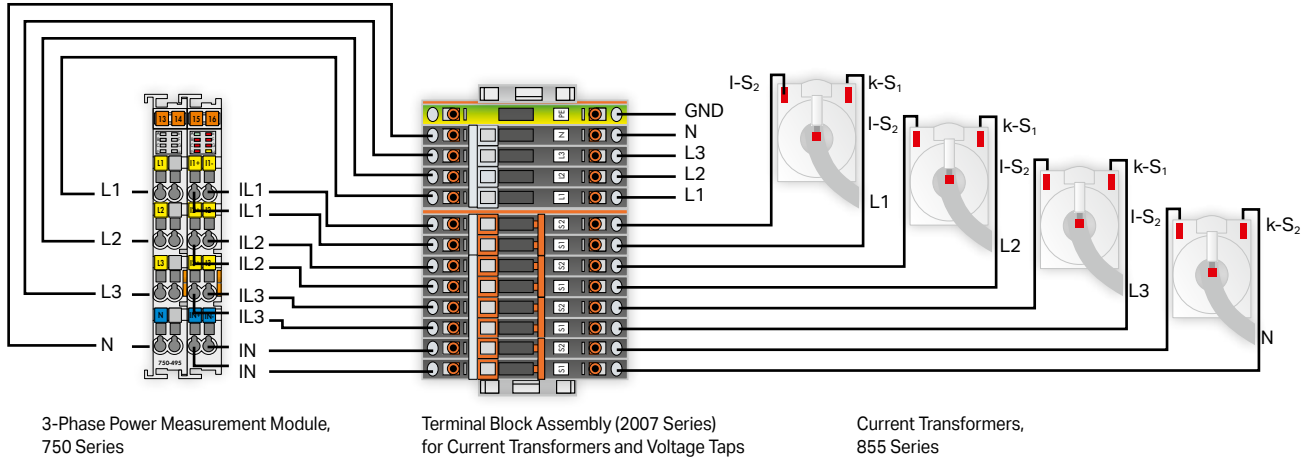
Compact terminal block for current transformer circuit, 2007-8873  
Connection option for current and voltage, including 'Y' point jumper



Compact terminal block for current transformer circuit, 2007-8875  
Connection option for current and voltage, including 'Y' point jumper

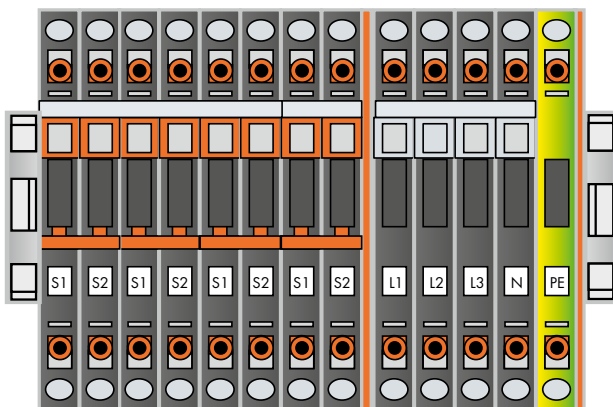
**ADVANTAGES:**

- 'Y' point jumper
- Easy and clear wiring
- Short-circuiting of current transformers
- Test sockets for control measurements
- Visible current and voltage path separation

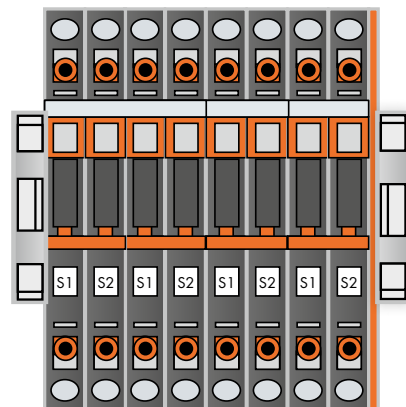


4

Pre-assembled terminal block assembly for easily connecting and short circuiting current transformers, suitable for three-phase power measurement modules (750-495)



Compact terminal block for current transformer circuit, 2007-8874  
Connection option for current and voltage



Compact terminal block for current transformer circuit, 2007-8877  
Connection option for current

## Current Sensor with Bus Connection; in DIN-Rail-Mount Enclosure 789 Series



Current Sensor with Bus Connection; in DIN-rail-mount enclosure; Measurement range: 0 ... 80 A

	Item No.	Pack. Unit
	789-620	1

Short description:  
WAGO's intelligent current sensor monitors solar plants or inverters for DC measurements within a large current measurement range.

Input	
Input signal type	Current
Input signal, current	0 ... 80 ADC
Resolution [bit]	15 bits
Communication	
Communication	Modbus RTU
Interface	RS-485
Transmission channels	Half duplex; 8-bit data; 1 stop bit
Number of participants (max.)	32
Bus length (max.)	≤ 1200 m
Parity	Even
Baud rate	19.2 kB
Terminating resistor	150 Ω (can be activated via DIP switch 1)
Measurement Error	
Transmission error (typ.)	≤ 0.5 % of upper-range value (at room temperature)
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Supply voltage range	12 ... 34 VDC
Power consumption at nominal supply voltage	≤ 8 mA
Safety and Protection	
Protection type	IP20
Connection Data	
Feedthrough for measurement conductor	15 mm
Connector	RJ-45
Geometric Data	
Width	35 mm / 1.378 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	80.2 g
Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4
Standards/specifications	DIN EN 50178

### Accessories



Interface Module with RJ-45 Connector

Item No.	Pack. Unit
289-965	1



Interface Module with RJ-45 Connector and Shield Clamping Saddle

Color	Item No.	Pack. Unit
white	289-966	1



ETHERNET RJ-45 Connector

Item No.	Pack. Unit
750-975	1

789-620

RJ-45-Connector Pin Assignment:

Pin	Function
1	Ub
2	
3	n. c.
4	A (Data+)
5	B (Data-)
6	n. c.
7	GND
8	

Communication Description:

Modbus®-Function	Read Holding Registers (0x03)
Address of Measured Value	0x0004
Data Type Measurement	Integer

Error Numbers

id	Description
01	Illegal Function
03	Illegal Data
101	Overflow (Current > +83 A)
102	Underflow (Current < -3 A)

DIP Switch Adjustability

● = ON

Address	DIP Switch						Terminating Resistor	DIP Switch 1
	2	3	4	5	6			
1						150 Ohm	●	
2					●			
3				●				
4				●	●			
5			●					
6			●		●			
7			●	●				
8			●	●	●			
9		●						
10		●			●			
11		●		●				
12		●		●	●			
13		●	●					
14		●	●		●			
15		●	●	●				
16		●	●	●	●			
17	●							
18	●						●	
19	●			●				
20	●			●	●			
21	●		●					
22	●		●		●			
23	●		●	●				
24	●		●	●	●			
25	●	●						
26	●	●			●			
27	●	●		●				
28	●	●		●	●			
29	●	●	●					
30	●	●	●		●			
31	●	●	●	●				
32	●	●	●	●	●			

NOTICE:  
Only set the Modbus® address in the OFF state.

## Current Sensor with Bus Connection; in DIN-Rail-Mount Enclosure 789 Series



Current Signal Conditioner; Current input signal:  
140 ADC; Modbus® RTU; Supply voltage: 24 VDC;  
Module width: 35 mm

Item No.	Pack. Unit
789-621	1

### Short description:

WAGO's intelligent current sensor monitors solar plants or inverters for DC measurements within a large current measurement range. The sensor is mounted on DIN-35 rail.

Input	
Input signal type	Current
Input signal, current	0 ... 140 ADC
Resolution [bit]	15 bits

Communication	
Communication	Modbus® RTU
Interface	RS-485
Transmission channels	Half duplex; 8-bit data; 1 stop bit
Number of participants (max.)	32
Bus length (max.)	≤ 1200 m
Parity	Even
Baud rate	19.2 kB
Terminating resistor	150 Ω (can be activated via DIP switch 1)

Measurement Error	
Transmission error (typ.)	≤ 0.5 % of upper-range value (0 ... 80 A; at room temperature); ≤ 1 % of upper-range value (80 ... 140 A; at room temperature)
Temperature coefficient	≤ 0.05 %/K (-20 ... +60 °C); ≤ 0.1 %/K (-60 ... +70 °C)

Power Supply	
Supply voltage range	12 ... 34 VDC
Power consumption at nominal supply voltage	≤ 8 mA

Safety and Protection	
Protection type	IP20

Connection Data	
Feedthrough for measurement conductor	15 mm Ø
Connector	RJ-45

Geometric Data	
Width	35 mm / 1.378 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Weight	77.22 g

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4
Standards/specifications	DIN EN 50178

### Accessories



Interface Module with RJ-45 Connector

Item No.	Pack. Unit
289-965	1



Interface Module with RJ-45 Connector and Shield Clamping Saddle

Color	Item No.	Pack. Unit
white	289-966	1



ETHERNET RJ-45 Connector

Item No.	Pack. Unit
750-975	1

789-621

RJ-45-Connector Pin Assignment:

Pin	Function
1	Ub
2	
3	n.c.
4	A (Data+)
5	B (Data-)
6	n.c.
7	GND
8	

Communication Description:

Modbus® Function	Read Holding Registers (0x03)
Address of Measured Value	0x0004
Data Type Measurement	Integer

Error Numbers

id	Description
01	Illegal Function
03	Illegal Data
101	Overflow (Current > +83 A)
102	Underflow (Current < -3 A)

DIP Switch Adjustability

● = ON

Adress	DIP Switch						Terminating Resistor	DIP Switch 1
	2	3	4	5	6			
1						150 Ohm	●	
2					●			
3				●				
4				●	●			
5			●					
6			●		●			
7			●	●				
8			●	●	●			
9		●						
10		●			●			
11		●		●				
12		●		●	●			
13		●	●					
14		●	●		●			
15		●	●	●				
16		●	●	●	●			
17	●							
18	●						●	
19	●			●				
20	●			●	●			
21	●		●					
22	●		●		●			
23	●		●	●				
24	●		●	●	●			
25	●	●						
26	●	●			●			
27	●	●		●				
28	●	●		●	●			
29	●	●	●					
30	●	●	●		●			
31	●	●	●	●				
32	●	●	●	●	●			

NOTICE:  
Only set the Modbus® Adress in the OFF state.

## Current Sensor with Bus Connection; in DIN-Rail-Mount Enclosure 789 Series



Current Signal Conditioner; Current input signal:  
50 ADC; Modbus® RTU; Supply voltage: 24 VDC;  
Module width: 35 mm

Item No.	Pack. Unit
789-622	1

Short description:  
WAGO's intelligent current sensor monitors AC currents and is mounted on DIN-35 rail.

### Input

Input signal type	Current
Input signal, current	0 ... 50 AAC
Resolution [bit]	14 bits

### Communication

Communication	Modbus® RTU
Interface	RS-485
Transmission channels	Half duplex; 8-bit data; 1 stop bit
Number of participants (max.)	32
Bus length (max.)	≤ 1200 m
Parity	Even
Baud rate	19.2 kB
Terminating resistor	150 Ω (can be activated via DIP switch 1)

### Measurement Error

Transmission error (typ.)	1 % (typ.); Max. 3 % of upper-range value (at room temperature)
Temperature coefficient	≤ 0.01 %/K

### Power Supply

Supply voltage range	12 ... 34 VDC
Power consumption at nominal supply voltage	≤ 8 mA

### Safety and Protection

Protection type	IP20
-----------------	------

### Connection Data

Feedthrough for measurement conductor	15 mm Ø
Connector	RJ-45

### Geometric Data

Width	35 mm / 1.378 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	77.22 g
--------	---------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4
Standards/specifications	DIN EN 50178

### Accessories



Interface Module with RJ-45 Connector

Item No.	Pack. Unit
289-965	1



Interface Module with RJ-45 Connector and Shield Clamping Saddle

Color	Item No.	Pack. Unit
white	289-966	1



ETHERNET RJ-45 Connector

Item No.	Pack. Unit
750-975	1

789-622

RJ-45-Connector Pin Assignment:

Pin	Function
1	Ub
2	
3	n.c.
4	A (Data+)
5	B (Data-)
6	n.c.
7	GND
8	

Communication Description:

Modbus® Function	Read Holding Registers (0x03)
Address of Measured Value	0x0004
Data Type Measurement	Integer

Error Numbers:

id	Description
01	Illegal Function
03	Illegal Data
101	Overflow (Current > +83 A)
102	Underflow (Current < -3 A)

DIP Switch Adjustability

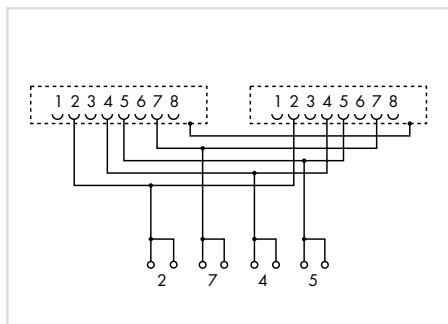
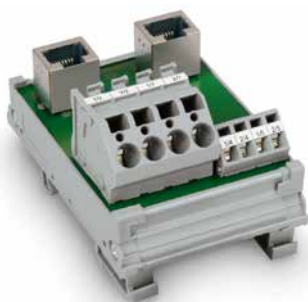
● = ON

Address	DIP Switch					Terminating Resistor	DIP Switch 1
	2	3	4	5	6		
1						150 Ohm	●
2							●
3				●			
4				●	●		
5			●				
6			●		●		
7			●	●			
8			●	●	●		
9		●					
10		●			●		
11		●		●			
12		●		●	●		
13		●	●				
14		●	●		●		
15		●	●	●			
16		●	●	●	●		
17	●						
18	●						●
19	●			●			
20	●			●	●		
21	●		●				
22	●		●		●		
23	●		●	●			
24	●		●	●	●		
25	●	●					
26	●	●			●		
27	●	●		●			
28	●	●		●	●		
29	●	●	●				
30	●	●	●		●		
31	●	●	●	●			
32	●	●	●	●	●		

NOTICE:  
Only set the Modbus® address in the OFF state.



## Interface Module for Current Sensors 289 Series



### Interface Module; with RJ-45 connector

Item No.	Pack. Unit
289-965	1

### Short description:

Compatible on the field side with the 789-620, 789-621 and 789-622 Current Sensors.

### Required terminal assignment:

- 2: + Supply
- 7: - Supply
- 4: D+
- 5: D-

### General Specifications

Current load	1.5 A
Contact resistance (typ.)	20 mΩ
Connection cable	RJ-45 cable assembly (recommended: UTP)

### Safety and Protection

Dielectric strength, contact/contact	0.5 kVrms
Insulation resistance	> 500 MΩ

### Connection Data

Connection type 1	Connector
Connection type 2	Clamping units 2, 7
Connection technology 2	CAGE CLAMP®
WAGO Connector 2	WAGO 236 Series
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 3	Clamping units 4, 5
Connection technology 3	CAGE CLAMP®
WAGO Connector 3	WAGO 745 Series
Solid conductor 3	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Fine-stranded conductor 3	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Strip length 3	11 ... 12 mm / 0.43 ... 0.47 inch
Note (conductor cross section)	12 AWG: THHN, THWN
Connector	RJ-45; shielded
Mating cycles (min.)	500

### Geometric Data

Width	58 mm / 2.283 in
Height from upper-edge of DIN-rail	40 mm / 1.575 in
Depth	85 mm / 3.346 in

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

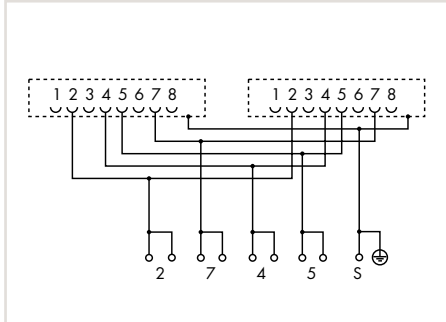
### Material Data

Weight	70 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +85 °C
-----------------------------------------	----------------

## Interface Module for Current Sensors 289 Series



Interface Module; with RJ-45 connector and shield clamping saddle

	Item No.	Pack. Unit
	289-966	1

### Short description:

Compatible on the field side with the 789-620, 789-621 and 789-622 Current Sensors.

### Required terminal assignment:

- 2: + Supply
- 7: - Supply
- 4: D+
- 5: D-

Direct shield connection to the DIN-rail via shield grounding foot

### General Specifications

Current load	1.5 A
Contact resistance (typ.)	20 mΩ
Connection cable	Shielded RJ-45 cable assembly (recommended: UTP, STP)
WAGO Shield Clamping Saddle	790-124 (included)

### Safety and Protection

Dielectric strength, contact/contact	0.5 kVrms
Insulation resistance	> 500 MΩ

### Connection Data

Connection type 1	Connector
Connection type 2	Clamping units 2, 7
Connection technology 2	CAGE CLAMP®
WAGO Connector 2	WAGO 236 Series
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 3	Clamping units 4, 5
Connection technology 3	CAGE CLAMP®
WAGO Connector 3	WAGO 745 Series
Solid conductor 3	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Fine-stranded conductor 3	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Strip length 3	11 ... 12 mm / 0.43 ... 0.47 inch
Note (conductor cross section)	12 AWG: THHN, THWN
Connector	RJ-45, shielded
Mating cycles (min.)	500

### Geometric Data

Width	69 mm / 2.717 in
Height from upper-edge of DIN-rail	40 mm / 1.575 in
Depth	85 mm / 3.346 in

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	89.92 g
--------	---------

### Environmental Requirements

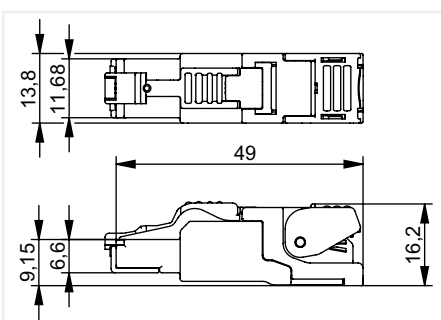
Surrounding air temperature (operation)	-20 ... +85 °C
-----------------------------------------	----------------

## ETHERNET RJ-45 Connector 750 Series



ETHERNET Plug; RJ-45; Cat. 6A; straight; 22 AWG

Code	Item No.	Pack. Unit
TIA-568A	750-977/000-011	1
TIA-568B	750-977/000-012	1



### Technical Data

Connection type	RJ-45 connector
Number of poles	8
Cable connection direction to mating direction	0°
Communication/fieldbus	ETHERNET
Baud rate	10,000 Mbit/s

### Connection Data

Connection type 1	IDC (Insulation Displacement Contact)
Solid conductor	0.21 ... 0.32 mm <sup>2</sup> / 24/1 ... 22/1 AWG
Stranded conductor (2)	0.11 ... 0.36 mm <sup>2</sup> / 27/7 ... 22/7 AWG

### Geometric Data

Width	13.8 mm
Height	16.2 mm
Depth	49 mm

### Mechanical Data

Connection requirement (permissible cable type)	Cat. 6A
Connectable sheathed cable diameter	5.5 ... 9 mm
Housing material	Zinc die-cast
Weight	18 g

### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Protection type	IP20
Relative humidity (without condensation)	95 %

### Standards and Specifications

Standards/specifications	IEC 60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043
--------------------------	---------------------------------------------------------------------------------------------------

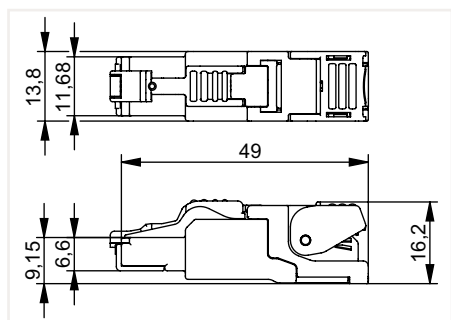
4

## ETHERNET RJ-45 Connector 750 Series



ETHERNET Plug; RJ-45; Cat. 6A; straight; 24 AWG

Code	Item No.	Pack. Unit
TIA-568A	750-977/000-021	1
TIA-568B	750-977/000-022	1



### Technical Data

Connection type	RJ-45 connector
Number of poles	8
Cable connection direction to mating direction	0°
Communication/fieldbus	ETHERNET
Baud rate	10,000 Mbit/s

### Connection Data

Connection type 1	IDC (Insulation Displacement Contact)
Solid conductor	0.13 ... 0.21 mm <sup>2</sup> / 26/1 ... 24/1 AWG
Stranded conductor (2)	0.11 ... 0.23 mm <sup>2</sup> / 27/7 ... 24/7 AWG

### Geometric Data

Width	13.8 mm
Height	16.2 mm
Depth	49 mm

### Mechanical Data

Connection requirement (permissible cable type)	Cat. 6A
Connectable sheathed cable diameter	5.5 ... 9 mm
Housing material	Zinc die-cast
Weight	18 g

### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Protection type	IP20
Relative humidity (without condensation)	95 %

### Standards and Specifications

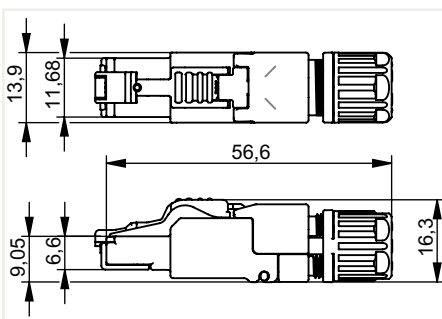
Standards/specifications	IEC 60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043
--------------------------	------------------------------------------------------------------------------------------------

## ETHERNET RJ-45 Connector 750 Series



ETHERNET Plug; RJ-45; Cat. 6A; straight; 22 AWG;  
Strain relief

Code	Item No.	Pack. Unit
TIA-568A	750-978/000-011	1
TIA-568B	750-978/000-012	1



### Technical Data

Connection type	RJ-45 connector
Number of poles	8
Cable connection direction to mating direction	0°
Communication/fieldbus	ETHERNET
Baud rate	10,000 Mbit/s

### Connection Data

Connection type 1	IDC (Insulation Displacement Contact)
Solid conductor	0.21 ... 0.32 mm <sup>2</sup> / 24/1 ... 22/1 AWG
Stranded conductor (2)	0.11 ... 0.36 mm <sup>2</sup> / 27/7 ... 22/7 AWG

### Geometric Data

Width	13.9 mm
Height	16.3 mm
Depth	56.6 mm

### Mechanical Data

Connection requirement (permissible cable type)	Cat. 6A
Connectable sheathed cable diameter	5.5 ... 10 mm
Housing material	Zinc die-cast
Weight	22 g

### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Protection type	IP20
Relative humidity (without condensation)	95 %

### Standards and Specifications

Standards/specifications	IEC 60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043
--------------------------	---------------------------------------------------------------------------------------------------

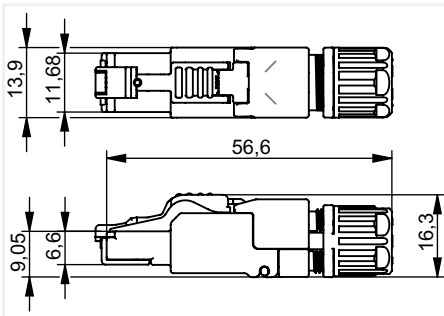
4

## ETHERNET RJ-45 Connector 750 Series



ETHERNET Plug; RJ-45; Cat. 6A; straight; 24 AWG;  
Strain relief

Code	Item No.	Pack. Unit
TIA-568A	750-978/000-021	1
TIA-568B	750-978/000-022	1



### Technical Data

Connection type	RJ-45 connector
Number of poles	8
Cable connection direction to mating direction	0°
Communication/fieldbus	ETHERNET
Baud rate	10,000 Mbit/s

### Connection Data

Connection type 1	IDC (Insulation Displacement Contact)
Solid conductor	0.13 ... 0.21 mm <sup>2</sup> / 26/1 ... 24/1 AWG
Stranded conductor (2)	0.11 ... 0.23 mm <sup>2</sup> / 27/7 ... 24/7 AWG

### Geometric Data

Width	13.9 mm
Height	16.3 mm
Depth	56.6 mm

### Mechanical Data

Connection requirement (permissible cable type)	Cat. 6A
Connectable sheathed cable diameter	5.5 ... 10 mm
Housing material	Zinc die-cast
Weight	22 g

### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Protection type	IP20
Relative humidity (without condensation)	95 %

### Standards and Specifications

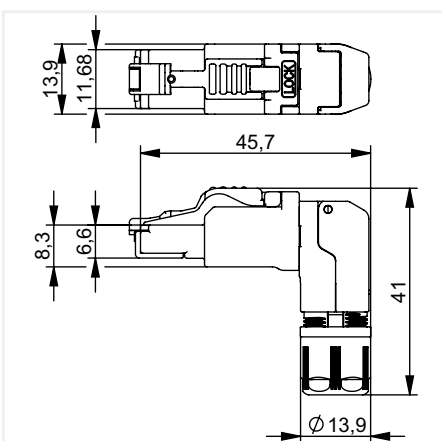
Standards/specifications	IEC 60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043
--------------------------	---------------------------------------------------------------------------------------------------

## ETHERNET RJ-45 Connector 750 Series



ETHERNET Plug; RJ-45; Cat. 6A; angled; 22 AWG; Strain relief

Code	Item No.	Pack. Unit
TIA-568A	750-979/000-011	1
TIA-568B	750-979/000-012	



### Technical Data

Connection type	RJ-45 connector
Number of poles	8
Cable connection direction to mating direction	90 °
Communication/fieldbus	ETHERNET
Baud rate	10,000 Mbit/s

### Connection Data

Connection type 1	IDC (Insulation Displacement Contact)
Solid conductor	0.21 ... 0.32 mm <sup>2</sup> / 24/1 ... 22/1 AWG
Stranded conductor (2)	0.11 ... 0.36 mm <sup>2</sup> / 27/7 ... 22/7 AWG

### Geometric Data

Width	13.9 mm
Height	41 mm
Depth	45.7 mm

### Mechanical Data

Connection requirement (permissible cable type)	Cat. 6A
Connectable sheathed cable diameter	5.5 ... 10 mm
Housing material	Zinc die-cast
Weight	26 g

### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Protection type	IP20
Relative humidity (without condensation)	95 %

### Standards and Specifications

Standards/specifications	IEC 60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043
--------------------------	---------------------------------------------------------------------------------------------------

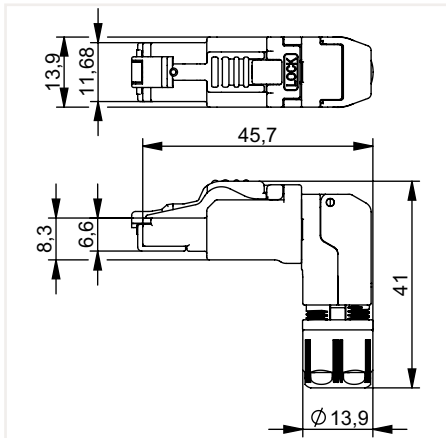
4

## ETHERNET RJ-45 Connector 750 Series



ETHERNET Plug; RJ-45; Cat. 6A; angled; 24 AWG; Strain relief

Code	Item No.	Pack. Unit
TIA-568A	750-979/000-011	1
TIA-568B	750-979/000-012	



### Technical Data

Connection type	RJ-45 connector
Number of poles	8
Cable connection direction to mating direction	90°
Communication/fieldbus	ETHERNET
Baud rate	10,000 Mbit/s

### Connection Data

Connection type 1	IDC (Insulation Displacement Contact)
Solid conductor	0.13 ... 0.21 mm <sup>2</sup> / 26/1 ... 24/1 AWG
Stranded conductor (2)	0.11 ... 0.23 mm <sup>2</sup> / 27/7 ... 24/7 AWG

### Geometric Data

Width	13.9 mm
Height	41 mm
Depth	45.7 mm

### Mechanical Data

Connection requirement (permissible cable type)	Cat. 6A
Connectable sheathed cable diameter	5.5 ... 10 mm
Housing material	Zinc die-cast
Weight	26 g

### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Protection type	IP20
Relative humidity (without condensation)	95 %

### Standards and Specifications

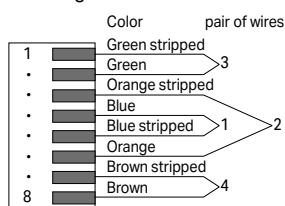
Standards/specifications	IEC 60603-7-51, ISO/IEC 11801, IEEE 802.3an; EIA/TIA 568-C.2; DIN EN 50173-1; UL 1863; UL 2043
--------------------------	------------------------------------------------------------------------------------------------



## ETHERNET RJ-45 Connector 750 Series

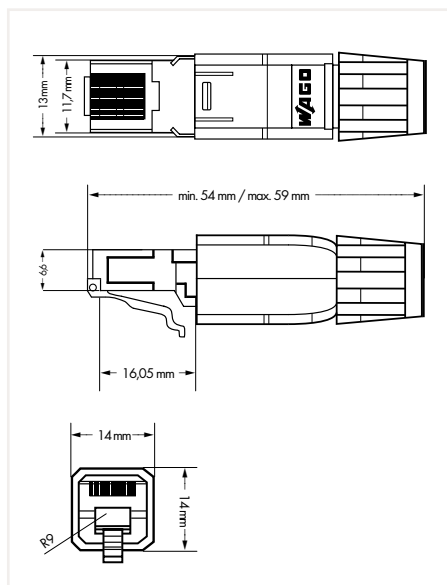


### Pin assignment TIA-568A



ETHERNET Plug RJ-45, IP20; ETHERNET  
10/100 Mbit/s; for field assembly

Item No.	Pack. Unit
750-975	1



#### Short description:

Versatile RJ-45 connector for industrial, office and building wiring applications.

WAGO's compact RJ-45 ETHERNET connector uses IDC technology for easy field assembly – connection is made without tools. The connector is compliant with all required standards. Large conductor cross sections can also be connected and the connector satisfies Category 5e.

### Technical Data

Connection type	RJ-45 connector
Number of poles	8
Cable connection direction to mating direction	0°
Communication/fieldbus	ETHERNET
Code	TIA-568A
Baud rate	1000 Mbit/s
Insulation resistance	(100 V) > 1 GΩ

### Connection Data

Connection type 1	IDC (Insulation Displacement Contact)
Solid conductor	0.13 ... 0.24 mm <sup>2</sup> / 26/1 ... 23/1 AWG
Stranded conductor (2)	0.14 ... 0.36 mm <sup>2</sup> / 26/7 ... 22/7 AWG

### Geometric Data

Width	14 mm
Height	14 mm
Depth	59 mm

### Mechanical Data

Shield	Brass (CuZn); hot-dip tinned 3 μm; Shield contacting: large surface >180°
Connection requirement (permissible cable type)	Cat. 5e
Connectable sheathed cable diameter	4.5 ... 8 mm
Housing material	Plastic
Contact material	Bronze (CuSn6)
Contact plating	> 1.2 μm gold over 1.2 μm nickel
Mating cycles (max.)	1000
Weight	12 g
Color	light gray

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +70 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Protection type	IP20
Relative humidity (without condensation)	95 %
Vibration resistance	4g per IEC 60068-2-6
Standards/specifications	- Basic standard: IEC 60603-7 RJ-45 Category 5; - CD ISO/IEC 11801: 2002; - EN 50173: 2002; - EIA/TIA 568A: 2002

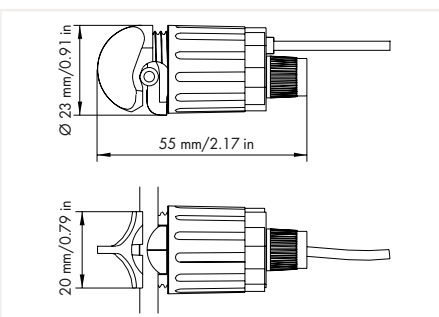


## Voltage Tap 855 Series



Voltage Tap; with fuse; 2.5 ... 6 mm<sup>2</sup>; Phase

Color	Item No.	Pack. Unit
black	855-8001	1



### Short description:

WAGO's 855 Series Voltage Taps easily and safely tap the measurement voltage. This allows a fuse-protected measurement voltage to be tapped from an insulated conductor with just one turn – no tools required.

### Features:

- Safely tap the measurement voltage with just one turn
- Tool-free assembly
- Secure mounting
- For insulated conductors up to 16 mm<sup>2</sup> (6 AWG)
- Cable length: 3 m

### Note:

Spare fuse: SIBA Fuse, Item No. 7008913.2

### Output – Voltage Tap

Rated voltage	400 VAC
Continuous current (max.)	2 A
Max. voltage drop (output)	≤ 0.5 VAC
Fuse (voltage path)	2 A; 450 V; F, 70 kA, 5 x 25 mm

### Safety and Protection

Test voltage	3 kVAC; 50 Hz; 1 min
Rated surge voltage	6 kV
Overvoltage category	III
Pollution degree	2
Protection type	IP20

### Connection Data

Connection technology	IDC
Solid conductor	2.5 ... 6 mm <sup>2</sup> / 14 ... 10 AWG
Fine-stranded conductor	2.5 ... 6 mm <sup>2</sup> / 14 ... 10 AWG
Feedthrough for measurement conductor	3 ... 5 mm Ø
Cable type	Secondary side: 1 x 1.0 mm <sup>2</sup> ; flexible; with ferrule

### Geometric Data

Width	23 mm / 0.906 inch
Height	59 mm / 2.323 inch
Depth	23 mm / 0.906 inch
Cable length	3 m

### Mechanical Data

Mounting type	Insulation displacement connection (IDC)
Mounting type	Mounting on insulated round cable
Torque	1.5 ... 2 Nm
Usability	Can be reused several times (max. 24 times)

### Material Data

Weight	25.9 g
Housing material	PA 6.6; UL94 V2

### Environmental Requirements

Surrounding air temperature (operation)	-5 ... +55 °C
Surrounding air temperature (storage)	-20 ... +70 °C
Relative humidity	5 ... 85 % (non-condensing)
Operating altitude (max.)	2000 m

### Standards and Specifications

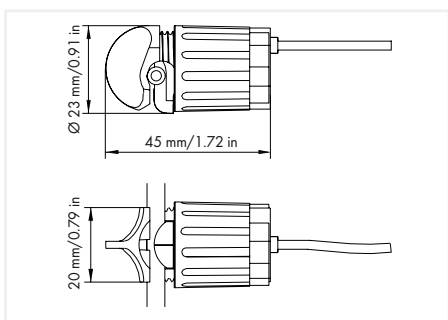
Conformity marking	CE
Standards/specifications	EN 60947-7-1

## Voltage Tap 855 Series



Voltage Tap; without fuse; 2.5 ... 6 mm<sup>2</sup>; Neutral conductor

Color	Item No.	Pack. Unit
blue	855-8002	1



### Short description:

WAGO's 855 Series Voltage Taps easily and safely tap the measurement voltage. This allows a fuse-protected measurement voltage to be tapped from an insulated conductor with just one turn – no tools required.

### Features:

- Safely tap the measurement voltage with just one turn
- Tool-free assembly
- Secure mounting
- For insulated conductors up to 16 mm<sup>2</sup> (6 AWG)
- Cable length: 3 m

### Output – Voltage Tap

Rated voltage	400 VAC
Continuous current (max.)	2 A
Max. voltage drop (output)	≤ 0.5 VAC
Fuse (voltage path)	-

### Safety and Protection

Test voltage	3 kVAC; 50 Hz; 1 min
Rated surge voltage	6 kV
Overvoltage category	III
Pollution degree	2
Protection type	IP20

### Connection Data

Connection technology	IDC
Solid conductor	2.5 ... 6 mm <sup>2</sup> / 14 ... 10 AWG
Fine-stranded conductor	2.5 ... 6 mm <sup>2</sup> / 14 ... 10 AWG
Feedthrough for measurement conductor	3 ... 5 mm Ø
Cable type	Secondary side: 1 x 1.0 mm <sup>2</sup> ; flexible; with ferrule

### Geometric Data

Width	23 mm / 0.906 inch
Height	50 mm / 1.969 inch
Depth	23 mm / 0.906 inch
Cable length	3 m

### Mechanical Data

Mounting type	Insulation displacement connection (IDC)
Mounting type	Mounting on insulated round cable
Torque	1.5 ... 2 Nm
Usability	Can be reused several times (max. 24 times)

### Material Data

Weight	20 g
Housing material	PA 6.6; UL94 V2

### Environmental Requirements

Surrounding air temperature (operation)	-5 ... +55 °C
Surrounding air temperature (storage)	-20 ... +70 °C
Relative humidity	5 ... 85 % (non-condensing)
Operating altitude (max.)	2000 m

### Standards and Specifications

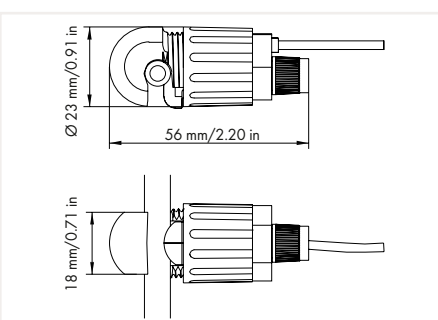
Conformity marking	CE
Standards/specifications	EN 60947-7-1

## Voltage Tap 855 Series



Voltage Tap; with fuse; 10 ... 16 mm<sup>2</sup>; Phase

Color	Item No.	Pack. Unit
black	855-8003	1



### Short description:

WAGO's 855 Series Voltage Taps easily and safely tap the measurement voltage. This allows a fuse-protected measurement voltage to be tapped from an insulated conductor with just one turn – no tools required.

### Features:

- Safely tap the measurement voltage with just one turn
- Tool-free assembly
- Secure mounting
- For insulated conductors up to 16 mm<sup>2</sup> (6 AWG)
- Cable length: 3 m

### Note:

Spare fuse: SIBA Fuse, Item No. 7008913.2

### Output – Voltage Tap

Rated voltage	400 VAC
Continuous current (max.)	2 A
Max. voltage drop (output)	≤ 0.5 VAC
Fuse	2 A; 450 V; F; 70 kA, 5 x 25 mm

### Safety and Protection

Test voltage	3 kVAC; 50 Hz; 1 min
Rated surge voltage	6 kV
Overvoltage category	III
Pollution degree	2
Protection type	IP20

### Connection Data

Connection technology	IDC
Solid conductor	10 ... 16 mm <sup>2</sup> / 8 ... 6 AWG
Fine-stranded conductor	10 ... 16 mm <sup>2</sup> / 8 ... 6 AWG
Feedthrough for measurement conductor	5 ... 7 mm Ø
Cable type	Secondary side: 1 x 1.0 mm <sup>2</sup> ; flexible; with ferrule

### Geometric Data

Width	23 mm / 0.906 inch
Height	59 mm / 2.323 inch
Depth	23 mm / 0.906 inch
Cable length	3 m

### Mechanical Data

Mounting type	Insulation displacement connection (IDC)
Mounting type	Mounting on insulated round cable
Torque	1.5 ... 2 Nm
Usability	Can be reused several times (max. 24 times)

### Material Data

Weight	29 g
Housing material	PA 6.6; UL94 V2

### Environmental Requirements

Surrounding air temperature (operation)	-5 ... +55 °C
Surrounding air temperature (storage)	-20 ... +70 °C
Relative humidity	5 ... 85 % (non-condensing)
Operating altitude (max.)	2000 m

### Standards and Specifications

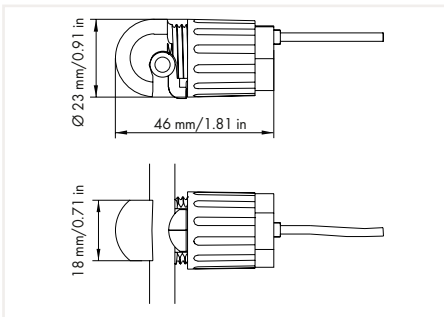
Conformity marking	CE
Standards/specifications	EN 60947-7-1

## Voltage Tap 855 Series



Voltage Tap; without fuse; 10 ... 16 mm<sup>2</sup>; Neutral conductor

Color	Item No.	Pack. Unit
blue	855-8004	1



### Short description:

WAGO's 855 Series Voltage Taps easily and safely tap the measurement voltage. This allows a fuse-protected measurement voltage to be tapped from an insulated conductor with just one turn – no tools required.

### Features:

- Safely tap the measurement voltage with just one turn
- Tool-free assembly
- Secure mounting
- For insulated conductors up to 16 mm<sup>2</sup> (6 AWG)
- Cable length: 3 m

### Output – Voltage Tap

Rated voltage	400 VAC
Continuous current (max.)	2 A
Max. voltage drop (output)	≤ 0.5 VAC
Fuse	-

### Safety and Protection

Test voltage	3 kVAC; 50 Hz; 1 min
Rated surge voltage	6 kV
Overvoltage category	III
Pollution degree	2
Protection type	IP20

### Connection Data

Connection technology	IDC
Solid conductor	10 ... 16 mm <sup>2</sup> / 8 ... 6 AWG
Fine-stranded conductor	10 ... 16 mm <sup>2</sup> / 8 ... 6 AWG
Feedthrough for measurement conductor	5 ... 7 mm Ø
Cable type	Secondary side: 1 x 1.0 mm <sup>2</sup> ; flexible; with ferrule

### Geometric Data

Width	23 mm / 0.906 inch
Height	50 mm / 1.969 inch
Depth	23 mm / 0.906 inch
Cable length	3 m

### Mechanical Data

Mounting type	Insulation displacement connection (IDC)
Mounting type	Mounting on insulated round cable
Torque	1.5 ... 2 Nm
Usability	Can be reused several times (max. 24 times)

### Material Data

Weight	21 g
Housing material	PA 6.6; UL94 V2

### Environmental Requirements

Surrounding air temperature (operation)	-5 ... +55 °C
Surrounding air temperature (storage)	-20 ... +70 °C
Relative humidity	5 ... 85 % (non-condensing)
Operating altitude (max.)	2000 m

### Standards and Specifications

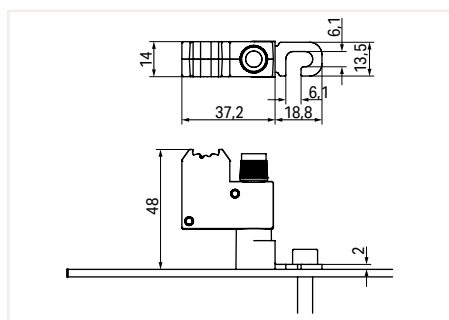
Conformity marking	CE
Standards/specifications	EN 60947-7-1

## Voltage Tap 855 Series



Voltage Tap; for busbar; with fuse; M6 mount

Item No.	Pack. Unit
855-8006	1



### Short description:

WAGO's voltage taps serve as busbar taps for measuring L- or N-conductors and are equipped with an integrated SIBA fuse with indicator. The built-in fuse is located directly above the voltage-carrying busbar. In the event of an overload and short circuit, the downstream measurement unit is safely disconnected before major damage occurs.

The voltage taps can be mounted directly on the busbar. Mounting is performed via M6 screw.

The measurement line is connected via Push-in CAGE CLAMP®, the universal connection technology for all conductor types that provides the simplicity of push-in terminations. Rigid conductors, such as solid and stranded conductors, as well as fine-stranded conductors with ferrules, can be terminated by simply pushing them in – no operating tool needed. The connection unit with a fuse and Push-in CAGE CLAMP® rotates. This creates additional added value by directly guiding subsequent wiring into the cable channel.

In addition, the voltage taps can be labeled with two different marking options.

### Features:

- Fuse-protected voltage tap for measurement purposes
- Safe protection through integrated fuse with indicator (measurement line/device)
- WAGO Push-in CAGE CLAMP® connection technology
- WAGO labelling options (WMB markers or marking strips)

### Note:

Spare fuse: SIBA Fuse, Item No. 7008913.2

### Output – Voltage Tap

Rated voltage	400 VAC
Fuse (voltage path)	2 A; 450 V; F; 70 kA; 5 x 25 mm

### Connection Data

Connection technology	Push-in CAGE CLAMP®
WAGO Connector	WAGO 2624 Series
Solid conductor	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Fine-stranded conductor	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Strip length	10 ... 12 mm / 0.39 ... 0.47 inch

### Connection Data

Width	57 mm / 2.244 inch
Height	14 mm / 0.551 inch
Depth	48 mm / 1.89 inch

### Mechanical Data

Mounting type	M6 mount
Mounting type	Installation on busbar

### Material Data

Weight	30 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Relative humidity	5 ... 85 % (non-condensing)
Operating altitude (max.)	2000 m
Vibration resistance	10g (Industry; 5 ... 2000 Hz; per IEC 60068-2-6); 4g (Ship; 5 ... 150 Hz; per IEC 60068-2-6)

### Standards and Specifications

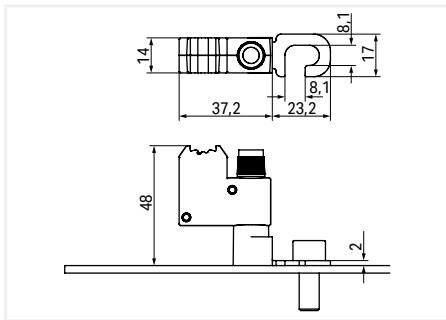
Standards/specifications	EN 60947-7-3
--------------------------	--------------

## Voltage Tap 855 Series



Voltage Tap; for busbar; with fuse; M8 mount

Item No.	Pack. Unit
855-8008	1



### Short description:

WAGO's voltage taps serve as busbar taps for measuring L- or N-conductors and are equipped with an integrated SIBA fuse with indicator. The built-in fuse is located directly above the voltage-carrying busbar. In the event of an overload and short circuit, the downstream measurement unit is safely disconnected before major damage occurs.

The voltage taps can be mounted directly on the busbar. Mounting is performed via M8 screw.

The measurement line is connected via Push-in CAGE CLAMP®, the universal connection technology for all conductor types that provides the simplicity of push-in terminations. Rigid conductors, such as solid and stranded conductors, as well as fine-stranded conductors with ferrules, can be terminated by simply pushing them in – no operating tool needed. The connection unit with a fuse and Push-in CAGE CLAMP® rotates. This creates additional added value by directly guiding subsequent wiring into the cable channel.

In addition, the voltage taps can be labeled with two different marking options.

### Features:

- Fuse-protected voltage tap for measurement purposes
- Safe protection through integrated fuse with indicator (measurement line/device)
- WAGO Push-in CAGE CLAMP® connection technology
- WAGO labelling options (WMB markers or marking strips)

### Note:

Spare fuse: SIBA Fuse, Item No. 7008913.2

### Output – Voltage Tap

Rated voltage	400 VAC
Fuse (voltage path)	2 A; 450 V; F; 70 kA; 5 x 25 mm

### Connection Data

Connection technology	Push-in CAGE CLAMP®
WAGO Connector	WAGO 2624 Series
Solid conductor	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Fine-stranded conductor	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Strip length	10 ... 12 mm / 0.39 ... 0.47 inch

### Connection Data

Width	61 mm / 2.402 inch
Height	14 mm / 0.551 inch
Depth	48 mm / 1.89 inch

### Mechanical Data

Mounting type	M8 mount
Mounting type	Installation on busbar

### Material Data

Weight	31 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Relative humidity	5 ... 85 % (non-condensing)
Operating altitude (max.)	2000 m
Vibration resistance	10g (Industry; 5 ... 2000 Hz; per IEC 60068-2-6); 4g (Ship; 5 ... 150 Hz; per IEC 60068-2-6)

### Standards and Specifications

Standards/specifications	EN 60947-7-3
--------------------------	--------------

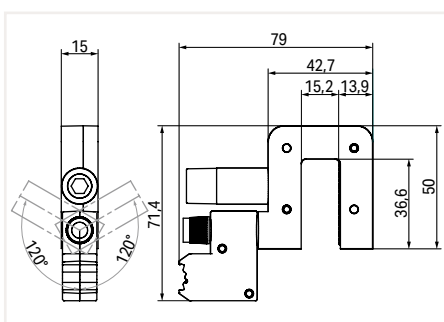


## Voltage Tap 855 Series



Voltage Tap; for busbar; with fuse; Clamp mount

Item No.	Pack. Unit
855-8015	1



### Short description:

WAGO's voltage taps serve as busbar taps for measuring L- or N-conductors and are equipped with an integrated SIBA fuse with indicator. The built-in fuse is located directly above the voltage-carrying busbar. In the event of an overload and short circuit, the downstream measurement unit is safely disconnected before major damage occurs.

The voltage taps can be mounted directly on the busbar. Clamp mount via Allen screw is performed using an insulated Allen wrench and provides an excellent contact between the busbar and the fuse. This ensures high operational safety and short-circuit protection.

The measurement line is connected via Push-in CAGE CLAMP®, the universal connection technology for all conductor types that provides the simplicity of push-in terminations. Rigid conductors, such as solid and stranded conductors, as well as fine-stranded conductors with ferrules, can be terminated by simply pushing them in – no operating tool needed. The connection unit with a fuse and Push-in CAGE CLAMP® rotates ( $\pm 120^\circ$ ). This creates additional added value by directly guiding subsequent wiring into the cable channel.

In addition, the voltage taps can be labeled with two different marking options.

### Features:

- Fuse-protected voltage tap for measurement purposes
- Safe protection through integrated fuse with indicator (measurement line/device)
- WAGO push-in termination technology
- WAGO labelling options (WMB markers or marking strips)

### Note:

Spare fuse: SIBA Fuse, Item No. 7008913.2

### Output – Voltage Tap

Rated voltage	400 VAC
Fuse (voltage path)	2 A; 450 V; F; 70 kA; 5 x 25 mm

### Connection Data

Connection technology	Push-in CAGE CLAMP®
WAGO Connector	WAGO 2624 Series
Solid conductor	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Fine-stranded conductor	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Strip length	10 ... 12 mm / 0.39 ... 0.47 inch
Busbar thickness (min.)	4 mm
Busbar thickness (max.)	15 mm

### Connection Data

Width	79 mm / 3.11 inch
Height	15 mm / 0.591 inch
Depth	72 mm / 2.835 inch

### Mechanical Data

Mounting type	Clamp mount
Mounting type	Installation on busbar

### Material Data

Weight	160 g
--------	-------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Relative humidity	5 ... 85 % (non-condensing)
Operating altitude (max.)	2000 m
Vibration resistance	10g (Industry; 5 ... 2000 Hz; per IEC 60068-2-6); 4g (Ship; 5 ... 150 Hz; per IEC 60068-2-6)

### Standards and Specifications

Standards/specifications	EN 60947-7-3
--------------------------	--------------

### Accessories



T-wrench; with a partially insulated shaft; SW 6.0 x 100

Item No.	Pack. Unit
855-8000	1

## Current and Voltage Tap 855 Series



### Current and Voltage Tap for the 50 mm<sup>2</sup> (0/1 AWG) High-Current Through Terminal Block

	Item No.	Pack. Unit
	855-501/150-000	1

#### Short description:

WAGO's current and voltage tap for 50 mm<sup>2</sup> (0/1 AWG) high-current through terminal blocks provides the ideal basis for successful energy management, because current and voltage are required wherever electrical power is measured. A combination of current transformer and voltage tap, this solution can be quickly and easily mounted into the jumper slot of WAGO's 50 mm<sup>2</sup> (1/0 AWG) high-current through terminal block.

An integrated fuse reliably protects downstream energy meters. An integrated current transformer (conversion ratio: 150 A/1 A) allows precise current measurement per EN 61869-2 (accuracy class: 0.5).

The current output connectors are marked with S1 (black) and S2 (red). Both termination and removal of fine-stranded conductors is performed via push-buttons. The 4-pole configuration (2 x S1 and 2 x S2) provides the following advantages:

- Current transformer (S1 and S2) can be short circuited via jumper (2000-402)
- Direct 'Y' point jumper on current transformer

The voltage is connected using a redundant terminal block.

Additionally, the current and voltage tap can be marked either using continuous marking strips or via WMB Multi Marking System.

#### Features:

- Power data can be directly tapped into the power supply
- Easy installation – simply insert the tap into the jumper slot of the 50 mm<sup>2</sup> (1/0 AWG) high-current through terminal block
- Integrated current transformer (150 A/1 A)
- Accuracy class: 0.5
- Fuse-protected voltage path

#### Note:

- Suitable for 2-conductor through terminal blocks for DIN-rail mounting (285-150; 285-154)
- Suitable for 2-conductor through terminal blocks with mounting flanges (285-141; 285-144)
- Spare fuse: SIBA Fuse, Item No. 7008913.2

#### Input – Current Transformer

Primary rated current	150 A
Rated continuous thermal current $I_{cth}$	150 A
Rated short-time thermal current $I_{th}$	9 kA/1 s
Rated surge current $I_{dyn}$	22.5 kA
Rated frequency	50 ... 60 Hz

#### Output – Current Transformer

Secondary rated current	1 A
Rated power $S_r$	0.2 VA

#### Output – Voltage Tap

Rated voltage	400 VAC
Fuse (voltage path)	2 A; 450 V; F; 70 kA; 5 x 25 mm

#### Measurement Error

Accuracy class	0.5
----------------	-----

#### Safety and Protection

Test voltage	3 kVAC; 50 Hz; 1 min
Protection type	IP20
Highest voltage for equipment $U_m$	720 VAC

#### Connection Data

Connection type 1	Current output
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	WAGO 250 Series
Solid conductor	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 16 AWG
Fine-stranded conductor	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 16 AWG
Strip length	8.5 ... 9.5 mm / 0.33 ... 0.37 inch
Connection type 2	Voltage output
Connection technology 2	Push-in CAGE CLAMP®
WAGO Connector 2	WAGO 2624 Series
Solid conductor 2	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Fine-stranded conductor 2	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Strip length 2	10 ... 12 mm / 0.39 ... 0.47 inch
Feedthrough for measurement conductor	$\varnothing \leq 12$ mm

#### Geometric Data

Width	20 mm / 0.787 inch
Height	68 mm / 2.677 inch
Depth	57 mm / 2.244 inch

#### Mechanical Data

Mounting type	Via jumper slot of the 2-conductor high-current through terminal block (see note)
---------------	-----------------------------------------------------------------------------------

#### Material Data

Weight	78.5 g
--------	--------

#### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Relative humidity	5 ... 85 % (non-condensing)
Operating altitude (max.)	2000 m
Vibration resistance	10g (Industry; 5 ... 2000 Hz; per IEC 60068-2-6); 4g (Ship; 5 ... 150 Hz; per IEC 60068-2-6)

#### Standards and Specifications

Conformity marking	CE
Standards/specifications	EN 61869-2; EN 60947-7-3

## Current and Voltage Tap 855 Series



### Current and Voltage Tap for the 95 mm<sup>2</sup> (4/0 AWG) High-Current Through Terminal Block

Item No.	Pack. Unit
855-951/250-000	1

#### Short description:

WAGO's current and voltage tap for 95 mm<sup>2</sup> (4/0 AWG) high-current through terminal blocks provides the ideal basis for successful energy management, because current and voltage are required wherever electrical power is measured. A combination of current transformer and voltage tap, this solution can be quickly and easily mounted into the jumper slot of WAGO's 95 mm<sup>2</sup> (4/0 AWG) high-current through terminal block.

An integrated fuse reliably protects downstream energy meters. An integrated current transformer (conversion ratio: 250 A/1 A) allows precise current measurement per EN 61869-2 (accuracy class: 0.5).

The current output connectors are marked with S1 (black) and S2 (red). Both termination and removal of fine-stranded conductors is performed via push-buttons. The 5-pole configuration (2 x S1 and 3 x S2) provides the following advantages:

- Current transformer (S1 and S2) can be short circuited via jumper (2000-402)
- Direct 'Y' point jumper on current transformer

The voltage is connected using a redundant terminal block.

Additionally, the current and voltage tap can be marked either using continuous marking strips or via WMB Multi Marking System.

#### Features:

- Power data can be directly tapped into the power supply
- Easy installation – simply insert the tap into the jumper slot of the 95 mm<sup>2</sup> (4/0 AWG) high-current through terminal block
- Integrated current transformer (250 A/1 A)
- Accuracy class: 0.5
- Fuse-protected voltage path

#### Note:

- Suitable for 2-conductor through terminal blocks for DIN-rail mounting (285-195; 285-194)
- Suitable for 2-conductor through terminal blocks with mounting flanges (285-181; 285-184)
- Spare fuse: SIBA Fuse, Item No. 7008913.2

#### Input – Current Transformer

Primary rated current	250 A
Rated continuous thermal current $I_{cth}$	250 A
Rated short-time thermal current $I_{th}$	15 kA/1 s
Rated surge current $I_{dyn}$	37.5 kA
Rated frequency	50 ... 60 Hz

#### Output – Current Transformer

Secondary rated current	1 A
Rated power $S_r$	0.2 VA

#### Output – Voltage Tap

Rated voltage	400 VAC
Fuse (voltage path)	2 A; 450 V; F; 70 kA; 5 x 25 mm

#### Measurement Error

Accuracy class	0.5
----------------	-----

#### Safety and Protection

Test voltage	3 kVAC; 50 Hz; 1 min
Protection type	IP20
Highest voltage for equipment $U_m$	720 VAC

#### Connection Data

Connection type 1	Current output
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	WAGO 250 Series
Solid conductor	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 16 AWG
Fine-stranded conductor	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 16 AWG
Strip length	8.5 ... 9.5 mm / 0.33 ... 0.37 inch
Connection type 2	Voltage output
Connection technology 2	Push-in CAGE CLAMP®
WAGO Connector 2	WAGO 2624 Series
Solid conductor 2	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Fine-stranded conductor 2	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Strip length 2	10 ... 12 mm / 0.39 ... 0.47 inch
Feedthrough for measurement conductor	Ø ≤ 16 mm

#### Geometric Data

Width	25 mm / 0.984 inch
Height	73 mm / 2.874 inch
Depth	58 mm / 2.283 inch

#### Mechanical Data

Mounting type	Via jumper slot of the 2-conductor high-current through terminal block (see note)
---------------	-----------------------------------------------------------------------------------

#### Material Data

Weight	98 g
--------	------

#### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Relative humidity	5 ... 85 % (non-condensing)
Operating altitude (max.)	2000 m
Vibration resistance	10g (Industry; 5 ... 2000 Hz; per IEC 60068-2-6); 4g (Ship; 5 ... 150 Hz; per IEC 60068-2-6)

#### Standards and Specifications

Conformity marking	CE
Standards/specifications	EN 61869-2; EN 60947-7-3

## Current and Voltage Tap 855 Series



### Current and Voltage Tap for the 185 mm<sup>2</sup> (350 kcmil) High-Current Through Terminal Block

	Item No.	Pack. Unit
	855-1851/350-000	1

#### Short description:

WAGO's current and voltage tap for 185 mm<sup>2</sup> (350 kcmil) high-current through terminal blocks provides the ideal basis for successful energy management, because current and voltage are required wherever electrical power is measured. A combination of current transformer and voltage tap, this solution can be quickly and easily mounted into the jumper slot of WAGO's 95 mm<sup>2</sup> (4/0 AWG) high-current through terminal block.

An integrated fuse reliably protects downstream energy meters. An integrated current transformer (conversion ratio: 350 A/1 A) allows precise current measurement per EN 61869-2 (accuracy class: 0.5).

The current output connectors are marked with S1 (black) and S2 (red). Both termination and removal of fine-stranded conductors is performed via push-buttons. The 5-pole configuration (2 x S1 and 3 x S2) provides the following advantages:

- Current transformer (S1 and S2) can be short circuited via jumper (2000-402)
- Direct 'Y' point jumper on current transformer

The voltage is connected using a redundant terminal block.

Additionally, the current and voltage tap can be marked either using continuous marking strips or via WMB Multi Marking System.

#### Features:

- Power data can be directly tapped into the power supply
- Easy installation – simply insert the tap into the jumper slot of the 185 mm<sup>2</sup> (350 kcmil) high-current through terminal block
- Integrated current transformer (350 A/1 A)
- Accuracy class: 0.5
- Fuse-protected voltage path

#### Note:

- Suitable for 2-conductor through terminal blocks for DIN-rail mounting (285-1185; 285-1184)
- Suitable for 2-conductor through terminal blocks with mounting flanges (285-1161; 285-1164)
- Spare fuse: SIBA Fuse, Item No. 7008913.2

#### Input – Current Transformer

Primary rated current	350 A
Rated continuous thermal current $I_{cth}$	350 A
Rated short-time thermal current $I_{th}$	21 kA/1 s
Rated surge current $I_{dyn}$	52.5 kA
Rated frequency	50 ... 60 Hz

#### Output – Current Transformer

Secondary rated current	1 A
Rated power $S_r$	0.2 VA

#### Output – Voltage Tap

Rated voltage	400 VAC
Fuse (voltage path)	2 A; 450 V; F; 70 kA; 5 x 25 mm

#### Measurement Error

Accuracy class	0.5
----------------	-----

#### Safety and Protection

Test voltage	3 kVAC; 50 Hz; 1 min
Protection type	IP20
Highest voltage for equipment $U_m$	720 VAC

#### Connection Data

Connection type 1	Current output
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	WAGO 250 Series
Solid conductor	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 16 AWG
Fine-stranded conductor	0.2 ... 1.5 mm <sup>2</sup> / 24 ... 16 AWG
Strip length	8.5 ... 9.5 mm / 0.33 ... 0.37 inch
Connection type 2	Voltage output
Connection technology 2	Push-in CAGE CLAMP®
WAGO Connector 2	WAGO 2624 Series
Solid conductor 2	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Fine-stranded conductor 2	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Strip length 2	10 ... 12 mm / 0.39 ... 0.47 inch
Feedthrough for measurement conductor	Ø ≤ 21.5 mm

#### Geometric Data

Width	32 mm / 1.256 inch
Height	84 mm / 3.307 inch
Depth	60 mm / 2.362 inch

#### Mechanical Data

Mounting type	Via jumper slot of the 2-conductor high-current through terminal block (see note)
---------------	-----------------------------------------------------------------------------------

#### Material Data

Weight	140 g
--------	-------

#### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-25 ... +70 °C
Relative humidity	5 ... 85 % (non-condensing)
Operating altitude (max.)	2000 m
Vibration resistance	10g (Industry; 5 ... 2000 Hz; per IEC 60068-2-6); 4g (Ship; 5 ... 150 Hz; per IEC 60068-2-6)

#### Standards and Specifications

Conformity marking	CE
Standards/specifications	EN 61869-2; EN 60947-7-3

## Power and Energy Measurement

### With the WAGO-I/O-SYSTEM 750 and 750 XTR

WAGO's 3-phase power measurement modules measure and process all relevant metrics from a three-phase supply network. They provide system operators with increased insight into energy consumption by specific machines and systems, as well as the ability to perform comprehensive network analysis.




#### Advantages:

- Measure machine and system energy consumption values
- Detect and process all relevant metrics
- Comprehensive network analysis
- Connect to the fieldbus-independent, compact and flexible WAGO-I/O-SYSTEM

The dark gray modules from the 750 XTR Series can also be used in eXTReme environments and offer these advantages:

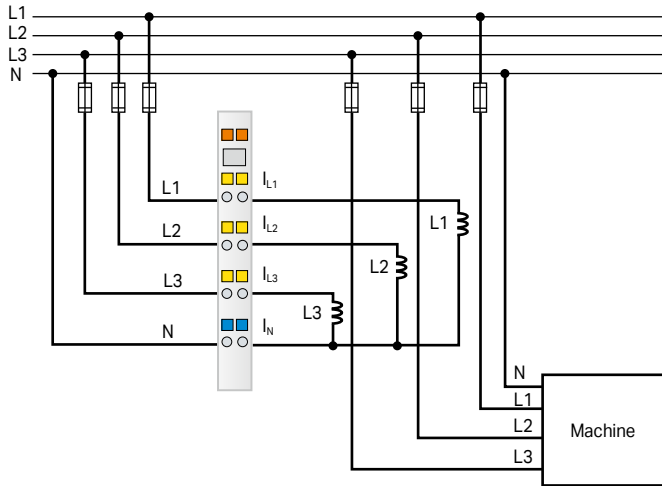
- eXTReme temperatures: -40 ... +70 °C
- eXTReme isolation: up to 5 kV of impulse voltage
- eXTReme vibration resistance: up to 5g of acceleration

4

Image			
Energy consumption	✓	✓	✓
Voltage	3 x 480 VAC	3 x 480 VAC	3 x 480/690 VAC
Current	1 A (750-493) 5 A (750-493/000-001)	1 A (750-494) 5 A (750-494/000-001) External Shunts (750-494/000-005)	1 A (750-495) 5 A (750-495/000-001) Rogowski Coil (750-495/000-002)
Active energy/power	✓	✓	✓
Phase position	✓	✓	✓
Reactive power/energy	via function block	✓	✓
Apparent power/energy	via function block	✓	✓
Rotary field detection		✓	✓
Power factor	(✓)	✓	✓
Frequency measurement	✓	✓	✓
Four-quadrant operation (inductive, capacitive, consumer, generator)		✓	✓
Harmonic analysis (up to the 41st harmonic)		✓	✓
Neutral conductor measurement			✓
Other product variants		Extended temperature range: -20 ... +60 °C: 750-494/025-000 (1 A), 750-494/025-001 (5 A)	750 XTR: 750-495/040-000 (1 A), 750-495/040-001 (5 A), 750-495/040-002 (Rogowski Coil)
Housing width	12 mm	12 mm	24 mm
Item number	750-493	750-494	750-495

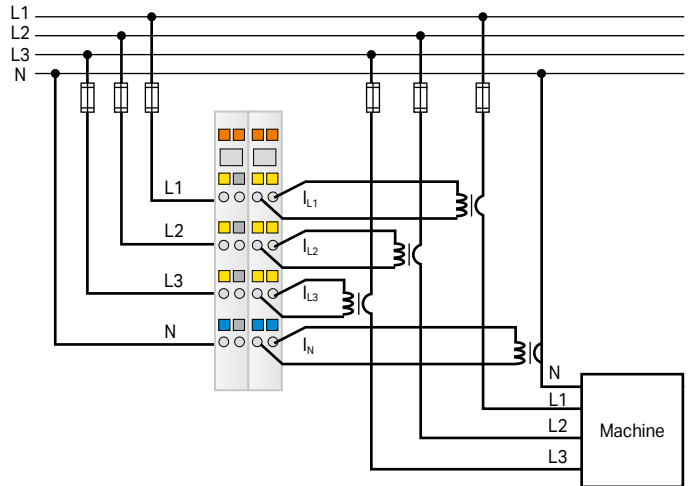
**General Configuration**

Power and energy measurement of a machine in a 480 VAC mains network via WAGO's 3-phase power measurement module (750-493, 750-494)



**General Configuration**

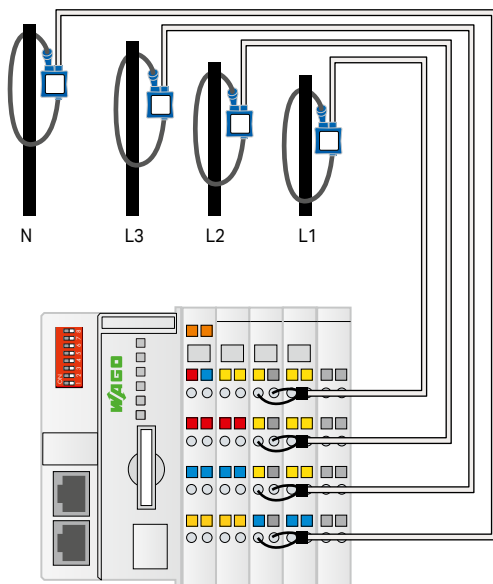
Power, energy and N-conductor measurement of a machine in a 480/690 VAC mains network via WAGO's 3-phase power measurement module (750-495)



4

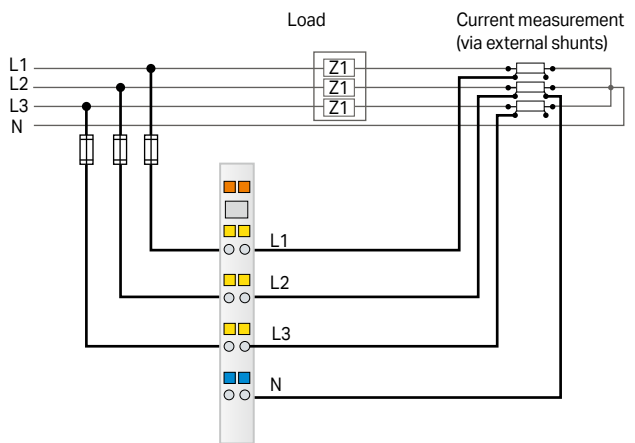
**Application:**

Direct connection of Rogowski coils to WAGO's 3-phase power measurement module (750-495/000-002)



**Application:**

Direct connection of external shunts to WAGO's 3-phase power measurement module (750-494/000-005)







iStock.com/AvatarKnowmad

## Line Length Calculation for Current Transformers

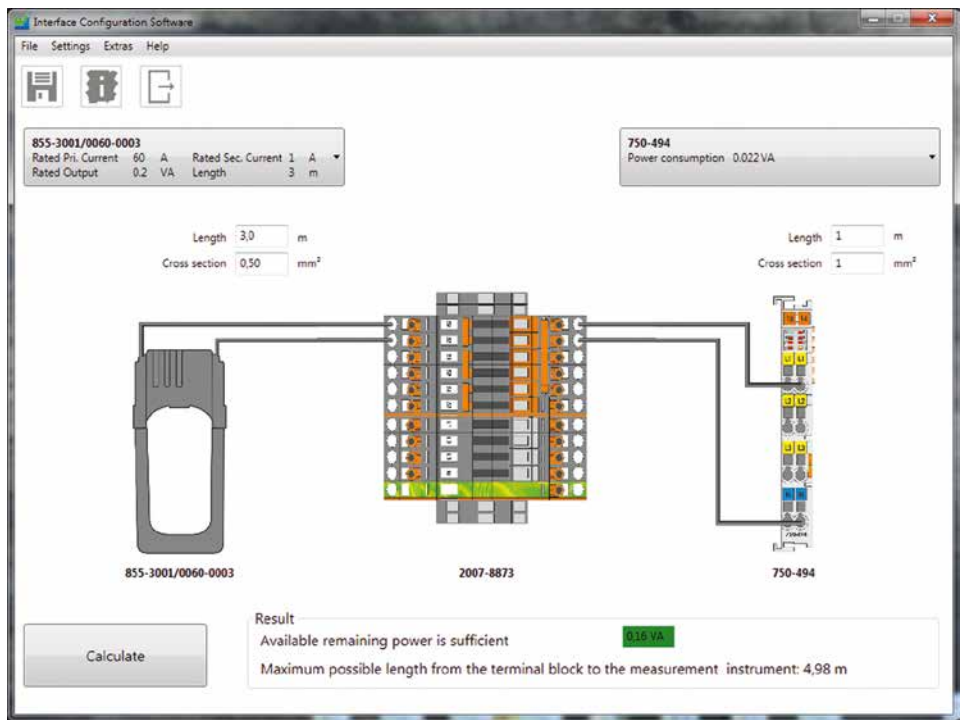
### Refined Solution for Your System Planning

To determine actual power requirements, both the power requirements of the connected measurement devices and the power losses from the measurement lines connected to a transformer's secondary circuit must be taken into account.

The interface configuration software's new feature quickly and easily calculates cable length and provides the results for your system documentation.



WAGO Interface Configuration Software Start Screen



Cable length calculator

Configuration report	
Project	WAGO
Project number	1582.23.58877
Company	Wago Kontakttechnik GmbH & Co. KG
Author	Michael Meyer
Date	21.08.2015
Stamp	
Transducer:	
Item number	855-3001/0060-0003
Rated Pri. Current	60A
Rated Sec. Current	1A
Rated Output	0.221VA
Measurement instrument:	
Item number	750-494
Power consumption	0.022VA
Cable from transducer to terminal block:	
Length	3m
Cross section	0.5mm²
Power loss	0.021VA
Cable from terminal block to measurement instrument:	
Length	1m
Cross section	1mm²
Power loss	0.036VA
Result:	
Available power	0.221VA
Total power loss	0.057VA
Remaining power	0.164VA
Required power	0.022VA
Result	Available remaining power is sufficient

Cable length calculation using the interface configuration software

Simply documented!

4

Power calculation of copper cables between measurement device and current transformer:

$$P_v = \frac{I_s^2 \times 2 \times l}{A_{Cu} \times 56} \text{ VA}$$

$I_s$  = Secondary rated measuring current strength [A]  
 $l$  = Simple cable length in m  
 $A_{Cu}$  = Cable cross section in mm<sup>2</sup>  
 $P_v$  = Power loss of connection cables

Note: When using a common three-phase return line, the values for  $P_v$  are halved.

Current transformer 5 A

$$P_v = \frac{5^2 \times 2 \times 10}{1.5 \times 56} \text{ VA} = 5.96 \text{ VA}$$

Example:

A 1 amp or 5 amp current transformer is used, with an ammeter on the secondary circuit, at a distance of 10 m between the transformer and the measurement device.

Current transformer 1 A

$$P_v = \frac{1^2 \times 2 \times 10}{1.5 \times 56} \text{ VA} = 0.24 \text{ VA}$$

Free software download at:












[www.wago.com/configuration-software](http://www.wago.com/configuration-software)





# WAGO Power Supplies

## WAGO Power Supplies

		Page
	<b>Pro</b>	
	Switched-Mode Power Supplies; 1-Phase; 787 Series	394
	Switched-Mode Power Supplies; 3-Phase; 787 Series	404
	<b>Classic</b>	
	Switched-Mode Power Supplies; 1-Phase; 787 Series	414
	Switched-Mode Power Supplies; 1-/2-Phase; 787 Series	430
	Switched-Mode Power Supplies; 3-Phase; 787 Series	432
	<b>Eco</b>	
	Switched-Mode Power Supplies; 1-Phase; 787 Series	436
	Switched-Mode Power Supplies; 3-Phase; 787 Series	450
	<b>Compact</b>	
	Switched-Mode Power Supplies; 1-Phase; 787 Series	456
	<b>UPS, Battery Modules and Buffer Modules</b>	
	Switched-Mode Power Supplies with Integrated UPS Charger and Controller	474
	UPS Chargers and Controllers; 787 Series	476
	Lead-Acid (AGM) Battery Modules; 787 Series	480
	Capacitive Buffer Modules; 787 Series	486
	<b>Redundancy Modules</b>	
	787 Series	490
	<b>Electronic Circuit Breakers</b>	
	1-Channel; 787 Series	496
	2-Channel; 787 Series	502
	4-Channel; 787 Series	508
	8-Channel; 787 Series	520
	<b>DC/DC Converters</b>	
	Compact Power – DC/DC Converters; 787 Series	530
	DC/DC Converters; 787 Series	533
	<b>Other Power Supplies</b>	
	Transformer Power Supplies; 787 Series	540
	Switched-Mode Power Supplies; IP67; 1-Phase; 787 Series	542
	Power Supply for Fan Control; 787 Series	550
	<b>Constant Voltage Sources and Power Supply Units</b>	
	DIN-Rail-Mount Constant Voltage Sources; 288, 289 Series	552
	DIN-Rail-Mount Power Supply Units; 288 Series	556
	<b>Accessories, 787 Series</b>	
	Communication Cables; Wall-Mount Adapters; DIN-Rail Adapters	560

# WAGO Power Supplies Selection Guide

## Switched-Mode Power Supplies; 24 VDC Output

Nominal voltage (output)	Nominal current (output) [ADC]	Input, 1-phase	Input, 2-/3-phase	Approvals						DC OK signal/contact	RS-232 interface	TopBoost <sup>1)</sup>	PowerBoost	Efficiency typ. [%]	Surrounding air temperature [°C] <sup>4)</sup>	Item Number	Page
				EN 60335	cURus 60950	cULus 508	DNVGL	ANSI/ISA 12.12.1	ATEX/IEC Ex								
0.5		■		■	■	■								83.0	-25 ... +70	787-1200	459
1.0		■		■	■	■								86.0	-25 ... +70	787-1602 <sup>2)</sup>	418
1.0		■		■	■	■	■	■						86.0	-25 ... +70	787-2852	336
1.25		■		■	■	■								80.0	-20 ... +60	787-1702	443
1.3		■		■	■	■								82.0	-25 ... +60	787-1002	471
1.3		■		■	■	■								82.0	-25 ... +60	787-1102	456
1.3		■		■	■	■								87.0	-25 ... +70	787-1202	460
2.0		■		■	■	■								89.0	-25 ... +70	787-1606 <sup>3)</sup>	419
2.5		■		■	■	■								86.0	-10 ... +70	787-712	436
2.5		■		■	■	■								81.0	-20 ... +60	787-1712	445
2.5		■		■	■	■								88.0	-25 ... +60	787-1012	472
2.5		■		■	■	■								88.0	-25 ... +60	787-1112	457
2.5		■		■	■	■								89.0	-25 ... +70	787-1212	462
3.0		■		■	■	■					■			87.8	-25 ... +70	787-818	398
3.8		■		■	■	■								87.0	-25 ... +70	787-1616/000-1000 <sup>2)</sup>	421
4.0		■		■	■	■								89.0	-25 ... +70	787-1616	420
4.0		■		■	■	■								88.0	-25 ... +60	787-1022	473
4.0		■		■	■	■								88.0	-25 ... +60	787-1122	458
4.0		■		■	■	■								92.3	-40 ... +85	787-6716	542
4.2		■		■	■	■								90.0	-25 ... +70	787-1216	463
5.0		■		■	■	■					■			87.8	-25 ... +70	787-822	399
5.0		■		■	■	■								89.0	-25 ... +70	787-1622	422
5.0		■	■		■	■								89.0	-25 ... +70	787-1628	430
5.0		■		■	■	■								89.0	-25 ... +70	787-1675 <sup>3)</sup>	474
5.0		■		■	■	■								86.0	-10 ... +60	787-722	437
5.0		■		■	■	■								84.0	-20 ... +60	787-1722	447
6.0		■		■	■	■								90.0	-25 ... +70	787-1226	464
6.25		■	■		■	■								87.0	-25 ... +70	787-738	450
10.0		■		■	■	■								90.0	-25 ... +70	787-832	400
10.0		■		■	■	■								91.0	-25 ... +70	787-1632 <sup>3)</sup>	423
10.0		■		■	■	■								90.0	-25 ... +70	787-1638	431
10.0		■		■	■	■								86.0	-10 ... +70	787-732	438
10.0		■		■	■	■								84.0	-20 ... +60	787-1732	448
10.0		■		■	■	■								91.7	-25 ... +70	787-850	408
10.0		■		■	■	■								91.7	-25 ... +70	787-840	404
10.0		■		■	■	■								90.0	-25 ... +70	787-1640	432
10.0		■		■	■	■								89.0	-25 ... +70	787-740	451
20.0		■		■	■	■								91.0	-25 ... +70	787-834	401
20.0		■		■	■	■								92.0	-25 ... +70	787-1634	424
20.0		■		■	■	■								90.0	-25 ... +70	787-734	439
20.0		■		■	■	■								92.9	-25 ... +70	787-852	409
20.0		■		■	■	■								92.9	-25 ... +70	787-842	405
20.0		■		■	■	■								92.0	-25 ... +70	787-1642	433
20.0		■		■	■	■								90.0	-25 ... +70	787-742	452
20.0		■		■	■	■								90.5	-20 ... +70	787-2742	454
40.0		■		■	■	■								90.0	-25 ... +70	787-736	440
40.0		■		■	■	■								93.6	-25 ... +55	787-854	410
40.0		■		■	■	■								93.6	-25 ... +55	787-844	406
40.0		■		■	■	■								92.0	-25 ... +70	787-1644	434
40.0		■		■	■	■								91.5	-20 ... +70	787-2744	455

■ Yes □ Pending

<sup>1)</sup> TopBoost enables magnetic tripping of circuit breakers in the output circuit.

<sup>2)</sup> NEC Class 2 Power Unit per cURus 1310 or cURus 60950

<sup>3)</sup> With uninterruptible power supply (UPS)

<sup>4)</sup> Device starts at -40°C, type-tested for 787-8xx, -10xx, -16xx

<sup>5)</sup> .../000-070 is optionally available with protective coating

Switched-Mode Power Supplies; 5, 12, 18, 48 VDC Output

Nominal voltage (output)	Nominal current (output) [ADC]	Input, 1-phase	Input, 2-/3-phase	Approvals							DC OK signal/contact	RS-232 interface	TopBoost <sup>1)</sup>	PowerBoost	Efficiency typ. [%]	Surrounding air temperature [°C] <sup>4)</sup>	Item Number	Page
				EN 60335	cURus 60950	cULus 508	DNVGL	ANSI/ISA 12.12.1	ATEX/IEC Ex									
5 VDC	5.5														75.0	-25 ... +60	Output: 5 VDC 787-1020	466
	12 VDC	2.0													82.0	-25 ... +70	Output: 12 VDC 787-1601 <sup>2)</sup>	414
12 VDC	2.0														80.0	-25 ... +60	787-1701	442
	2.0														80.0	-25 ... +60	787-1001	467
	4.0														86.0	-25 ... +70	787-1611 <sup>2)</sup>	415
	4.0														81.0	-25 ... +60	787-1711	444
	4.0														85.0	-25 ... +60	787-1011	468
	5.0														89.5	-25 ... +70	787-1211	461
	6.0														83.0	-25 ... +70	787-819	394
	6.5														87.0	-25 ... +60	787-1021	469
	7.0														86.0	-25 ... +70	787-1621	416
	8.0														84.0	-25 ... +60	787-1721	446
	10.0														87.8	-25 ... +70	787-821	395
15.0	15.0														87.0	-25 ... +70	787-831	396
	15.0														90.0	-25 ... +70	787-1631	417
	18 VDC	2.5													83.0	-25 ... +60	Output: 18 VDC 787-1017	470
48 VDC	2.0														86.0	-25 ... +70	Output: 48 VDC 787-1623	426
	5.0														91.0	-25 ... +70	787-833	402
	5.0														92.0	-25 ... +70	787-1633	427
	10.0														91.0	-25 ... +70	787-835	403
	10.0														93.0	-25 ... +70	787-1635 <sup>5)</sup>	428
	20.0														93.0	-25 ... +70	787-845	412
20.0														94.4	-25 ... +70	787-847	413	

DC/DC Converters

Nominal voltage (input) [VDC]	Nominal voltage (output) [VDC]	Nominal current (output) [A]	Approvals							DC OK signal/contact	Efficiency typ. [%]	Surrounding air temperature [°C]	Item Number	Page
			EN 50155	EN 60335	UL 61010-2-201	cULus 508	DNVGL	ANSI/ISA 12.12.1	ATEX/IEC Ex					
24.0	5.0	0.5									82.5	-25 ... +70	787-2801	534
24.0	10.0	0.5									89.0	-25 ... +70	787-2802	535
48.0	24.0	0.5									91.0	-25 ... +70	787-2803	537
24.0	12.0	0.5									90.0	-25 ... +70	787-2805	536
24.0	5/10/12	0.5									82.5	-25 ... +70	787-2810	538
24.0	12.0	0.4									84.0	-25 ... +70	787-1650	533
110.0	24.0	2.0									85.0	-40 ... +70	787-1014	530
72.0	24.0	2.0									86.0	-40 ... +70	787-1014/072-000	531
72.0	12.0	4.0									86.0	-40 ... +70	787-1015/072-000	532

Safety Transformers

Nominal voltage (output) [VAC]	Nominal power (output) [VA]	Nominal voltage (input) [VAC]	Approvals							Surrounding air temperature [°C]	Item Number	Page	
			EN 5085	EN 61558-2-6	UL 60601	cULus 508	DNVGL	ANSI/ISA 12.12.1	ATEX/IEC Ex				
12/24	40	110/230									-25 ... +55	787-974	540
12/24	63	110/230									-25 ... +55	787-976	541

# WAGO System Devices Selection Guide

## Uninterruptible Power Supplies (UPS)

Input		Output		Approvals						Dimensions and Environmental Conditions				Item Number	Page
Nominal voltage [VAC]	Nominal voltage [VDC]	Nominal voltage [VDC]	Nominal current [ADC]	EN 60335	cURus 60950	cULus 508	DNVGL	ANSI/ISA 12.12.1	ATEX/IEC Ex	Width [mm]	Height [mm]	Length [mm]	Surrounding air temperature [°C]		
-	24	24	10.0		■	■				40.0	163.0	163.0	-10 ... +60	787-870	476
-	24	24	20.0		■	■				57.0	163.0	171.0	-10 ... +60	787-875	477
	24	24	40.0			■				68.0	181.0	162.0	0 ... +55	787-915	478
100 ... 240	110 ... 370	24	5.0		■	■	■			60.0	135.5	127.0	-25 ... +70	787-1675	474

## Battery Modules

Input		Output		Approvals							Dimensions and Environmental Conditions				Item Number	Page
Nominal voltage [VDC]	Nominal voltage [VDC]	Nominal capacity [Ah]	Nominal capacity [Ah]	EN 60335	cURus 60950	cULus 508	GL	ANSI/ISA 12.12.1	ATEX/IEC Ex	VdS-tested battery	Width [mm]	Height [mm]	Length [mm]	Surrounding air temperature [°C]		
24	24	0.8				□				■	72.0	124.5	97.0	-15 ... +40	787-1671	484
24	24	1.2				■				■	55.0	136.5	153.0	-15 ... +40	787-876	480
24	24	3.2				■				■	76.2	175.5	168.0	-15 ... +40	787-871	481
24	24	7.0				■				■	86.0	217.5	236.0	-15 ... +40	787-872	482
24	24	12.0				■				■	120.5	217.5	236.0	-15 ... +40	787-873	483

## Capacitive Buffer Modules

Input/Output, Buffer			Approvals						Dimensions and Environmental Conditions				Item Number	Page
Nominal input/output voltage [VDC]	Nominal current (output) [ADC]	Buffer time [s]	EN 60335	cURus 60950	cULus 508	GL	ANSI/ISA 12.12.1	ATEX/IEC Ex	Width [mm]	Height [mm]	Length [mm]	Surrounding air temperature [°C]		
24	10.0	0.06 ... 7.2		■	■				57.0	179.0	163.0	-10 ... +50	787-880	486
24	20.0	0.17 ... 16.5		■	■				57.0	179.0	181.0	-10 ... +50	787-881	487
24	40.0	0.35 ... 6.6			■				68.0	181.0	162.0	-10 ... +50	787-916	488

## Redundancy Modules

Input		Output		Approvals						Dimensions and Environmental Conditions				Item Number	Page
Nominal voltage [VDC]	Nominal voltage [VDC]	Nominal current [ADC]	Nominal current [ADC]	EN 60335	cURus 60950	cULus 508	DNVGL	ANSI/ISA 12.12.1	ATEX/IEC Ex	Width [mm]	Height [mm]	Length [mm]	Surrounding air temperature [°C]		
12 ... 48	12 ... 48	12.5				■				50.0	92.0	130.0	-25 ... +70	787-783	490
24	24	20.0			■	■				40.0	163.0	181.0	-10 ... +60	787-885	492
24	24	40.0			■	■	■			42.0	139.5	127.0	-40 ... +70	787-1685 <sup>2)</sup>	494
12 ... 48	12 ... 48	40.0				■				83.0	153.0	130.0	-25 ... +70	787-785	491
48	48	20.0				■				40.0	163.0	181.0	-10 ... +60	787-886	493

■ Yes □ Pending

<sup>1)</sup> NEC Class 2

<sup>2)</sup> .../000-070 is optionally available with protective coating

<sup>3)</sup> Available upon request

Electronic Circuit Breakers

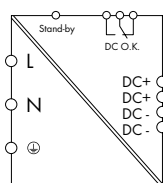
Nominal input/ output voltage	Input/Output				Approvals				Dimensions and Environmental Conditions				Item Number	Page
	Channels (output)	Nominal current (output) [ADC]	Communication	Active current limitation	UL 61010-2-201	UR 2367	cULus 508	GL	Width [mm]	Height [mm]	Length [mm]	Surrounding air temperature [°C]		
12 VDC	4	2 ... 10	M						45	115.5	90	-25 ... +70	787-1664/000-100	508
24 VDC	1	1	S		□				6	97.8	94	-25 ... +70	787-2861/100-000	496
	1	2	S		□				6	97.8	94	-25 ... +70	787-2861/200-000	497
	1	4	S		□				6	97.8	94	-25 ... +70	787-2861/400-000	498
	1	6	S		□				6	97.8	94	-25 ... +70	787-2861/600-000	499
	1	8	S		□				6	97.8	94	-25 ... +70	787-2861/800-000	500
	1	1 ... 8	S					□	6	97.8	94	-25 ... +70	787-2861/108-020	501
24 VDC	2	2 ... 10	M						45	115.5	90	-25 ... +70	787-1662	504
	2	2 ... 10	P						45	115.5	90	-25 ... +70	787-1662/000-054	506
	2	3.8 LPS	M	■				□	45	115.5	90	-25 ... +70	787-1662/004-1000 <sup>1)</sup>	503
	2	0.5 ... 6	M	■					45	115.5	90	-25 ... +70	787-1662/006-1000	502
	2	1 ... 6	M						45	115.5	90	-25 ... +70	787-1662/106-000	505
24 VDC	4	2 ... 10	M						45	115.5	90	-25 ... +70	787-1664	514
	4	2 ... 10	M						45	115.5	90	-25 ... +70	787-1664/000-004	516
	4	2 ... 10	P						45	115.5	90	-25 ... +70	787-1664/000-054	517
	4	1 ... 10	I			□	□	□	45	115.5	90	-25 ... +70	787-1664/000-080	513
	4	3.8 LPS	M	■				□	45	115.5	90	-25 ... +70	787-1664/004-1000 <sup>1)</sup>	510
	4	0.5 ... 6	M	■					45	115.5	90	-25 ... +70	787-1664/006-1000	509
	4	1 ... 6	M						45	115.5	90	-25 ... +70	787-1664/106-000	515
	4	2 ... 12	M	■				□	45	115.5	90	-25 ... +70	787-1664/212-1000	511
	4	0.5 ... 6	P	■					45	115.5	90	-25 ... +70	787-1664/006-1054	512
24 VDC	8	2 ... 10	M						42	142.5	127	-25 ... +70	787-1668	523
	8	2 ... 10	M						42	142.5	127	-25 ... +70	787-1668/000-004	524
	8	2 ... 10	P						42	142.5	127	-25 ... +70	787-1668/000-054	525
	8	1 ... 10	I			□	□	□	42	142.5	127	-25 ... +70	787-1668/000-080	529
	8	0.5 ... 6	M	■					42	142.5	127	-25 ... +70	787-1668/006-1000	520
	8	1 ... 6	M						42	142.5	127	-25 ... +70	787-1668/106-000	522
	8	1 ... 6	M						42	142.5	127	-25 ... +70	787-1668/106-054	526
	8	1 ... 6	P	■					42	142.5	127	-25 ... +70	787-1668/006-1054	521
48 VDC	2	2 ... 10	P					45	115.5	90	-25 ... +70	787-1662/000-250	507	
48 VDC	4	2 ... 10	M						45	115.5	90	-25 ... +70	787-1664/000-200	518
	4	2 ... 10	P						45	115.5	90	-25 ... +70	787-1664/000-250	519
48 VDC	8	2 ... 10	M						42	142.5	127	-25 ... +70	787-1668/000-200	527
	8	2 ... 10	P						42	142.5	127	-25 ... +70	787-1668/000-250	528

Other

Description	Approvals					Surrounding air temperature [°C]	Item Number	Page
	EN 60950	cULus 60950	EN 61204-3	EN 61000-6-3	DIN EN 60939-2			
Power supply for fan control	■	■	■	■	■		787-914	550
Radio interference suppression filter; 1-phase					■		787-980	551

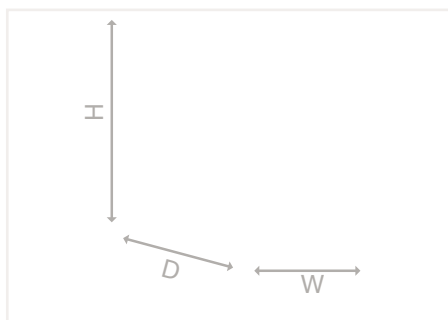
- S = Signal
- N = Signal, low-side switching
- P = Potential-free signal
- I = IO-Link protocol
- M = Manchester protocol

# Switched-Mode Power Supply; Pro; 1-Phase; 12 VDC / 6 A 787 Series



Switched-Mode Power Supply; Pro; 1-phase; Output voltage: 12 VDC; Output current: 6 A; TopBoost + PowerBoost; DC OK contact

Item No.	Pack. Unit
787-819	1



## Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Switch off the output and minimize power consumption via stand-by input
- Output monitoring via DC OK contact
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

## Input

Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	-5 %/V (< 95 VAC)
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	≤ 0.51 A (240 VAC; 6 ADC)
Inrush current	≤ 30 A (peak)
Power factor correction (PFC)	Passive
Mains failure hold-up time	≥ 70 ms (230 VAC)

## Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	12 VDC (SELV) / ≤ 1 %
Output voltage range	11 ... 18 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	6 A (12 VDC)
Nominal output power	72 W
Residual ripple	≤ 70 mV (peak-to-peak)
Overload behavior	TopBoost/PowerBoost/Constant current mode

## Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Error LED (red); 1 x Stand-by input; 1 x DC OK relay contact (changeover contact)
-----------	--------------------------------------------------------------------------------------------------------------

## Efficiency/Power Losses

Power loss $P_1$	≤ 0.5 W (stand-by); ≤ 3 W (no load); ≤ 9.4 W (nominal load)
Efficiency	≥ 83 %

## Fuse Protection

Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

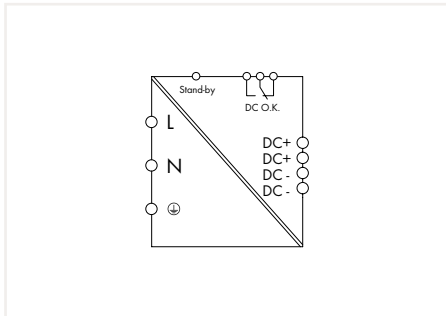
## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	40 x 163 x 163; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	800 g

## Standards and Specifications

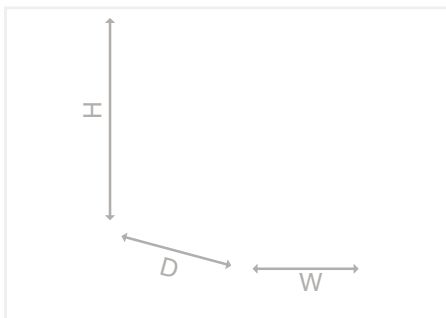
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508
------------------------------------	-----------------------------------------------------------

# Switched-Mode Power Supply; Pro; 1-Phase; 12 VDC / 10 A 787 Series



Switched-Mode Power Supply; Pro; 1-phase; Output voltage: 12 VDC; Output current: 10 A; TopBoost + PowerBoost; DC OK contact

Item No.	Pack. Unit
787-821	1



#### Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Switch off the output and minimize power consumption via stand-by input
- Output monitoring via DC OK contact
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	-5 %/V (< 95 VAC)
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	≤ 0.97 A (240 VAC; 10 ADC)
Inrush current	≤ 30 A (peak)
Power factor correction (PFC)	Passive
Mains failure hold-up time	≥ 35 ms (230 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	12 VDC (SELV) / ≤ 1 %
Output voltage range	11 ... 18 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	10 A (12 VDC)
Nominal output power	120 W
Residual ripple	≤ 70 mV (peak-to-peak)
Overload behavior	TopBoost/PowerBoost/Constant current mode

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Error LED (red); 1 x Stand-by input; 1 x DC OK relay contact (changeover contact)

Efficiency/Power Losses	
Power loss $P_i$	≤ 0.5 W (stand-by); ≤ 5 W (no load); ≤ 14.6 W (nominal load)
Efficiency	≥ 87.8 %

Fuse Protection	
Internal fuse	T 4 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

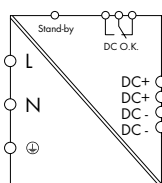
Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	57 x 163 x 163; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1295 g

Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508

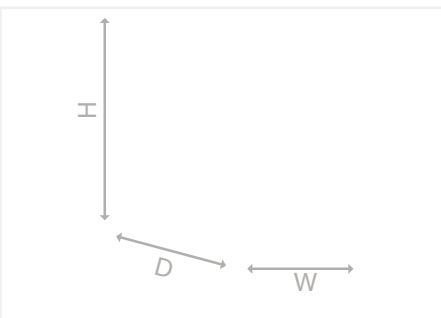


# Switched-Mode Power Supply; Pro; 1-Phase; 12 VDC / 15 A 787 Series



Switched-Mode Power Supply; Pro; 1-phase; Output voltage: 12 VDC; Output current: 15 A; TopBoost + PowerBoost; DC OK contact

Item No.	Pack. Unit
787-831	1



### Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Switch off the output and minimize power consumption via stand-by input
- Output monitoring via DC OK contact
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

### Input

Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	-1.5 %/V (< 110 VAC)
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	≤ 0.9 A (240 VAC; 15 ADC)
Inrush current	≤ 8 A (active PFC)
Power factor correction (PFC)	Active
Mains failure hold-up time	≥ 30 ms (230 VAC)

### Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	12 VDC (SELV) / ≤ 1 %
Output voltage range	11 ... 18 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	15 A (12 VDC)
Nominal output power	180 W
Residual ripple	≤ 70 mV (peak-to-peak)
Overload behavior	TopBoost/PowerBoost/Constant current mode

### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Error LED (red); 1 x Stand-by input; 1 x DC OK relay contact (changeover contact)
-----------	--------------------------------------------------------------------------------------------------------------

### Efficiency/Power Losses

Power loss $P_1$	≤ 0.8 W (stand-by); ≤ 4.6 W (no load); ≤ 23.4 W (nominal load)
Efficiency	≥ 87 %

### Fuse Protection

Internal fuse	T 6.3 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

### Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

### Geometric Data/Mechanical Data/Material Data

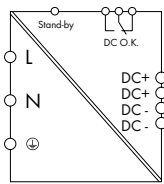
Width x height x depth (mm)	57 x 163 x 179; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1480 g

### Standards and Specifications

Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508
------------------------------------	-----------------------------------------------------------

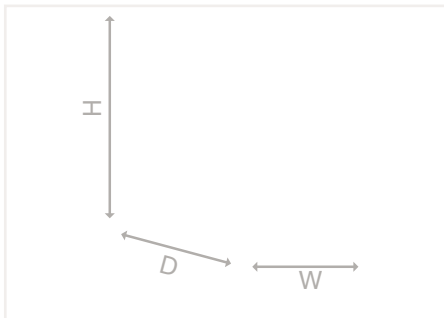


# Switched-Mode Power Supply; Pro; 1-Phase; 24 VDC / 3 A 787 Series



Switched-Mode Power Supply; Pro; 1-phase; Output voltage: 24 VDC; Output current: 3 A; TopBoost + PowerBoost; DC OK contact

Item No.	Pack. Unit
787-818	1



## Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Switch off the output and minimize power consumption via stand-by input
- Output monitoring via DC OK contact
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	-5 %/V (< 95 VAC)
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	≤ 0.51 A (240 VAC; 3 ADC)
Inrush current	≤ 30 A (peak)
Power factor correction (PFC)	Passive
Mains failure hold-up time	≥ 70 ms (230 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / ≤ 1 %
Output voltage range	22 ... 29.5 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	3 A (24 VDC)
Nominal output power	72 W
Residual ripple	≤ 70 mV (peak-to-peak)
Overload behavior	TopBoost/PowerBoost/Constant current mode

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Error LED (red); 1 x Stand-by input; 1 x DC OK relay contact (changeover contact)

Efficiency/Power Losses	
Power loss $P_1$	≤ 0.5 W (stand-by); ≤ 3 W (no load); ≤ 8.8 W (nominal load)
Efficiency	≥ 87.8 %

Fuse Protection	
Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

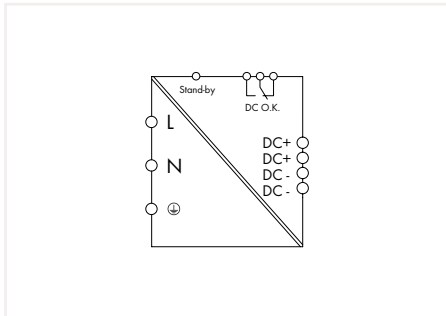
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	40 x 163 x 163; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	960 g

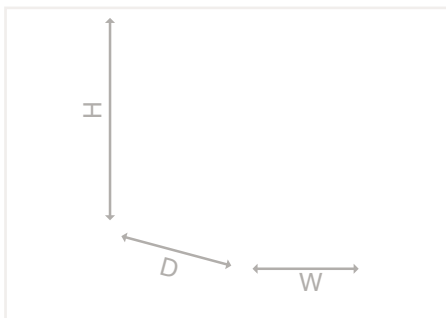
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508

# Switched-Mode Power Supply; Pro; 1-Phase; 24 VDC / 5 A 787 Series



Switched-Mode Power Supply; Pro; 1-phase; Output voltage: 24 VDC; Output current: 5 A; TopBoost + PowerBoost; DC OK contact

Item No.	Pack. Unit
787-822	1



## Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Switch off the output and minimize power consumption via stand-by input
- Output monitoring via DC OK contact
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	$\leq 0.97$ A (240 VAC; 5 ADC)
Inrush current	$\leq 30$ A (peak)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 35$ ms (230 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	22 ... 29.5 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	5 A (24 VDC)
Nominal output power	120 W
Residual ripple	$\leq 70$ mV (peak-to-peak)
Overload behavior	TopBoost/PowerBoost/Constant current mode

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Error LED (red); 1 x Stand-by input; 1 x DC OK relay contact (changeover contact)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 0.5$ W (stand-by); $\leq 5$ W (no load); $\leq 14.6$ W (nominal load)
Efficiency	$\geq 87.8$ %

Fuse Protection	
Internal fuse	T 4 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

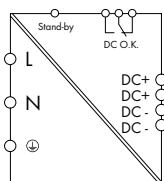
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +70$ °C (device starts at $-40$ °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3$ %/K ( $> +50$ °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	57 x 163 x 163; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1268 g

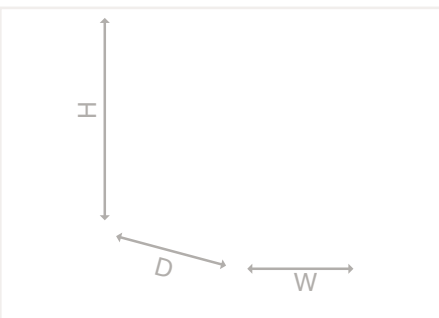
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508

# Switched-Mode Power Supply; Pro; 1-Phase; 24 VDC / 10 A 787 Series



Switched-Mode Power Supply; Pro; 1-phase; Output voltage: 24 VDC; Output current: 10 A; TopBoost + PowerBoost; DC OK contact

Item No.	Pack. Unit
787-832	1



## Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Switch off the output and minimize power consumption via stand-by input
- Output monitoring via DC OK contact
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

## Input

Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	$\leq 1.2$ A (240 VAC; 10 ADC)
Inrush current	$\leq 8$ A (active PFC)
Power factor correction (PFC)	Active
Mains failure hold-up time	$\geq 24$ ms (230 VAC)

## Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	22 ... 29.5 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	10 A (24 VDC)
Nominal output power	240 W
Residual ripple	$\leq 70$ mV (peak-to-peak)
Overload behavior	TopBoost/PowerBoost/Constant current mode

## Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Error LED (red); 1 x Stand-by input; 1 x DC OK relay contact (changeover contact)
-----------	--------------------------------------------------------------------------------------------------------------

## Efficiency/Power Losses

Power loss $P_1$	$\leq 0.8$ W (stand-by); $\leq 3.8$ W (no load); $\leq 24$ W (nominal load)
Efficiency	$\geq 90$ %

## Fuse Protection

Internal fuse	T 6.3 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-25$ ... $+70$ °C (device starts at $-40$ °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3$ %/K ( $> +50$ °C)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

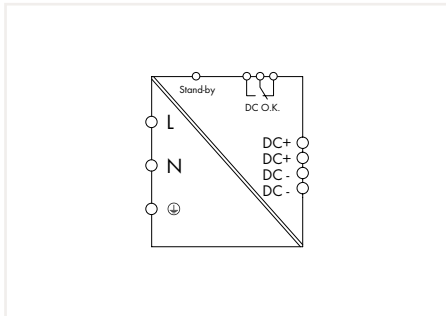
## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	57 x 163 x 179; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1485 g

## Standards and Specifications

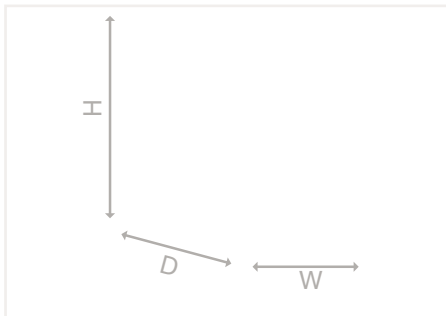
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508
------------------------------------	-----------------------------------------------------------

# Switched-Mode Power Supply; Pro; 1-Phase; 24 VDC / 20 A 787 Series



Switched-Mode Power Supply; Pro; 1-phase; Output voltage: 24 VDC; Output current: 20 A; TopBoost + PowerBoost; DC OK contact

Item No.	Pack. Unit
787-834	1



#### Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Switch off the output and minimize power consumption via stand-by input
- Output monitoring via DC OK contact
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	-1.5 %/V (< 110 VAC)
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	≤ 2.3 A (230 VAC; 20 ADC)
Inrush current	≤ 8 A (active PFC)
Power factor correction (PFC)	Active
Mains failure hold-up time	≥ 25 ms (230 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / ≤ 1 %
Output voltage range	22 ... 29.5 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	20 A (24 VDC)
Nominal output power	480 W
Residual ripple	≤ 70 mV (peak-to-peak)
Overload behavior	TopBoost/PowerBoost/Constant current mode

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Error LED (red); 1 x Stand-by input; 1 x DC OK relay contact (changeover contact)

Efficiency/Power Losses	
Power loss $P_i$	≤ 0.8 W (stand-by); ≤ 4.8 W (no load); ≤ 43.2 W (nominal load)
Efficiency	≥ 91 %

Fuse Protection	
Internal fuse	T 10 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

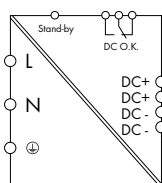
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	97 x 171 x 187; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	2300 g

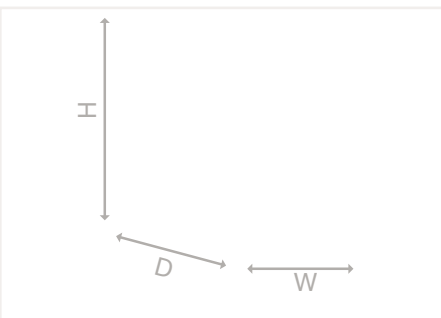
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508

# Switched-Mode Power Supply; Pro; 1-Phase; 48 VDC / 5 A 787 Series



Switched-Mode Power Supply; Pro; 1-phase; Output voltage: 48 VDC; Output current: 5 A; TopBoost + PowerBoost; DC OK contact

Item No.	Pack. Unit
787-833	1



## Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Switch off the output and minimize power consumption via stand-by input
- Output monitoring via DC OK contact
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

## Input

Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	-1.5 %/V (< 110 VAC)
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	≤ 1.2 A (230 VAC; 5 ADC)
Inrush current	≤ 8 A (active PFC)
Power factor correction (PFC)	Active
Mains failure hold-up time	≥ 20 ms (230 VAC)

## Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	48 VDC (SELV) / ≤ 1 %
Output voltage range	33 ... 52 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	5 A (48 VDC)
Nominal output power	240 W
Residual ripple	≤ 70 mV (peak-to-peak)
Overload behavior	TopBoost/PowerBoost/Constant current mode

## Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Error LED (red); 1 x Stand-by input; 1 x DC OK relay contact (changeover contact)
-----------	--------------------------------------------------------------------------------------------------------------

## Efficiency/Power Losses

Power loss $P_1$	≤ 0.8 W (stand-by); ≤ 7.4 W (no load); ≤ 21.6 W (nominal load)
Efficiency	≥ 91 %

## Fuse Protection

Internal fuse	T 6.3 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

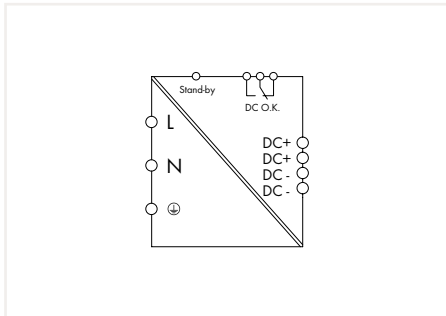
## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	57 x 163 x 179; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1475 g

## Standards and Specifications

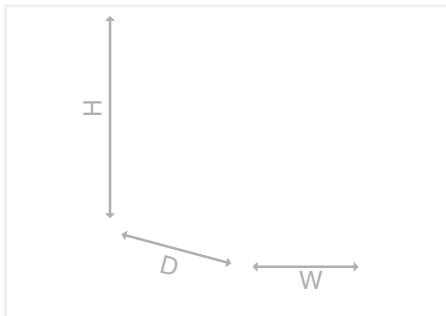
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508
------------------------------------	-----------------------------------------------------------

# Switched-Mode Power Supply; Pro; 1-Phase; 48 VDC / 10 A 787 Series



Switched-Mode Power Supply; Pro; 1-phase; Output voltage: 48 VDC; Output current: 10 A; TopBoost + PowerBoost; DC OK contact

Item No.	Pack. Unit
787-835	1



#### Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Switch off the output and minimize power consumption via stand-by input
- Output monitoring via DC OK contact
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	-1.5 %/V (< 110 VAC)
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	≤ 2.3 A (230 VAC; 10 ADC)
Inrush current	≤ 8 A (active PFC)
Power factor correction (PFC)	Active
Mains failure hold-up time	≥ 20 ms (230 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	48 VDC (SELV) / ≤ 1 %
Output voltage range	33 ... 52 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	10 A (48 VDC)
Nominal output power	480 W
Residual ripple	≤ 70 mV (peak-to-peak)
Overload behavior	TopBoost/PowerBoost/Constant current mode

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Error LED (red); 1 x Stand-by input; 1 x DC OK relay contact (changeover contact)

Efficiency/Power Losses	
Power loss $P_i$	≤ 0.8 W (stand-by); ≤ 4.8 W (no load); ≤ 43.2 W (nominal load)
Efficiency	≥ 91 %

Fuse Protection	
Internal fuse	T 10 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

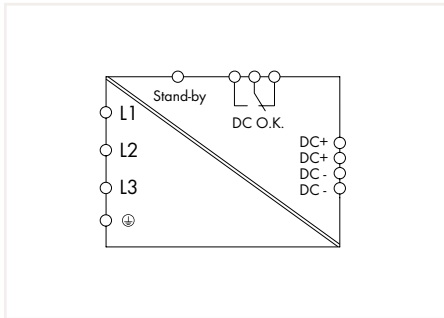
Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	97 x 171 x 187; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	2460 g

Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508

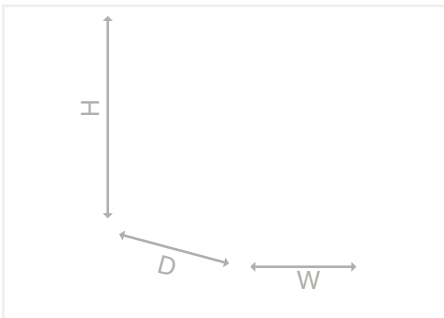


# Switched-Mode Power Supply; Pro; 3-Phase; 24 VDC / 10 A 787 Series



Switched-Mode Power Supply; Pro; 3-phase; Output voltage: 24 VDC; Output current: 10 A; TopBoost + PowerBoost; DC OK contact

Item No.	Pack. Unit
787-840	1



## Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Switch off the output and minimize power consumption via stand-by input
- Output monitoring via DC OK contact
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	(2 / 3) x 400 ... 500 VAC
Input voltage range	(2 / 3) x 340 ... 550 VAC; 480 ... 780 VDC
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 0.6 \text{ A}$ (340 VAC; 10 ADC)
Inrush current	$\leq 30 \text{ A}$
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 22 \text{ ms}$ (3 x 400 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1 \%$
Output voltage range	22.8 ... 28.8 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	10 A (24 VDC)
Nominal output power	240 W
Residual ripple	$\leq 70 \text{ mV}$ (peak-to-peak)
Overload behavior	TopBoost/PowerBoost/Constant current mode

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Error LED (red); 1 x Stand-by input; 1 x DC OK relay contact (changeover contact)

Efficiency/Power Losses	
Power loss $P_1$	$\leq 7.8 \text{ W}$ (no load); $\leq 19.9 \text{ W}$ (nominal load)
Efficiency	$\geq 91.7 \%$

Fuse Protection	
Internal fuse	3 x T 2.5 A / 440 VAC
Recommended backup fusing	3 x Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C; Alternative: motor circuit breaker; Setpoint: 1.6 A; Setting range: 1.6 ... 2.5 A

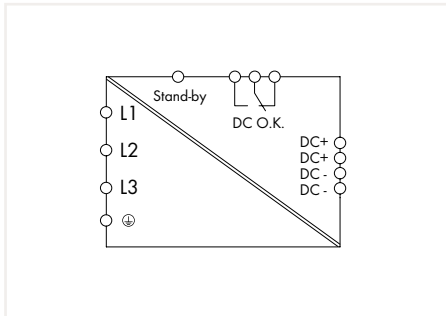
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +70 \text{ }^\circ\text{C}$ (device starts at $-40 \text{ }^\circ\text{C}$ , type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3 \%/K$ ( $> +50 \text{ }^\circ\text{C}$ )
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	57 x 163 x 179; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1000 g

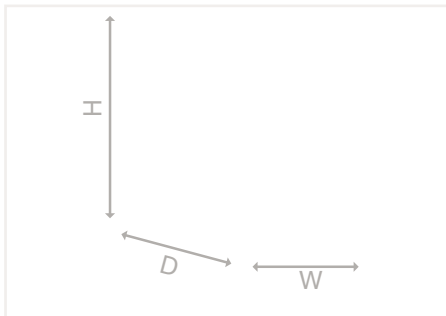
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508

# Switched-Mode Power Supply; Pro; 3-Phase; 24 VDC / 20 A 787 Series



Switched-Mode Power Supply; Pro; 3-phase; Output voltage: 24 VDC; Output current: 20 A; TopBoost + PowerBoost; DC OK contact

Item No.	Pack. Unit
787-842	1



#### Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Switch off the output and minimize power consumption via stand-by input
- Output monitoring via DC OK contact
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	(2 / 3) x 400 ... 500 VAC
Input voltage range	(2 / 3) x 340 ... 550 VAC; 480 ... 780 VDC
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 1.1 \text{ A}$ (340 VAC; 20 ADC)
Inrush current	$\leq 30 \text{ A}$
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 13 \text{ ms}$ (3 x 400 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1 \%$
Output voltage range	22.8 ... 28.8 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	20 A (24 VDC)
Nominal output power	480 W
Residual ripple	$\leq 70 \text{ mV}$ (peak-to-peak)
Overload behavior	TopBoost/PowerBoost/Constant current mode

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Error LED (red); 1 x Stand-by input; 1 x DC OK relay contact (changeover contact)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 8.3 \text{ W}$ (no load); $\leq 34.1 \text{ W}$ (nominal load)
Efficiency	$\geq 92.9 \%$

Fuse Protection	
Internal fuse	3 x T 2.5 A / 440 VAC
Recommended backup fusing	3 x Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C; Alternative: motor circuit breaker; Setpoint: 2.5 A; Setting range: 2.5 ... 4 A

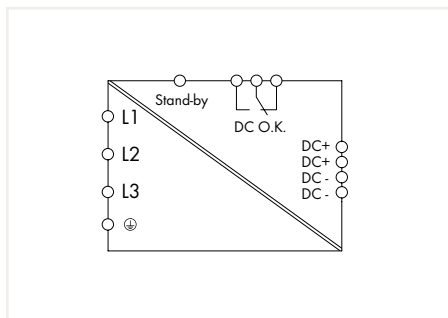
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +70 \text{ }^\circ\text{C}$ (device starts at $-40 \text{ }^\circ\text{C}$ , type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3 \%/K$ ( $> +50 \text{ }^\circ\text{C}$ )
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	77 x 171 x 179; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1300 g

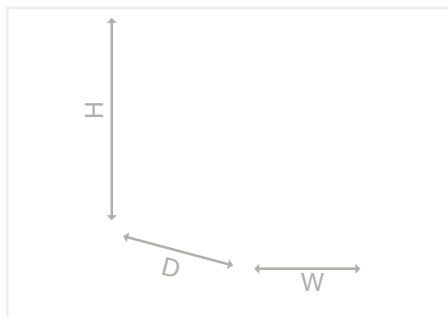
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508

# Switched-Mode Power Supply; Pro; 3-Phase; 24 VDC / 40 A 787 Series



Switched-Mode Power Supply; Pro; 3-phase; Output voltage: 24 VDC; Output current: 40 A; TopBoost + PowerBoost; DC OK contact

	Item No.	Pack. Unit
	787-844	1
with lateral DIN-rail support	787-844/000-002	



## Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Switch off the output and minimize power consumption via stand-by input
- Output monitoring via DC OK contact
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

## Input

Nominal input voltage $U_{i,nom}$	(2 / 3) x 400 ... 500 VAC
Input voltage range	(2 / 3) x 340 ... 550 VAC; 480 ... 780 VDC
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 2$ A (340 VAC; 40 ADC)
Inrush current	$\leq 30$ A
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 15$ ms (3 x 400 VAC)

## Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	22.8 ... 28.8 VDC (adjustable)
Nominal output current $I_{o,nom}$	40 A (24 VDC)
Nominal output power	960 W
Residual ripple	$\leq 70$ mV (peak-to-peak)
Overload behavior	TopBoost/PowerBoost/Constant current mode

## Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Error LED (red); 1 x Stand-by input; 1 x DC OK relay contact (changeover contact)
-----------	--------------------------------------------------------------------------------------------------------------

## Efficiency/Power Losses

Power loss $P_1$	$\leq 7$ W (no load); $\leq 61.5$ W (nominal load)
Efficiency	$\geq 93.6$ %

## Fuse Protection

Internal fuse	3 x T 3.2 A / 440 VAC
Recommended backup fusing	3 x Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C; Alternative: motor circuit breaker; Setpoint: 3.2 A; Setting range: 2.5 ... 4 A

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +55 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-5 %/K (> +45 °C)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

## Geometric Data/Mechanical Data/Material Data

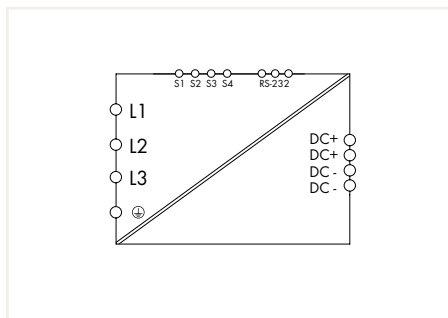
Width x height x depth (mm)	128 x 171 x 205; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	2500 g

## Standards and Specifications

Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508
------------------------------------	-----------------------------------------------------------

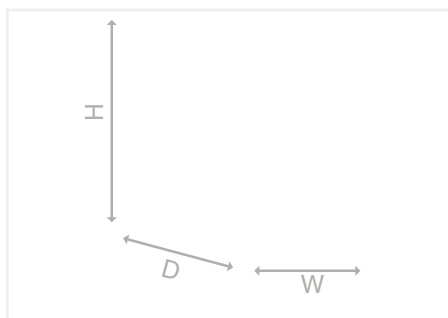
5

# Switched-Mode Power Supply; Pro; 3-Phase; 24 VDC / 10 A 787 Series



Switched-Mode Power Supply; Pro; 3-phase; Output voltage: 24 VDC; Output current: 10 A; TopBoost + PowerBoost; LineMonitor; DC OK signal

Item No.	Pack. Unit
787-850	1



## Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- LineMonitor for parameter setting and monitoring
- RS-232 interface
- Four signal outputs

## Input

Nominal input voltage $U_{i,nom}$	(2 / 3) x 400 ... 500 VAC
Input voltage range	(2 / 3) x 340 ... 550 VAC; 480 ... 780 VDC
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 0.6$ A (340 VAC; 10 ADC)
Inrush current	$\leq 30$ A
Power factor correction (PFC)	Passive (adjustable via software/display)
Mains failure hold-up time	$\geq 22$ ms (3 x 400 VAC)

## Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	22.8 ... 28.8 VDC (adjustable)
Nominal output current $I_{o,nom}$	10 A (24 VDC)
Nominal output power	240 W
Residual ripple	$\leq 70$ mV (peak-to-peak)
Overload behavior	Adjustable (constant current/fuse mode)

## Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Warning LED (yellow); 1 x Error LED (red); LCD; 4 x Signal output (24 VDC; max. 25 mA); 1 x RS-232 interface
Communication	RS-232 interface

## Efficiency/Power Losses

Power loss $P_i$	$\leq 7.8$ W (no load); $\leq 19.9$ W (nominal load)
Efficiency	$\geq 91.7$ %

## Fuse Protection

Internal fuse	3 x T 2.5 A / 440 VAC
Recommended backup fusing	3 x Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C; Alternative: motor circuit breaker; Setpoint: 1.6 A; Setting range: 1.6 ... 2.5 A

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

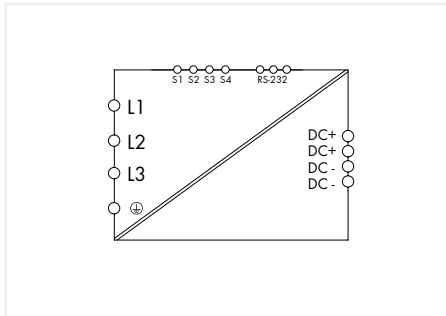
## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	57 x 163 x 179; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1000 g

## Standards and Specifications

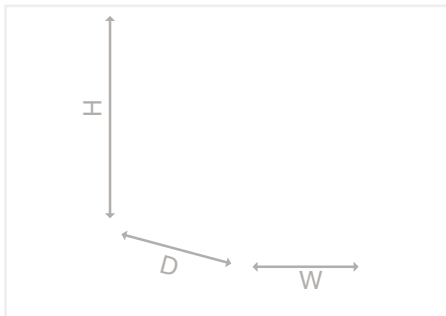
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508
------------------------------------	-----------------------------------------------------------

# Switched-Mode Power Supply; Pro; 3-Phase; 24 VDC / 20 A 787 Series



Switched-Mode Power Supply; Pro; 3-phase; Output voltage: 24 VDC; Output current: 20 A; TopBoost + PowerBoost; LineMonitor; DC OK signal

Item No.	Pack. Unit
787-852	1

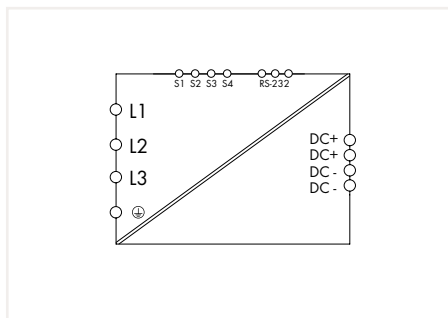


## Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- LineMonitor for parameter setting and monitoring
- RS-232 interface
- Four signal outputs

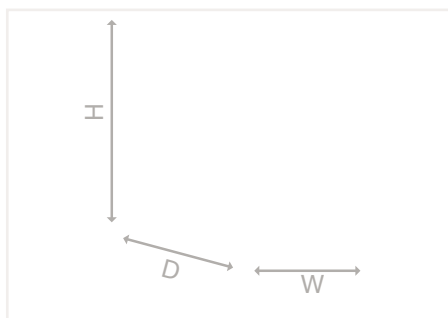
<b>Input</b>	
Nominal input voltage $U_{i, \text{nom}}$	(2 / 3) x 400 ... 500 VAC
Input voltage range	(2 / 3) x 340 ... 550 VAC; 480 ... 780 VDC
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 1.1 \text{ A}$ (340 VAC; 20 ADC)
Inrush current	$\leq 30 \text{ A}$
Power factor correction (PFC)	Passive (adjustable via software/display)
Mains failure hold-up time	$\geq 13 \text{ ms}$ (3 x 400 VAC)
<b>Output</b>	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1 \%$
Output voltage range	22.8 ... 28.8 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	20 A (24 VDC)
Nominal output power	480 W
Residual ripple	$\leq 70 \text{ mV}$ (peak-to-peak)
Overload behavior	Adjustable (constant current/fuse mode)
<b>Signaling and Communication</b>	
Signaling	1 x DC OK LED (green); 1 x Warning LED (yellow); 1 x Error LED (red); LCD; 4 x Signal output (24 VDC; max. 25 mA); 1 x RS-232 interface
Communication	RS-232 interface
<b>Efficiency/Power Losses</b>	
Power loss $P_i$	$\leq 8.3 \text{ W}$ (no load); $\leq 34.1 \text{ W}$ (nominal load)
Efficiency	$\geq 92.9 \%$
<b>Fuse Protection</b>	
Internal fuse	3 x T 2.5 A / 440 VAC
Recommended backup fusing	3 x Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C; Alternative: motor circuit breaker; Setpoint: 2.5 A; Setting range: 2.5 ... 4 A
<b>Safety and Protection/Environmental Requirements</b>	
Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2
<b>Connection Data</b>	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG
<b>Geometric Data/Mechanical Data/Material Data</b>	
Width x height x depth (mm)	77 x 171 x 179; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1300 g
<b>Standards and Specifications</b>	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508

# Switched-Mode Power Supply; Pro; 3-Phase; 24 VDC / 40 A 787 Series



Switched-Mode Power Supply; Pro; 3-phase; Output voltage: 24 VDC; Output current: 40 A; TopBoost + PowerBoost; LineMonitor; DC OK signal

Item No.	Pack. Unit
787-854	1



## Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- LineMonitor for parameter setting and monitoring
- RS-232 interface
- Four signal outputs

## Input

Nominal input voltage $U_{i,nom}$	(2 / 3) x 400 ... 500 VAC
Input voltage range	(2 / 3) x 340 ... 550 VAC; 480 ... 780 VDC
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 2 \text{ A}$ (340 VAC)
Inrush current	$\leq 30 \text{ A}$
Power factor correction (PFC)	Passive (adjustable via software/display)
Mains failure hold-up time	$\geq 15 \text{ ms}$ (3 x 400 VAC)

## Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1 \%$
Output voltage range	22.8 ... 28.8 VDC (adjustable)
Nominal output current $I_{o,nom}$	40 A (24 VDC)
Nominal output power	960 W
Residual ripple	$\leq 70 \text{ mV}$ (peak-to-peak)
Overload behavior	Adjustable (constant current/fuse mode)

## Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Warning LED (yellow); 1 x Error LED (red); LCD; 4 x Signal output (24 VDC; max. 25 mA); 1 x RS-232 interface
Communication	RS-232 interface

## Efficiency/Power Losses

Power loss $P_i$	$\leq 7 \text{ W}$ (no load); $\leq 61.5 \text{ W}$ (nominal load)
Efficiency	$\geq 93.6 \%$

## Fuse Protection

Internal fuse	3 x T 3.2 A / 440 VAC
Recommended backup fusing	3 x Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C; Alternative: motor circuit breaker; Setpoint: 3.2 A; Setting range: 2.5 ... 4 A

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +55 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-5 %/K (> +45 °C)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	128 x 171 x 205; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	2300 g

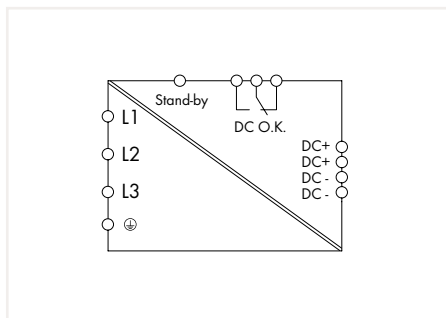
## Standards and Specifications

Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508
------------------------------------	-----------------------------------------------------------



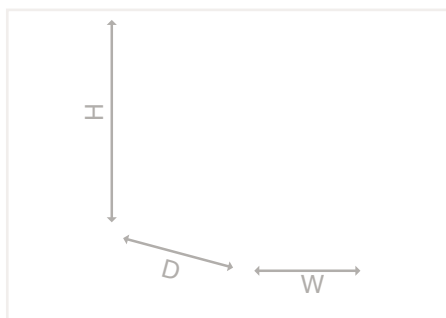


# Switched-Mode Power Supply; Pro; 3-Phase; 48 VDC / 10 A 787 Series



Switched-Mode Power Supply; Pro; 3-phase; Output voltage: 48 VDC; Output current: 10 A; TopBoost + PowerBoost; DC OK contact

Item No.	Pack. Unit
787-845	1



## Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Switch off the output and minimize power consumption via stand-by input
- Output monitoring via DC OK contact
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

## Input

Nominal input voltage $U_{i, \text{nom}}$	(2 / 3) x 400 ... 500 VAC
Input voltage range	(2 / 3) x 340 ... 550 VAC; 480 ... 780 VDC
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 1.1 \text{ A}$ (340 VAC; 10 ADC)
Inrush current	$\leq 30 \text{ A}$ (peak)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 12 \text{ ms}$ (3 x 400 VAC)

## Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	48 VDC (SELV) / $\leq 1 \%$
Output voltage range	39 ... 53 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	10 A (48 VDC)
Nominal output power	480 W
Residual ripple	$\leq 70 \text{ mV}$ (peak-to-peak)
Overload behavior	TopBoost/PowerBoost/Constant current mode

## Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Error LED (red); 1 x Stand-by input; 1 x DC OK relay contact (changeover contact)
-----------	--------------------------------------------------------------------------------------------------------------

## Efficiency/Power Losses

Power loss $P_i$	$\leq 0.8 \text{ W}$ (stand-by); $\leq 8.2 \text{ W}$ (no load); $\leq 38 \text{ W}$ (nominal load)
Efficiency	$\geq 93 \%$

## Fuse Protection

Internal fuse	3 x T 2.5 A / 440 VAC
Recommended backup fusing	3 x Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C; Alternative: motor circuit breaker; Setpoint: 2.5 A; Setting range: 2.5 ... 4 A

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

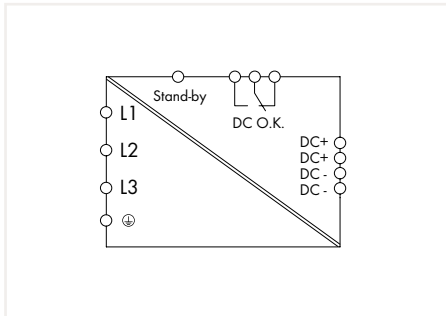
## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	77 x 171 x 179; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1900 g

## Standards and Specifications

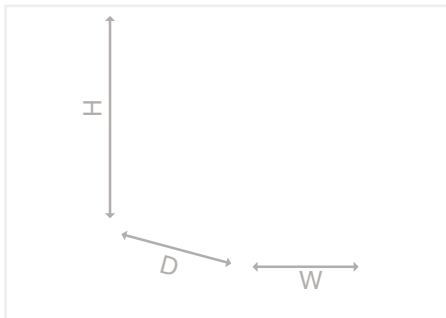
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508
------------------------------------	-----------------------------------------------------------

# Switched-Mode Power Supply; Pro; 3-Phase; 48 VDC / 20 A 787 Series



Switched-Mode Power Supply; Pro; 3-phase; Output voltage: 48 VDC; Output current: 20 A; TopBoost + PowerBoost; DC OK contact

Item No.	Pack. Unit
787-847	1



## Features:

- Switched-mode power supply with PowerBoost and TopBoost
- Switch off the output and minimize power consumption via stand-by input
- Output monitoring via DC OK contact
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	(2 / 3) x 400 ... 500 VAC
Input voltage range	(2 / 3) x 340 ... 550 VAC; 480 ... 780 VDC
Nominal mains frequency range	50 ... 60 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 2 \text{ A}$ (340 VAC; 20 ADC)
Inrush current	$\leq 30 \text{ A}$ (peak)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 15 \text{ ms}$ (3 x 400 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	48 VDC (SELV) / $\leq 1 \%$
Output voltage range	39 ... 53 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	20 A (48 VDC)
Nominal output power	960 W
Residual ripple	$\leq 70 \text{ mV}$ (peak-to-peak)
Overload behavior	TopBoost/PowerBoost/Constant current mode

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Error LED (red); 1 x Stand-by input; 1 x DC OK relay contact (changeover contact)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 0.8 \text{ W}$ (stand-by); $\leq 5.2 \text{ W}$ (no load); $\leq 59.2 \text{ W}$ (nominal load)
Efficiency	$\geq 94.4 \%$

Fuse Protection	
Internal fuse	3 x T 3.2 A / 440 VAC
Recommended backup fusing	3 x Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C; Alternative: motor circuit breaker; Setpoint: 3.2 A; Setting range: 2.5 ... 4 A

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +70 \text{ }^\circ\text{C}$ (device starts at $-40 \text{ }^\circ\text{C}$ , type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-5 \%$ /K ( $> +45 \text{ }^\circ\text{C}$ )
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG

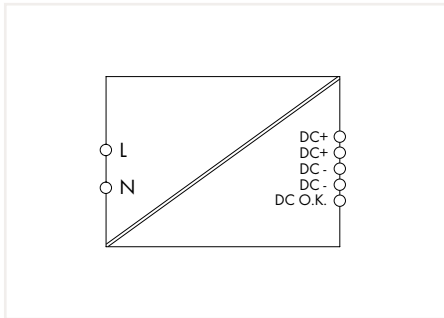
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	128 x 171 x 205; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	3270 g

Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508

# Switched-Mode Power Supply; Classic; 1-Phase; 12 VDC / 2 A 787 Series

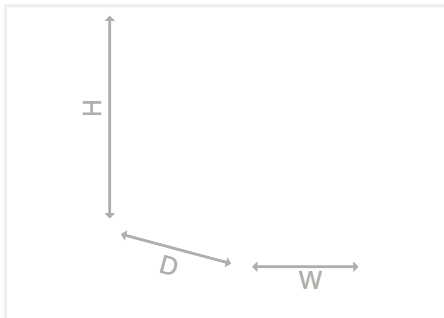


Similar to picture



Switched-Mode Power Supply; Classic; 1-phase;  
Output voltage: 12 VDC; Output current: 2 A; NEC Class  
2; DC OK signal

	Item No.	Pack. Unit
	787-1601	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Bounce-free switching signal (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- GL approval, also suitable for EMC 1 in conjunction with 787-980 Filter Module
- NEC Class 2 per UL 60950

Input	
Nominal input voltage $U_{i,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-2.5 %/V (< 95 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.29$ A (240 VAC); $\leq 0.5$ A (100 VAC)
Inrush current	$\leq 30$ A
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 120$ ms (230 VAC); $> 15$ ms (100 VAC)

Output	
Nominal output voltage $U_{o,nom}$ /adjustment accuracy	12 VDC (SELV) / $\leq 1$ %
Output voltage range	11.5 ... 14.5 VDC (adjustable)
Nominal output current $I_{o,nom}$	2 A (12 VDC); 2.1 A (< +40 °C)
Nominal output power	24 W
Residual ripple	$\leq 20$ mV (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x DC OK active signal output (12 VDC; 40 mA)

Efficiency/Power Losses	
Power loss $P_1$	$\leq 0.7$ W (230 VAC; no load); $\leq 5.3$ W (230 VAC; nominal load)
Power loss (max.) $P_{1,max}$	$\leq 5.7$ W (100 VAC / 12 VDC; 2 A)
Efficiency	$\geq 82$ %

Fuse Protection	
Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

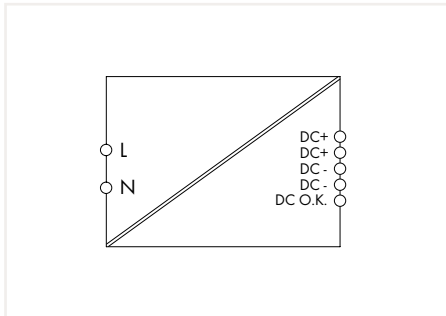
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overtoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	22.5 x 90 x 107.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	128 g

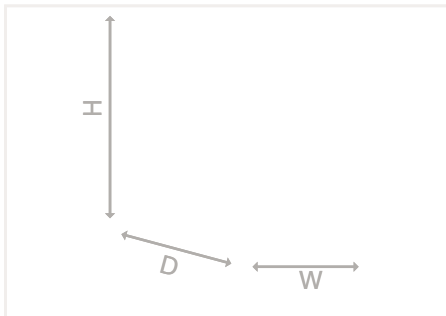
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; EN 60335-1; UL 60950-1; UL 508; GL

# Switched-Mode Power Supply; Classic; 1-Phase; 12 VDC / 4 A 787 Series



Switched-Mode Power Supply; Classic; 1-phase;  
Output voltage: 12 VDC; Output current: 4 A; NEC Class  
2; DC OK signal

Item No.	Pack. Unit
787-1611	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Bounce-free switching signal (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- GL approval, also suitable for EMC 1 in conjunction with 787-980 Filter Module
- NEC Class 2 per UL 60950

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-2.5 %/V (< 95 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.46$ A (240 VAC); $\leq 0.86$ A (100 VAC)
Inrush current	$\leq 30$ A
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 120$ ms (230 VAC); $> 15$ ms (100 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	12 VDC (SELV) / $\leq 1$ %
Output voltage range	11.5 ... 14.5 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	4 A (12 VDC); 4.2 A (< +40 °C)
Nominal output power	48 W
Residual ripple	$\leq 20$ mV (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x DC OK active signal output (12 VDC; 40 mA)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 1$ W (230 VAC; no load); $\leq 8$ W (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 9.1$ W (100 VAC / 12 VDC; 4 A)
Efficiency	$\geq 86$ %

Fuse Protection	
Internal fuse	T 4 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K ( $> +50$ °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

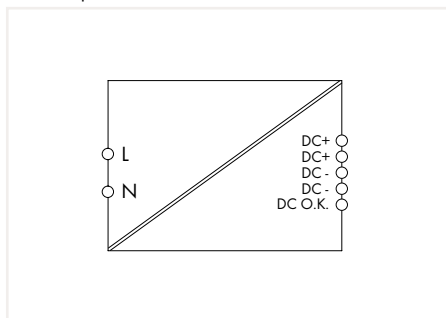
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	45 x 90 x 107.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	210 g

Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; EN 60335-1; UL 60950-1; UL 508; GL

## Switched-Mode Power Supply; Classic; 1-Phase; 12 VDC / 7 A 787 Series

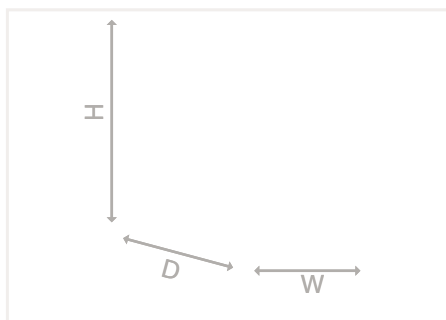


Similar to picture



Switched-Mode Power Supply; Classic; 1-phase; Out-  
put voltage: 12 VDC; Output current: 7 A; DC OK signal

	Item No.	Pack. Unit
	787-1621	1



### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Bounce-free switching signal (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- GL approval, also suitable for EMC 1 in conjunction with 787-980 Filter Module

Input	
Nominal input voltage $U_{i,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-2.5 %/V (< 95 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.9$ A (240 VAC); $\leq 1.66$ A (100 VAC)
Inrush current	$\leq 30$ A
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 80$ ms (230 VAC); $> 15$ ms (100 VAC)

Output	
Nominal output voltage $U_{o,nom}$ /adjustment accuracy	12 VDC (SELV) / $\leq 1$ %
Output voltage range	11.5 ... 14.5 VDC (adjustable)
Nominal output current $I_{o,nom}$	7 A (12 VDC); 7.5 A (< +40 °C)
Nominal output power	84 W
Residual ripple	$\leq 20$ mV (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x DC OK active signal output (12 VDC; 40 mA)

Efficiency/Power Losses	
Power loss $P_1$	$\leq 1$ W (230 VAC; no load); $\leq 16.2$ W (230 VAC; nominal load)
Power loss (max.) $P_{1,max}$	$\leq 19.8$ W (100 VAC / 12 VDC; 7 A)
Efficiency	$\geq 86$ %

Fuse Protection	
Internal fuse	T 4 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overtoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	52 x 90 x 119; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	384 g

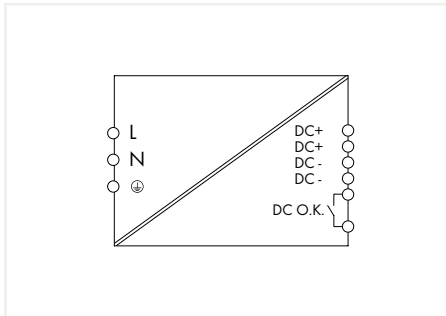
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; EN 60335-1; UL 60950-1; UL 508; GL

5

# Switched-Mode Power Supply; Classic; 1-Phase; 12 VDC / 15 A 787 Series

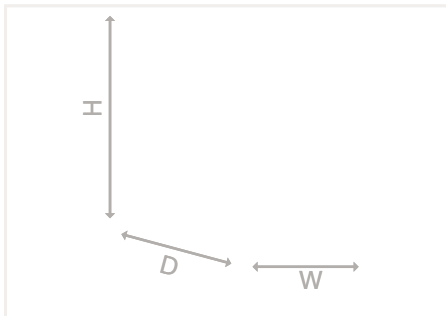


Similar to picture



Switched-Mode Power Supply; Classic; 1-phase; Output voltage: 12 VDC; Output current: 15 A; TopBoost; DC OK signal

Item No.	Pack. Unit
787-1631	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Bounce-free switching signal (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- GL approval
- Integrated TopBoost enables secondary-side protection via miniature circuit breakers.

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-2.5 %/V (< 100 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.93$ A (240 VAC); $\leq 2.05$ A (100 VAC)
Inrush current	$\leq 30$ A
Power factor correction (PFC)	Active
Mains failure hold-up time	$\geq 28$ ms (230 VAC); $> 28$ ms (100 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	12 VDC (SELV) / $\leq 1$ %
Output voltage range	11.5 ... 15 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	15 A (12 VDC)
Nominal output power	180 W
Residual ripple	$\leq 35$ mV (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x DC OK contact (make contact; max. 30 VAC/DC; 1 A)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 4.4$ W (230 VAC; no load); $\leq 21.8$ W (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 24.7$ W (100 VAC / 12 VDC; 15 A)
Efficiency	$\geq 90$ %

Fuse Protection	
Internal fuse	T 6.3 A / 250 VAC
Recommended backup fusing	Circuit breaker: 10 A, 16 A; Tripping characteristic: B or C

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec./pri.-GND/sec.-GND)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-5 %/K ( $> +60$ °C; 196 ... 264 VAC); -2.5 %/K ( $> +50$ °C; 85 ... 195 VAC)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

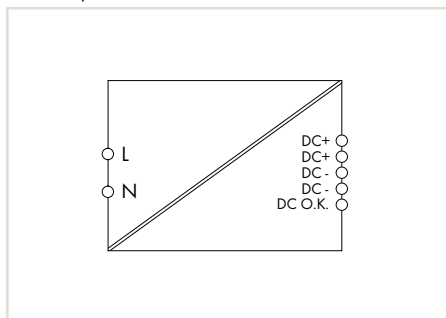
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	55 x 127 x 172 ; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	930 g

Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; GL

# Switched-Mode Power Supply; Classic; 1-Phase; 24 VDC / 1 A 787 Series

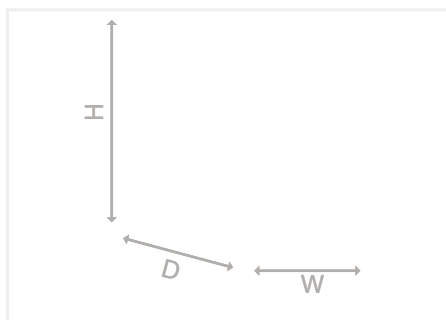


Similar to picture



Switched-Mode Power Supply; Classic; 1-phase;  
Output voltage: 24 VDC; Output current: 1 A; NEC Class  
2; DC OK signal

Item No.	Pack. Unit
787-1602	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Bounce-free switching signal (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- GL approval, also suitable for EMC 1 in conjunction with 787-980 Filter Module
- NEC Class 2 per UL 60950

#### Input

Nominal input voltage $U_{i,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-2.5 %/V (< 95 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.28$ A (240 VAC); $\leq 0.49$ A (100 VAC)
Inrush current	$\leq 30$ A
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 120$ ms (230 VAC); $> 20$ ms (100 VAC)

#### Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	23 ... 28.5 VDC (adjustable)
Nominal output current $I_{o,nom}$	1 A (24 VDC); 1.2 A (< 40 °C)
Nominal output power	24 W
Residual ripple	$\leq 20$ mV (peak-to-peak)
Overload behavior	Constant current

#### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x DC OK active signal output (24 VDC; 20 mA)
-----------	-----------------------------------------------------------------------

#### Efficiency/Power Losses

Power loss $P_1$	$\leq 1$ W (230 VAC; no load); $\leq 4$ W (230 VAC; nominal load)
Power loss (max.) $P_{1,max}$	$\leq 5$ W (100 VAC / 24 VDC; 1 A)
Efficiency	$\geq 86$ %

#### Fuse Protection

Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

#### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	22.5 x 90 x 107.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	128 g

#### Standards and Specifications

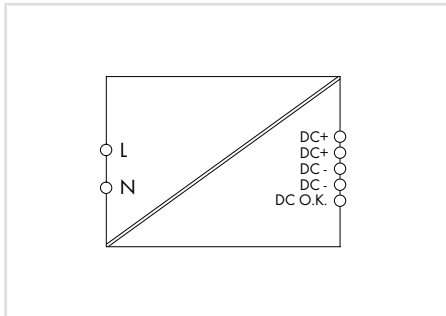
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; EN 60335-1; UL 60950-1; UL 508; GL
------------------------------------	----------------------------------------------------------------



# Switched-Mode Power Supply; Classic; 1-Phase; 24 VDC / 2 A 787 Series

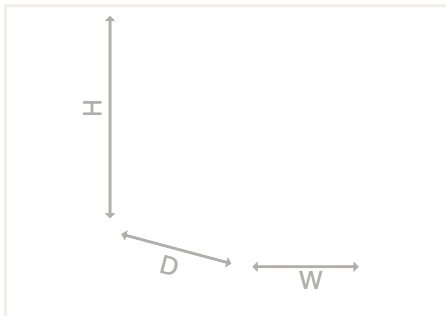


Similar to picture



Switched-Mode Power Supply; Classic; 1-phase;  
Output voltage: 24 VDC; Output current: 2 A; NEC Class  
2; DC OK signal

Item No.	Pack. Unit
787-1606	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Bounce-free switching signal (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- GL approval, also suitable for EMC 1 in conjunction with 787-980 Filter Module
- NEC Class 2 per UL 60950

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-2.5 %/V (< 95 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	≤ 0.48 A (240 VAC); ≤ 0.82 A (100 VAC)
Inrush current	≤ 30 A
Power factor correction (PFC)	Passive
Mains failure hold-up time	≥ 120 ms (230 VAC); > 20 ms (100 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / ≤ 1 %
Output voltage range	23 ... 28.5 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	2 A (24 VDC); 2.2 A (< +40 °C)
Nominal output power	48 W
Residual ripple	≤ 20 mV (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x DC OK active signal output (24 VDC; 20 mA)

Efficiency/Power Losses	
Power loss $P_i$	≤ 1 W (230 VAC; no load); ≤ 6 W (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	≤ 7 W (100 VAC / 24 VDC; 2 A)
Efficiency	≥ 89 %

Fuse Protection	
Internal fuse	T 4 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	45 x 90 x 107.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	210 g

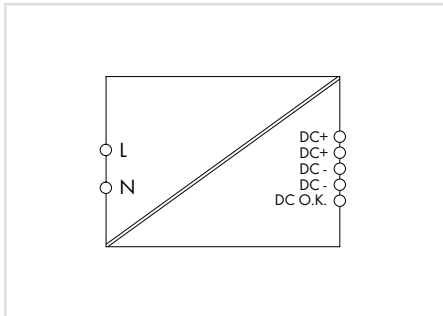
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; EN 60335-1; UL 60950-1; UL 508; GL



# Switched-Mode Power Supply; Classic; 1-Phase; 24 VDC / 4 A 787 Series

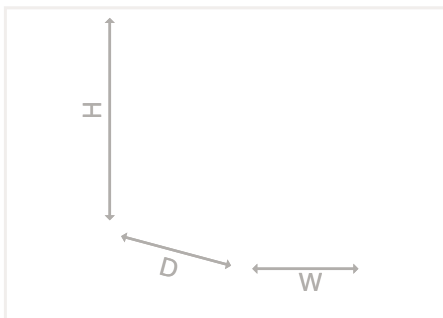


Similar to picture



Switched-Mode Power Supply; Classic; 1-phase; Out-  
put voltage: 24 VDC; Output current: 4 A; DC OK signal

Item No.	Pack. Unit
787-1616	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Bounce-free switching signal (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- GL approval

#### Input

Nominal input voltage $U_{i,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-2.5 %/V (< 95 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	≤ 0.98 A (240 VAC); ≤ 1.82 A (100 VAC)
Inrush current	≤ 30 A
Power factor correction (PFC)	Passive
Mains failure hold-up time	≥ 80 ms (230 VAC); > 15 ms (100 VAC)

#### Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	24 VDC (SELV) / ≤ 1 %
Output voltage range	23 ... 28.5 VDC (adjustable)
Nominal output current $I_{o,nom}$	4 A (24 VDC); 4.2 A (< +40 °C)
Nominal output power	96 W
Residual ripple	≤ 20 mV (peak-to-peak)
Overload behavior	Constant current

#### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x DC OK active signal output (24 VDC; 20 mA)
-----------	-----------------------------------------------------------------------

#### Efficiency/Power Losses

Power loss $P_1$	≤ 1 W (230 VAC; no load); ≤ 12.4 W (230 VAC; nominal load)
Power loss (max.) $P_{1,max}$	≤ 15 W (100 VAC / 24 VDC; 4 A)
Efficiency	≥ 89 %

#### Fuse Protection

Internal fuse	T 4 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

#### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overtoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	52 x 90 x 119.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	384 g

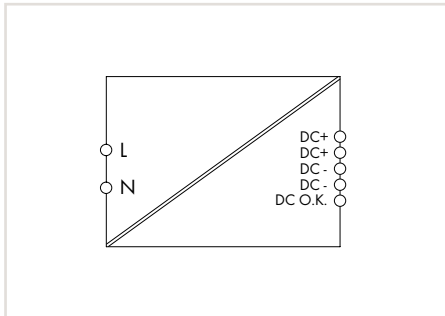
#### Standards and Specifications

Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; EN 60335-1; UL 60950-1; UL 508; GL
------------------------------------	----------------------------------------------------------------

# Switched-Mode Power Supply; Classic; 1-Phase; 24 VDC / 3.8 A 787 Series

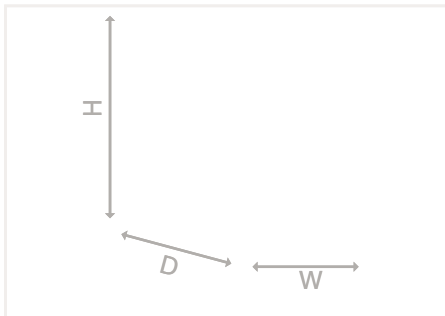


Similar to picture



Switched-Mode Power Supply; Classic; 1-phase; Output voltage: 24 VDC; Output current: 3.8 A; NEC Class 2; DC OK signal

	Item No.	Pack. Unit
	787-1616/000-1000	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Bounce-free switching signal (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- GL approval, also suitable for EMC 1 in conjunction with 787-980 Filter Module
- Limited Power Source (LPS) per NEC Class 2 (UL 1310 and UL 60950)

Input	
Nominal input voltage $U_{i, nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-2.5 %/V (< 95 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.95$ A (240 VAC); $\leq 1.73$ A (100 VAC)
Inrush current	$\leq 30$ A
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 80$ ms (230 VAC); $> 15$ ms (100 VAC)

Output	
Nominal output voltage $U_{o, nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	23 ... 28.5 VDC (adjustable)
Nominal output current $I_{o, nom}$	3.8 A (24 VDC)
Nominal output power	91.2 W
Residual ripple	$\leq 20$ mV (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x DC OK active signal output (24 VDC; 20 mA)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 2.8$ W (230 VAC; no load); $\leq 14$ W (230 VAC; nominal load)
Power loss (max.) $P_{i, max}$	$\leq 20$ W (100 VAC / 91 W)
Efficiency	$\geq 87$ %

Fuse Protection	
Internal fuse	T 4 A / 250 VAC
Recommended backup fusing	Circuit breaker: 10 A, 16 A; Tripping characteristic: B or C

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K ( $> +50$ °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

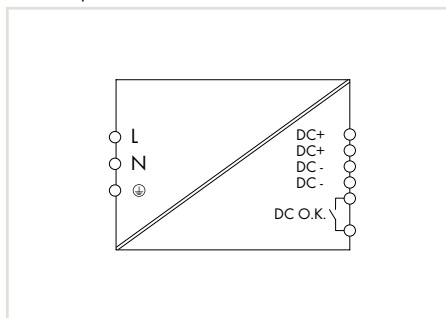
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	52 x 90 x 119; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	384 g

Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; EN 60335-1; UL 60950-1; UL 508; UL 1310; GL

## Switched-Mode Power Supply; Classic; 1-Phase; 24 VDC / 5 A 787 Series

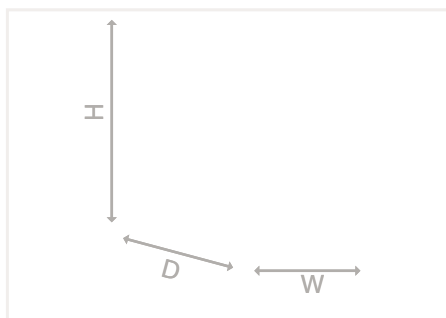


Similar to picture



Switched-Mode Power Supply; Classic; 1-phase;  
Output voltage: 24 VDC; Output current: 5 A; TopBoost;  
DC OK signal

Item No.	Pack. Unit
787-1622	1



### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Bounce-free switching signal (DC O.K.)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- GL approval, also suitable for EMC 1 in conjunction with 787-980 Filter Module
- Integrated TopBoost enables secondary-side protection via miniature circuit breakers.

Input	
Nominal input voltage $U_{i,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-2.5 %/V (< 97 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 1.24$ A (230 VAC); $\leq 2.3$ A (100 VAC)
Inrush current	$\leq 30$ A
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 80$ ms (230 VAC); $> 10$ ms (100 VAC)

Output	
Nominal output voltage $U_{o,nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	23 ... 28.5 VDC (adjustable)
Nominal output current $I_{o,nom}$	5 A (24 VDC)
Nominal output power	210 W
Residual ripple	$\leq 30$ mV (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x DC OK contact (make contact; max. 30 VAC/DC; 1 A)

Efficiency/Power Losses	
Power loss $P_1$	$\leq 1.2$ W (230 VAC; no load); $\leq 14.6$ W (230 VAC; nominal load)
Power loss (max.) $P_{1,max}$	$\leq 19.4$ W (100 VAC / 24 VDC; 5 A)
Efficiency	$\geq 89$ %

Fuse Protection	
Internal fuse	T 4 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overtoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-5 %/K ( $> +60$ °C; 196 ... 264 VAC); -2.5 %/K ( $> +50$ °C; 85 ... 195 VAC)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

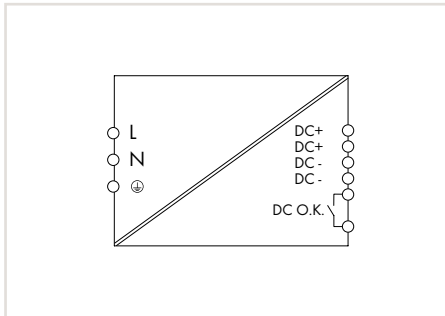
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	42 x 127 x 137.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	385 g

Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; EN 60335-1; UL 60950-1; UL 508; GL

# Switched-Mode Power Supply; Classic; 1-Phase; 24 VDC / 10 A 787 Series

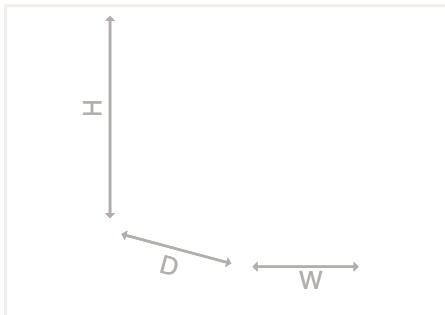


Similar to picture



Switched-Mode Power Supply; Classic; 1-phase; Output voltage: 24 VDC; Output current: 10 A; TopBoost; DC OK signal

	Item No.	Pack. Unit
	787-1632	1
with coated PCBs	787-1632/000-070	1



## Features:

- Switched-mode power supply
  - Natural convection cooling when horizontally mounted
  - Enclosed for use in control cabinets
  - Bounce-free switching signal (DC O K)
  - Suitable for both parallel and series operation
  - Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
  - GL approval
  - Integrated TopBoost enables secondary-side protection via miniature circuit breakers
- Input voltage 90 ... 372 VDC possible at operating temperatures of 0 ... +70 °C

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-2.5 %/V (< 100 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	≤ 1.25 A (230 VAC); ≤ 2.74 A (100 VAC)
Inrush current	≤ 30 A
Power factor correction (PFC)	Active
Mains failure hold-up time	≥ 17 ms (230 VAC); > 15 ms (100 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / ≤ 1 %
Output voltage range	23 ... 28.5 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	10 A (24 VDC)
Nominal output power	240 W
Residual ripple	≤ 50 mV (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x DC OK contact (make contact; max. 30 VAC/DC; 1 A)

Efficiency/Power Losses	
Power loss $P_i$	≤ 6.6 W (230 VAC; no load); ≤ 24.4 W (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	≤ 31.3 W (100 VAC / 24 VDC; 10 A)
Efficiency	≥ 91 %

Fuse Protection	
Internal fuse	T 6.3 A / 250 VAC
Recommended backup fusing	Circuit breaker: 10 A, 16 A; Tripping characteristic: B or C

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-5 %/K (> +60 °C; 196 ... 264 VAC); -2.5 %/K (> +50 °C; 85 ... 195 VAC)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

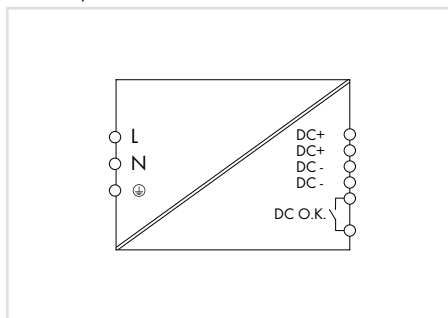
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	55 x 127 x 172; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1140 g

Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; GL

# Switched-Mode Power Supply; Classic; 1-Phase; 24 VDC / 20 A 787 Series

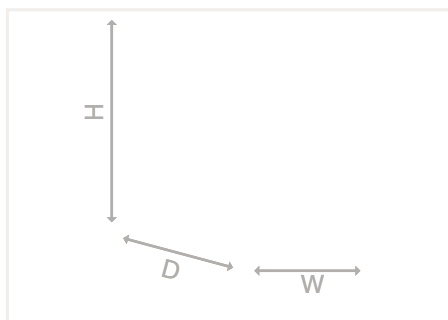


Similar to picture



Switched-Mode Power Supply; Classic; 1-phase; Output voltage: 24 VDC; Output current: 20 A; TopBoost; DC OK signal

Item No.	Pack. Unit
787-1634	1



## Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Bounce-free switching signal (DC O.K.)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- GL approval
- Integrated TopBoost enables secondary-side protection via miniature circuit breakers.

## Input

Nominal input voltage $U_{i,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-1.8 %/V (< 105 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 2.23$ A (230 VAC); $\leq 5.56$ A (100 VAC)
Inrush current	$\leq 30$ A
Power factor correction (PFC)	Active
Mains failure hold-up time	$\geq 20$ ms (230 VAC); $> 8$ ms (100 VAC)

## Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	23 ... 28.5 VDC (adjustable)
Nominal output current $I_{o,nom}$	20 A (24 VDC)
Nominal output power	480 W
Residual ripple	$\leq 70$ mV (peak-to-peak)
Overload behavior	Constant current

## Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x DC OK contact (make contact; max. 30 VAC/DC; 1 A)
-----------	------------------------------------------------------------------------------

## Efficiency/Power Losses

Power loss $P_1$	$\leq 7.2$ W (230 VAC; no load); $\leq 42.4$ W (230 VAC; nominal load)
Power loss (max.) $P_{1,max}$	$\leq 68.3$ W (100 VAC / 24 VDC; 20 A)
Efficiency	$\geq 92$ %

## Fuse Protection

Internal fuse	T 10 A / 250 VAC
Recommended backup fusing	Circuit breaker: 10 A, 16 A; Tripping characteristic: B or C

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-5 %/K ( $> +60$ °C; 196 ... 264 VAC); -2.5 %/K ( $> +50$ °C; 85 ... 195 VAC)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG

## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	95 x 127 x 170; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1600 g

## Standards and Specifications

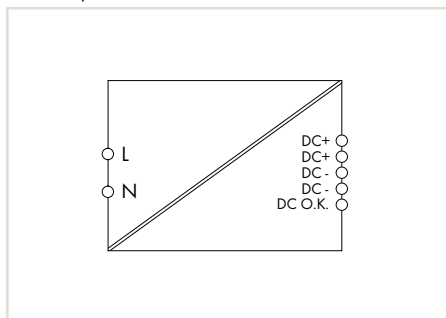
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; GL
------------------------------------	----------------------------------------------------



# Switched-Mode Power Supply; Classic; 1-Phase; 48 VDC / 2 A 787 Series

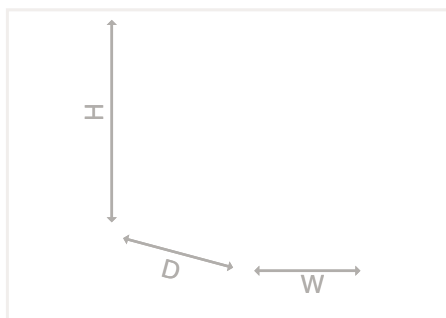


Similar to pictured device



Switched-Mode Power Supply; Classic; 1-phase; Out-  
put voltage: 48 VDC; Output current: 2 A; DC OK signal

Item No.	Pack. Unit
787-1623	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Bounce-free switching signal (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- GL approval

#### Input

Nominal input voltage $U_{i,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-2.5 %/V (< 95 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	≤ 0.97 A (240 VAC); ≤ 1.84 A (100 VAC)
Inrush current	≤ 30 A
Power factor correction (PFC)	Passive
Mains failure hold-up time	≥ 80 ms (230 VAC); > 15 ms (100 VAC)

#### Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	48 VDC (SELV) / ≤ 1 %
Output voltage range	40 ... 53 VDC (adjustable)
Nominal output current $I_{o,nom}$	2 A (48 VDC); 2.1 A (< +40 °C)
Nominal output power	96 W
Residual ripple	≤ 20 mV (peak-to-peak)
Overload behavior	Constant current

#### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x DC OK active signal output (48 VDC; 10 mA)
-----------	-----------------------------------------------------------------------

#### Efficiency/Power Losses

Power loss $P_1$	≤ 1 W (230 VAC; no load); ≤ 16.2 W (230 VAC; nominal load)
Power loss (max.) $P_{1,max}$	≤ 19.8 W (100 VAC / 48 VDC; 2 A)
Efficiency	≥ 86 %

#### Fuse Protection

Internal fuse	T 4 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

#### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overtoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	52 x 90 x 119; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	590 g

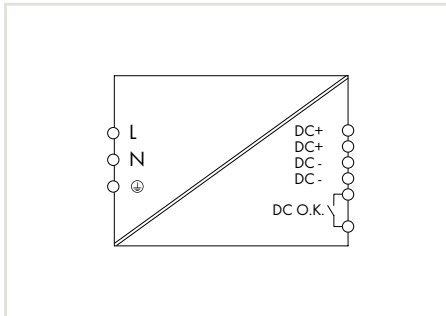
#### Standards and Specifications

Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; EN 60335-1; UL 60950-1; UL 508; GL
------------------------------------	----------------------------------------------------------------

# Switched-Mode Power Supply; Classic; 1-Phase; 48 VDC / 5 A 787 Series

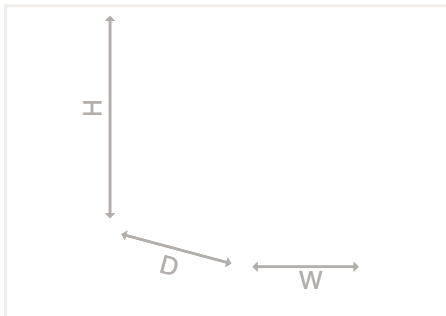


Similar to pictured device



Switched-Mode Power Supply; Classic; 1-phase;  
Output voltage: 48 VDC; Output current: 5 A; TopBoost;  
DC OK signal

	Item No.	Pack. Unit
	787-1633	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Bounce-free switching signal (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- GL approval, also suitable for EMC 1 in conjunction with 787-980 Filter Module
- Integrated TopBoost enables secondary-side protection via miniature circuit breakers. Input voltage 100 ... 372 VDC is possible.

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-2.5 %/V (< 100 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 1.25$ A (230 VAC); $\leq 2.74$ A (100 VAC)
Inrush current	$\leq 30$ A
Power factor correction (PFC)	Active
Mains failure hold-up time	$\geq 21$ ms (230 VAC); $> 21$ ms (100 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	48 VDC (SELV) / $\leq 1$ %
Output voltage range	40 ... 56 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	5 A (48 VDC)
Nominal output power	240 W
Residual ripple	$\leq 30$ mV (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x DC OK contact (make contact; max. 30 VAC/DC; 1 A)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 7$ W (230 VAC; no load); $\leq 40.8$ W (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 26.5$ W (100 VAC / 48 VDC; 5 A)
Efficiency	$\geq 92$ %

Fuse Protection	
Internal fuse	T 6.3 A / 250 VAC
Recommended backup fusing	Circuit breaker: 10 A, 16 A; Tripping characteristic: B or C

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-5 %/K ( $> +60$ °C; 196 ... 264 VAC); -2.5 %/K ( $> +50$ °C; 85 ... 195 VAC)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	55 x 127 x 172; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	930 g

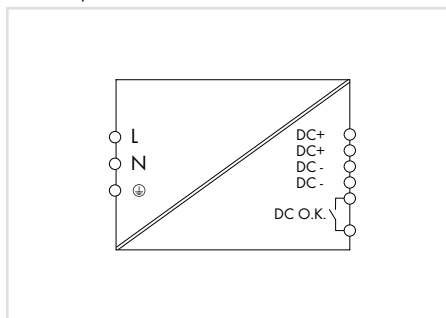
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; GL



# Switched-Mode Power Supply; Classic; 1-Phase; 48 VDC / 10 A 787 Series

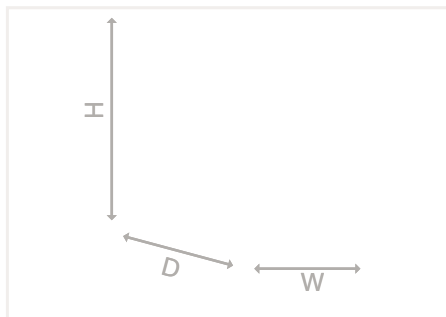


Similar to pictured device



Switched-Mode Power Supply; Classic; 1-phase; Output voltage: 48 VDC; Output current: 10 A; TopBoost; DC OK signal

	Item No.	Pack. Unit
	787-1635	1
with coated PCBs	787-1635/000-070	1



## Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Bounce-free switching signal (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- GL approval
- Integrated TopBoost enables secondary-side protection via miniature circuit breakers.

## Input

Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-2.5 %/V (< 100 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 2.23$ A (230 VAC); $\leq 5.56$ A (100 VAC)
Inrush current	$\leq 30$ A
Power factor correction (PFC)	Active
Mains failure hold-up time	$\geq 20$ ms (230 VAC); $> 20$ ms (100 VAC)

## Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	48 VDC (SELV) / $\leq 1$ %
Output voltage range	40 ... 56 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	10 A (48 VDC)
Nominal output power	480 W
Residual ripple	$\leq 80$ mV (peak-to-peak)
Overload behavior	Constant current

## Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x DC OK contact (make contact; max. 30 VAC/DC; 1 A)
-----------	------------------------------------------------------------------------------

## Efficiency/Power Losses

Power loss $P_1$	$\leq 11.7$ W (230 VAC; no load); $\leq 36.3$ W (230 VAC; nominal load)
Power loss (max.) $P_{1, \text{max}}$	$\leq 64.9$ W (100 VAC / 48 VDC; 10 A)
Efficiency	$\geq 93$ %

## Fuse Protection

Internal fuse	T 10 A / 250 VAC
Recommended backup fusing	Circuit breaker: 10 A, 16 A; Tripping characteristic: B or C

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-5 %/K ( $> +60$ °C; 196... 264 VAC); -2.5 %/K ( $> +50$ °C; 85 ... 195 VAC)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG

## Geometric Data/Mechanical Data/Material Data

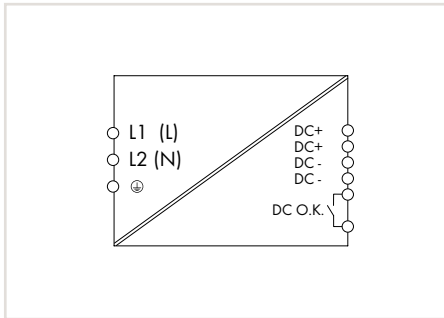
Width x height x depth (mm)	95 x 127 x 170; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1600 g

## Standards and Specifications

Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; GL
------------------------------------	----------------------------------------------------

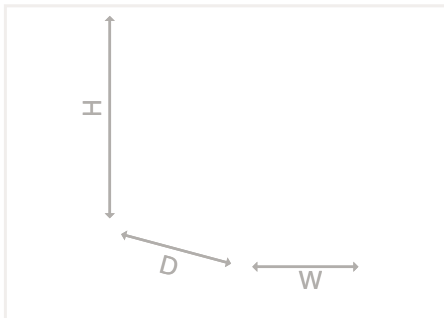


# Switched-Mode Power Supply; Classic; 1-/2-Phase; 24 VDC / 5 A 787 Series



Switched-Mode Power Supply; Classic; 2-phase;  
Output voltage: 24 VDC; Output current: 5 A; TopBoost;  
DC OK signal

	Item No.	Pack. Unit
	787-1628	1



## Features:

- Switched-mode power supply with TopBoost, enabling secondary-side protection via circuit breakers
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Contact (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	(1 / 2) x 200 ... 500 VAC
Input voltage range	(1 / 2) x 180 ... 550 VAC; 254 ... 780 VDC
Input voltage derating	-0.5 %/V (< 200 VAC); -0.4 %/V (< 280 VDC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 1.25$ A (200 VAC); $\leq 0.67$ A (500 VAC)
Inrush current	$\leq 30$ A (NTC)
Power factor	$\geq 0.52$
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 126$ ms (500 VAC); $> 15$ ms (200 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	23 ... 28.5 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	5 A (24 VDC)
Nominal output power	120 W
Residual ripple	$\leq 30$ mV (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x DC OK contact (make contact; max. 30 VAC/DC; 1 A)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 0.94$ W (no load); $\leq 16.36$ W (230 VAC; nominal load); $\leq 14.55$ W (400 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 18.2$ W (200 VAC / 24 VDC; 5 A)
Efficiency	$\geq 89$ %

Fuse Protection	
Internal fuse	T 3.15 A / 500 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

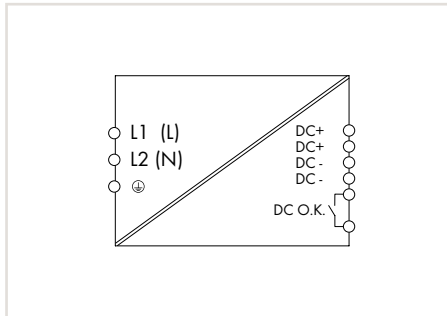
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-2.5 %/K ( $> +55$ °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	42 x 127 x 143.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	600 g

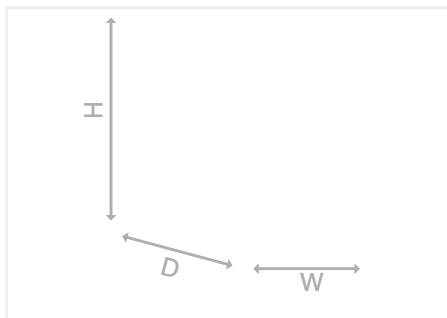
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL

# Switched-Mode Power Supply; Classic; 1-/2-Phase; 24 VDC / 10 A 787 Series



Switched-Mode Power Supply; Classic; 2-phase; Output voltage: 24 VDC; Output current: 10 A; TopBoost; DC OK signal

Item No.	Pack. Unit
787-1638	1



## Features:

- Switched-mode power supply with TopBoost, enabling secondary-side protection via circuit breakers
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Contact (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	(1 / 2) x 200 ... 500 VAC
Input voltage range	(1 / 2) x 180 ... 550 VAC; 254 ... 780 VDC
Input voltage derating	-0.5 %/V (< 200 VAC); -0.4 %/V (< 280 VDC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 1.98$ A (230 VAC); $\leq 1.36$ A (230 VAC)
Inrush current	$\leq 30$ A (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 78$ ms (400 VAC); $> 20$ ms (200 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	23 ... 28.5 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	10 A (24 VDC)
Nominal output power	240 W
Residual ripple	$\leq 30$ mV (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x DC OK contact (make contact; max. 30 VAC/DC; 1 A)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 1.3$ W (no load); $\leq 27.8$ W (230 VAC; nominal load); $\leq 20.3$ W (400 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 27.8$ W (230 VAC / 24 VDC; 10 A)
Efficiency	$\geq 89$ % (230 VAC); $\geq 92.5$ % (400 VAC)

Fuse Protection	
Internal fuse	T 6.3 A / 500 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

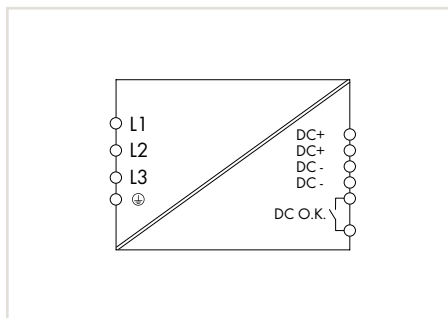
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-2.5 %/K ( $> +55$ °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	55 x 127 x 146.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	830 g

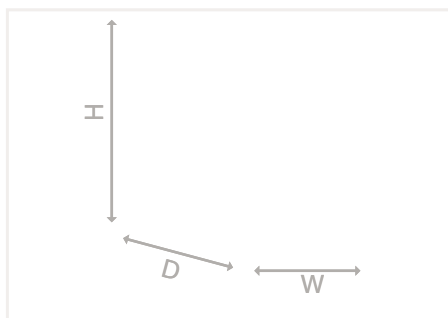
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL

# Switched-Mode Power Supply; Classic; 3-Phase; 24 VDC / 10 A 787 Series



Switched-Mode Power Supply; Classic; 3-phase; Output voltage: 24 VDC; Output current: 10 A; TopBoost; DC OK signal

Item No.	Pack. Unit
787-1640	1



## Features:

- Switched-mode power supply with TopBoost, enabling secondary-side protection via circuit breakers
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Contact (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

## Input

Nominal input voltage $U_{i,nom}$	(2/3) x 400 ... 500 VAC
Input voltage range	(2/3) x 320 ... 575 VAC; 450 ... 800 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 0.73 \text{ A}$ (400 VAC); $\leq 3 \times 0.66 \text{ A}$ (500 VAC)
Inrush current	$\leq 30 \text{ A}$ (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 50 \text{ ms}$ (500 VAC); $> 21 \text{ ms}$ (400 VAC)

## Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1 \%$
Output voltage range	23 ... 28.5 VDC (adjustable)
Nominal output current $I_{o,nom}$	10 A (24 VDC)
Nominal output power	240 W
Residual ripple	$\leq 50 \text{ mV}$ (peak-to-peak)
Overload behavior	Constant current

## Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x DC OK contact (make contact; max. 30 VAC/DC; 1 A)
-----------	------------------------------------------------------------------------------

## Efficiency/Power Losses

Power loss $P_1$	$\leq 2.1 \text{ W}$ (no load); $\leq 27.9 \text{ W}$ (400 VAC; nominal load)
Power loss (max.) $P_{1,max}$	$\leq 28.3 \text{ W}$ (500 VAC / 24 VDC; 10 A)
Efficiency	$\geq 90 \%$

## Fuse Protection

Internal fuse	No
Required backup fusing	3 x Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B, C, max. 20 A; Alternative: motor circuit breaker; External DC fuse required for DC input voltage

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +70 \text{ }^\circ\text{C}$ (device starts at $-40 \text{ }^\circ\text{C}$ , type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-2.5 \text{ } \%/ \text{K}$ ( $> +55 \text{ }^\circ\text{C}$ )
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

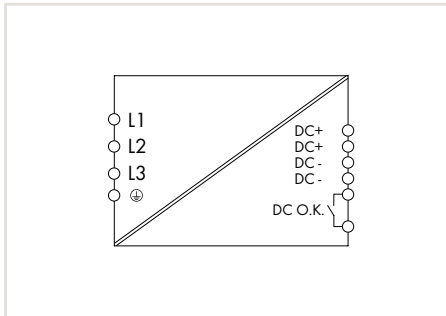
## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	55 x 127 x 171; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1000 g

## Standards and Specifications

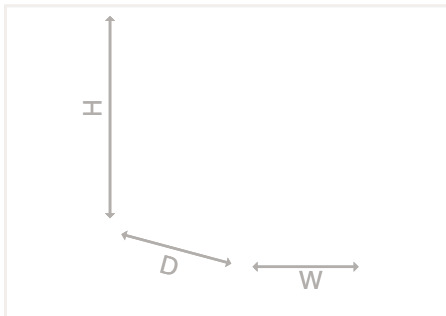
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL
------------------------------------	--------------------------------------------------------

# Switched-Mode Power Supply; Classic; 3-Phase; 24 VDC / 20 A 787 Series



Switched-Mode Power Supply; Classic; 3-phase; Output voltage: 24 VDC; Output current: 20 A; TopBoost; DC OK signal

Item No.	Pack. Unit
787-1642	1



## Features:

- Switched-mode power supply with TopBoost, enabling secondary-side protection via circuit breakers
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Contact (DC O K)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	(2/3) x 400 ... 500 VAC
Input voltage range	(2/3) x 320 ... 575 VAC; 450 ... 800 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 1.21 \text{ A}$ (400 VAC); $\leq 3 \times 1.03 \text{ A}$ (500 VAC)
Inrush current	$\leq 30 \text{ A}$ (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 25 \text{ ms}$ (500 VAC); $> 15 \text{ ms}$ (400 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1 \%$
Output voltage range	23 ... 28.5 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	20 A (24 VDC)
Nominal output power	480 W
Residual ripple	$\leq 15 \text{ mV}$ (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x DC OK contact (make contact; max. 30 VAC/DC; 1 A)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 5.8 \text{ W}$ (no load); $\leq 42.8 \text{ W}$ (400 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 47.6 \text{ W}$ (500 VAC / 24 VDC; 20 A)
Efficiency	$\geq 92 \%$

Fuse Protection	
Internal fuse	No
Required backup fusing	3 x Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B, C, max. 20 A; Alternative: motor circuit breaker; External DC fuse required for DC input voltage

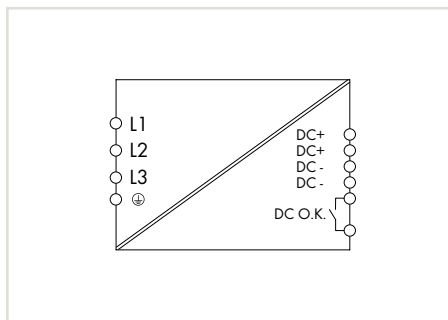
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +70 \text{ }^\circ\text{C}$ (device starts at $-40 \text{ }^\circ\text{C}$ , type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-2.5 \%/K$ ( $> +55 \text{ }^\circ\text{C}$ )
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	80 x 127 x 180; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1623 g

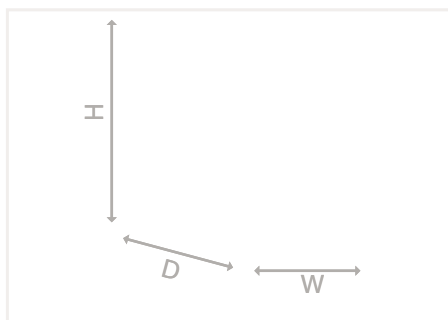
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL

# Switched-Mode Power Supply; Classic; 3-Phase; 24 VDC / 40 A 787 Series



Switched-Mode Power Supply; Classic; 3-phase; Output voltage: 24 VDC; Output current: 40 A; TopBoost; DC OK signal

Item No.	Pack. Unit
787-1644	1



## Features:

- Switched-mode power supply with TopBoost, enabling secondary-side protection via circuit breakers
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Contact (DC O.K.)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

## Input

Nominal input voltage $U_{i,nom}$	(2/3) x 400 ... 500 VAC
Input voltage range	(2/3) x 320 ... 575 VAC; 450 ... 800 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 2.15 \text{ A}$ (400 VAC); $\leq 3 \times 1.82 \text{ A}$ (500 VAC)
Inrush current	$\leq 30 \text{ A}$ (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 25 \text{ ms}$ (500 VAC); $> 15 \text{ ms}$ (400 VAC)

## Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1 \%$
Output voltage range	23 ... 28.5 VDC (adjustable)
Nominal output current $I_{o,nom}$	40 A (24 VDC)
Nominal output power	960 W
Residual ripple	$\leq 30 \text{ mV}$ (peak-to-peak)
Overload behavior	Constant current

## Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x DC OK contact (make contact; max. 30 VAC/DC; 1 A)
-----------	------------------------------------------------------------------------------

## Efficiency/Power Losses

Power loss $P_1$	$\leq 4.2 \text{ W}$ (no load); $\leq 83.9 \text{ W}$ (400 VAC; nominal load)
Power loss (max.) $P_{1,max}$	$\leq 83.9 \text{ W}$ (500 VAC / 24 VDC; 40 A)
Efficiency	$\geq 92 \%$

## Fuse Protection

Internal fuse	No
Required backup fusing	3 x Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B, C, max. 20 A; Alternative: motor circuit breaker; External DC fuse required for DC input voltage

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +70 \text{ }^\circ\text{C}$ (device starts at $-40 \text{ }^\circ\text{C}$ , type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-2.5 \text{ } \%/ \text{K}$ ( $> +55 \text{ }^\circ\text{C}$ )
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG

## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	126 x 127 x 198; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	2800 g

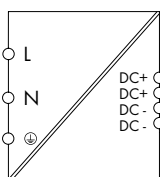
## Standards and Specifications

Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL
------------------------------------	--------------------------------------------------------



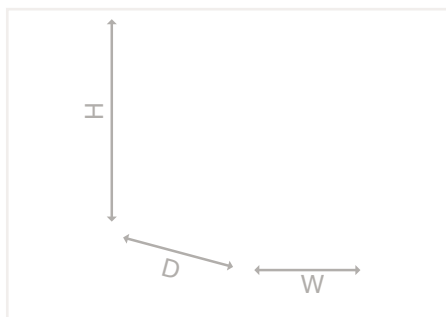


## Switched-Mode Power Supply; Eco; 1-Phase; 24 VDC / 2.5 A 787 Series



Switched-Mode Power Supply; Eco; 1-phase; Output voltage: 24 VDC; Output current: 2.5 A

Item No.	Pack. Unit
787-712	1



### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	110 ... 240 VAC
Input voltage range	85 ... 264 VAC; 90 ... 373 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 0.7$ A (230 VAC); $\leq 1.2$ A (115 VAC)
Inrush current	$\leq 30$ A
Power factor	$\geq 0.5$ (230 VAC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 20$ ms (230 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	22 ... 28 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	2.5 A (24 VDC)
Nominal output power	60 W
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.15 ... 1.4 x $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Overload LED (red)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 8.3$ W (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 11.5$ W (110 VAC / 24 VDC; 2.75 A)
Efficiency	$\geq 86$ % (230 VAC)

Fuse Protection	
Internal fuse	F 2.5 A / 250 VAC
Recommended backup fusing	Circuit breaker: 10 A, 16 A; Tripping characteristic: B or C

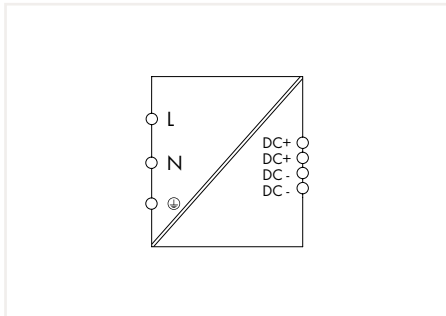
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	480,000 h (per IEC 61709)
Surrounding air temperature (operation)	-10 ... +70 °C
Relative humidity	$\leq 95$ % (no condensation permissible)
Derating	-3.3 %/K (> +50 °C; 230 VAC)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 4 mm <sup>2</sup> / 0.08 ... 4 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	50 x 92 x 136; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	470 g

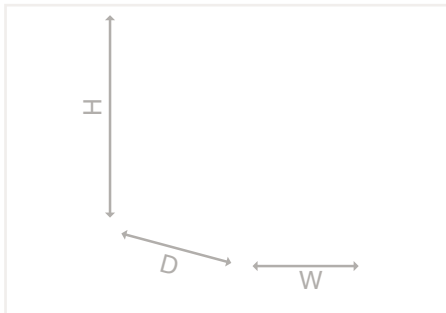
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; cURus 60950; cULus 508; ANSI/ISA 12.12.01 (Class I Div. 2); ATEX; IEC Ex

# Switched-Mode Power Supply; Eco; 1-Phase; 24 VDC / 5 A 787 Series



Switched-Mode Power Supply; Eco; 1-phase; Output voltage: 24 VDC; Output current: 5 A

	Item No.	Pack. Unit
	787-722	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, nom}$	110 ... 240 VAC
Input voltage range	85 ... 264 VAC; 90 ... 373 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 1$ A (230 VAC); $\leq 2$ A (115 VAC)
Inrush current	$\leq 30$ A
Power factor	$\geq 0.94$ (230 VAC); $\geq 0.98$ (115 VAC)
Power factor correction (PFC)	Active
Mains failure hold-up time	$\geq 20$ ms (230 VAC)

Output	
Nominal output voltage $U_{o, nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	22 ... 28 VDC (adjustable)
Nominal output current $I_{o, nom}$	5 A (24 VDC)
Nominal output power	120 W
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.15 ... 1.4 x $I_{o, nom}$ ); Shutdown and automatic restart in the event of a short circuit

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Overload LED (red)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 19.5$ W (230 VAC; nominal load)
Power loss (max.) $P_{i, max}$	$\leq 23.5$ W (110 VAC / 24 VDC; 5.5 A)
Efficiency	$\geq 86$ % (230 VAC)

Fuse Protection	
Internal fuse	F 3.15 A / 250 VAC
Recommended backup fusing	Circuit breaker: 10 A, 16 A; Tripping characteristic: B or C

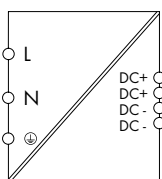
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	480,000 h (per IEC 61709)
Surrounding air temperature (operation)	-10 ... +60 °C
Relative humidity	$\leq 95$ % (no condensation permissible)
Derating	-5.33 %/K (> +45 °C; 230 VAC)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 4 mm <sup>2</sup> / 0.08 ... 4 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	75 x 92 x 136; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	850 g

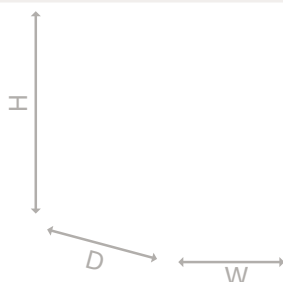
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; cURus 60950; cULus 508; ANSI/ISA 12.12.01 (Class I Div. 2); ATEX; IEC Ex

## Switched-Mode Power Supply; Eco; 1-Phase; 24 VDC / 10 A 787 Series



Switched-Mode Power Supply; Eco; 1-phase; Output voltage: 24 VDC; Output current: 10 A

Item No.	Pack. Unit
787-732	1



### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

### Input

Nominal input voltage $U_{i, \text{nom}}$	110 ... 240 VAC
Input voltage range	85 ... 264 VAC; 90 ... 373 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 1.5$ A (230 VAC); $\leq 3$ A (115 VAC)
Inrush current	$\leq 30$ A
Power factor	$\geq 0.94$ (230 VAC); $\geq 0.98$ (115 VAC)
Power factor correction (PFC)	Active
Mains failure hold-up time	$\geq 20$ ms (230 VAC)

### Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	22 ... 28 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	10 A (24 VDC)
Nominal output power	240 W
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.15 ... 1.4 x $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit

### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Overload LED (red)
-----------	-----------------------------------------------

### Efficiency/Power Losses

Power loss $P_i$	$\leq 37.5$ W (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 53$ W (110 VAC / 24 VDC; 11 A)
Efficiency	$\geq 86$ % (230 VAC)

### Fuse Protection

Internal fuse	F 5 A / 250 VAC
Recommended backup fusing	Circuit breaker: 10 A, 16 A; Tripping characteristic: B or C

### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	480,000 h (per IEC 61709)
Surrounding air temperature (operation)	-10 ... +70 °C
Relative humidity	$\leq 95$ % (no condensation permissible)
Derating	-2.33 %/K (> +40 °C; 230 VAC)
Pollution degree	2

### Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 4 mm <sup>2</sup> / 0.08 ... 4 mm <sup>2</sup> / 28 ... 12 AWG

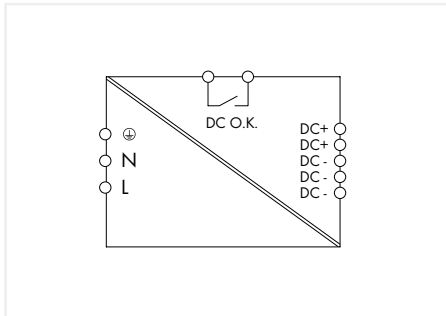
### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	110 x 92 x 136; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1200 g

### Standards and Specifications

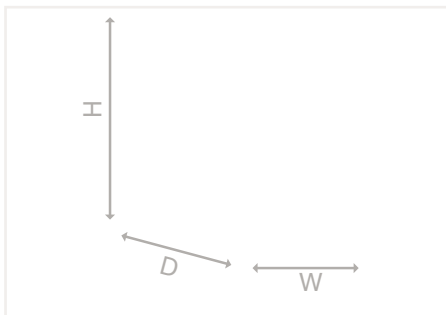
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; cURus 60950; cULus 508; ANSI/ISA 12.12.01 (Class I Div. 2); ATEX; IEC Ex
------------------------------------	----------------------------------------------------------------------------------------------------

# Switched-Mode Power Supply; Eco; 1-Phase; 24 VDC / 20 A 787 Series



Switched-Mode Power Supply; Eco; 1-phase; Output voltage: 24 VDC; Output current: 20 A

Item No.	Pack. Unit
787-734	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	110 ... 240 VAC
Input voltage range	85 ... 264 VAC; 130 ... 373 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 3 \text{ A}$ (230 VAC); $\leq 6.3 \text{ A}$ (115 VAC)
Inrush current	$\leq 30 \text{ A}$
Power factor	$\geq 0.94$ (230 VAC); $\geq 0.98$ (115 VAC)
Power factor correction (PFC)	Active
Mains failure hold-up time	$\geq 20 \text{ ms}$ (230 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1 \%$
Output voltage range	22 ... 28 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	20 A (24 VDC)
Nominal output power	480 W
Residual ripple	$\leq 100 \text{ mV}$ (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.15 ... 1.4 x $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Overload LED (red); 1 x DC OK signal output (optocoupler as make contact; max. 31.2 V; 20 mA)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 65 \text{ W}$ (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 107 \text{ W}$ (110 VAC / 24 VDC; 23 A)
Efficiency	$\geq 90 \%$

Fuse Protection	
Internal fuse	T 10 A / 250 VAC
Recommended backup fusing	Circuit breaker: 10 A, 16 A; Tripping characteristic: B or C

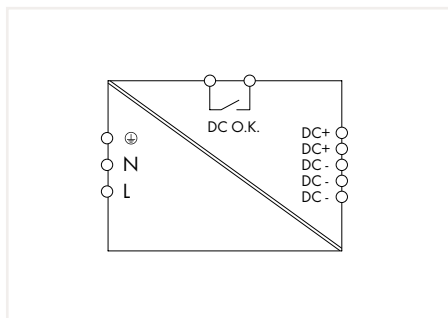
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-GND/sec.-GND/sec.-signal/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 250,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +70 \text{ }^\circ\text{C}$
Relative humidity	$\leq 95 \%$ (no condensation permissible)
Derating	See instruction manual
Pollution degree	2

Connection Data	
Connection technology	Push-in CAGE CLAMP®
Input/signaling (solid/fine-stranded/AWG)	0.5 ... 6 mm <sup>2</sup> / 0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Output (solid/fine-stranded/AWG)	1.5 ... 16 mm <sup>2</sup> / 1.5 ... 16 mm <sup>2</sup> / 16 ... 6 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	115 x 136 x 144; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	2120 g

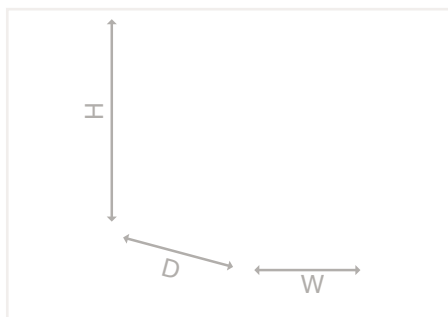
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61000-6-2; EN 61000-6-3; UL 60950; UL 508

## Switched-Mode Power Supply; Eco; 1-Phase; 24 VDC / 40 A 787 Series



Switched-Mode Power Supply; Eco; 1-phase; Output voltage: 24 VDC; Output current: 40 A

Item No.	Pack. Unit
787-736	1



### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

### Input

Nominal input voltage $U_{i, \text{nom}}$	110 ... 240 VAC
Input voltage range	90 ... 264 VAC; 130 ... 373 VDC
Input voltage derating	-2 %/V (< 100 VAC)
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	≤ 6 A (230 VAC); ≤ 12 A (115 VAC)
Inrush current	≤ 30 A
Power factor	≥ 0.94 (230 VAC); ≥ 0.98 (115 VAC)
Power factor correction (PFC)	Active
Mains failure hold-up time	≥ 17 ms (230 VAC)

### Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / ≤ 1 %
Output voltage range	22 ... 28 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	40 A (24 VDC)
Nominal output power	960 W
Residual ripple	≤ 100 mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.15 ... 1.4 x $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit

### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Overload LED (red); 1 x DC OK signal output (optocoupler as make contact; max. 31.2 V; 20 mA)
-----------	--------------------------------------------------------------------------------------------------------------------------

### Efficiency/Power Losses

Power loss $P_l$	≤ 107 W (230 VAC; nominal load)
Efficiency	≥ 90 %

### Fuse Protection

Internal fuse	T 20 A / 250 VAC
Recommended backup fusing	Circuit breaker: 13 A, 16 A, 20 A; Tripping characteristic: B or C

### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-GND/sec.-GND/sec.-signal/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 250,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	≤ 95 % (no condensation permissible)
Derating	-2.66 %/K (> +55 °C)
Pollution degree	2

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Input/signaling (solid/fine-stranded/AWG)	0.5 ... 6 mm <sup>2</sup> / 0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Output (solid/fine-stranded/AWG)	1.5 ... 16 mm <sup>2</sup> / 1.5 ... 16 mm <sup>2</sup> / 16 ... 6 AWG

### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	170 x 136 x 150; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	3500 g

### Standards and Specifications

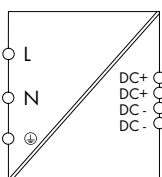
Approvals/standards/specifications	CE; EN 60950; EN 61000-6-2; EN 61000-6-3; UL 60950; UL 508
------------------------------------	------------------------------------------------------------

5

# Switched-Mode Power Supply; Eco; 1-Phase; 12 VDC / 2 A 787 Series

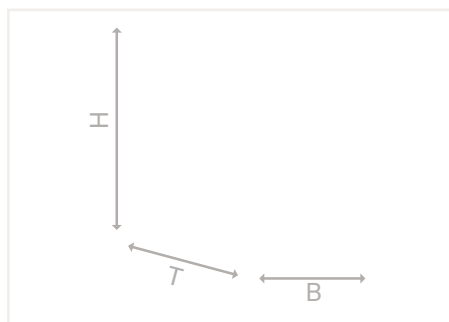


Similar to picture



Switched-Mode Power Supply; Eco; 1-phase; Output voltage: 12 VDC; Output current: 2 A; DC OK signal

Item No.	Pack. Unit
787-1701	1



## Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1 and EN 60335-1; PELV per EN 60204
- DIN-35 rail mountable in different positions
- Direct installation on mounting plate via cable grip

## Input

Nominal input voltage $U_{i, nom}$	100 ... 240 VAC
Input voltage range	90 ... 264 VAC; 125 ... 375 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 0.7$ A (100 VAC)
Inrush current	$\leq 18$ A
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 10$ ms (230 VAC)

## Output

Nominal output voltage $U_{o, nom}$ /adjustment accuracy	12 VDC (SELV) / $\leq 1\%$
Output voltage range	10 ... 14 VDC (adjustable)
Nominal output current $I_{o, nom}$	2 A (12 VDC; 110 ... 240 VAC); 1.6 A (12 VDC; 100 ... 240 VAC)
Nominal output power	24 W
Residual ripple	$\leq 150$ mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.4 x $I_{o, nom}$ ); Shutdown and automatic restart in the event of a short circuit

## Signaling and Communication

Signaling	1 x DC OK LED (green)
-----------	-----------------------

## Efficiency/Power Losses

Efficiency	$\geq 80\%$ (230 VAC; 2 ADC)
------------	------------------------------

## Fuse Protection

Internal fuse	F 1 A / 250 VAC
Recommended backup fusing	Circuit breaker: B6, B10

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes, for two devices of the same type
MTBF	$> 300,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-20 \dots +60$ °C
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	$-4\%/K$ ( $> +45$ °C)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

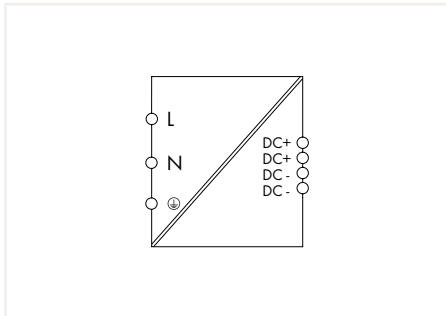
## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	30 x 90 x 99; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715); Screw mounting
Weight	250 g

## Standards and Specifications

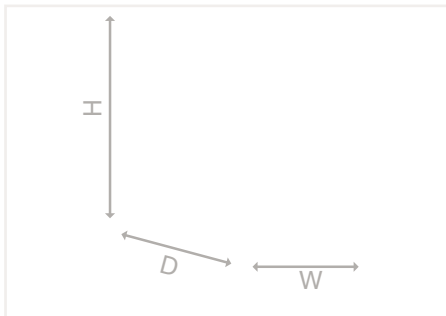
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 60335; EN 61558-2-6; UL 508* (*pending)
------------------------------------	----------------------------------------------------------------------

# Switched-Mode Power Supply; Eco; 1-Phase; 24 VDC / 1.25 A 787 Series



Switched-Mode Power Supply; Eco; 1-phase; Output voltage: 24 VDC; Output current: 1.25 A

	Item No.	Pack. Unit
	787-1702	1



### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1 and EN 60335-1; PELV per EN 60204
- DIN-35 rail mountable in different positions
- Direct installation on mounting plate via cable grip

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	90 ... 264 VAC; 125 ... 375 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 0.3$ A (230 VAC); $\leq 0.6$ A (115 VAC)
Inrush current	$\leq 18$ A
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 10$ ms (230 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	22 ... 26 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	1.25 A (24 VDC; 110 ... 240 VAC); 1 A (24 VDC; 100 ... 240 VAC)
Nominal output power	30 W
Residual ripple	$\leq 200$ mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.4 x $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit

Signaling and Communication	
Signaling	1 x DC OK LED (green)

Efficiency/Power Losses	
Efficiency	$\geq 87$ % (230 VAC; 1.25 ADC)

Fuse Protection	
Internal fuse	F 1 A / 250 VAC
Recommended backup fusing	Circuit breaker: B6, B10

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes, for two devices of the same type
MTBF	$> 300,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-20$ ... $+60$ °C
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	$-4$ %/K ( $> +45$ °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	30 x 90 x 99; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715); Screw mounting
Weight	300 g

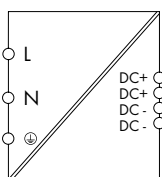
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 60335; UL 60950; UL 508



# Switched-Mode Power Supply; Eco; 1-Phase; 12 VDC / 4 A 787 Series



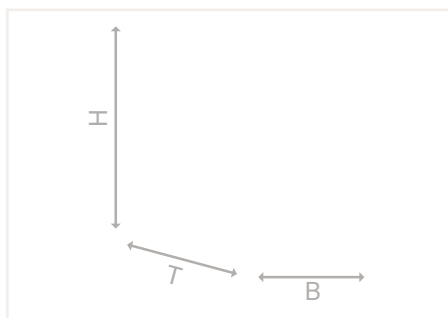
Similar to picture



5

Switched-Mode Power Supply; Eco; 1-phase; Output voltage: 12 VDC; Output current: 4 A; DC OK signal

Item No.	Pack. Unit
787-1711	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1 and EN 60335-1; PELV per EN 60204
- DIN-35 rail mountable in different positions
- Direct installation on mounting plate via cable grip

Input	
Nominal input voltage $U_{i,nom}$	100 ... 240 VAC
Input voltage range	90 ... 264 VAC; 125 ... 375 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 1.8$ A (100 VAC)
Inrush current	$\leq 18$ A
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 10$ ms (230 VAC)

Output	
Nominal output voltage $U_{o,nom}$ /adjustment accuracy	12 VDC (SELV) / $\leq 1$ %
Output voltage range	10 ... 14 VDC (adjustable)
Nominal output current $I_{o,nom}$	4 A (12 VDC; 110 ... 240 VAC); 3.2 A (12 VDC; 100 ... 240 VAC)
Nominal output power	48 W
Residual ripple	$\leq 150$ mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.4 x $I_{o,nom}$ ); Shutdown and automatic restart in the event of a short circuit

Signaling and Communication	
Signaling	1 x DC OK LED (green)

Efficiency/Power Losses	
Efficiency	$\geq 80$ % (230 VAC; 4 ADC)

Fuse Protection	
Internal fuse	F 2 A / 250 VAC
Recommended backup fusing	Circuit breaker: B6, B10

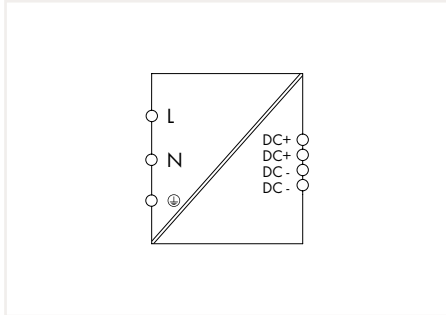
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes, for two devices of the same type
MTBF	$> 300,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-20$ ... $+60$ °C
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	$-4$ %/K ( $> +45$ °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	40 x 90 x 99; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715); Screw mounting
Weight	250 g

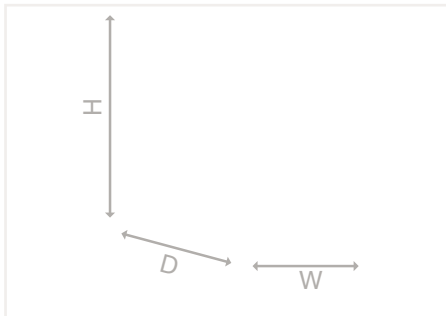
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 60335; EN 61558-2-6; UL 508* (*pending)

# Switched-Mode Power Supply; Eco; 1-Phase; 24 VDC / 2.5 A 787 Series



Switched-Mode Power Supply; Eco; 1-phase; Output voltage: 24 VDC; Output current: 2.5 A

	Item No.	Pack. Unit
	787-1712	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1 and EN 60335-1; PELV per EN 60204
- DIN-35 rail mountable in different positions
- Direct installation on mounting plate via cable grip

#### Input

Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	90 ... 264 VAC; 125 ... 375 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 0.6$ A (230 VAC); $\leq 1.2$ A (115 VAC)
Inrush current	$\leq 18$ A
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 10$ ms (230 VAC)

#### Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	22 ... 26 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	2.5 A (24 VDC; 110 ... 240 VAC); 2 A (24 VDC; 100 ... 240 VAC)
Nominal output power	60 W (max.)
Residual ripple	$\leq 200$ mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.4 x $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit

#### Signaling and Communication

Signaling	1 x DC OK LED (green)
-----------	-----------------------

#### Efficiency/Power Losses

Efficiency	$\geq 88$ % (230 VAC; 2.5 ADC)
------------	--------------------------------

#### Fuse Protection

Internal fuse	F 2 A / 250 VAC
Recommended backup fusing	Circuit breaker: B6, B10

#### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes, for two devices of the same type
MTBF	> 300,000 h (per IEC 61709)
Surrounding air temperature (operation)	-20 ... +60 °C
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	-4 %/K (> +45 °C)
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	40 x 90 x 99; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715); Screw mounting
Weight	300 g

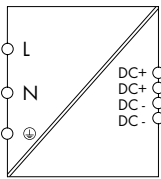
#### Standards and Specifications

Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 60335; UL 60950; UL 508
------------------------------------	------------------------------------------------------

## Switched-Mode Power Supply; Eco; 1-Phase; 12 VDC / 8 A 787 Series

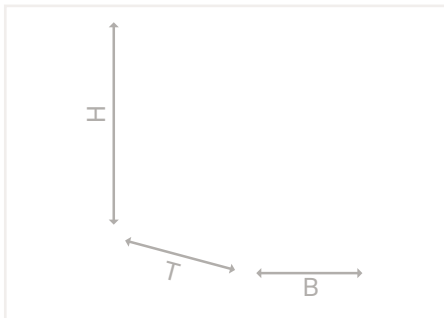


Similar to picture



Switched-Mode Power Supply; Eco; 1-phase; Output voltage: 12 VDC; Output current: 8 A; DC OK signal

Item No.	Pack. Unit
787-1721	1



### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1 and EN 60335-1; PELV per EN 60204
- DIN-35 rail mountable in different positions
- Direct installation on mounting plate via cable grip

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	90 ... 264 VAC; 125 ... 375 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 3$ A (100 VAC)
Inrush current	$\leq 18$ A
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 10$ ms (230 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	12 VDC (SELV) / $\leq 1$ %
Output voltage range	10 ... 14 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	8 A (12 VDC; 110 ... 240 VAC); 6.4 A (12 VDC; 100 ... 240 VAC)
Nominal output power	96 W
Residual ripple	$\leq 150$ mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.4 x $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit

Signaling and Communication	
Signaling	1 x DC OK LED (green)

Efficiency/Power Losses	
Efficiency	$\geq 80$ % (230 VAC; 8 ADC)

Fuse Protection	
Internal fuse	F 3.15 A / 250 VAC
Recommended backup fusing	Circuit breaker: B6, B10

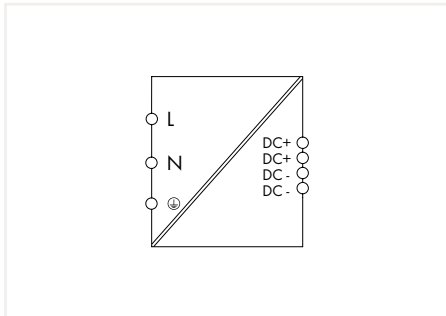
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes, for two devices of the same type
MTBF	$> 300,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-20$ ... $+60$ °C
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	$-3$ %/K ( $> +40$ °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	60 x 130 x 99; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715); Screw mounting
Weight	520 g

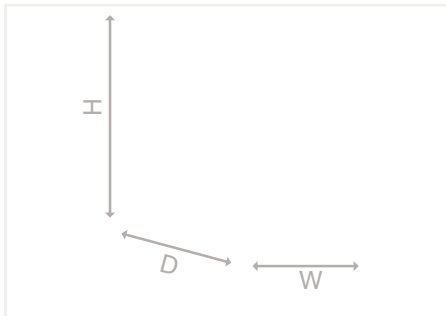
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 60335; EN 61558-2-6; UL 508* (*pending)

# Switched-Mode Power Supply; Eco; 1-Phase; 24 VDC / 5 A 787 Series



Switched-Mode Power Supply; Eco; 1-phase; Output voltage: 24 VDC; Output current: 5 A

	Item No.	Pack. Unit
	787-1722	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1 and EN 60335-1; PELV per EN 60204
- DIN-35 rail mountable in different positions
- Direct installation on mounting plate via cable grip

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	90 ... 264 VAC; 125 ... 375 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 1$ A (230 VAC); $\leq 2$ A (115 VAC)
Inrush current	$\leq 18$ A
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 10$ ms (230 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	22 ... 26 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	5 A (24 VDC; 110 ... 240 VAC); 4 A (24 VDC; 100 ... 240 VAC)
Nominal output power	120 W
Residual ripple	$\leq 200$ mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.4 x $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit

Signaling and Communication	
Signaling	1 x DC OK LED (green)

Efficiency/Power Losses	
Efficiency	$\geq 88$ % (230 VAC; 5 ADC)

Fuse Protection	
Internal fuse	F 3.15 A / 250 VAC
Recommended backup fusing	Circuit breaker: B6, B10

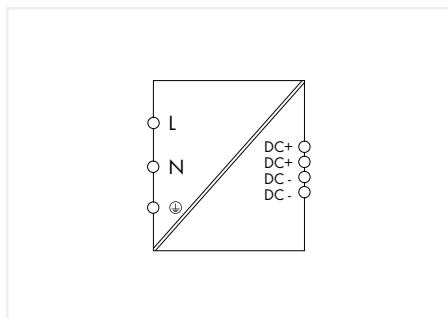
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes, for two devices of the same type
MTBF	$> 300,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-20$ ... $+60$ °C
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	$-3$ %/K ( $> +45$ °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	60 x 130 x 99; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715); Screw mounting
Weight	550 g

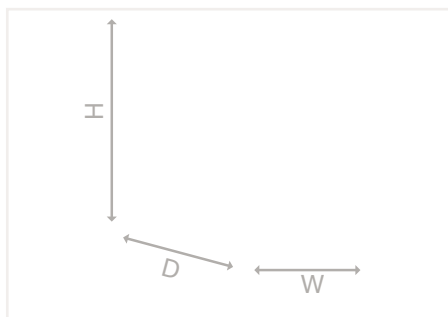
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 60335; UL 60950; UL 508

# Switched-Mode Power Supply; Eco; 1-Phase; 24 VDC / 10 A 787 Series



Switched-Mode Power Supply; Eco; 1-phase; Output voltage: 24 VDC; Output current: 10 A

	Item No.	Pack. Unit
	787-1732	1



## Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1 and EN 60335-1; PELV per EN 60204
- DIN-35 rail mountable in different positions
- Direct installation on mounting plate via cable grip

## Input

Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	90 ... 264 VAC; 125 ... 375 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 2$ A (230 VAC); $\leq 4$ A (115 VAC)
Inrush current	$\leq 18$ A
Power factor correction (PFC)	Active
Mains failure hold-up time	$\geq 10$ ms (230 VAC)

## Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	22 ... 26 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	10 A (24 VDC; 110 ... 240 VAC); 8 A (24 VDC; 100 ... 240 VAC)
Nominal output power	240 W
Residual ripple	$\leq 200$ mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.4 x $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit

## Signaling and Communication

Signaling	1 x DC OK LED (green)
-----------	-----------------------

## Efficiency/Power Losses

Efficiency	$\geq 91$ % (230 VAC; 10 ADC)
------------	-------------------------------

## Fuse Protection

Internal fuse	F 5 A / 250 VAC
Recommended backup fusing	Circuit breaker: B6, B10

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes, for two devices of the same type
MTBF	> 300,000 h (per IEC 61709)
Surrounding air temperature (operation)	-20 ... +60 °C
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	-4 %/K (> +45 °C)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

## Geometric Data/Mechanical Data/Material Data

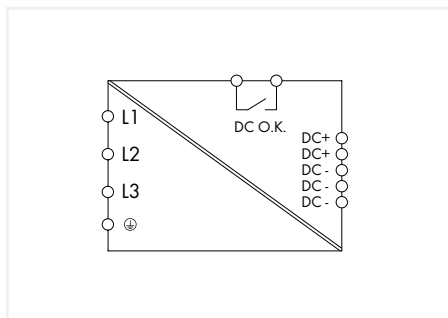
Width x height x depth (mm)	70 x 165 x 99; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715); Screw mounting
Weight	840 g

## Standards and Specifications

Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 60335; UL 60950; UL 508
------------------------------------	------------------------------------------------------

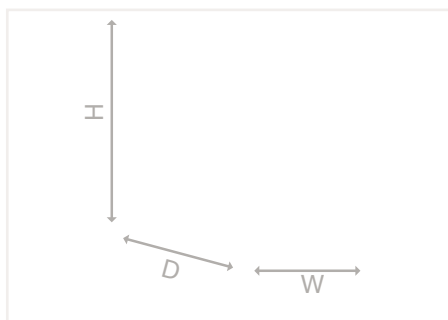


## Switched-Mode Power Supply; Eco; 3-Phase; 24 VDC / 6.25 A 787 Series



Switched-Mode Power Supply; Eco; 3-phase; Output voltage: 24 VDC; Output current: 6.25 A; DC OK signal

Item No.	Pack. Unit
787-738	1



### Features:

- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Fast and tool-free termination via lever-actuated PCB terminal blocks
- Bounce-free switching signal (DC OK) via optocoupler
- Parallel operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

### Input

Nominal input voltage $U_{i, \text{nom}}$	(2 / 3) x 400 ... 500 VAC
Input voltage range	(2 / 3) x 360 ... 575 VAC; 500 ... 800 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 0.6 \text{ A}$ (400 VAC; 6.25 ADC)
Inrush current	$\leq 25 \text{ A}$
Power factor	$\geq 0.5$
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 17 \text{ ms}$ (3 x 400 VAC)

### Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1 \%$
Output voltage range	22 ... 28 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	6.25 A (24 VDC)
Nominal output power	150 W
Residual ripple	$\leq 100 \text{ mV}$ (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.15 ... 1.4 x $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit

### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Overload LED (red); 1 x DC OK signal output (optocoupler as make contact; max. 31.2 V; 20 mA)
-----------	--------------------------------------------------------------------------------------------------------------------------

### Efficiency/Power Losses

Power loss $P_1$	$\leq 18.5 \text{ W}$
Power loss (max.) $P_{1, \text{max}}$	$\leq 20 \text{ W}$
Efficiency	$\geq 87 \%$

### Fuse Protection

Internal fuse	3 x T 2 A / 250 VAC
Recommended backup fusing	3 x Circuit breaker $\geq 6 \text{ A}$ ; Tripping characteristic: B or C; Alternative: motor circuit breaker

### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-GND/sec.-GND/sec.-signal/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 250,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +70 \text{ }^\circ\text{C}$
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	$-2.5 \text{ } \%/ \text{K}$ ( $> +50 \text{ }^\circ\text{C}$ ; 230 VAC)
Pollution degree	2

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.5 ... 0 mm <sup>2</sup> / 0.5 ... 0 mm <sup>2</sup> / 20 ... 10 AWG
LED indication (solid/fine-stranded/AWG)	0.2 ... 1.5 mm <sup>2</sup> / 0.2 ... 1.5 mm <sup>2</sup> / 24 ... 14 AWG

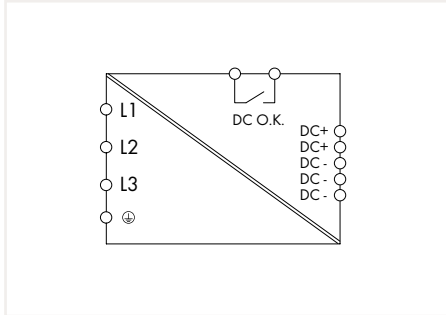
### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	50 130 x 92; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	844 g

### Standards and Specifications

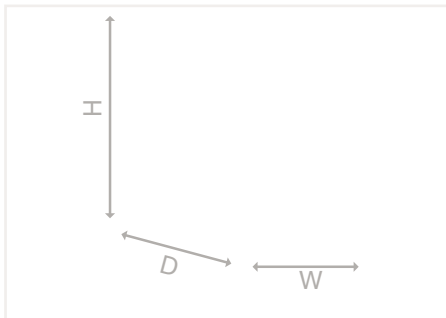
Approvals/standards/specifications	CE; EN 60950; EN 61204-3 (Class A); UL 60950; UL 508
------------------------------------	------------------------------------------------------

# Switched-Mode Power Supply; Eco; 3-Phase; 4 VDC / 10 A 787 Series



Switched-Mode Power Supply; Eco; 3-phase; Output voltage: 24 VDC; Output current: 10 A; DC OK signal

Item No.	Pack. Unit
787-740	1



#### Features:

- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Fast and tool-free termination via lever-actuated PCB terminal blocks
- Bounce-free switching signal (DC OK) via optocoupler
- Parallel operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, nom}$	(2 / 3) x 400 ... 500 VAC
Input voltage range	(2 / 3) x 360 ... 575 VAC; 500 ... 800 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 1.2$ A (400 VAC; 10 ADC)
Inrush current	$\leq 25$ A
Power factor	$\geq 0.5$
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 17$ ms (3 x 400 VAC)

Output	
Nominal output voltage $U_{o, nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	22 ... 28 VDC (adjustable)
Nominal output current $I_{o, nom}$	10 A (24 VDC)
Nominal output power	240 W
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.15 ... 1.4 x $I_{o, nom}$ ); Shutdown and automatic restart in the event of a short circuit

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Overload LED (red); 1 x DC OK signal output (optocoupler as make contact; max. 31.2 V; 20 mA)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 32.5$ W
Power loss (max.) $P_{i, max}$	$\leq 36$ W
Efficiency	$\geq 89$ %

Fuse Protection	
Internal fuse	3 x T 2 A / 250 VAC
Recommended backup fusing	3 x Circuit breaker $\geq 6$ A; Tripping characteristic: B or C; Alternative: motor circuit breaker

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-GND/sec.-GND/sec.-signal/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 250,000$ h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	-1.25 %/K ( $> +50$ °C; 230 VAC)
Pollution degree	2

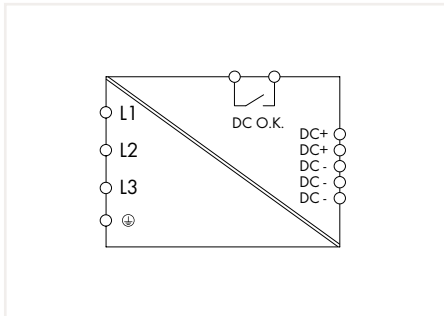
Connection Data	
Connection technology	Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.5 ... 0 mm <sup>2</sup> / 0.5 ... 0 mm <sup>2</sup> / 20 ... 10 AWG
LED indication (solid/fine-stranded/AWG)	0.2 ... 1.5 mm <sup>2</sup> / 0.2 ... 1.5 mm <sup>2</sup> / 24 ... 14 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	65 x 130 x 130; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	2120 g

Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3 (Class A); UL 60950; UL 508

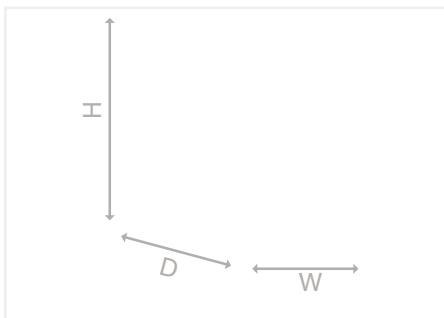


## Switched-Mode Power Supply; Eco; 3-Phase; 24 VDC / 20 A 787 Series



Switched-Mode Power Supply; Eco; 3-phase; Output voltage: 24 VDC; Output current: 20 A; DC OK signal

Item No.	Pack. Unit
787-742	1



### Features:

- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Fast and tool-free termination via lever-actuated PCB terminal blocks
- Bounce-free switching signal (DC OK) via optocoupler
- Parallel operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

### Input

Nominal input voltage $U_{i, \text{nom}}$	(2 / 3) x 400 ... 500 VAC
Input voltage range	(2 / 3) x 360 ... 575 VAC; 500 ... 800 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 2 \text{ A}$ (400 VAC; 20 ADC)
Inrush current	$\leq 30 \text{ A}$
Power factor	$\geq 0.5$
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 17 \text{ ms}$ (3 x 400 VAC)

### Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1 \%$
Output voltage range	22 ... 28 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	20 A (24 VDC)
Nominal output power	480 W
Residual ripple	$\leq 100 \text{ mV}$ (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.15 ... 1.4 x $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit

### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Overload LED (red); 1 x DC OK signal output (optocoupler as make contact; max. 31.2 V; 20 mA)
-----------	--------------------------------------------------------------------------------------------------------------------------

### Efficiency/Power Losses

Power loss $P_1$	$\leq 50 \text{ W}$
Power loss (max.) $P_{1, \text{max}}$	$\leq 55 \text{ W}$
Efficiency	$\geq 90 \%$

### Fuse Protection

Internal fuse	3 x T 5 A / 250 VAC
Recommended backup fusing	3 x Circuit breaker $\geq 6 \text{ A}$ ; Tripping characteristic: B or C; Alternative: motor circuit breaker

### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-GND/sec.-GND/sec.-signal/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Oversoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 250,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +70 \text{ }^\circ\text{C}$
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	$-2 \text{ }^\circ\text{C/K}$ ( $> +50 \text{ }^\circ\text{C}$ ; 230 VAC)
Pollution degree	2

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.5 ... 0 mm <sup>2</sup> / 0.5 ... 0 mm <sup>2</sup> / 20 ... 10 AWG
LED indication (solid/fine-stranded/AWG)	0.2 ... 1.5 mm <sup>2</sup> / 0.2 ... 1.5 mm <sup>2</sup> / 24 ... 14 AWG

### Geometric Data/Mechanical Data/Material Data

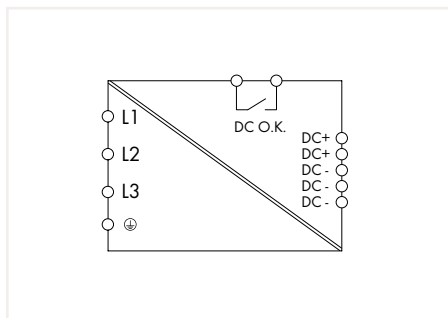
Width x height x depth (mm)	110 x 130 x 151; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1930 g

### Standards and Specifications

Approvals/standards/specifications	CE; EN 60950; EN 61204-3 (Class A); UL 60950; UL 508
------------------------------------	------------------------------------------------------

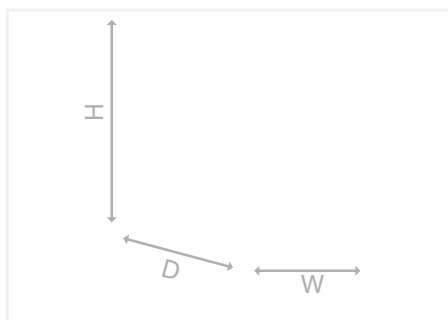


# Switched-Mode Power Supply; Eco; 3-Phase; 24 VDC / 20 A 787 Series



Switched-Mode Power Supply; Eco; 3-phase; Output voltage: 24 VDC; Output current: 20 A; DC OK signal

Item No.	Pack. Unit
787-2742	1



## Features:

- Economical power supply for standard applications
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Fast and tool-free termination via lever-actuated terminals with push-in connection technology
- DC OK signal output
- Parallel operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

## Input

Nominal input voltage $U_{i, \text{nom}}$	(2 / 3) x 400 ... 480 VAC
Input voltage range	(2 / 3) x 325 ... 575 VAC; 560 ... 700 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 1,2 \text{ A}$ (AC 400 V)
Inrush current	$\leq 30 \text{ A}$ (AC 400 V)
Power factor	$\geq 0,7$ (AC 400 V)
Power factor correction (PFC)	passiv
Mains failure hold-up time	$\geq 10 \text{ ms}$ (3 x AC 400 V)

## Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1 \%$
Output voltage range	22 ... 28 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	20 A (24 VDC)
Nominal output power	480 W
Residual ripple	$\leq 150 \text{ mV}$ (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.4 x $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit

## Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Overload LED (red); 1 x DC OK signal output (PhotoMOS as make contact; max. 31.2 V / 100 mA)
-----------	-------------------------------------------------------------------------------------------------------------------------

## Efficiency/Power Losses

Power loss $P_i$	$\leq 50 \text{ W}$ (400 VAC; nominal load)
Efficiency	$\geq 90,5 \%$ (400 VAC; nominal load)

## Fuse Protection

Internal fuse	3 x T 3.5 A / 500 VAC
Recommended backup fusing	3 x Circuit breaker $\geq 10 \text{ A}$ ; Tripping characteristic: B or C

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec./pri.-GND/sec.-GND/sec.-signal)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes; max. 2 power supplies
MTBF	> 1,800,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	-2 %/K (> 45 °C)
Pollution degree	2

## Connection Data

Connection technology	Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.5 ... 6 mm <sup>2</sup> / 0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Signaling (solid/fine-stranded/AWG)	0.2 ... 1.5 mm <sup>2</sup> / 0.2 ... 1.5 mm <sup>2</sup> / 24 ... 14 AWG

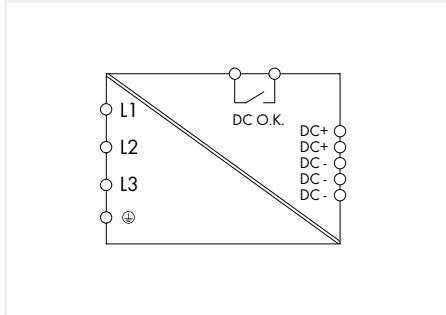
## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	80 x 130 x 170; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1710 g

## Standards and Specifications

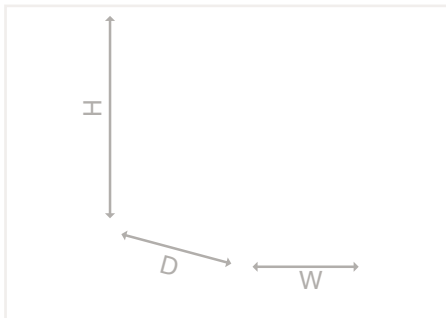
Approvals/standards/specifications	CE; EAC; EN 61204-3; EN 60950-1; EN 62368-1; cURus 60950-1; cURus 62368-1; cULus 508; CSA C22.2
------------------------------------	-------------------------------------------------------------------------------------------------

# Switched-Mode Power Supply; Eco; 3-Phase; 24 VDC / 40 A 787 Series



Switched-Mode Power Supply; Eco; 3-phase; Output voltage: 24 VDC; Output current: 40 A; DC OK signal

Item No.	Pack. Unit
787-2744	1



## Features:

- Economical power supply for standard applications
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Fast and tool-free termination via lever-actuated terminals with push-in connection technology
- DC OK signal output
- Parallel operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, nom}$	(2 / 3) x 400 ... 480 VAC
Input voltage range	(2 / 3) x 325 ... 575 VAC; 560 ... 700 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 3 \times 2.5$ A (AC 400 V)
Inrush current	$\leq 30$ A (AC 400 V)
Power factor	$\geq 0.7$ (AC 400 V)
Power factor correction (PFC)	passiv
Mains failure hold-up time	$\geq 10$ ms (3 x AC 400 V)

Output	
Nominal output voltage $U_{o, nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	22 ... 28 VDC (adjustable)
Nominal output current $I_{o, nom}$	40 A (24 VDC)
Nominal output power	960 W
Residual ripple	$\leq 150$ mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.4 x $I_{o, nom}$ ); Shutdown and automatic restart in the event of a short circuit

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Overload LED (red); 1 x DC OK signal output (PhotoMOS as make contact; max. 31.2 V / 100 mA)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 89$ W (400 VAC; nominal load)
Efficiency	$\geq 91.5$ % (400 VAC; nominal load)

Fuse Protection	
Internal fuse	3 x T 6.3 A / 500 VAC
Recommended backup fusing	3 x Circuit breaker $\geq 10$ A; Tripping characteristic: B or C

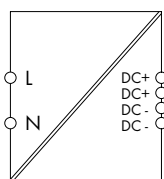
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec./pri.-GND/sec.-GND/sec.-signal)	4.242 kVDC / 2.2 kVDC / 0.7 kVDC / 0.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes; max. 2 power supplies
MTBF	$> 1,300,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-20 \dots +70$ °C
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	-2 %/K ( $> 45$ °C)
Pollution degree	2

Connection Data	
Connection technology	Push-in CAGE CLAMP®
Input (solid/fine-stranded/AWG)	0.5 ... 6 mm <sup>2</sup> / 0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Output (solid/fine-stranded/AWG)	0.75 ... 16 mm <sup>2</sup> / 0.75 ... 25 mm <sup>2</sup> / 18 ... 4 AWG
Signaling (solid/fine-stranded/AWG)	0.2 ... 1.5 mm <sup>2</sup> / 0.2 ... 1.5 mm <sup>2</sup> / 24 ... 14 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	140 x 130 x 170; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	2630 g

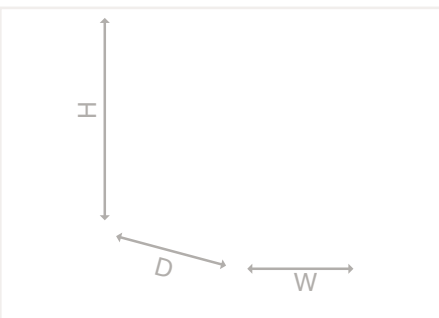
Standards and Specifications	
Approvals/standards/specifications	CE; EAC; EN 61204-3; EN 60950-1; EN 62368-1; cURus 60950-1; cURus 62368-1; cULus 508; CSA C22.2

## Switched-Mode Power Supply; Compact; 1-Phase; 24 VDC / 1.3 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase;  
Output voltage: 24 VDC; Output current: 1.3 A; DC OK  
signal

	Item No.	Pack. Unit
	787-1102	1



### Features:

- Switched-mode power supply
- Stepped profile for installation in standard distribution boards
- Pluggable *picoMAX*® connection technology (tool-free)
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- Suitable for both parallel and series operation

### Input

Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	$I_o \leq 1 \text{ A}$ (< 100 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.5 \text{ A}$ (230 VAC); $\leq 0.7 \text{ A}$ (110 VAC)
Inrush current	$\leq 30 \text{ A}$ (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 80 \text{ ms}$ (230 VAC); $> 10 \text{ ms}$ (110 VAC)

### Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 2 \%$
Output voltage range	22.8 ... 26.4 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	1.3 A (24 VDC); 0.9 A (in any mounting position)
Nominal output power	31 W
Residual ripple	$\leq 100 \text{ mV}$ (peak-to-peak)
Overload behavior	Constant current

### Signaling and Communication

Signaling	1 x Status indication LED (green)
-----------	-----------------------------------

### Efficiency/Power Losses

Power loss $P_i$	$\leq 2.6 \text{ W}$ (230 VAC; no load); $\leq 7 \text{ W}$ (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 7.3 \text{ W}$ (100 VAC / 24 VDC; 1.3 A)
Efficiency	$\geq 82 \%$

### Fuse Protection

Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +60 \text{ }^\circ\text{C}$ (device starts at $-40 \text{ }^\circ\text{C}$ , type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3 \text{ } \%/ \text{K}$ ( $> +45 \text{ }^\circ\text{C}$ )
Pollution degree	2

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.2 ... 2.5 mm <sup>2</sup> / 0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG

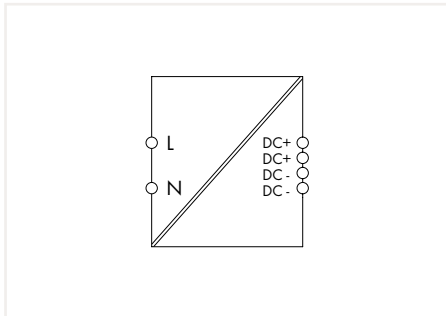
### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	54 x 89 x 55; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g

### Standards and Specifications

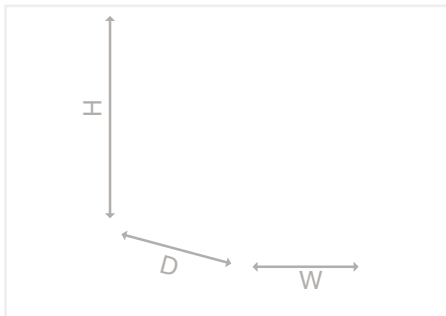
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL
------------------------------------	--------------------------------------------------------

# Switched-Mode Power Supply; Compact; 1-Phase; 24 VDC / 2.5 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase;  
Output voltage: 24 VDC; Output current: 2.5 A; DC OK  
signal

Item No.	Pack. Unit
787-1112	1

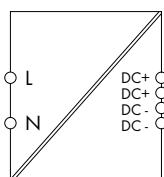


#### Features:

- Switched-mode power supply
- Stepped profile for installation in standard distribution boards
- Pluggable *picoMAX*® connection technology (tool-free)
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- Suitable for both parallel and series operation

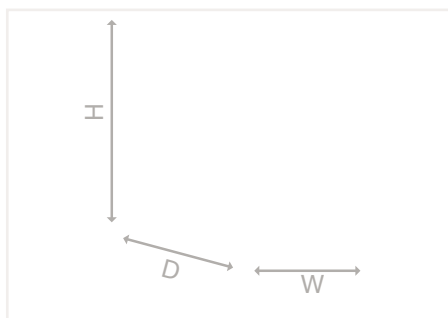
Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	$I_o \leq 2 \text{ A}$ (< 100 VAC); $I_o \leq 1.8 \text{ A}$ (< 90 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.6 \text{ A}$ (230 VAC); $\leq 1.4 \text{ A}$ (110 VAC)
Inrush current	$\leq 30 \text{ A}$ (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 80 \text{ ms}$ (230 VAC); $> 10 \text{ ms}$ (110 VAC)
Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 2 \%$
Output voltage range	22.8 ... 26.4 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	2.5 A (24 VDC); 1.6 A (in any mounting position)
Nominal output power	60 W (max.)
Residual ripple	$\leq 100 \text{ mV}$ (peak-to-peak)
Overload behavior	Constant current
Signaling and Communication	
Signaling	1 x Status indication LED (green)
Efficiency/Power Losses	
Power loss $P_i$	$\leq 2.2 \text{ W}$ (230 VAC; no load); $\leq 8.5 \text{ W}$ (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 10.5 \text{ W}$ (100 VAC / 24 VDC; 2.5 A)
Efficiency	$\geq 88 \%$
Fuse Protection	
Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Oversvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +70 \text{ }^\circ\text{C}$ (device starts at $-40 \text{ }^\circ\text{C}$ , type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3 \%$ /K ( $> +45 \text{ }^\circ\text{C}$ )
Pollution degree	2
Connection Data	
Connection technology	Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.2 ... 2.5 mm <sup>2</sup> / 0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	72 x 89 x 55; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	240 g
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL

# Switched-Mode Power Supply; Compact; 1-Phase; 24 VDC / 4 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase; Output voltage: 24 VDC; Output current: 4 A; DC OK signal

Item No.	Pack. Unit
787-1122	1



## Features:

- Switched-mode power supply
- Stepped profile for installation in standard distribution boards
- Pluggable *picoMAX*® connection technology (tool-free)
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204
- Suitable for both parallel and series operation

## Input

Nominal input voltage $U_{i,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	$I_o \leq 3.5$ A (< 100 VAC); $I_o \leq 3$ A (< 90 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.9$ A (230 VAC); $\leq 1.6$ A (110 VAC)
Inrush current	$\leq 30$ A (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 100$ ms (230 VAC); $> 15$ ms (110 VAC)

## Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 2$ %
Output voltage range	22.8 ... 26.4 VDC (adjustable)
Nominal output current $I_{o,nom}$	4 A (24 VDC); 2.4 A (in any mounting position)
Nominal output power	96 W
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Constant current

## Signaling and Communication

Signaling	1 x Status indication LED (green)
-----------	-----------------------------------

## Efficiency/Power Losses

Power loss $P_i$	$\leq 0.8$ W (230 VAC; no load); $\leq 13.1$ W (230 VAC; nominal load)
Power loss (max.) $P_{i,max}$	$\leq 14.8$ W (264 VAC / 24 VDC; 4 A)
Efficiency	$\geq 88$ %

## Fuse Protection

Internal fuse	T 4 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-25$ ... $+70$ °C (device starts at $-40$ °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3$ %/K ( $> +45$ °C)
Pollution degree	2

## Connection Data

Connection technology	Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.2 ... 2.5 mm <sup>2</sup> / 0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG

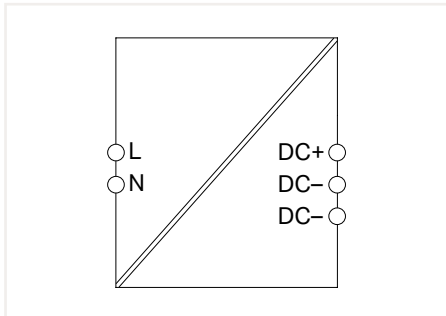
## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	90 x 89 x 55; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	300 g

## Standards and Specifications

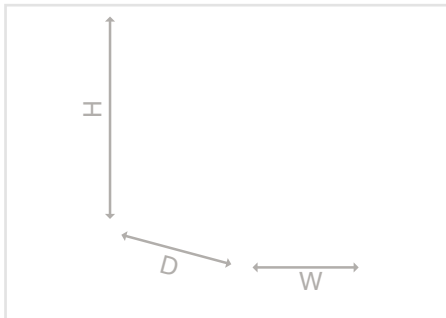
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL
------------------------------------	--------------------------------------------------------

# Switched-Mode Power Supply; Compact; 1-Phase; 24 VDC / 0.5 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase;  
Output: 24 VDC; 0.5 A

Item No.	Pack. Unit
787-1200	1



#### Features:

- Switched-mode power supply
- Stepped profile, ideal for distribution boards/boxes
- Pluggable *picoMAX*® Connection Technology (tool-free)
- Electrically isolated output voltage (SELV) per EN 62368/UL 62368 and EN 60335-1; PELV per EN 60204
- Series operation

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC; 140 ... 340 VDC
Input voltage range	90 ... 264 VAC; 125 ... 375 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 0.27$ A (100 VAC; 0.5 ADC)
Input voltage derating	-2 %/V (<100 VAC); -1.33 %/V (< 140 VDC)
Inrush current	$\leq 30$ A (NTC)
Power factor	$\geq 0.5$
Power factor correction (PFC)	None
Mains failure hold-up time	$\geq 100$ ms (230 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Nominal output current $I_{o, \text{nom}}$	0.5 A
Nominal output power	12 W
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Shutdown and automatic restart in the event of a short circuit

Signaling and Communication	
Signaling	1 x Status indication LED (green)

Efficiency/Power Losses	
Efficiency	$\geq 83$ % (230 VAC; nominal load); $\geq 82$ % (110 VAC, nominal load)
Power loss $P_i$	$\leq 0.2$ W (230 VAC; no load)
Power loss (max.) $P_{I, \text{max}}$	$\leq 2.5$ W (100 VAC / 24 VDC; 0.5 A)

Fuse Protection	
Internal fuse	T 1 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A; Tripping characteristic: B

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kV DC
Protection class/protection type	II / IP20 (per EN 60529)
Reverse voltage protection	Yes
Oversvoltage category	II
Parallel operation/series operation	No/yes, for two devices of the same type
MTBF	> 700,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	20 ... 90 % (no condensation permissible)
Derating	-2.6 %/K (> +55 °C)
Pollution degree	2

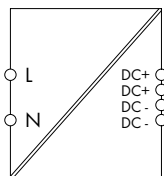
Connection Data	
Connection technology	Push-in CAGE CLAMP®
Input (solid/fine-stranded/AWG)	0.2 ... 2.5 mm <sup>2</sup> / 0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Output (solid/fine-stranded/AWG)	0.2 ... 1.5 mm <sup>2</sup> / 0.2 ... 1.5 mm <sup>2</sup> / 24 ... 14 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	18 x 90 x 52.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715); Screw mount (back/side)
Weight	63 g

Standards and Specifications	
Approvals/standards/specifications	CE; EN 61204-3; EN 60335-1; EN 62368; UL 62368; UL 508

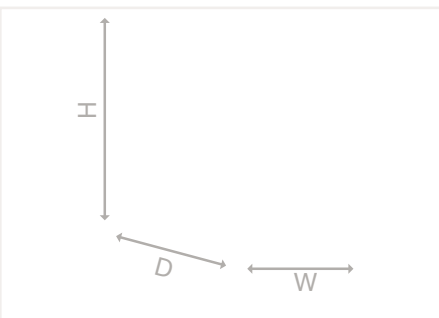


## Switched-Mode Power Supply; Compact; 1-Phase; 24 VDC / 1.3 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase;  
Output voltage: 24 VDC; Output current: 1.3 A; DC OK  
signal

Item No.	Pack. Unit
787-1202	1



### Features:

- Switched-mode power supply
- Stepped profile, ideal for distribution boards or distribution boxes
- Removable front panel and screw mounts provide an ideal installation alternative in distribution boxes or devices
- Pluggable *picoMAX*® connection technology (tool-free)
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1 and EN 60335-1; PELV per EN 60204
- Suitable for both parallel and series operation

### Input

Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 125 ... 375 VDC
Input voltage derating	-2 %/V (<100 VAC); -1.33 %/V (< 140 VDC)
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	≤ 0.6 A
Inrush current	≤ 20 A
Power factor	≥ 0.5
Power factor correction (PFC)	Passive
Mains failure hold-up time	≥ 70 ms

### Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / ≤ 1 %
Output voltage range	22 ... 26 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	1.3 A
Nominal output power	31.2 W
Residual ripple	≤ 100 mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.35 × $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit or permanent overload

### Signaling and Communication

Signaling	1 x DC OK LED (green)
-----------	-----------------------

### Efficiency/Power Losses

Power loss $P_i$	≤ 0.43 W (230 VAC; no load)
Power loss (max.) $P_{i, \text{max}}$	≤ 5.5 W (100 VAC / 24 VDC; 1.3 A)
Efficiency	≥ 87 % (230 VAC); ≥ 82 % (110 VAC)

### Fuse Protection

Internal fuse	T 1 A / 250 VAC
Recommended backup fusing	Circuit breaker 6 A (C characteristic), 10 A (B characteristic) or higher

### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 700,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	≤ 95 % (no condensation permissible)
Derating	-2.66 %/K (> +55 °C)
Pollution degree	2

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.2 ... 2.5 mm² / 0.2 ... 2.5 mm² / 24 ... 12 AWG

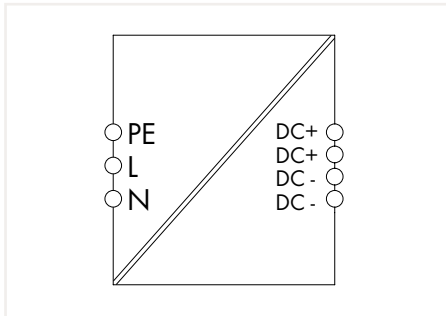
### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	54 x 90 x 52.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715); Screw mount (back/side)
Weight	210 g

### Standards and Specifications

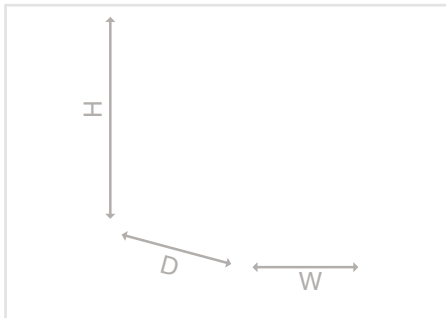
Approvals/standards/specifications	CE; EN 61204-3; EN 60335-1; EN 60950-1; UL 60950; UL 508
------------------------------------	----------------------------------------------------------

# Switched-Mode Power Supply; Compact; 1-Phase; 12 VDC / 5 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase;  
Output: 12 VDC; 5 A

Item No.	Pack. Unit
787-1211	1



#### Features:

- Switched-mode power supply
- Stepped profile, ideal for distribution boards/boxes
- Removable front panel and screw mounts provide an ideal installation alternative in distribution boxes or devices
- Pluggable *picoMAX*® Connection Technology (tool-free)
- Electrically isolated output voltage (SELV) per EN 62368/UL 62368 and EN 60335-1; PELV per EN 60204
- Suitable for both parallel and series operation

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC; 140 ... 340 VDC
Input voltage range	85 ... 264 VAC; 125 ... 375 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 0.98$ A (100 VAC; 5 ADC)
Input voltage derating	-2 %/V (< 100 VAC); -1.33 %/V (< 140 VDC)
Inrush current	$\leq 30$ A (NTC)
Power factor	$\geq 0.5$
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 60$ ms (230 VAC); $> 12$ ms (110 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	12 VDC (SELV) / $\leq 1$ %
Output voltage range	10 ... 14 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	5 A
Nominal output power	60 W
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.22 ... 1.7 x $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit

Signaling and Communication	
Signaling	1 x DC OK LED (green)

Efficiency/Power Losses	
Efficiency	$\geq 88.5$ % (230 VAC; nominal load); $\geq 87.5$ % (110 VAC, nominal load)
Power loss $P_i$	$\leq 0.6$ W (230 VAC; no load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 9$ W (100 VAC / 12 VDC; 5 A)

Fuse Protection	
Internal fuse	T 3.15 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A or higher; Tripping characteristic: B

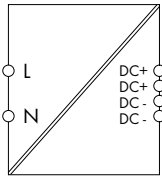
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec./pri.-GND)	4.242 kV DC / 2.2 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Reverse voltage protection	Yes
Overvoltage category	II
Parallel operation/series operation	Yes, for devices of the same type/yes, for two devices of the same type
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	20 ... 90 % (no condensation permissible)
Pollution degree	2

Connection Data	
Connection technology	Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.2 ... 2.5 mm <sup>2</sup> / 0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	72 x 90 x 52.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715); Screw mount (back/side)
Weight	270 g

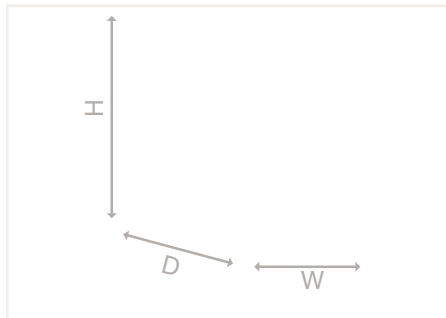
Standards and Specifications	
Approvals/standards/specifications	CE; EN 61204-3; EN 60335-1; EN 62368; UL 62368; UL 508

# Switched-Mode Power Supply; Compact; 1-Phase; 24 VDC / 2.5 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase;  
Output voltage: 24 VDC; Output current: 2.5 A; DC OK  
signal

Item No.	Pack. Unit
787-1212	1



#### Features:

- Switched-mode power supply
- Stepped profile, ideal for distribution boards or distribution boxes
- Removable front panel and screw mounts provide an ideal installation alternative in distribution boxes or devices
- Pluggable *picoMAX*<sup>®</sup> connection technology (tool-free)
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1 and EN 60335-1; PELV per EN 60204
- Suitable for both parallel and series operation

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 125 ... 375 VDC
Input voltage derating	-2 %/V (<100 VAC); -1.33 %/V (< 140 VDC)
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	≤ 1,5 A
Inrush current	≤ 20 A
Power factor	≥ 0.5
Power factor correction (PFC)	Passive
Mains failure hold-up time	≥ 60 ms

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / ≤ 1 %
Output voltage range	22 ... 26 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	2.5 A; 2 A (< 110 VAC)
Nominal output power	60 W (max.)
Residual ripple	≤ 100 mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.35 × $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit or permanent overload

Signaling and Communication	
Signaling	1 x DC OK LED (green)

Efficiency/Power Losses	
Power loss $P_i$	≤ 0.6 W (230 VAC; no load)
Power loss (max.) $P_{i, \text{max}}$	≤ 9 W (100 VAC / 24 VDC; 2.5 A)
Efficiency	≥ 89 % (230 VAC); ≥ 87 % (110 VAC)

Fuse Protection	
Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker 6 A (C characteristic), 10 A (B characteristic) or higher

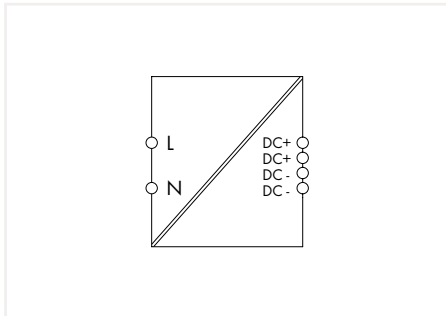
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	≤ 95 % (no condensation permissible)
Derating	-2.66 %/K (> +55 °C)
Pollution degree	2

Connection Data	
Connection technology	Push-in CAGE CLAMP <sup>®</sup>
Input/output (solid/fine-stranded/AWG)	0.2 ... 2.5 mm <sup>2</sup> / 0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	72 x 90 x 52.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715); Screw mount (back/side)
Weight	270 g

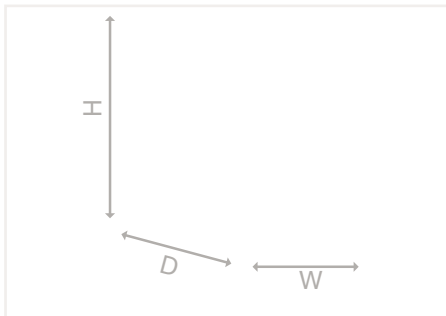
Standards and Specifications	
Approvals/standards/specifications	CE; EN 61204-3; EN 60335-1; EN 60950-1; UL 60950; UL 508

# Switched-Mode Power Supply; Compact; 1-Phase; 24 VDC / 4.2 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase;  
Output voltage: 24 VDC; Output current: 4.2 A; DC OK  
signal

Item No.	Pack. Unit
787-1216	1



#### Features:

- Switched-mode power supply
- Stepped profile, ideal for distribution boards or distribution boxes
- Removable front panel and screw mounts provide an ideal installation alternative in distribution boxes or devices
- Pluggable *picoMAX*<sup>®</sup> connection technology (tool-free)
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1 and EN 60335-1; PELV per EN 60204
- Suitable for both parallel and series operation

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 125 ... 375 VDC
Input voltage derating	-2 %/V (<100 VAC); -1.33 %/V (< 140 VDC)
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	≤ 2.5 A
Inrush current	≤ 20 A
Power factor	≥ 0.5
Power factor correction (PFC)	Passive
Mains failure hold-up time	≥ 50 ms

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / ≤ 1 %
Output voltage range	22 ... 26 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	4.2 A; 3.3 A (< 110 VAC)
Nominal output power	100 W
Residual ripple	≤ 100 mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.35 × $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit or permanent overload

Signaling and Communication	
Signaling	1 x DC OK LED (green)

Efficiency/Power Losses	
Power loss $P_i$	≤ 0.7 W (230 VAC; no load)
Power loss (max.) $P_{i, \text{max}}$	≤ 15 W (100 VAC / 24 VDC; 4.2 A)
Efficiency	≥ 90 % (230 VAC); ≥ 87 % (110 VAC)

Fuse Protection	
Internal fuse	T 3.15 A / 250 VAC
Recommended backup fusing	Circuit breaker 6 A (C characteristic), 10 A (B characteristic) or higher

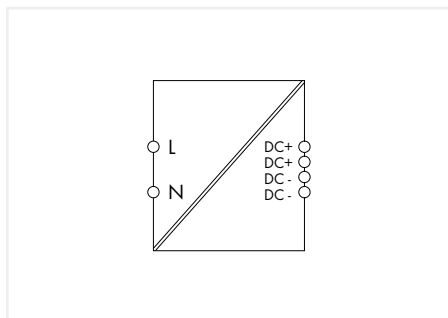
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	≤ 95 % (no condensation permissible)
Derating	-2.66 %/K (> +55 °C)
Pollution degree	2

Connection Data	
Connection technology	Push-in CAGE CLAMP <sup>®</sup>
Input/output (solid/fine-stranded/AWG)	0.2 ... 2.5 mm <sup>2</sup> / 0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	108 x 90 x 52.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715); Screw mount (back/side)
Weight	415 g

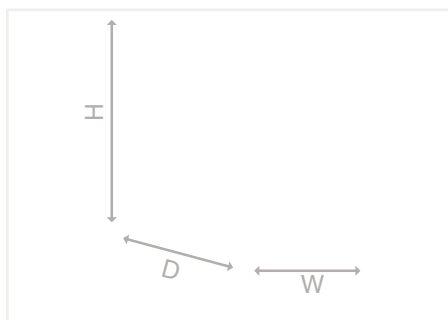
Standards and Specifications	
Approvals/standards/specifications	CE; EN 61204-3; EN 60335-1; EN 60950-1; UL 60950; UL 508

# Switched-Mode Power Supply; Compact; 1-Phase; 24 VDC / 6 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase; Output voltage: 24 VDC; Output current: 6 A; DC OK signal

Item No.	Pack. Unit
787-1226	1



## Features:

- Switched-mode power supply
- Stepped profile, ideal for distribution boards or distribution boxes
- Removable front panel and screw mounts provide an ideal installation alternative in distribution boxes or devices
- Pluggable *picoMAX*<sup>®</sup> connection technology (tool-free)
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1 and EN 60335-1; PELV per EN 60204
- Suitable for both parallel and series operation

## Input

Nominal input voltage $U_{i, \text{nom}}$	100 ... 120 VAC; 200 ... 240 VAC
Input voltage range	90 ... 132 VAC; 180 ... 264 VAC; 250 ... 375 VDC
Input voltage derating	-2 %/V (< 100 VAC)
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	≤ 3.8 A
Inrush current	≤ 20 A
Power factor	≥ 0.5
Power factor correction (PFC)	Passive
Mains failure hold-up time	≥ 30 ms

## Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / ≤ 1 %
Output voltage range	22 ... 26 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	6 A; 4.8 A (< 110 VAC)
Nominal output power	150 W
Residual ripple	≤ 100 mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.35 × $I_{o, \text{nom}}$ ); Shutdown and automatic restart in the event of a short circuit or permanent overload

## Signaling and Communication

Signaling	1 x DC OK LED (green)
-----------	-----------------------

## Efficiency/Power Losses

Power loss $P_l$	≤ 0.4 W (230 VAC; no load)
Power loss (max.) $P_{l, \text{max}}$	≤ 16.5 W (100 VAC / 24 VDC; 6 A)
Efficiency	≥ 90 % (230 VAC); ≥ 89 % (110 VAC)

## Fuse Protection

Internal fuse	T 3.15 A / 250 VAC
Recommended backup fusing	Circuit breaker 6 A (C characteristic), 10 A (B characteristic) or higher

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	≤ 95 % (no condensation permissible)
Derating	-2.66 %/K (> +55 °C)
Pollution degree	2

## Connection Data

Connection technology	Push-in CAGE CLAMP <sup>®</sup>
Input/output (solid/fine-stranded/AWG)	0.2 ... 2.5 mm <sup>2</sup> / 0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG

## Geometric Data/Mechanical Data/Material Data

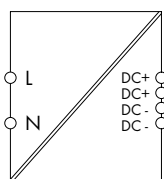
Width x height x depth (mm)	144 x 90 x 52.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715); Screw mount (back/side)
Weight	510 g

## Standards and Specifications

Approvals/standards/specifications	CE; EN 61204-3; EN 60335-1; EN 60950-1; UL 60950; UL 508
------------------------------------	----------------------------------------------------------

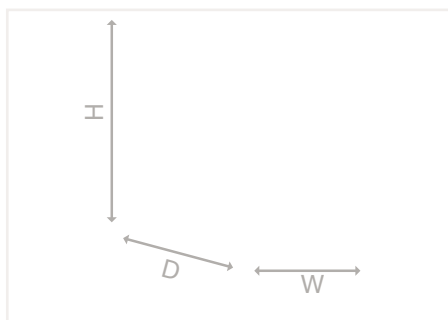


# Switched-Mode Power Supply; Compact; 1-Phase; 5 VDC / 5.5 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase; Output voltage: 5 VDC; Output current: 5.5 A; DC OK signal

Item No.	Pack. Unit
787-1020	1



## Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Stepped profile, ideal for distribution boards or distribution boxes
- Overhead mounting is possible with derating
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

## Input

Nominal input voltage $U_{i,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.29$ A (230 VAC); $\leq 0.56$ A (110 VAC)
Inrush current	$\leq 30$ A (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 80$ ms (230 VAC); $> 10$ ms (110 VAC)

## Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	5 VDC (SELV) / $\leq 2\%$
Output voltage range	4.5 ... 8.5 VDC (adjustable)
Nominal output current $I_{o,nom}$	5.5 A (5 VDC); 3.5 A (in any mounting position)
Nominal output power	27.5 W
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Constant current

## Signaling and Communication

Signaling	1 x Status indication LED (green)
-----------	-----------------------------------

## Efficiency/Power Losses

Power loss $P_I$	$\leq 2.4$ W (230 VAC; no load); $\leq 9.4$ W (230 VAC; nominal load)
Power loss (max.) $P_{I,max}$	$\leq 9.9$ W (264 VAC / 5 VDC; 5.5 A)
Efficiency	$\geq 75\%$

## Fuse Protection

Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker 6 A (C characteristic), 10 A (B characteristic) or higher

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec.)	4.2 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +60$ °C (device starts at $-40$ °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3\%/K$ ( $> +45$ °C)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

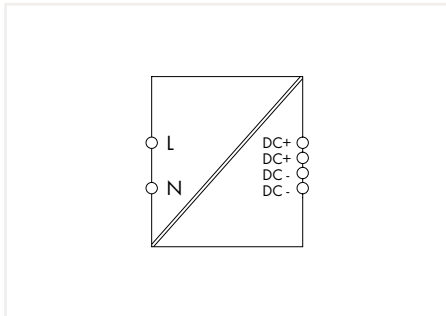
## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	72 x 89 x 55; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	240 g

## Standards and Specifications

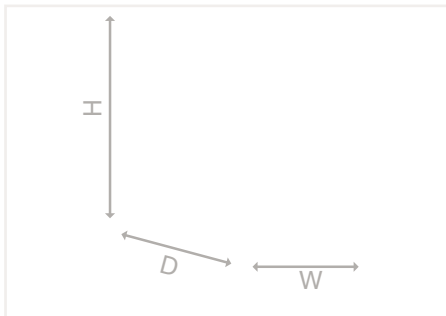
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL* (*pending)
------------------------------------	--------------------------------------------------------------------

# Switched-Mode Power Supply; Compact; 1-Phase; 12 VDC / 2 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase;  
Output voltage: 12 VDC; Output current: 2 A

	Item No.	Pack. Unit
	787-1001	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Stepped profile, ideal for distribution boards or distribution boxes
- Overhead mounting is possible with derating
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	$I_o \leq 1.5 \text{ A}$ (< 100 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.4 \text{ A}$ (230 VAC); $\leq 0.6 \text{ A}$ (110 VAC)
Inrush current	$\leq 30 \text{ A}$ (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 80 \text{ ms}$ (230 VAC); $> 10 \text{ ms}$ (110 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	12 VDC (SELV) / $\leq 2 \%$
Output voltage range	10.5 ... 18 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	2 A (12 VDC); 1.4 A (12 VDC; in any mounting position); 0.75 A (18 VDC)
Nominal output power	24 W
Residual ripple	$\leq 100 \text{ mV}$ (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x Status indication LED (green)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 2.6 \text{ W}$ (230 VAC; no load); $\leq 6 \text{ W}$ (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 6 \text{ W}$ (100 VAC / 12 VDC; 2 A)
Efficiency	$\geq 80 \%$

Fuse Protection	
Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker 6 A (C characteristic), 10 A (B characteristic) or higher

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Oversoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +60 \text{ }^\circ\text{C}$ (device starts at $-40 \text{ }^\circ\text{C}$ , type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3 \%/K$ ( $> +45 \text{ }^\circ\text{C}$ )
Pollution degree	2

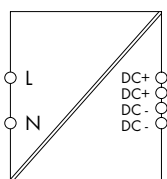
Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	54 x 89 x 55; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	180 g

Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL

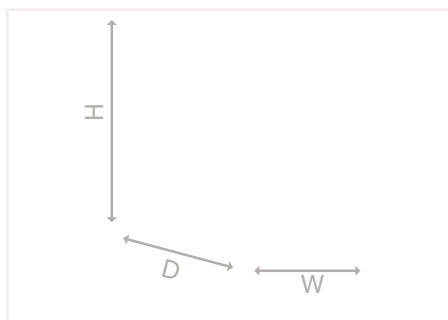


## Switched-Mode Power Supply; Compact; 1-Phase; 12 VDC / 4 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase;  
Output voltage: 12 VDC; Output current: 4 A

Item No.	Pack. Unit
787-1011	1



### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Stepped profile, ideal for distribution boards or distribution boxes
- Overhead mounting is possible with derating
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

### Input

Nominal input voltage $U_{i,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	$I_o \leq 3.5$ A (< 100 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.5$ A (230 VAC); $\leq 0.9$ A (110 VAC)
Inrush current	$\leq 30$ A (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 80$ ms (230 VAC); $> 10$ ms (110 VAC)

### Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	12 VDC (SELV) / $\leq 2$ %
Output voltage range	10.5 ... 15.5 VDC (adjustable)
Nominal output current $I_{o,nom}$	4 A (12 VDC); 2.4 A (in any mounting position)
Nominal output power	48 W
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Constant current

### Signaling and Communication

Signaling	1 x Status indication LED (green)
-----------	-----------------------------------

### Efficiency/Power Losses

Power loss $P_i$	$\leq 2.2$ W (230 VAC; no load); $\leq 8.5$ W (230 VAC; nominal load)
Power loss (max.) $P_{i,max}$	$\leq 9$ W (100 VAC / 12 VDC; 4 A)
Efficiency	$\geq 85$ %

### Fuse Protection

Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker 6 A (C characteristic), 10 A (B characteristic) or higher

### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-25$ ... $+60$ °C (device starts at $-40$ °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3$ %/K ( $> +45$ °C)
Pollution degree	2

### Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

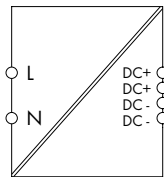
### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	72 x 89 x 55; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	255 g

### Standards and Specifications

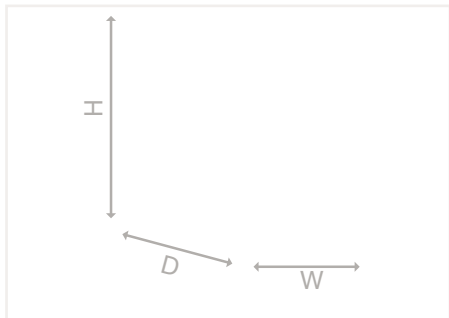
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL
------------------------------------	--------------------------------------------------------

# Switched-Mode Power Supply; Compact; 1-Phase; 12 VDC / 6 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase;  
Output voltage: 12 VDC; Output current: 6 A

	Item No.	Pack. Unit
	787-1021	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Stepped profile, ideal for distribution boards or distribution boxes
- Overhead mounting is possible with derating
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	$I_o \leq 6 \text{ A}$ (< 100 VAC); $I_o \leq 5.5 \text{ A}$ (< 90 VAC)
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 0.9 \text{ A}$ (230 VAC); $\leq 1.6 \text{ A}$ (110 VAC)
Inrush current	$\leq 30 \text{ A}$ (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 100 \text{ ms}$ (230 VAC); $> 15 \text{ ms}$ (110 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	12 VDC (SELV) / $\leq 2 \%$
Output voltage range	10.5 ... 15.5 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	6 A (12 VDC); 3.9 A (12 VDC; in any mounting position)
Nominal output power	78 W
Residual ripple	$\leq 100 \text{ mV}$ (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x Status indication LED (green)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 1 \text{ W}$ (230 VAC; no load); $\leq 15 \text{ W}$ (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 15 \text{ W}$ (100 VAC / 12 VDC; 6.5 A)
Efficiency	$\geq 87 \%$

Fuse Protection	
Internal fuse	T 4 A / 250 VAC
Recommended backup fusing	Circuit breaker 6 A (C characteristic), 10 A (B characteristic) or higher

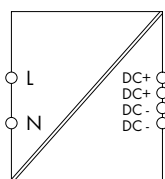
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +60 \text{ }^\circ\text{C}$ (device starts at $-40 \text{ }^\circ\text{C}$ , type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3 \%$ /K ( $> +45 \text{ }^\circ\text{C}$ )
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	90 x 89 x 55; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	300 g

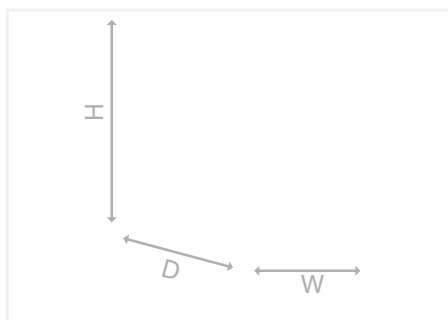
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL

# Switched-Mode Power Supply; Compact; 1-Phase; 18 VDC / 2.4 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase;  
Output voltage: 18 VDC; Output current: 2.4 A

Item No.	Pack. Unit
787-1017	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Stepped profile, ideal for distribution boards or distribution boxes
- Overhead mounting is possible with derating
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

#### Input

Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	$I_o \leq 2 \text{ A}$ (< 100 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.5 \text{ A}$ (230 VAC); $\leq 0.9 \text{ A}$ (110 VAC)
Inrush current	$\leq 30 \text{ A}$ (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 10 \text{ ms}$ (230 VAC); $> 10 \text{ ms}$ (110 VAC)

#### Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	18 VDC / $\leq 2 \%$
Output voltage range	15 ... 28 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	2.4 A (18 VDC); 2 A (24 VDC; in any mounting position)
Nominal output power	43 W
Residual ripple	$\leq 100 \text{ mV}$ (peak-to-peak)
Overload behavior	Constant current

#### Signaling and Communication

Signaling	1 x Status indication LED (green)
-----------	-----------------------------------

#### Efficiency/Power Losses

Power loss $P_i$	$\leq 2.6 \text{ W}$ (230 VAC; no load); $\leq 8.1 \text{ W}$ (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 8.2 \text{ W}$ (100 VAC / 18 VDC; 2.4 A)
Efficiency	$\geq 84 \%$

#### Fuse Protection

Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker 6 A (C characteristic), 10 A (B characteristic) or higher

#### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +60 \text{ }^\circ\text{C}$ (device starts at $-40 \text{ }^\circ\text{C}$ , type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3 \%/K$ ( $> +45 \text{ }^\circ\text{C}$ )
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

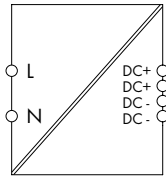
#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	72 x 89 x 55; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	264 g

#### Standards and Specifications

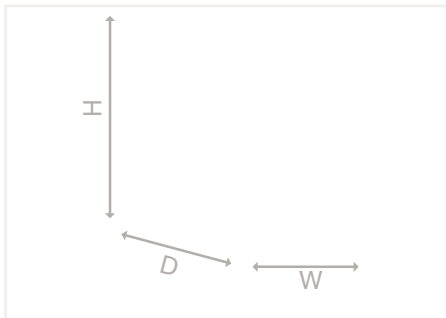
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL* (*pending)
------------------------------------	--------------------------------------------------------------------

# Switched-Mode Power Supply; Compact; 1-Phase; 24 VDC / 1.3 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase;  
Output voltage: 24 VDC; Output current: 1.3 A

	Item No.	Pack. Unit
	787-1002	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Stepped profile, ideal for distribution boards or distribution boxes
- Overhead mounting is possible with derating
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	$I_o \leq 1 \text{ A}$ (< 100 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.5 \text{ A}$ (230 VAC); $\leq 0.7 \text{ A}$ (110 VAC)
Inrush current	$\leq 30 \text{ A}$ (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 80 \text{ ms}$ (230 VAC); $> 10 \text{ ms}$ (110 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 2 \%$
Output voltage range	22.8 ... 26.4 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	1.3 A (24 VDC); 0.9 A (in any mounting position)
Nominal output power	31.2 W
Residual ripple	$\leq 100 \text{ mV}$ (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x Status indication LED (green)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 2.6 \text{ W}$ (230 VAC; no load); $\leq 7 \text{ W}$ (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 7.3 \text{ W}$ (100 VAC / 24 VDC; 1.3 A)
Efficiency	$\geq 82 \%$

Fuse Protection	
Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker 6 A (C characteristic), 10 A (B characteristic) or higher

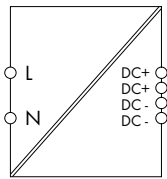
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000 \text{ h}$ (per IEC 61709)
Surrounding air temperature (operation)	$-25 \dots +60 \text{ }^\circ\text{C}$ (device starts at $-40 \text{ }^\circ\text{C}$ , type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3 \%$ /K ( $> +45 \text{ }^\circ\text{C}$ )
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	54 x 89 x 55; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	180 g

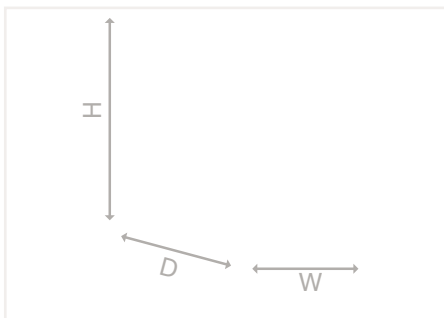
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL

## Switched-Mode Power Supply; Compact; 1-Phase; 24 VDC / 2.5 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase;  
Output voltage: 24 VDC; Output current: 2.5 A

Item No.	Pack. Unit
787-1012	1



### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Stepped profile, ideal for distribution boards or distribution boxes
- Overhead mounting is possible with derating
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	$I_o \leq 2$ A (< 100 VAC); $I_o \leq 1.8$ A (< 90 VAC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.6$ A (230 VAC); $\leq 1.4$ A (110 VAC)
Inrush current	$\leq 30$ A (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 80$ ms (230 VAC); $> 10$ ms (110 VAC)

Output	
Nominal output voltage $U_{o,nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 2$ %
Output voltage range	22.8 ... 26.4 VDC (adjustable)
Nominal output current $I_{o,nom}$	2.5 A (24 VDC); 1.6 A (in any mounting position)
Nominal output power	60 W (max.)
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x Status indication LED (green)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 2.2$ W (230 VAC; no load); $\leq 8.5$ W (230 VAC; nominal load)
Power loss (max.) $P_{i,max}$	$\leq 10.5$ W (100 VAC / 24 VDC; 2.5 A)
Efficiency	$\geq 88$ %

Fuse Protection	
Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker 6 A (C characteristic), 10 A (B characteristic) or higher

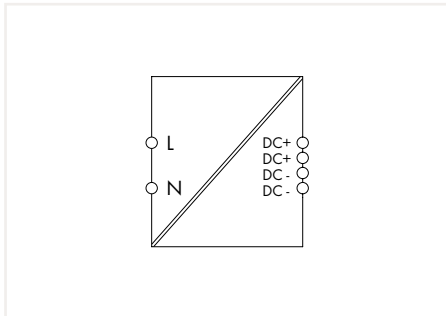
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-25$ ... $+60$ °C (device starts at $-40$ °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3$ %/K ( $> +45$ °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	72 x 89 x 55; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	255 g

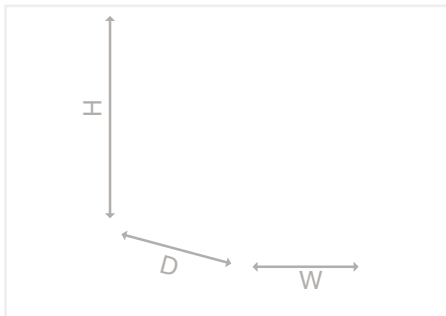
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL

# Switched-Mode Power Supply; Compact; 1-Phase; 24 VDC / 4 A 787 Series



Switched-Mode Power Supply; Compact; 1-phase;  
Output voltage: 24 VDC; Output current: 4 A

	Item No.	Pack. Unit
	787-1022	1



#### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Stepped profile, ideal for distribution boards or distribution boxes
- Overhead mounting is possible with derating
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 373 VDC
Input voltage derating	upon request
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 0.9$ A (230 VAC); $\leq 1.6$ A (110 VAC)
Inrush current	$\leq 30$ A (NTC)
Power factor correction (PFC)	Passive
Mains failure hold-up time	$\geq 100$ ms (230 VAC); $> 15$ ms (110 VAC)

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 2$ %
Output voltage range	22.8 ... 26.4 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	4 A (24 VDC); 2.4 A (in any mounting position)
Nominal output power	96 W
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Constant current

Signaling and Communication	
Signaling	1 x Status indication LED (green)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 0.8$ W (230 VAC; no load); $\leq 13.1$ W (230 VAC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 14.8$ W (264 VAC / 24 VDC; 4 A)
Efficiency	$\geq 88$ %

Fuse Protection	
Internal fuse	T 4 A / 250 VAC
Recommended backup fusing	Circuit breaker $\geq 6$ A; Tripping characteristic: B or C

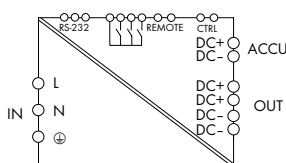
Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-25$ ... $+60$ °C (device starts at $-40$ °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$-3$ %/K ( $> +45$ °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	90 x 89 x 55; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	310 g

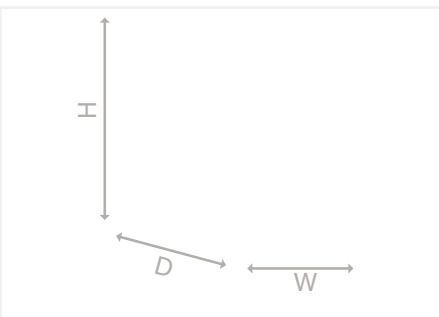
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; UL 60950-1; UL 508; DNV GL

# Switched-Mode Power Supply with Integrated UPS Charger and Controller; Classic; 1-phase; 24 VDC / 5 A 787 Series



Switched-Mode Power Supply with Integrated UPS Charger and Controller; Classic; 1-phase; Output voltage: 24 VDC; Output current: 5 A; communication-capable

Item No.	Pack. Unit
787-1675	1



## Features:

- Switched-mode power supply with integrated charger and controller for uninterruptible power supply (UPS)
- Battery control technology for smooth charging and predictive maintenance applications
- Potential-free contacts provide function monitoring
- Buffer time can be set on site via rotary switch
- Parameter setting and monitoring via RS-232 interface
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

## Input

Nominal input voltage $U_{i,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Input voltage derating	-1.5 %/V (< 100 VAC); -1 %/V (< 150 VDC)
Nominal mains frequency range	44 ... 66 Hz; 0 Hz
Input current $I_i$	$\leq 1.1$ A (230 VAC; 5 ADC); $\leq 2.2$ A (110 VAC; 5 ADC)
Inrush current	$\leq 30$ A
Power factor correction (PFC)	Passive

## Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Output voltage range	23 ... 28.5 VDC (mains operation); 18.5 ... 27.5 VDC (buffer mode)
Nominal output current $I_{o,nom}$	5 A
Nominal output power	120 W
Residual ripple	$\leq 50$ mV (peak-to-peak)
Overload behavior	Constant current

## Energy Storage Systems

Buffer time	1 s ... 20 min (or constant; PC mode; configurable via software)
Switch-on threshold (adjustable)	20 ... 25.5 VDC (configurable via software; pre-configured: 22 VDC)
Charging current	0.3 ... 1 A
End-of-charge voltage	26 ... 29.5 VDC (temperature-controlled; optional fixed setting)
Recommended battery module	787-871, 787-872, 787-873, 787-876, 787-1671

## Signaling and Communication

Signaling	1 x Alarm LED (red); 1 x Battery Charge LED (yellow); 1 x DC OK LED (green); 3 x Signal output (24 VDC; max. 200 mA in total); 1 x RS-232 interface
Communication	RS-232 interface
Remote input	Switches buffer mode off

## Efficiency/Power Losses

Power loss $P_i$	$\leq 5.2$ W (buffer mode; 24 VDC; 5 A); $\leq 17$ W (mains operation; 230 VAC; 24 VDC; 5 A); $\leq 22$ W
Power loss (max.) $P_{i,max}$	$\leq 30$ W (90 VAC; charging)
Efficiency	$\geq 88$ %

## Fuse Protection

Internal fuse	T 4 A / 250 VAC (input side)
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C

## Safety and Protection/Environmental Requirements

Isolation voltage (pri.-GND/sec.-GND/pri.-sec.)	2.2 kVDC / 0.7 kVDC / 4.242 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Reverse voltage protection	Yes
Overvoltage category	II
Parallel operation/series operation	Yes, max. 3 battery modules for buffer time extension/no
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-3 %/K (> +50 °C)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Interface (solid/fine-stranded/AWG)	0.08 ... 1.5 mm <sup>2</sup> / 0.08 ... 1.5 mm <sup>2</sup> / 28 ... 14 AWG
Line length (max.)	$\leq 3$ m (output, battery control)

## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	60 x 127 x 135.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	885 g

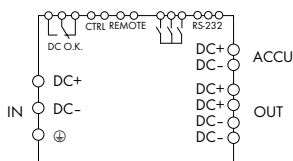
## Standards and Specifications

Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 61558-2-16; UL 60950; UL 508; GL
------------------------------------	---------------------------------------------------------------



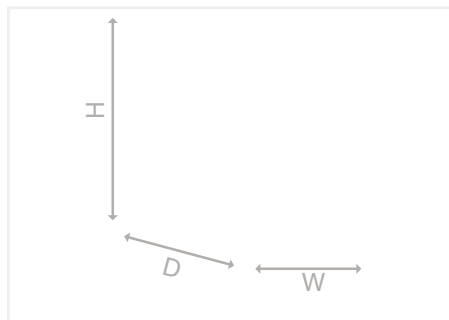


# UPS Charger and Controller; 24 VDC / 10 A 787 Series



UPS Charger and Controller; Input voltage: 24 VDC;  
Output voltage: 24 VDC; Output current: 10 A;  
LineMonitor; communication-capable

Item No.	Pack. Unit
787-870	1



#### Features:

- Charger and controller for uninterruptible power supply (UPS)
- Current and voltage monitoring, as well as parameter setting via LCD and RS-232 interface
- Active signal outputs for function monitoring
- Remote input for buffered output deactivation
- Input for temperature control of connected battery
- Battery control (from manufacturing no. 215563) detects both battery life and battery type

#### Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	22 ... 29 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 0.1$ A (no load running); $\leq 0.8$ A (charging); $\leq 10.8$ A
Inrush current	$\leq 4$ A (no load)

#### Output

Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Output voltage range	$U_i - 1$ VDC (rated operation); 20 ... 25.5 VDC (buffer mode)
Nominal output current $I_{o, \text{nom}}$	10 A

#### Energy Storage Systems

Buffer Time	10 ... 600 s (or constant; adjustable)
Switch-on threshold (adjustable)	20 ... 25.5 VDC
Charging current	$\leq 0.6$ A
End-of-charge voltage	26 ... 29.5 VDC (temperature-controlled; optional fixed setting)
Recommended battery module	787-871, 787-872, 787-873, 787-876, 787-1671

#### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Warning LED (yellow); 1 x Error LED (red); LCD; 3 x Signal output (24 VDC; max. 25 mA); 1 x Isolated relay contact (max. 30 VDC; 1 A); 1 x RS-232 interface; Battery control (C+; C-)
Communication	RS-232 interface
Remote input	Switches buffer mode off

#### Efficiency/Power Losses

Power loss $P_i$	$\leq 15$ W (no load); $\leq 20$ W (nominal load)
Efficiency	$\geq 95$ %

#### Fuse Protection

Internal fuse	T 15 A
---------------	--------

#### Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	Yes
Parallel operation/series operation	Yes, a maximum three battery modules for buffer time extension (temperature measurement evaluation is only possible via one battery module)/no
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-10 ... +60 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG
Line length (max.)	$\leq 3$ m (input, output, battery control)

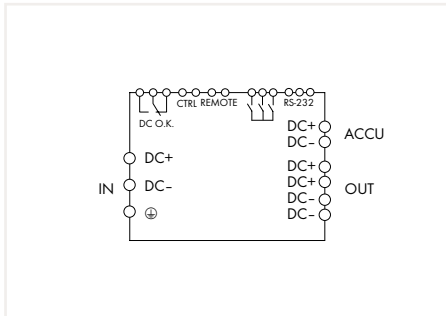
#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	40 x 163 x 163; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	800 g

#### Standards and Specifications

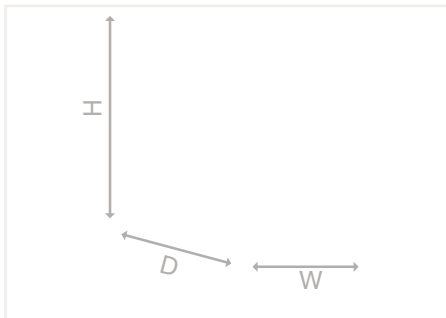
Approvals/standards/specifications	CE; EN 60950; UL 60950; UL 508; EN 61000-6-2; EN 61000-6-3
------------------------------------	------------------------------------------------------------

# UPS Charger and Controller; 24 VDC / 20 A 787 Series



UPS Charger and Controller; Input voltage: 24 VDC;  
Output voltage: 24 VDC; Output current: 20 A;  
LineMonitor; communication-capable

Item No.	Pack. Unit
787-875	1

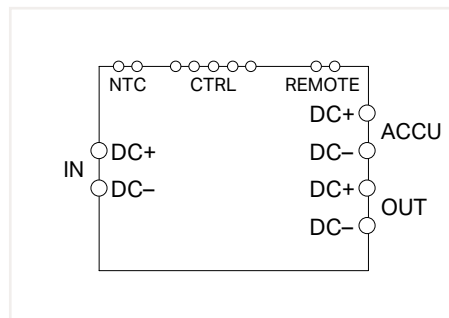


#### Features:

- Charger and controller for uninterruptible power supply (UPS)
- Current and voltage monitoring, as well as parameter setting via LCD and RS-232 interface
- Active signal outputs for function monitoring
- Remote input for buffered output deactivation
- Input for temperature control of connected battery
- Battery control (from manufacturing no. 215563) detects both battery life and battery type

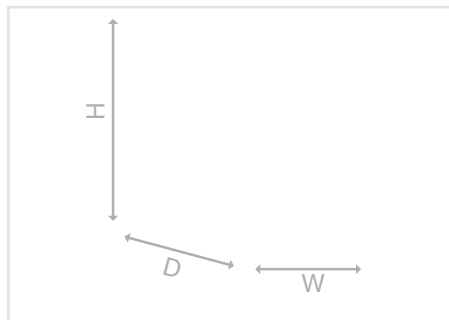
Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	22 ... 29 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 0.1$ A (no load running); $\leq 1.5$ A (charging); $\leq 21.5$ A
Inrush current	$\leq 4$ A (no load)
Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Output voltage range	$U_i - 1$ VDC (rated operation); 20 ... 25.5 VDC (buffer mode)
Nominal output current $I_{o, \text{nom}}$	20 A
Energy Storage Systems	
Buffer Time	10 ... 600 s (or constant; adjustable)
Switch-on threshold (adjustable)	20 ... 25.5 VDC
Charging current	$\leq 1$ A
End-of-charge voltage	26 ... 29.5 VDC (temperature-controlled; optional fixed setting)
Recommended battery module	787-871, 787-872, 787-873
Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Warning LED (yellow); 1 x Error LED (red); LCD; 3 x Signal output (24 VDC; max. 25 mA); 1 x Isolated relay contact (max. 30 VDC; 1 A); 1 x RS-232 interface; Battery control (C+; C-)
Communication	RS-232 interface
Remote input	Switches buffer mode off
Efficiency/Power Losses	
Power loss $P_i$	$\leq 15$ W (no load); $\leq 30$ W (nominal load)
Efficiency	$\geq 95$ %
Fuse Protection	
Internal fuse	T 25 A
Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	Yes
Parallel operation/series operation	Yes, a maximum three battery modules for buffer time extension (temperature measurement evaluation is only possible via one battery module)/no
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-10 \dots +60$ °C
Relative humidity	5 ... 96 % (no condensation permissible)
Pollution degree	2
Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 0.5 mm <sup>2</sup> / 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG
Line length (max.)	$\leq 3$ m (input, output, battery control)
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	57 x 171 x 163; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1200 g
Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; UL 60950; UL 508; EN 61000-6-2; EN 61000-6-3

## DC UPS Module; 24 VDC / 40 A 787 Series



DC UPS Module; Input voltage: 24 VDC;  
Output voltage: 24 VDC; Output current: 40 A

Item No.	Pack. Unit
787-915	1



### Features:

- DC UPS module for uninterruptible power supply (UPS)
- Potential-free contacts provide function monitoring
- Remote input for buffered output deactivation
- Input for temperature control of connected battery
- Battery internal resistance measurement for diagnosing batteries, including connection cable and fuse

### Note:

For North America: Use only batteries with appropriate safety approvals!

### Input

Nominal input voltage $U_{i,nom}$	24 VDC
Input voltage range	22 ... 28 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 0.16$ A (no load running); $\leq 4$ A (charging); $\leq 44$ A

### Output

Nominal output voltage $U_{o,nom}$	24 VDC
Output voltage range	$U_i$ (rated operation); 19.5 ... 26.5 VDC (unregulated battery voltage in buffer mode)
Nominal output current $I_{o,nom}$	40 A

### Energy Storage Systems

Buffer time	Load-dependent
Switch-on threshold (adjustable)	21.5 ... 22.5 VDC
Charging current	1 ... 4 A (adjustable in 1 A steps via DIP switch; Default setting: 2 A)
End-of-charge voltage	26.4 ... 29 VDC (temperature controlled with NTC; without temperature sensor: 27.2 V)
Recommended battery module	Type: VRLA 24 V; 7 ... 40 Ah

### Signaling and Communication

Signaling	1 x Power LED (green); 1 x UPS LED (yellow); 1 x Warning LED (red); 2 x isolated relay contact (max. 30 VDC, 1 A)
Remote input	Switches buffer mode off

### Efficiency/Power Losses

Power loss $P_i$	$\leq 4$ W (no load); $\leq 22.5$ W (nominal load)
Efficiency	$\geq 97$ % (rated operation); $\geq 85$ % (charging)

### Fuse Protection

Internal fuse	T 6.3 A (charging circuit)
Recommended backup fusing	T 50 A

### Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	Yes
Parallel operation/series operation	No/no
MTBF	600,000 h (+40 °C; per SN 29500)
Surrounding air temperature (operation)	0 ... +50 °C
Relative humidity	5 ... 95 % (no condensation permissible)
Pollution degree	2

### Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.75 ... 16 mm <sup>2</sup> / 0.75 ... 25 mm <sup>2</sup> / 18 ... 4 AWG
Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	68 x 181 x 162; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1100 g

### Standards and Specifications

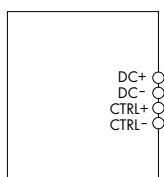
Approvals/standards/specifications	CE; EN 62368-1; EN 61000-6-2; EN 61000-6-3; CSA* (*pending)
------------------------------------	-------------------------------------------------------------

5

## Lead-Acid AGM Battery Module; 24 VDC / 7.5 A 787 Series

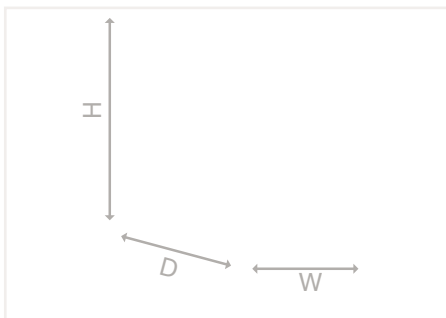


Similar to pictured device



Lead-Acid (AGM) Battery Module; Input voltage: 24 VDC;  
Output current: 7.5 A; Capacity: 1.2 Ah; with battery  
control

Item No.	Pack. Unit
787-876	1



### Features:

- Lead-acid, absorbed glass mat (AGM) battery module for uninterruptible power supply (UPS)
- Can be connected to both 787-870/875 UPS Charger/Controller and 787-1675 Power Supply with integrated UPS charger and controller
- Parallel operation provides higher buffer time
- Built-in temperature sensor
- DIN-35-rail mountable
- Battery control (from manufacturing no. 216570) detects both battery life and battery type

### Note:

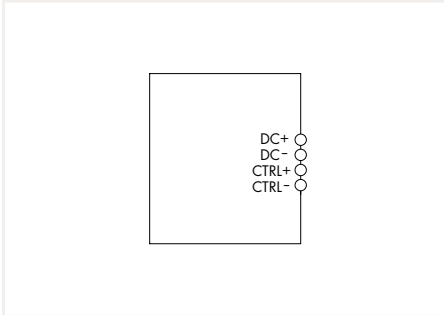
For parallel connection, please switch battery capacity setting to "OFF" in the UPS charger and controller.

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Nominal output current $I_{o, \text{nom}}$	7.5 A
Energy Storage Systems	
Battery capacity	1.2 Ah
Charging current	$\leq 0.3$ A
End-of-charge voltage	27 VDC (+25 °C)
Signaling and Communication	
Signaling	Battery control (C+; C-)
Fuse Protection	
Internal fuse	T 15 A
Safety and Protection/Environmental Requirements	
Protection class/protection type	III / IP20 (per EN 60529)
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Service life (typ.)	5 / 4 / 2 a (20 / 30 / 40 °C)
Surrounding air temperature (operation)	-10 ... +40 °C
Pollution degree	2
Connection Data	
Connection technology	CAGE CLAMP®
Input/output/battery control (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Line length (max.)	$\leq 3$ m (input, output, battery control)
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	55 x 153 x 126.6; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	2140 g
Standards and Specifications	
Approvals/standards/specifications	CE; VdS-tested battery; UL 508

# Lead-Acid AGM Battery Module; 24 VDC / 20 A 787 Series

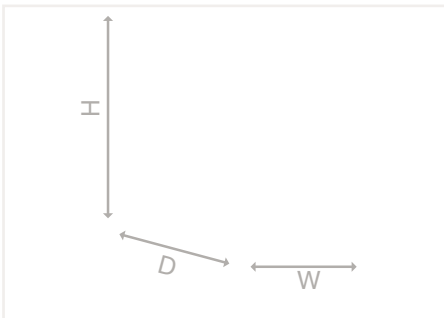


Similar to pictured device



Lead-Acid (AGM) Battery Module; Input voltage: 24 VDC;  
Output current: 20 A; Capacity: 3.2 Ah; with battery control

Item No.	Pack. Unit
787-871	1



#### Features:

- Lead-acid, absorbed glass mat (AGM) battery module for uninterruptible power supply (UPS)
- Can be connected to both 787-870/875 UPS Charger/Controller and 787-1675 Power Supply with integrated UPS charger and controller
- Parallel operation provides higher buffer time
- Built-in temperature sensor
- Mounting plate installation via continuous DIN-rail
- Battery control (from manufacturing no. 216570) detects both battery life and battery type

#### Note:

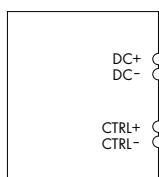
For parallel connection, please switch battery capacity setting to "OFF" in the UPS charger and controller.

<b>Input</b>	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
<b>Output</b>	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Nominal output current $I_{o, \text{nom}}$	20 A
<b>Energy Storage Systems</b>	
Battery capacity	3.2 Ah
Charging current	$\leq 0.8 \text{ A}$
End-of-charge voltage	27 VDC (+25 °C)
<b>Signaling and Communication</b>	
Signaling	Battery control (C+; C-)
<b>Fuse Protection</b>	
Internal fuse	T 25 A
<b>Safety and Protection/Environmental Requirements</b>	
Protection class/protection type	III / IP20 (per EN 60529)
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Service life (typ.)	5 / 4 / 2 a (20 / 30 / 40 °C)
Surrounding air temperature (operation)	-10 ... +40 °C
Pollution degree	2
<b>Connection Data</b>	
Connection technology	CAGE CLAMP®
Input/output/battery control (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Line length (max.)	$\leq 3 \text{ m}$ (input, output, battery control)
<b>Geometric Data/Mechanical Data/Material Data</b>	
Width x height x depth (mm)	76.2 x 168 x 175.5
Mounting type	Screw mount
Weight	3975 g
<b>Standards and Specifications</b>	
Approvals/standards/specifications	CE; VdS-tested battery; UL 508

## Lead-Acid AGM Battery Module; 24 VDC / 40 A 787 Series

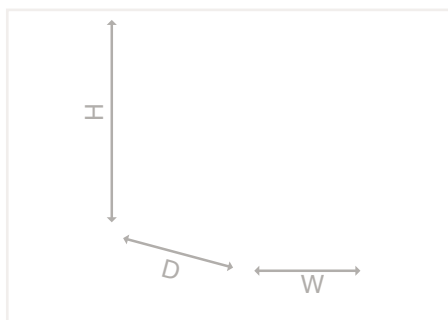


Similar to pictured device



Lead-Acid (AGM) Battery Module; Input voltage: 24 VDC; Output current: 40 A; Capacity: 7 Ah; with battery control

Item No.	Pack. Unit
787-872	1



### Features:

- Lead-acid, absorbed glass mat (AGM) battery module for uninterruptible power supply (UPS)
- Can be connected to both 787-870/875 UPS Charger/Controller and 787-1675 Power Supply with integrated UPS charger and controller
- Parallel operation provides higher buffer time
- Built-in temperature sensor
- Mounting plate installation via continuous DIN-rail
- Battery control (from manufacturing no. 216570) detects both battery life and battery type

### Note:

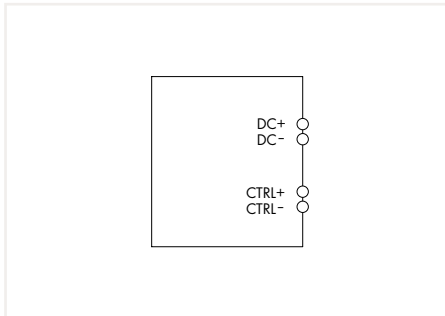
For parallel connection, please switch battery capacity setting to "OFF" in the UPS charger and controller.

<b>Input</b>	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
<b>Output</b>	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Nominal output current $I_{o, \text{nom}}$	40 A
<b>Energy Storage Systems</b>	
Battery capacity	7 Ah
Charging current	$\leq 1.8 \text{ A}$
End-of-charge voltage	27 VDC (+25 °C)
<b>Signaling and Communication</b>	
Signaling	Battery control (C+; C-)
<b>Fuse Protection</b>	
Internal fuse	2 x T 25 A
<b>Safety and Protection/Environmental Requirements</b>	
Protection class/protection type	III / IP20 (per EN 60529)
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Service life (typ.)	5 / 4 / 2 a (20 / 30 / 40 °C)
Surrounding air temperature (operation)	-10 ... +40 °C
Pollution degree	2
<b>Connection Data</b>	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Battery control (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Line length (max.)	$\leq 3 \text{ m}$ (input, output, battery control)
<b>Geometric Data/Mechanical Data/Material Data</b>	
Width x height x depth (mm)	86 x 239 x 217.5
Mounting type	Screw mount
Weight	6500 g
<b>Standards and Specifications</b>	
Approvals/standards/specifications	CE; VdS-tested battery; UL 508

## Lead-Acid AGM Battery Module; 24 VDC / 40 A 787 Series

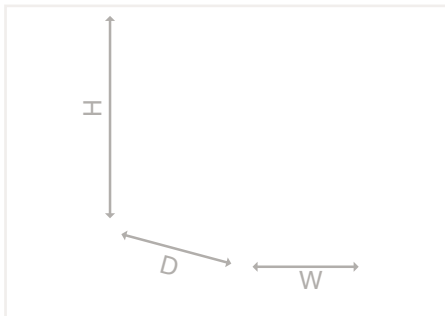


Similar to pictured device



Lead-Acid (AGM) Battery Module; Input voltage: 24 VDC; Output current: 40 A; Capacity: 12 Ah; with battery control

Item No.	Pack. Unit
787-873	1



### Features:

- Lead-acid, absorbed glass mat (AGM) battery module for uninterruptible power supply (UPS)
- Can be connected to both 787-870/875 UPS Charger/Controller and 787-1675 Power Supply with integrated UPS charger and controller
- Parallel operation provides higher buffer time
- Built-in temperature sensor
- Mounting plate installation via continuous DIN-rail
- Battery control (from manufacturing no. 216570) detects both battery life and battery type

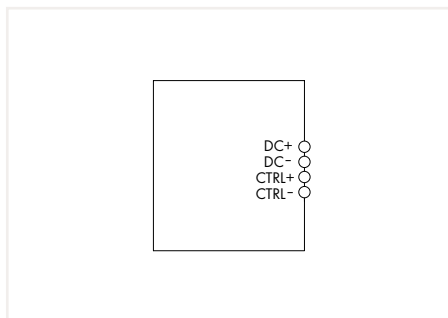
### Note:

For parallel connection, please switch battery capacity setting to "OFF" in the UPS charger and controller.

<b>Input</b>	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
<b>Output</b>	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Nominal output current $I_{o, \text{nom}}$	40 A
<b>Energy Storage Systems</b>	
Battery capacity	12 Ah
Charging current	$\leq 3$ A
End-of-charge voltage	27 VDC (+25 °C)
<b>Signaling and Communication</b>	
Signaling	Battery control (C+; C-)
<b>Fuse Protection</b>	
Internal fuse	2 x T 25 A
<b>Safety and Protection/Environmental Requirements</b>	
Protection class/protection type	III / IP20 (per EN 60529)
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Service life (typ.)	5 / 4 / 2 a (20 / 30 / 40 °C)
Surrounding air temperature (operation)	-10 ... +40 °C
Pollution degree	2
<b>Connection Data</b>	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Battery control (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Line length (max.)	$\leq 3$ m (input, output, battery control)
<b>Geometric Data/Mechanical Data/Material Data</b>	
Width x height x depth (mm)	120.5 x 239 x 217.5
Mounting type	Screw mount
Weight	10,650 g
<b>Standards and Specifications</b>	
Approvals/standards/specifications	CE; VdS-tested battery; UL 508

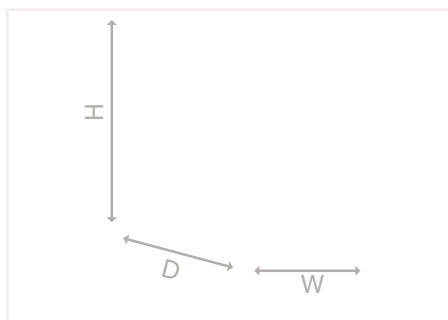


## Lead-Acid AGM Battery Module; 24 VDC / 5 A 787 Series



Lead-Acid (AGM) Battery Module; Input voltage: 24 VDC; Output current: 5 A; Capacity: 0.8 Ah; with battery control

	Item No.	Pack. Unit
	787-1671	1



### Features:

- Lead-acid, absorbed glass mat (AGM) battery module for uninterruptible power supply (UPS)
- Can be connected to both 787-870/875 UPS Charger/Controller and 787-1675 Power Supply with integrated UPS charger and controller
- Parallel operation provides higher buffer time
- Built-in temperature sensor
- DIN-35-rail mounting
- Battery control (from manufacturing no. 216570) detects both battery life and battery type

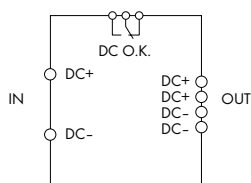
### Note:

For parallel connection, please switch battery capacity setting to "OFF" in the UPS charger and controller.

<b>Input</b>	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
<b>Output</b>	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Nominal output current $I_{o, \text{nom}}$	5 A
<b>Energy Storage Systems</b>	
Battery capacity	0.8 Ah
Charging current	0.2 A (recommended)
End-of-charge voltage	27 VDC (+25 °C)
<b>Signaling and Communication</b>	
Signaling	Battery control (C+; C-)
<b>Fuse Protection</b>	
Internal fuse	T 10 A
<b>Safety and Protection/Environmental Requirements</b>	
Protection class/protection type	III / IP20 (per EN 60529)
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Service life (typ.)	5 / 4 / 2 a (20 / 30 / 40 °C)
Surrounding air temperature (operation)	-15 ... +40 °C (-20 ... +40 °C during discharge)
Pollution degree	2
<b>Connection Data</b>	
Connection technology	CAGE CLAMP®
Input/output/battery control (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Line length (max.)	≤ 3 m
<b>Geometric Data/Mechanical Data/Material Data</b>	
Width x height x depth (mm)	72 x 97 x 124; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1000 g
<b>Standards and Specifications</b>	
Approvals/standards/specifications	CE; UL 508*; (*pending)

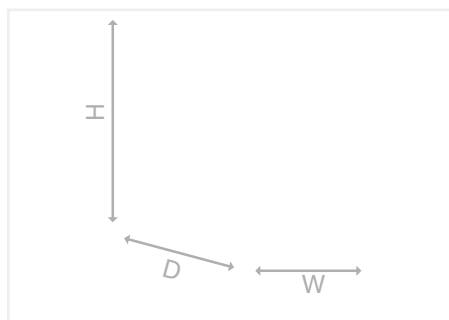


# Capacitive Buffer Module; 24 VDC / 10 A 787 Series



Capacitive Buffer Module; Input voltage: 24 VDC;  
Output voltage: 24 VDC; Output current: 10 A; Buffer  
time: 0.17 ... 16.5 s; communication-capable

	Item No.	Pack. Unit
	787-880	1



#### Features:

- Capacitive buffer module bridges short duration voltage drops or load fluctuations
- For uninterruptible power supply
- Internal diode between input and output enables operation with decoupled output.
- Buffer modules can be readily parallel-connected to increase buffer time or load current.
- Potential-free contact for charge condition monitoring

#### Input

Nominal input voltage $U_{i,nom}$	24 VDC
Input voltage range	20 ... 30 VDC
Input current $I_i$	$\leq 0.06$ A (no load running); $\leq 1$ A (charging); $\leq 11$ A

#### Output

Nominal output voltage $U_{o,nom}$	24 VDC
Output voltage range	$U_i - 0.5$ VDC (rated operation); 20.4 ... 24 VDC (buffer mode)
Nominal output current $I_{o,nom}$	10 A
Switch-on threshold (adjustable)	20 ... 24 VDC

#### Energy Storage Systems

Buffer time	0.06 ... 7.2 s (depends on load current and switch-on threshold)
Switch-on threshold (adjustable)	20 ... 24 VDC
Charging time (typ.)	5 min

#### Signaling and Communication

Signaling	1 x LED DC OK (green); 1 x LED Charge (yellow); 1 x LED DC not OK (red); 1 x isolated relay contact (max. 30 VDC, 1 A)
-----------	------------------------------------------------------------------------------------------------------------------------

#### Efficiency/Power Losses

Power loss $P_i$	$\leq 1.5$ W (no load); $\leq 6.5$ W (nominal load)
------------------	-----------------------------------------------------

#### Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	Yes
Parallel operation/series operation	Yes/no
MTBF	typ. 87,600 h (at +25 °C); typ. 30,500 h (at +40 °C)
Surrounding air temperature (operation)	-10 ... +50 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®
Input/output/relay (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	57 x 163 x 179; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1000 g

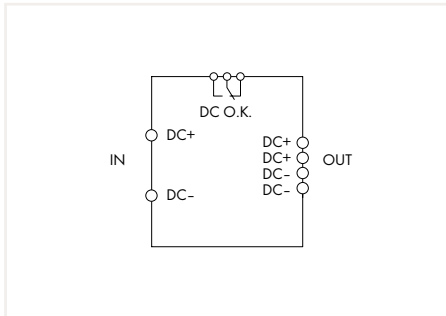
#### Standards and Specifications

Approvals/standards/specifications	CE; EN 60950; UL 508; EN 61000-6-2; EN 61000-6-3
------------------------------------	--------------------------------------------------

# Capacitive Buffer Module; 24 VDC / 20 A 787 Series

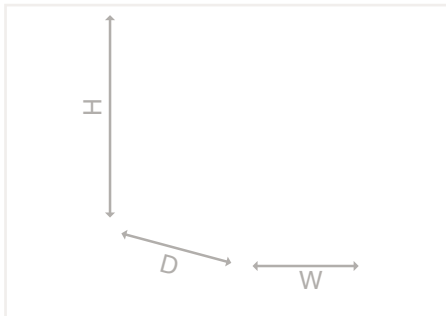


Similar to picture



Capacitive Buffer Module; Input voltage: 24 VDC;  
Output voltage: 24 VDC; Output current: 20 A; Buffer  
time: 0.17 ... 16.5 s; communication-capable

Item No.	Pack. Unit
787-881	1

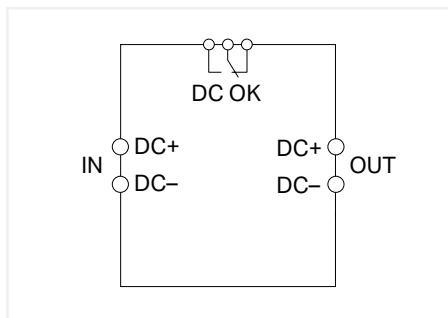


#### Features:

- Capacitive buffer module bridges short duration voltage drops or load fluctuations
- For uninterruptible power supply
- Internal diode between input and output enables operation with decoupled output.
- Buffer modules can be readily parallel-connected to increase buffer time or load current.
- Potential-free contact for charge condition monitoring

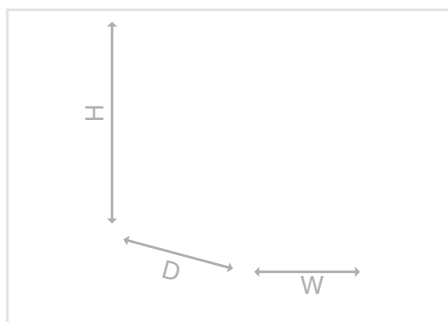
<b>Input</b>	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	20 ... 30 VDC
Input current $I_i$	$\leq 0.06$ A (no load running); $\leq 1$ A (charging); $\leq 22$ A
<b>Output</b>	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Output voltage range	$U_i - 1$ VDC (rated operation); 20.4 ... 24 VDC (buffer mode)
Nominal output current $I_{o, \text{nom}}$	20 A
Switch-on threshold (adjustable)	20 ... 24 VDC
<b>Energy Storage Systems</b>	
Buffer time	0.17 ... 16.5 s (depends on load current and switch-on threshold)
Switch-on threshold (adjustable)	20 ... 24 VDC
Charging time (typ.)	5 min
<b>Signaling and Communication</b>	
Signaling	1 x LED DC OK (green); 1 x LED Charge (yellow); 1 x LED DC not OK (red); 1 x isolated relay contact (max. 30 VDC, 1 A)
<b>Efficiency/Power Losses</b>	
Power loss $P_i$	$\leq 1.5$ W (no load); $\leq 15$ W (nominal load)
<b>Safety and Protection/Environmental Requirements</b>	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	Yes
Parallel operation/series operation	Yes/no
MTBF	typ. 87,600 h (at +25 °C); typ. 30,500 h (at +40 °C)
Surrounding air temperature (operation)	-10 ... +50 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Pollution degree	2
<b>Connection Data</b>	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Relay (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
<b>Geometric Data/Mechanical Data/Material Data</b>	
Width x height x depth (mm)	57 x 181 x 179; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1000 g
<b>Standards and Specifications</b>	
Approvals/standards/specifications	CE; EN 60950; UL 508; EN 61000-6-2; EN 61000-6-3

# Capacitive Buffer Module; 24 VDC / 40 A 787 Series



Capacitive Buffer Module; Input voltage: 24 VDC;  
Output voltage: 24 VDC; Output current: 40 A; Buffer  
time: 0.35 ... 6.6 s

Item No.	Pack. Unit
787-916	1



## Features:

- Capacitive buffer module bridges short duration voltage drops or load fluctuations
- Internal diode between input and output enables operation with decoupled output
- Potential-free contact for charge condition monitoring

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	23 ... 30 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 0.06$ A (no load running); $\leq 0.8$ A (charging); $\leq 40.8$ A

Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Output voltage range	$U_i - 0.5$ VDC (mains operation; $I_o = 20$ A); $U_i - 0.8$ VDC (mains operation; $I_o = 40$ A); 20 ... 29 VDC (buffer mode)
Nominal output current $I_{o, \text{nom}}$	40 A

Energy Storage Systems	
Buffer time	0.3 ... 6.6 s (depends on load current and temperature)
Switch-on threshold (typ.)	22 VDC
Nominal capacity	4.17 F
Nominal voltage	32.4 VDC
Effective energy content (typ.)	500 Ws
Charging time (typ.)	2.5 min

Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x UPS LED (yellow); 1 x Warning LED (red); 1 x isolated relay contact (max. 30 VDC, 1 A)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 1.9$ W (operation without decoupled output); $\leq 11.5$ W (operation with decoupled output; $I^o = 20$ A); $\leq 33.5$ W (operation with decoupled output; $I_o = 40$ A)
Efficiency	$\geq 96.5$ %

Fuse Protection	
Internal fuse	No
Recommended backup fusing	T 40 A

Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	Yes
Parallel operation/series operation	No/no
Life service	74,000 h (+25 °C; $I_o = 40$ A); 28,200 h (+40 °C; $I_o = 40$ A)
Surrounding air temperature (operation)	-10 ... +50 °C
Relative humidity	5 ... 95 % (no condensation permissible)
Pollution degree	2

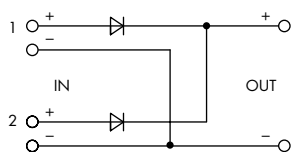
Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.75 ... 16 mm <sup>2</sup> / 0.75 ... 25 mm <sup>2</sup> / 18 ... 4 AWG
Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	68 x 181 x 162; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	900 g

Standards and Specifications	
Approvals/standards/specifications	CE; EN 62368-1; EN 61000-6-2; EN 61000-6-3; CSA* (*pending)

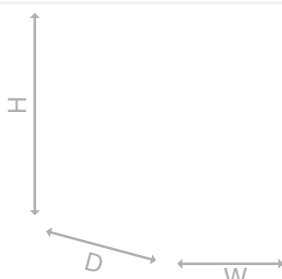


## Redundancy Module; 24 VDC / 25 A 787 Series



Redundancy Module; Input voltage: 2 x 9 ... 54 VDC;  
Input current: 2 x 12.5 A; Output voltage:  
9 ... 54 VDC; Output current: 25 A

Item No.	Pack. Unit
787-783	1



### Features:

- Redundancy module with two inputs for decoupling two power supplies
- For redundant and fail-safe power supply
- With LED for input voltage monitoring on site

### Input

Nominal input voltage $U_{i,nom}$	2 x 24 VDC
Input voltage range	2 x 9 ... 54 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	≤ 12.5 A (per path)

### Output

Nominal output voltage $U_{o,nom}$	24 VDC
Output voltage range	9 ... 54 VDC ( $U_i$ - Voltage drop)
Voltage drop	≤ 0.8 V (input/output)
Nominal output current $I_{o,nom}$	25 A
Output power (max.)	1350 W
Nominal output power	600 W

### Signaling and Communication

Signaling	1 x IN1 LED (green); 1 x IN2 LED (green); 1 x OUT LED (green)
-----------	------------------------------------------------------------------

### Efficiency/Power Losses

Power loss $P_l$	≤ 19 W (nominal load)
Efficiency	≥ 96 %

### Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Short-circuit-protected	No
Parallel operation/series operation	Yes/no
MTBF	> 10 million h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	≤ 95 % (no condensation permissible)
Derating	-2.66 %/K (+55 °C < Tamb ≤ +70 °C)
Pollution degree	2

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.5 ... 6 mm <sup>2</sup> / 0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG

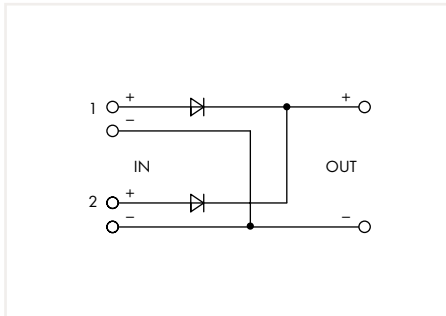
### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	50 x 130 x 92; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	470 g

### Standards and Specifications

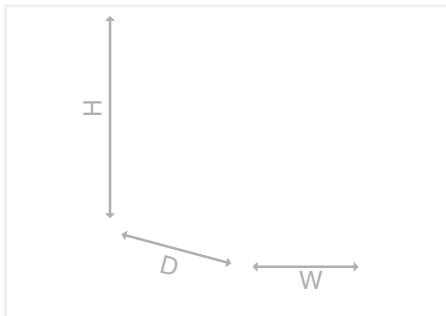
Approvals/standards/specifications	CE; UL 508
------------------------------------	------------

# Redundancy Module; 24 VDC / 76 A 787 Series



Redundancy Module; Input voltage: 2 x 9 ... 54 VDC;  
Input current: 2 x 40 A; Output voltage:  
9 ... 54 VDC; Output current: 76 A

Item No.	Pack. Unit
787-785	1



#### Features:

- Redundancy module with two inputs for decoupling two power supplies
- For redundant and fail-safe power supply
- With LED for input voltage monitoring on site

Input	
Nominal input voltage $U_{i, \text{nom}}$	2 x 24 VDC
Input voltage range	2 x 9 ... 54 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	≤ 40 A (per path); ≤ 76 A (in total)

Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Output voltage range	9 ... 54 VDC ( $U_i$ - Voltage drop)
Voltage drop	≤ 0.5 V (input/output)
Nominal output current $I_{o, \text{nom}}$	76 A (UL: max. 65 A)
Output power (max.)	4104 W
Nominal output power	1824 W

Signaling and Communication	
Signaling	1 x IN1 LED (green); 1 x IN2 LED (green); 1 x OUT LED (green)

Efficiency/Power Losses	
Power loss $P_i$	≤ 38 W (nominal load)
Efficiency	≥ 97 %

Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Short-circuit-protected	No
Parallel operation/series operation	Yes/no
MTBF	> 10 million h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	≤ 95 % (no condensation permissible)
Derating	-2.66 %/K (+55 °C < Tamb ≤ +70 °C)
Pollution degree	2

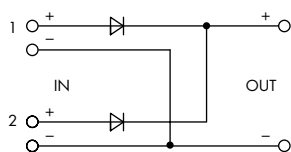
Connection Data	
Connection technology	Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	1.5 ... 16 mm <sup>2</sup> / 1.5 ... 16 mm <sup>2</sup> / 16 ... 6 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	83 x 130 x 153; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	960 g

Standards and Specifications	
Approvals/standards/specifications	CE; UL 508

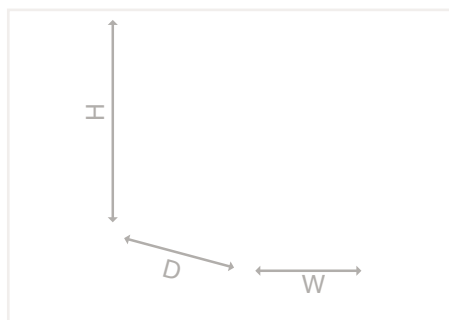


## Redundancy Module; 24 VDC / 40 A 787 Series



Redundancy Module; Input voltage: 2 x 24 VDC; Input current: 2 x 20 A; Output voltage: 24 VDC; Output current: 40 A; communication-capable

Item No.	Pack. Unit
787-885	1



### Features:

- Redundancy module with two inputs for decoupling two power supplies
- For redundant and fail-safe power supply
- With LED and potential-free contact for input voltage monitoring on site and remotely

### Input

Nominal input voltage $U_{i,nom}$	2 x 24 VDC
Input voltage range	2 x 18 ... 30 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 20$ A (per path)

### Output

Nominal output voltage $U_{o,nom}$	24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq 0.6$ V (input/output)
Nominal output current $I_{o,nom}$	40 A
Output power (max.)	1200 W
Nominal output power	960 W

### Signaling and Communication

Signaling	1 x OUT LED (green); 1 x IN1 LED (yellow); 1 x IN2 LED (yellow); 1 x isolated relay contact (max. 30 VDC, 1 A)
-----------	----------------------------------------------------------------------------------------------------------------

### Efficiency/Power Losses

Power loss $P_l$	$\leq 1.5$ W (no load); $\leq 14$ W (24 VDC; 20 A); $\leq 26$ W (48 VDC; 40 A)
Efficiency	$\geq 97$ %

### Fuse Protection

Internal fuse	No
---------------	----

### Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	Yes
Parallel operation/series operation	Yes/no
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-10 \dots +60$ °C
Relative humidity	5 ... 96 % (no condensation permissible)
Pollution degree	2

### Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Relay (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

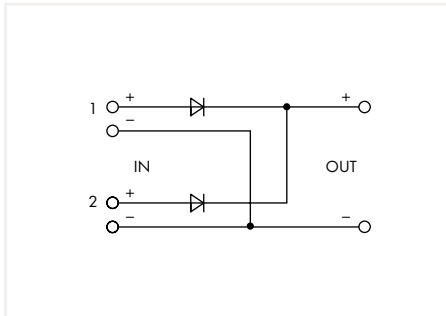
### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	40 x 181 x 163; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715) in two positions
Weight	870 g

### Standards and Specifications

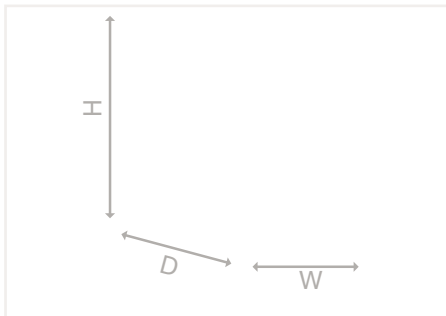
Approvals/standards/specifications	CE; EN 60950; UL 60950; UL 508; EN 61000-6-2; EN 61000-6-3
------------------------------------	------------------------------------------------------------

# Redundancy Module; 48 VDC / 40 A 787 Series



Redundancy Module; Input voltage: 2 x 48 VDC; Input current: 2 x 20 A; Output voltage: 48 VDC; Output current: 40 A; communication-capable

Item No.	Pack. Unit
787-886	1



#### Features:

- Redundancy module with two inputs for decoupling two power supplies
- For redundant and fail-safe power supply
- With LED and potential-free contact for input voltage monitoring on site and remotely

Input	
Nominal input voltage $U_{i, \text{nom}}$	2 x 48 VDC
Input voltage range	2 x 36 ... 54 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 20$ A (per path)

Output	
Nominal output voltage $U_{o, \text{nom}}$	48 VDC
Output voltage range	36 ... 54 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq 1$ V (input/output)
Nominal output current $I_{o, \text{nom}}$	40 A
Output power (max.)	2160 W
Nominal output power	1920 W

Signaling and Communication	
Signaling	1 x OUT LED (green); 1 x IN1 LED (yellow); 1 x IN2 LED (yellow); 1 x isolated relay contact (max. 30 VDC, 1 A)

Efficiency/Power Losses	
Power loss $P_i$	$\leq 1.7$ W (48 VDC; no load); $\leq 20$ W (48 VDC; 20 A); $\leq 40$ W (48 VDC; 40 A)
Efficiency	$\geq 96$ %

Fuse Protection	
Internal fuse	No

Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	Yes
Parallel operation/series operation	Yes/no
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-10 \dots +60$ °C
Relative humidity	5 ... 96 % (no condensation permissible)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Relay (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

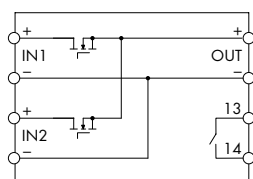
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	40 x 181 x 163; height including connector; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	860 g

Standards and Specifications	
Approvals/standards/specifications	CE; EN 60950; UL 60950*; UL 508*; EN 61000-6-2; EN 61000-6-3 (*pending)

# Redundancy Module; 24 VDC / 40 A 787 Series

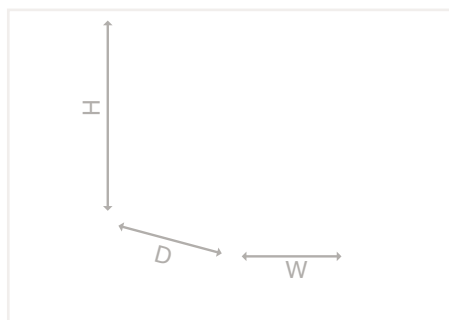


Similar to picture



Redundancy Module; Input voltage: 2 x 24 VDC; Input current: 2 x 20 A; Output voltage: 24 VDC; Output current: 40 A; communication-capable

Item No.	Pack. Unit
787-1685	1



#### Features:

- Redundancy module with low-loss Mosfet® decouples two power supplies
- For redundant and fail-safe power supply, incl. Mosfet® monitoring
- Continuous output current: 40 ADC, in any ratio of both inputs (e.g., 20 A / 20 A or 0 A / 40 A)
- Suitable for power supplies with PowerBoost and TopBoost
- Same profile as CLASSIC Power Supplies
- Connects to power supplies with electrically isolated output voltage (SELV) per EN 60950-1/UL 60950-1; PELV per EN 60204

#### Input

Nominal input voltage $U_{i,nom}$	2 x 24 VDC
Input voltage range	2 x 10 ... 36 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	≤ 40 A (from one input path); ≤ 20 A (via both input paths)
PowerBoost input	60 ADC (4 s); 50 ADC (8 s)
TopBoost input	100 ADC (50 ms)

#### Output

Nominal output voltage $U_{o,nom}$	24 VDC
Output voltage range	10 ... 36 VDC ( $U_i$ - Voltage drop)
Voltage drop	≤ 100 mV (input/output)
Nominal output current $I_{o,nom}$	40 A
Nominal output power	960 W
Switching frequency	5 kHz
TopBoost	200 ADC (50 ms)
PowerBoost	120 ADC (4 s); 100 ADC (8 s)

#### Signaling and Communication

Signaling	1 x IN1 LED (green); 1 x IN2 LED (green); 1 x DC OK signal contact (IN1 and IN2 > 10 VDC)
-----------	----------------------------------------------------------------------------------------------

#### Efficiency/Power Losses

Power loss $P_1$	≤ 1.5 W (no load); ≤ 9.5 W (nominal load)
Efficiency	≥ 99.5 %

#### Fuse Protection

Internal fuse	No
---------------	----

#### Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	Yes
Parallel operation/series operation	Yes/no
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-40 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-1.5 %/K (> +65 °C)
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.5 ... 10 mm² / 0.5 ... 10 mm² / 20 ... 8 AWG
LED indication (solid/fine-stranded/AWG)	0.08 ... 2.5 mm² / 0.08 ... 2.5 mm² / 28 ... 12 AWG

#### Geometric Data/Mechanical Data/Material Data

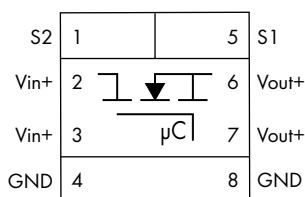
Width x height x depth (mm)	42 x 127 x 139.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	370 g

#### Standards and Specifications

Approvals/standards/specifications	CE; EN 61204-3; EN 60950-1; UL 60950; UL 508; DNV GL
------------------------------------	------------------------------------------------------

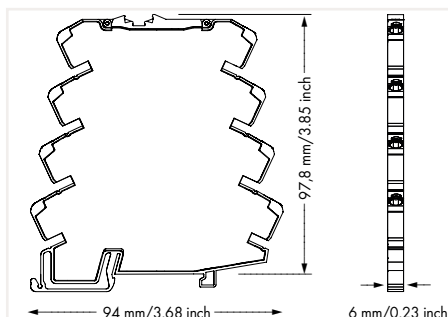


## Electronic Circuit Breaker; 24 VDC / 1 A 787 Series



Electronic Circuit Breaker; 1-channel; Input voltage:  
24 VDC; 1 A; communication-capable

	Item No.	Pack. Unit
	787-2861/100-000	1

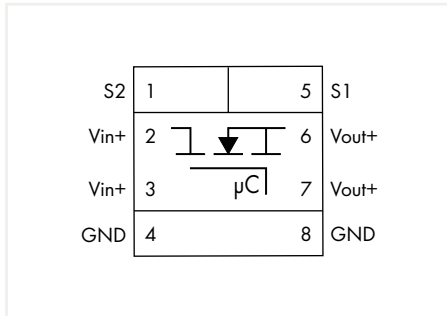


### Features:

- Space-saving ECB with one channel
- Reliably and safely trips in the event of an overload and short circuit on the secondary side
- Switch-on capacity > 50,000  $\mu\text{F}$
- Enables the use of an economical, standard power supply
- Minimizes wiring via two voltage outputs and maximizes commoning options on both input and output sides (e.g., commoning of the output voltage on 857 and 2857 Series devices)
- Status signal – as single or group message
- Reset, switch on/off via remote input or local switch
- Prevents power supply overload due to total inrush current thanks to time-delayed switching on during inter-connected operation

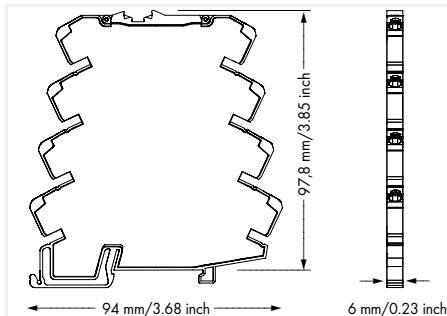
Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Total number of channels (module)	1
Nominal output voltage $U_{o, \text{nom}}$	1 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ – Voltage drop)
Voltage drop	$\leq 50$ mV (1 A)
Nominal output current $I_{o, \text{nom}}$	1 x 1 A (fixed setting)
Trip time	4 ms ... 100 s
Switch-on capacity	> 50,000 $\mu\text{F}$ per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 170 ms/max. 500 ms)
Active current limitation	No
Signaling and Communication	
Signaling	1 x Status LED (green/yellow/red/blue); 1 x Control input; 1 x Active signal output ( $U_i$ , max. 4 mA)
Remote input	18 ... 30 VDC signal, switches on/off and resets the channel
Efficiency/Power Losses	
Power loss $P_1$	$\leq 0.3$ W (no load)
Efficiency	$\geq 99$ %
Fuse Protection	
Internal fuse	T 15 A
Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	1,263,074 h (per MIL-HDBK-217F2)
Surrounding air temperature (operation)	$-25$ ... $+70$ °C
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	No derating
Pollution degree	2
Connection Data	
Number of jumper slots	8
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	6 x 97.8 x 94; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	37 g
Standards and Specifications	
Approvals/standards/specifications	CE; EN 61000-6-2; EN 61000-6-3; EN 60950-1; UL 61010-2-201* (*pending)

# Electronic Circuit Breaker; 24 VDC / 2 A 787 Series



Electronic Circuit Breaker; 1-channel; Input voltage: 24 VDC; 2 A; communication-capable

	Item No.	Pack. Unit
	787-2861/200-000	1

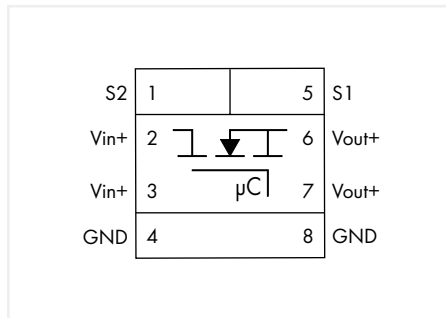


#### Features:

- Space-saving ECB with one channel
- Reliably and safely trips in the event of an overload and short circuit on the secondary side
- Switch-on capacity > 50,000 µF
- Enables the use of an economical, standard power supply
- Minimizes wiring via two voltage outputs and maximizes commoning options on both input and output sides (e.g., commoning of the output voltage on 857 and 2857 Series devices)
- Status signal – as single or group message
- Reset, switch on/off via remote input or local switch
- Prevents power supply overload due to total inrush current thanks to time-delayed switching on during inter-connected operation

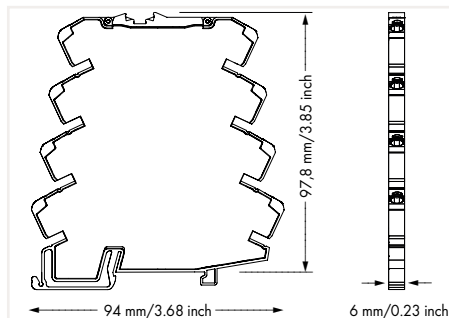
Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Total number of channels (module)	1
Nominal output voltage $U_{o, \text{nom}}$	1 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ – Voltage drop)
Voltage drop	≤ 100 mV (2 A)
Nominal output current $I_{o, \text{nom}}$	1 x 2 A (fixed setting)
Trip time	4 ms ... 100 s
Switch-on capacity	> 50,000 µF per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 170 ms/max. 500 ms)
Active current limitation	No
Signaling and Communication	
Signaling	1 x Status LED (green/yellow/red/blue); 1 x Control input; 1 x Active signal output ( $U_i$ , max. 4 mA)
Remote input	18 ... 30 VDC signal, switches on/off and resets the channel
Efficiency/Power Losses	
Power loss $P_i$	≤ 0.3 W (no load)
Efficiency	≥ 99 %
Fuse Protection	
Internal fuse	T 15 A
Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	1,262,142 h (per MIL-HDBK-217F2)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	No derating
Pollution degree	2
Connection Data	
Number of jumper slots	8
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	6 x 97.8 x 94; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	37 g
Standards and Specifications	
Approvals/standards/specifications	CE; EN 61000-6-2; EN 61000-6-3; EN 60950-1; UL 61010-2-201* (*pending)

## Electronic Circuit Breaker; 24 VDC / 4 A 787 Series



Electronic Circuit Breaker; 1-channel; Input voltage: 24 VDC; 4 A; communication-capable

	Item No.	Pack. Unit
	787-2861/400-000	1



### Features:

- Space-saving ECB with one channel
- Reliably and safely trips in the event of an overload and short circuit on the secondary side
- Switch-on capacity > 50,000  $\mu\text{F}$
- Enables the use of an economical, standard power supply
- Minimizes wiring via two voltage outputs and maximizes commoning options on both input and output sides (e.g., commoning of the output voltage on 857 and 2857 Series devices)
- Status signal – as single or group message
- Reset, switch on/off via remote input or local switch
- Prevents power supply overload due to total inrush current thanks to time-delayed switching on during inter-connected operation

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC

Output	
Total number of channels (module)	1
Nominal output voltage $U_{o, \text{nom}}$	1 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ – Voltage drop)
Voltage drop	$\leq 80$ mV (4 A)
Nominal output current $I_{o, \text{nom}}$	1 x 4 A (fixed setting)
Trip time	4 ms ... 100 s
Switch-on capacity	> 50,000 $\mu\text{F}$ per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 170 ms/max. 500 ms)
Active current limitation	No

Signaling and Communication	
Signaling	1 x Status LED (green/yellow/red/blue); 1 x Control input; 1 x Active signal output ( $U_i$ , max. 4 mA)
Remote input	18 ... 30 VDC signal, switches on/off and resets the channel

Efficiency/Power Losses	
Power loss $P_1$	$\leq 0.3$ W (no load)
Efficiency	$\geq 99$ %

Fuse Protection	
Internal fuse	T 15 A

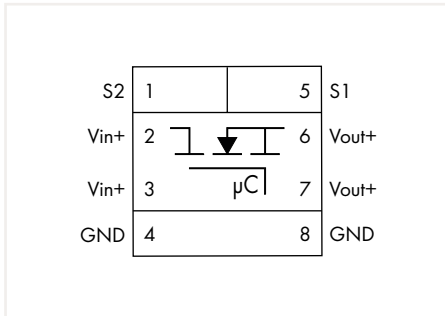
Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	1,258,733 h (per MIL-HDBK-217F2)
Surrounding air temperature (operation)	$-25$ ... $+70$ °C
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	No derating
Pollution degree	2

Connection Data	
Number of jumper slots	8
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	6 x 97.8 x 94; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	37 g

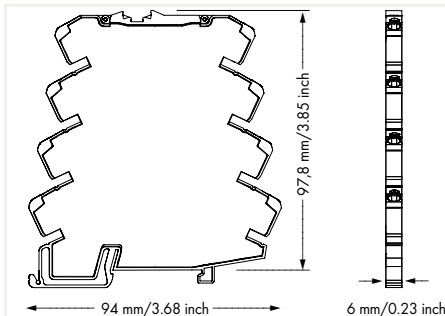
Standards and Specifications	
Approvals/standards/specifications	CE; EN 61000-6-2; EN 61000-6-3; EN 60950-1; UL 61010-2-201* (*pending)

# Electronic Circuit Breaker; 24 VDC / 6 A 787 Series



Electronic Circuit Breaker; 1-channel; Input voltage:  
24 VDC; 6 A; communication-capable

	Item No.	Pack. Unit
	787-2861/600-000	1



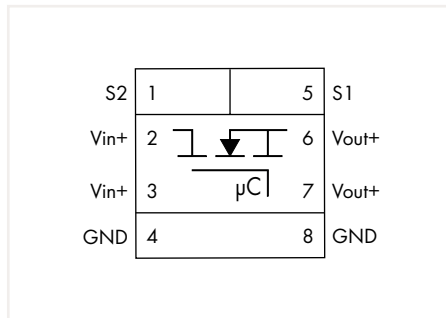
#### Features:

- Space-saving ECB with one channel
- Reliably and safely trips in the event of an overload and short circuit on the secondary side
- Switch-on capacity > 50,000  $\mu\text{F}$
- Enables the use of an economical, standard power supply
- Minimizes wiring via two voltage outputs and maximizes commoning options on both input and output sides (e.g., commoning of the output voltage on 857 and 2857 Series devices)
- Status signal – as single or group message
- Reset, switch on/off via remote input or local switch
- Prevents power supply overload due to total inrush current thanks to time-delayed switching on during inter-connected operation

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Total number of channels (module)	1
Nominal output voltage $U_{o, \text{nom}}$	1 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ – Voltage drop)
Voltage drop	$\leq 1200$ mV (6 A)
Nominal output current $I_{o, \text{nom}}$	1 x 6 A (fixed setting)
Trip time	4 ms ... 100 s
Switch-on capacity	> 50,000 $\mu\text{F}$ per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 170 ms/max. 500 ms)
Active current limitation	No
Signaling and Communication	
Signaling	1 x Status LED (green/yellow/red/blue); 1 x Control input; 1 x Active signal output ( $U_i$ , max. 4 mA)
Remote input	18 ... 30 VDC signal, switches on/off and resets the channel
Efficiency/Power Losses	
Power loss $P_i$	$\leq 0.3$ W (no load)
Efficiency	$\geq 99$ %
Fuse Protection	
Internal fuse	T 15 A
Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	1,253,313 h (per MIL-HDBK-217F2)
Surrounding air temperature (operation)	-25 ... +70 °C (derating must be observed)
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	See instruction manual
Pollution degree	2
Connection Data	
Number of jumper slots	8
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	6 x 97.8 x 94; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	37 g
Standards and Specifications	
Approvals/standards/specifications	CE; EN 61000-6-2; EN 61000-6-3; EN 60950-1; UL 61010-2-201* (*pending)

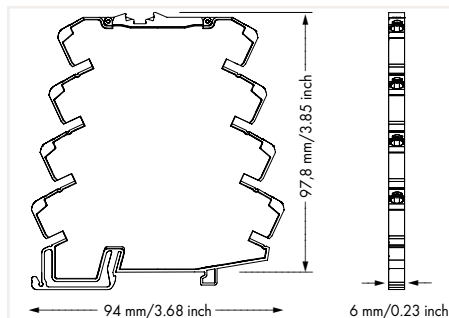


## Electronic Circuit Breaker; 24 VDC / 8 A 787 Series



Electronic Circuit Breaker; 1-channel; Input voltage: 24 VDC; 8 A; communication-capable

	Item No.	Pack. Unit
	787-2861/800-000	1



### Features:

- Space-saving ECB with one channel
- Reliably and safely trips in the event of an overload and short circuit on the secondary side
- Switch-on capacity > 50,000  $\mu\text{F}$
- Enables the use of an economical, standard power supply
- Minimizes wiring via two voltage outputs and maximizes commoning options on both input and output sides (e.g., commoning of the output voltage on 857 and 2857 Series devices)
- Status signal – as single or group message
- Reset, switch on/off via remote input or local switch
- Prevents power supply overload due to total inrush current thanks to time-delayed switching on during inter-connected operation

### Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC

### Output

Total number of channels (module)	1
Nominal output voltage $U_{o, \text{nom}}$	1 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ – Voltage drop)
Voltage drop	$\leq 160$ mV (8 A)
Nominal output current $I_{o, \text{nom}}$	1 x 8 A (fixed setting)
Trip time	4 ms ... 100 s
Switch-on capacity	> 50,000 $\mu\text{F}$ per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 170 ms/max. 500 ms)
Active current limitation	No

### Signaling and Communication

Signaling	1 x Status LED (green/yellow/red/blue); 1 x Control input; 1 x Active signal output ( $U_i$ , max. 4 mA)
Remote input	18 ... 30 VDC signal, switches on/off and resets the channel

### Efficiency/Power Losses

Power loss $P_1$	$\leq 0.3$ W (no load)
Efficiency	$\geq 99$ %

### Fuse Protection

Internal fuse	T 15 A
---------------	--------

### Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	1,245,816 h (per MIL-HDBK-217F2)
Surrounding air temperature (operation)	-25 ... +65 °C (derating must be observed)
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	See instruction manual
Pollution degree	2

### Connection Data

Number of jumper slots	8
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG

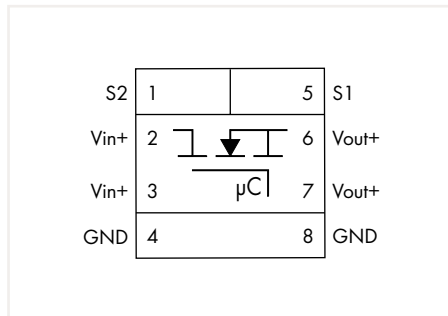
### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	6 x 97.8 x 94; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	37 g

### Standards and Specifications

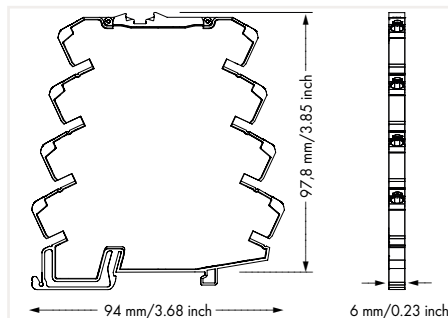
Approvals/standards/specifications	CE; EN 61000-6-2; EN 61000-6-3; EN 60950-1; UL 61010-2-201* (*pending)
------------------------------------	------------------------------------------------------------------------

# Electronic Circuit Breaker; 24 VDC / 1 ... 8 A 787 Series



Electronic Circuit Breaker; 1-channel; Input voltage: 24 VDC; adjustable 1 ... 8 A; Signal contact

	Item No.	Pack. Unit
	787-2861/108-020	1



#### Features:

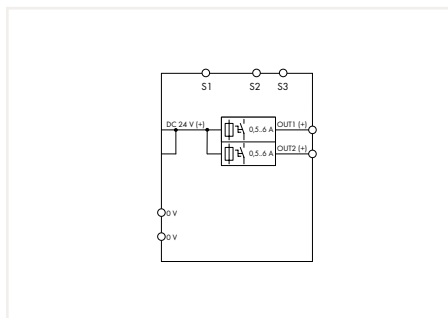
- Space-saving ECB with one channel
- Reliably and safely trips in the event of an overload and short circuit on the secondary side
- Switch-on capacity > 50,000 µF
- Enables the use of an economical, standard power supply
- Minimizes wiring via two voltage outputs and maximizes commoning options on both input and output sides (e.g., commoning of the output voltage on 857 and 2857 Series devices)
- Status signal – adjustable as single or group message
- Reset, switch on/off via remote input or local switch
- Prevents power supply overload due to total inrush current thanks to time-delayed switching on during inter-connected operation

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Total number of channels (module)	1
Nominal output voltage $U_{o, \text{nom}}$	1 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ – Voltage drop)
Voltage drop	≤ 160 mV (8 A)
Nominal output current $I_{o, \text{nom}}$	1 x 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 A (adjustable)
Trip time	4 ms ... 100 s
Switch-on capacity	> 50,000 µF per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 170 ms/max. 500 ms)
Active current limitation	No
Signaling and Communication	
Signaling	1 x Status LED (green/yellow/red/blue/violet); 1 x Control input; 1 x Active signal output ( $U_i$ max. 4 mA)
Remote input	18 ... 30 VDC signal, switches on/off and resets the channel
Efficiency/Power Losses	
Power loss $P_i$	≤ 0.3 W (no load)
Efficiency	≥ 98 %
Fuse Protection	
Internal fuse	T 15 A
Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	1,262,142 h (per MIL-HDBK-217F2)
Surrounding air temperature (operation)	-25 ... +70 °C (derating must be observed)
Relative humidity	10 ... 95 % (no condensation permissible)
Derating	See instruction manual
Pollution degree	2
Connection Data	
Number of jumper slots	8
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	6 x 97.8 x 94; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	37 g
Standards and Specifications	
Approvals/standards/specifications	CE; EN 61000-6-2; EN 61000-6-3; EN 60950-1; UL 61010-2-201* (*pending)

# Electronic Circuit Breaker; with Active Current Limitation;

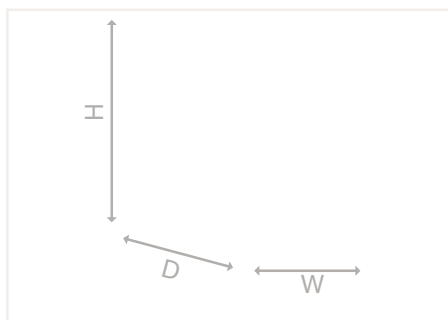
## 24 VDC / 0.5 ... 6 A

### 787 Series



Electronic Circuit Breaker; 2-channel; Input voltage: 24 VDC; adjustable 0.5 ... 6 A; Active current limitation; communication-capable

Item No.	Pack. Unit
787-1662/006-1000	1



#### Features:

- Space-saving ECB with two channels
- Nominal current: 0.5 ... 6 A (adjustable for each channel via sealable selector switch)
- Active current limitation
- Switch-on capacity > 65,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input resets tripped channels or switches on/off any number of channels via pulse sequence

#### Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC

#### Output

Total number of channels (module)	2
Nominal output voltage $U_{o, \text{nom}}$	2 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq 145$ mV (6 A)
Nominal output current $I_{o, \text{nom}}$	2 x 0.5 / 1 / 2 / 3 / 4 / 6 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 5 s (load-dependent)
Switch-on capacity	> 65,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	Yes
Current limitation	1.7 x $I_{o, \text{nom}}$ typ.

#### Signaling and Communication

Signaling	2 x LED (green/red/orange); 1 x Remote control input (S1); 2 x active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence

#### Efficiency/Power Losses

Power loss $P_1$	$\leq 0.55$ W (no load); $\leq 2.5$ W (2 x 6 A)
Efficiency	$\geq 99$ %

#### Fuse Protection

Internal fuse	T 15 A per channel
---------------	--------------------

#### Safety and Protection/Environmental Requirements

Isolation voltage (connectors - housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g

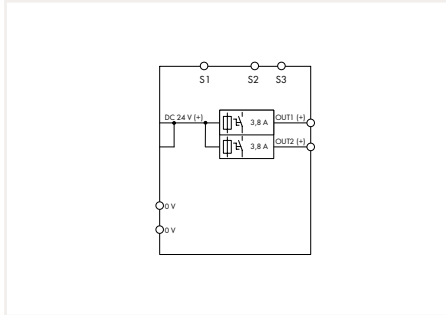
#### Standards and Specifications

Approvals/standards/specifications	CE; UL 508; UL 2367; GL; EN 60950; EN 61000-6-2; EN 61000-6-3
------------------------------------	---------------------------------------------------------------

# Electronic Circuit Breaker; with Active Current Limitation; 24 VDC / 3.8 A 787 Series

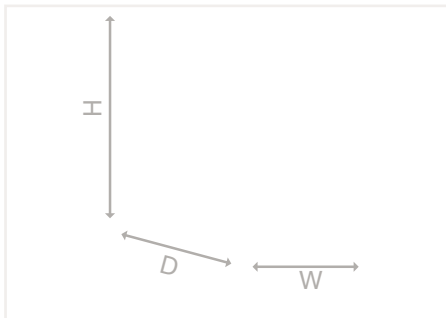


Similar to picture



Electronic Circuit Breaker; 2-channel; Input voltage: 24 VDC; 3.8 A; Active current limitation; NEC Class 2; communication-capable

Item No.	Pack. Unit
787-1662/004-1000	1



#### Features:

- Space-saving ECB with two channels
- Nominal current is fixed at 3.8 A for each channel
- Each output complies with NEC Class 2
- Active current limitation
- Switch-on capacity > 65,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input resets tripped channels or switches on/off any number of channels via pulse sequence

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	20 ... 28.8 VDC
Output	
Total number of channels (module)	2
Nominal output voltage $U_{o, \text{nom}}$	2 x 24 VDC
Output voltage range	20 ... 28.8 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq 125$ mV (3.8 A)
Nominal output current $I_{o, \text{nom}}$	2 x 3.8 A (fixed setting; NEC Class 2 at 20 ... 24 VDC); 2 x 3.2 A (NEC Class 2 at 28 VDC)
Trip time	16 ms ... 4.7 s (load-dependent)
Switch-on capacity	> 65,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	Yes
Current limitation	3.8 A (3.2 A at $U_o > 25$ VDC); LPS per NEC Class 2

Signaling and Communication	
Signaling	2 x LED (green/red/orange); 1 x Remote control input (S1); 2 x active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence

Efficiency/Power Losses	
Power loss $P_l$	$\leq 0.65$ W (no load); $\leq 1.6$ W (2 x 3.8 A)
Efficiency	$\geq 99$ %

Fuse Protection	
Internal fuse	No

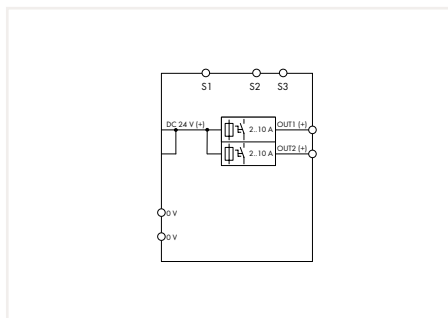
Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g

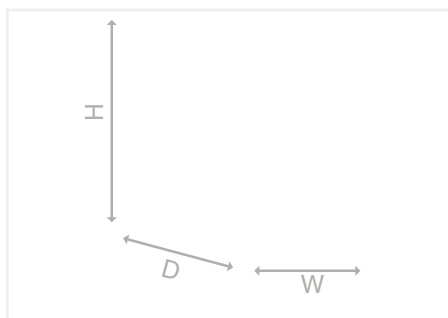
Standards and Specifications	
Approvals/standards/specifications	CE; UL 508; UL 2367; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)

# Electronic Circuit Breaker; 24 VDC / 2 ... 10 A 787 Series



Electronic Circuit Breaker; 2-channel; Input voltage: 24 VDC; adjustable 2 ... 10 A; communication-capable

Item No.	Pack. Unit
787-1662	1



## Features:

- Space-saving ECB with two channels
- Nominal current: 2 ... 10 A (adjustable for each channel via sealable selector switch)
- Switch-on capacity > 50,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input for switching on/off any number of channels via pulse sequence

## Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC

## Output

Total number of channels (module)	2
Nominal output voltage $U_{o, \text{nom}}$	2 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ – Voltage drop)
Voltage drop	$\leq 200$ mV (10 A)
Nominal output current $I_{o, \text{nom}}$	2 x 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No

## Signaling and Communication

Signaling	2 x LED (green/red/orange); 1 x Remote control input (S1); 2 x active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence

## Efficiency/Power Losses

Power loss $P_1$	$\leq 0.85$ W (no load); $\leq 5.5$ W (2 x 10 A)
Efficiency	$\geq 99$ %

## Fuse Protection

Internal fuse	T 15 A per channel
---------------	--------------------

## Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

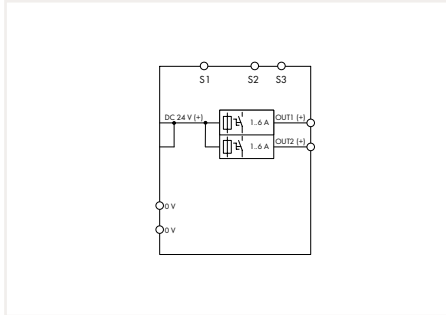
## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	200 g

## Standards and Specifications

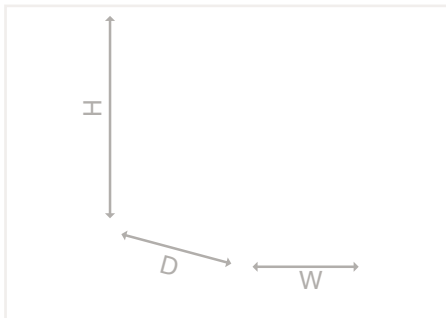
Approvals/standards/specifications	CE; UL 508; UL 2367; GL; EN 60950; EN 61000-6-2; EN 61000-6-3
------------------------------------	---------------------------------------------------------------

# Electronic Circuit Breaker; 24 VDC / 1 ... 6 A 787 Series



Electronic Circuit Breaker; 2-channel; Input voltage: 24 VDC; adjustable 1 ... 6 A; communication-capable

	Item No.	Pack. Unit
	787-1662/106-000	1



### Features:

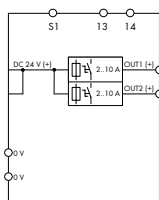
- Space-saving ECB with two channels
- Nominal current: 1 ... 6 A (adjustable for each channel via sealable selector switch)
- Switch-on capacity > 50,000  $\mu\text{F}$  per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input for switching on/off any number of channels via pulse sequence

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Total number of channels (module)	2
Nominal output voltage $U_{o, \text{nom}}$	2 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq 120$ mV (6 A)
Nominal output current $I_{o, \text{nom}}$	2 x 1 / 2 / 3 / 4 / 5 / 6 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu\text{F}$ per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No
Signaling and Communication	
Signaling	2 x LED (green/red/orange); 1 x Remote control input (S1); 2 x active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence
Efficiency/Power Losses	
Power loss $P_i$	$\leq 0.85$ W (no load); $\leq 2.5$ W (2 x 6 A)
Efficiency	$\geq 99$ %
Fuse Protection	
Internal fuse	T 15 A per channel
Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2
Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g
Standards and Specifications	
Approvals/standards/specifications	CE; UL 508; UL 2367; GL; EN 60950; EN 61000-6-2; EN 61000-6-3

# Electronic Circuit Breaker; 24 VDC / 2 ... 10 A 787 Series



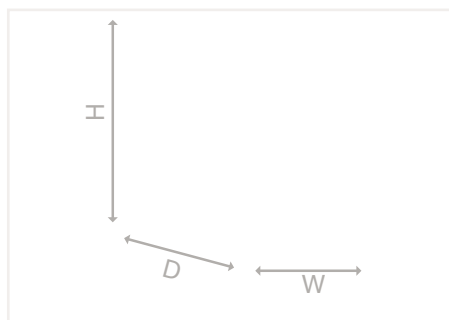
Similar to picture



5

Electronic Circuit Breaker; 2-channel; Input voltage: 24 VDC; adjustable 2 ... 10 A; Signal contact; Specialty configuration

Item No.	Pack. Unit
787-1662/000-054	1



#### Features:

- Space-saving ECB with two channels
- Nominal current: 2 ... 10 A (adjustable for each channel via sealable selector switch)
- Switch-on capacity > 50,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Potential-free signal contact 13/14 reports "channel switched off" and "tripped channel" – does not support communication via pulse sequence

#### Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC

#### Output

Total number of channels (module)	2
Nominal output voltage $U_{o, \text{nom}}$	2 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ – Voltage drop)
Voltage drop	$\leq 200$ mV (10 A)
Nominal output current $I_{o, \text{nom}}$	2 x 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No

#### Signaling and Communication

Signaling	2 x LED (green/red/orange); 1 x Remote control input (S1); 1 x Group signal contact (13; 14)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms

#### Efficiency/Power Losses

Power loss $P_i$	$\leq 0.84$ W (no load); $\leq 5.5$ W (2 x 10 A)
Efficiency	$\geq 99$ %

#### Fuse Protection

Internal fuse	T 15 A per channel
---------------	--------------------

#### Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	161 g

#### Standards and Specifications

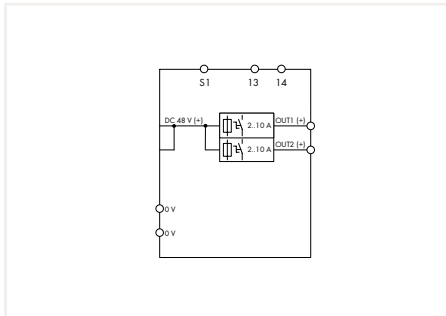
Approvals/standards/specifications	CE; UL 508*; UL 2367*; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)
------------------------------------	-----------------------------------------------------------------------------



# Electronic Circuit Breaker; 48 VDC / 2 ... 10 A 787 Series

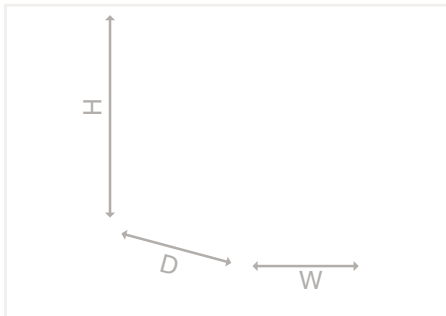


Similar to picture



Electronic Circuit Breaker; 2-channel; Input voltage:  
48 VDC; adjustable 2 ... 10 A; Signal contact

Item No.	Pack. Unit
787-1662/000-250	1



## Features:

- Space-saving ECB with two channels
- Nominal current: 2 ... 10 A (adjustable for each channel via sealable selector switch)
- Switch-on capacity > 23,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Remote input resets all tripped channels
- Potential-free signal contact 13/14 reports "channel switched off" and "tripped channel" – does not support communication via pulse sequence

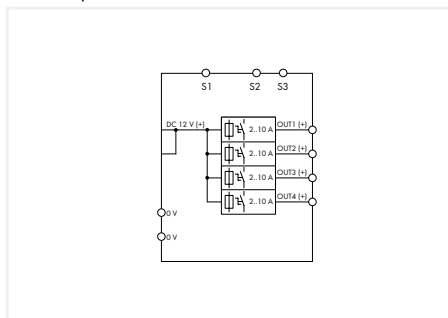
Input	
Nominal input voltage $U_{i, nom}$	48 VDC
Input voltage range	32 ... 58 VDC
Output	
Total number of channels (module)	2
Nominal output voltage $U_{o, nom}$	2 x 48 VDC
Output voltage range	32 ... 58 VDC ( $U_o$ – Voltage drop)
Voltage drop	$\leq 175$ mV (10 A)
Nominal output current $I_{o, nom}$	2 x 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 23,000 $\mu$ F per channel at 48 VDC, 2.5 mm <sup>2</sup> cable cross section and 2.5 m cable length
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No
Signaling and Communication	
Signaling	2 x LED (green/red/orange); 1 x Remote control input (S1); 1 x Group signal contact (13; 14)
Remote input	Reactivation of all tripped channels via 15 ... 58 VDC pulse for min. 500 ms
Efficiency/Power Losses	
Power loss $P_i$	$\leq 0.84$ W (no load); $\leq 4.5$ W (2 x 10 A)
Efficiency	$\geq 99$ %
Fuse Protection	
Internal fuse	T 15 A per channel
Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2
Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g
Standards and Specifications	
Approvals/standards/specifications	CE; UL 508*; UL 2367*; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)



# Electronic Circuit Breaker; 12 VDC / 2 ... 10 A 787 Series

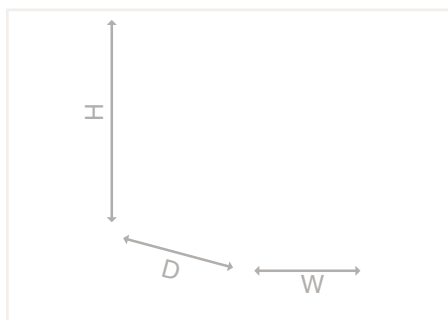


Similar to picture



Electronic Circuit Breaker; 4-channel; Input voltage:  
12 VDC; adjustable 2 ... 10 A; communication-capable

Item No.	Pack. Unit
787-1664/000-100	1



## Features:

- Space-saving ECB with four channels
- Nominal current: 2 ... 10 A (adjustable for each channel via sealable selector switch)
- Switch-on capacity > 50,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input resets tripped channels or switches on/off any number of channels via pulse sequence

## Input

Nominal input voltage $U_{i, \text{nom}}$	12 VDC
Input voltage range	10 ... 16 VDC

## Output

Total number of channels (module)	4
Nominal output voltage $U_{o, \text{nom}}$	4 x 12 VDC
Output voltage range	10 ... 16 VDC ( $U_o$ – Voltage drop)
Voltage drop	$\leq 200$ mV (10 A)
Nominal output current $I_{o, \text{nom}}$	4 x 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No

## Signaling and Communication

Signaling	4 x LED (green/red/orange); 1 x Remote control input (S1); 2 x Active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 9 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence

## Efficiency/Power Losses

Power loss $P_1$	$\leq 0.53$ W (no load); $\leq 10$ W (4 x 10 A)
Efficiency	$\geq 99$ %

## Fuse Protection

Internal fuse	T 15 A per channel
---------------	--------------------

## Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$\geq +50$ °C (see instruction manual)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

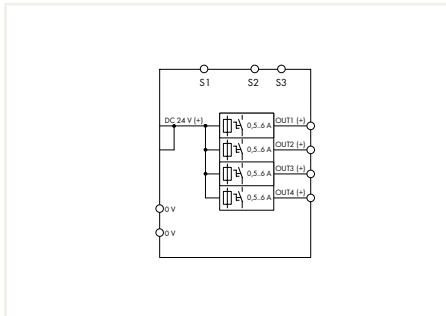
## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g

## Standards and Specifications

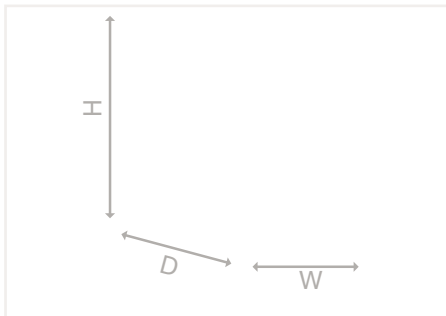
Approvals/standards/specifications	CE; UL 508*; UL 2367*; GL; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)
------------------------------------	----------------------------------------------------------------------------

# Electronic Circuit Breaker; with Active Current Limitation; 24 VDC / 0.5 ... 6 A 787 Series



Electronic Circuit Breaker; 4-channel; Input voltage: 24 VDC; adjustable 0.5 ... 6 A; Active current limitation; communication-capable

Item No.	Pack. Unit
787-1664/006-1000	1



## Features:

- Space-saving ECB with four channels
- Nominal current: 0.5 ... 6 A (adjustable for each channel via sealable selector switch)
- Active current limitation
- High switch-on capacity per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input resets all tripped channels
- Remote input for switching on/off any number of channels via pulse sequence

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Total number of channels (module)	4
Nominal output voltage $U_{o, \text{nom}}$	4 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq 145$ mV (6 A)
Nominal output current $I_{o, \text{nom}}$	4 x 0.5 / 1 / 2 / 3 / 4 / 6 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 5 s (load-dependent)
Switch-on capacity	> 65,000 $\mu\text{F}$ per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	Yes
Current limitation	$1.7 \times I_{o, \text{nom}}$ typ.

Signaling and Communication	
Signaling	4 x LED (green/red/orange); 1 x Remote control input (S1); 2 x Active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence

Efficiency/Power Losses	
Power loss $P_i$	$\leq 0.77$ W (no load); $\leq 4.3$ W (4 x 6 A)
Efficiency	$\geq 99$ %

Fuse Protection	
Internal fuse	T 15 A per channel

Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g

Standards and Specifications	
Approvals/standards/specifications	CE; UL 508; UL 2367; GL; EN 60950; EN 61000-6-2; EN 61000-6-3

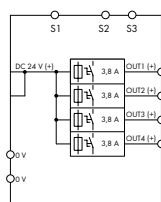
# Electronic Circuit Breaker; with Active Current Limitation;

## 24 VDC / 3.8 A

### 787 Series

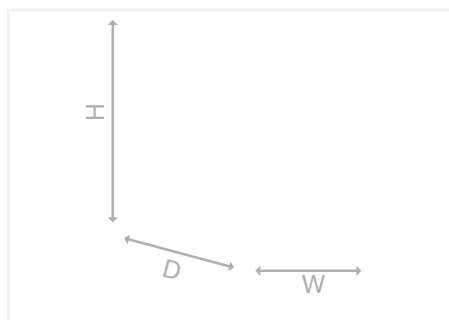


Similar to picture



Electronic Circuit Breaker; 4-channel; Input voltage: 24 VDC; 3.8 A; Active current limitation; NEC Class 2; communication-capable

Item No.	Pack. Unit
787-1664/004-1000	1



#### Features:

- Space-saving ECB with four channels
- Nominal current is fixed at 3.8 A for each channel
- Each output complies with NEC Class 2
- Active current limitation
- High switch-on capacity per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input resets all tripped channels
- Remote input for switching on/off any number of channels via pulse sequence

#### Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	20 ... 28.8 VDC

#### Output

Total number of channels (module)	4
Nominal output voltage $U_{o, \text{nom}}$	4 x 24 VDC
Output voltage range	20 ... 28.8 VDC ( $U_o$ - Voltage drop)
Voltage drop	$\leq 150$ mV (3.8 A)
Nominal output current $I_{o, \text{nom}}$	4 x 3.8 A (fixed setting; NEC Class 2 at 20 ... 24 VDC); 4 x 3.2 A (NEC Class 2 at 28 VDC)
Trip time	16 ms ... 4.7 s (load-dependent)
Switch-on capacity	> 65,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	Yes
Current limitation	3.8 A (3.2 A at $U_o > 25$ VDC); LPS per NEC Class 2

#### Signaling and Communication

Signaling	4 x LED (green/red/orange); 1 x Remote control input (S1); 2 x Active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence

#### Efficiency/Power Losses

Power loss $P_1$	$\leq 0.82$ W (no load); $\leq 3.1$ W (4 x 3.8 A)
Efficiency	$\geq 99$ %

#### Fuse Protection

Internal fuse	No
---------------	----

#### Safety and Protection/Environmental Requirements

Isolation voltage (connectors - housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g

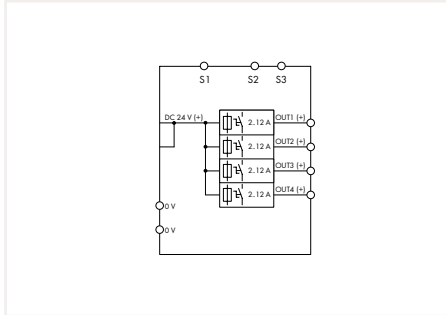
#### Standards and Specifications

Approvals/standards/specifications	CE; UL 508; UL 2367; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)
------------------------------------	---------------------------------------------------------------------------

# Electronic Circuit Breaker; with Active Current Limitation; 24 VDC / 2 ... 12 A 787 Series

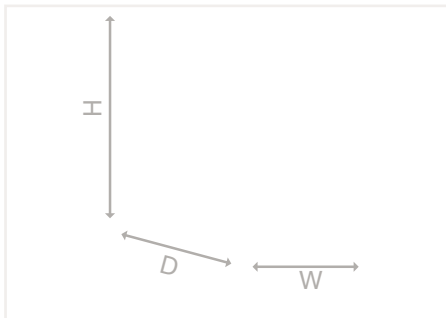


Similar to picture



Electronic Circuit Breaker; 4-channel; Input voltage: 24 VDC; adjustable 2 ... 12 A; Active current limitation; communication-capable

Item No.	Pack. Unit
787-1664/212-1000	1



#### Features:

- Space-saving ECB with four channels
- Nominal current: 2 ... 12 A (adjustable for each channel via sealable selector switch)
- Active current limitation
- High switch-on capacity per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input resets all tripped channels
- Remote input for switching on/off any number of channels via pulse sequence

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Total number of channels (module)	4
Nominal output voltage $U_{o, \text{nom}}$	4 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_o$ – Voltage drop)
Voltage drop	$\leq 240$ mV (12 A)
Nominal output current $I_{o, \text{nom}}$	4 x 2 / 4 / 6 / 8 / 10 / 12 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 5 s (load-dependent)
Switch-on capacity	> 65,000 $\mu\text{F}$ per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	Yes
Current limitation	1.7 x $I_{o, \text{nom}}$ typ.

Signaling and Communication	
Signaling	4 x LED (green/red/orange); 1 x Remote control input (S1); 2 x Active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence

Efficiency/Power Losses	
Power loss $P_l$	$\leq 0.77$ W (no load); $\leq 12.3$ W (4 x 12 A)
Efficiency	$\geq 99$ %

Fuse Protection	
Internal fuse	T 15 A per channel

Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

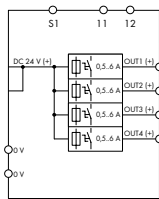
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g

Standards and Specifications	
Approvals/standards/specifications	CE; UL 508; UL 2367; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)

# Electronic Circuit Breaker; with Active Current Limitation; 24 VDC / 0.5 ... 6 A 787 Series

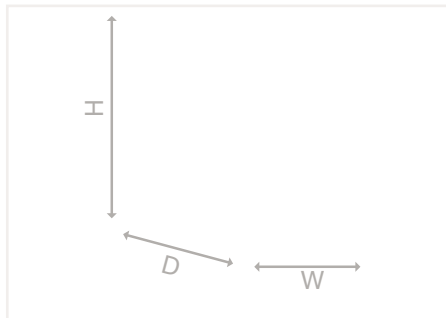


Similar to picture



Electronic Circuit Breaker; 4-channel; Input voltage: 24 VDC; adjustable 0.5 ... 6 A; Active current limitation; Signal contact; Speciality configuration

Item No.	Pack. Unit
787-1664/006-1054	1



## Features:

- Space-saving ECB with four channels
- Nominal current: 0.5 ... 6 A (adjustable for each channel via sealable selector switch)
- Active current limitation
- High switch-on capacity per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Remote input resets all tripped channels
- Potential-free signal contact 11/12 reports "channel switched off" and "tripped channel" – does not support communication via pulse sequence

## Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC

## Output

Total number of channels (module)	4
Nominal output voltage $U_{o, \text{nom}}$	4 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ – Voltage drop)
Voltage drop	≤ 145 mV (6 A)
Nominal output current $I_{o, \text{nom}}$	4 x 0.5 / 1 / 2 / 3 / 4 / 6 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 5 s (load-dependent)
Switch-on capacity	> 58,000 $\mu\text{F}$ per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	Yes
Current limitation	$1.3 \times I_{o, \text{nom}}$ typ.

## Signaling and Communication

Signaling	4 x LED (green/red/orange); 1 x Remote control input (S1); 1 x Group signal contact (11; 12)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms

## Efficiency/Power Losses

Power loss $P_i$	≤ 0.77 W (no load); ≤ 4.3 W (4 x 6 A)
Efficiency	≥ 99 %

## Fuse Protection

Internal fuse	T 15 A per channel
---------------	--------------------

## Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

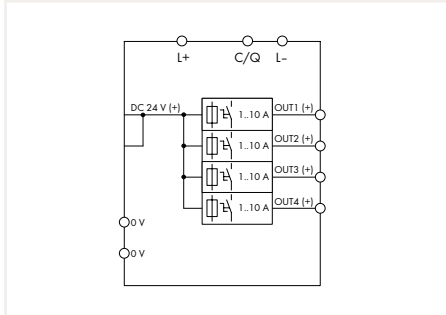
## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g

## Standards and Specifications

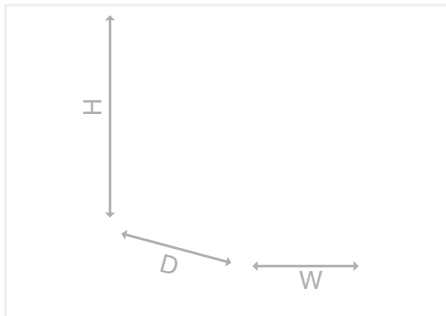
Approvals/standards/specifications	CE; UL 508; UL 2367; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)
------------------------------------	---------------------------------------------------------------------------

# Electronic Circuit Breaker; 24 VDC / 1 ... 10 A 787 Series



Electronic Circuit Breaker; 4-channel; Input voltage: 24 VDC; adjustable 1 ... 10 A; IO-Link

Item No.	Pack. Unit
787-1664/000-080	1

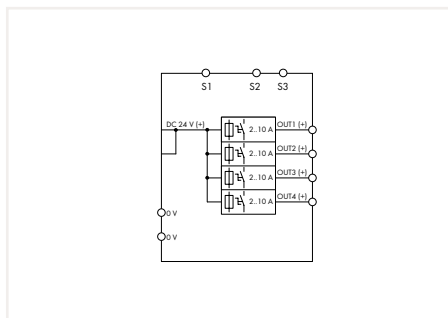


#### Features:

- Space-saving ECB with four channels
- Nominal current: 1 ... 10 A (adjustable for each channel via sealable selector switch or IO-Link interface)
- Switch-on capacity > 50,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Status message and current measurement of each individual channel via IO-Link interface
- Switch on/off each channel separately via IO-Link interface

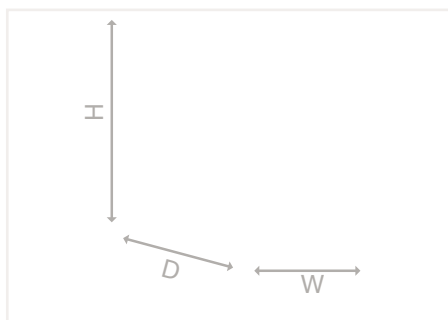
Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Total number of channels (module)	4
Nominal output voltage $U_{o, \text{nom}}$	4 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq 200$ mV (10 A)
Nominal output current $I_{o, \text{nom}}$	4 x 1 / 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via IO-Link interface; 1, 2, 4, 6, 10 A (adjustable for each channel via selector switch))
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No
Signaling and Communication	
Signaling	4 x LED (green/red/orange); 1 x IO-Link interface
Remote input	Switching on/off any number of channels via IO-Link interface
Efficiency/Power Losses	
Power loss $P_i$	$\leq 0.84$ W (no load); $\leq 10$ W (4 x 10 A)
Efficiency	$\geq 99$ %
Fuse Protection	
Internal fuse	T 15 A per channel
Safety and Protection/Environmental Requirements	
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$\geq +50$ °C (see instruction manual)
Pollution degree	2
Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g
Standards and Specifications	
Approvals/standards/specifications	CE; UL 508*; UL 2367*; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)

# Electronic Circuit Breaker; 24 VDC / 2 ... 10 A 787 Series



Electronic Circuit Breaker; 4-channel; Input voltage: 24 VDC; adjustable 2 ... 10 A; communication-capable

Item No.	Pack. Unit
787-1664	1



## Features:

- ECB with four channels, parametrizable
- Time-delayed switching of channels
- Tripped message (group signal)
- Remote input resets all tripped channels
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Status message for each channel via pulse sequence
- Remote input for switching on/off any number of channels via pulse sequence

## Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC

## Output

Total number of channels (module)	4
Nominal output voltage $U_{o, \text{nom}}$	4 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq 200$ mV (10 A)
Nominal output current $I_{o, \text{nom}}$	4 x 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No

## Signaling and Communication

Signaling	4 x LED (green/red/orange); 1 x Remote control input (S1); 2 x Active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence

## Efficiency/Power Losses

Power loss $P_1$	$\leq 0.84$ W (no load); $\leq 10$ W (4 x 10 A)
Efficiency	$\geq 99$ %

## Fuse Protection

Internal fuse	T 15 A per channel
---------------	--------------------

## Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$\geq +50$ °C (see instruction manual)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

## Geometric Data/Mechanical Data/Material Data

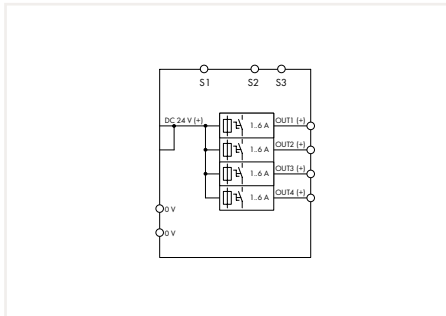
Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g

## Standards and Specifications

Approvals/standards/specifications	CE; UL 508; UL 2367; GL; EN 60950; EN 61000-6-2; EN 61000-6-3
------------------------------------	---------------------------------------------------------------

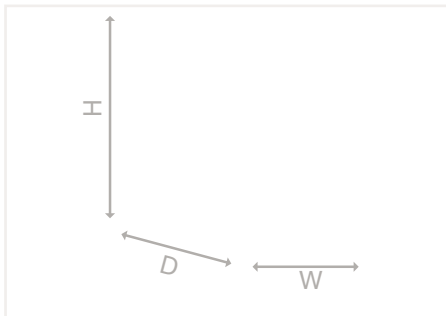


# Electronic Circuit Breaker; 24 VDC / 1 ... 6 A 787 Series



Electronic Circuit Breaker; 4-channel; Input voltage: 24 VDC; adjustable 1 ... 6 A; communication-capable

Item No.	Pack. Unit
787-1664/106-000	1



#### Features:

- ECB with four channels, parametrizable
- Time-delayed switching of channels
- Tripped message (group signal)
- Remote input resets all tripped channels
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Status message for each channel via pulse sequence
- Remote input for switching on/off any number of channels via pulse sequence

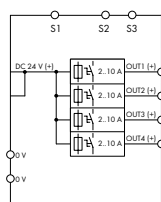
Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Total number of channels (module)	4
Nominal output voltage $U_{o, \text{nom}}$	4 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq 120$ mV (6 A)
Nominal output current $I_{o, \text{nom}}$	4 x 1 / 2 / 3 / 4 / 5 / 6 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No
Signaling and Communication	
Signaling	4 x LED (green/red/orange); 1 x Remote control input (S1); 2 x Active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence
Efficiency/Power Losses	
Power loss $P_i$	$\leq 0.84$ W (no load); $\leq 4.2$ W (4 x 6 A)
Efficiency	$\geq 99$ %
Fuse Protection	
Internal fuse	T 15 A per channel
Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2
Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	210 g
Standards and Specifications	
Approvals/standards/specifications	CE; UL 508; UL 2367; GL; EN 60950; EN 61000-6-2; EN 61000-6-3



# Electronic Circuit Breaker; 24 VDC / 2 ... 10 A 787 Series

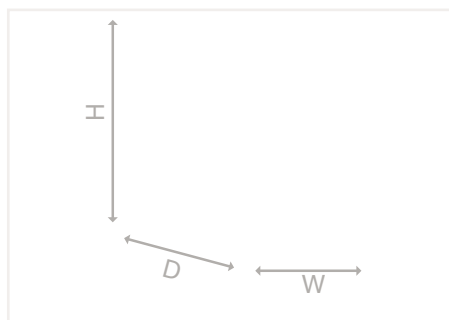


Similar to picture



Electronic Circuit Breaker; 4-channel; Input voltage: 24 VDC; adjustable 2 ... 10 A; communication-capable; Specialty configuration

Item No.	Pack. Unit
787-1664/000-004	1



#### Features:

- ECB with four channels, parametrizable
- Time-delayed switching of channels
- Tripped message (group signal)
- Remote input resets all tripped channels
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Status message for each channel via pulse sequence
- Remote input for switching on/off any number of channels via pulse sequence
- Group signal S3 reports "channel switched off" and "tripped channel"

#### Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC

#### Output

Total number of channels (module)	4
Nominal output voltage $U_{o, \text{nom}}$	4 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq 200$ mV (10 A)
Nominal output current $I_{o, \text{nom}}$	4 x 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No

#### Signaling and Communication

Signaling	4 x LED (green/red/orange); 1 x Remote control input (S1); 2 x Active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence

#### Efficiency/Power Losses

Power loss $P_1$	$\leq 0.84$ W (no load); $\leq 10$ W (4 x 10 A)
Efficiency	$\geq 99$ %

#### Fuse Protection

Internal fuse	T 15 A per channel
---------------	--------------------

#### Safety and Protection/Environmental Requirements

Isolation voltage (connectors - housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$\geq +50$ °C (see instruction manual)
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	161 g

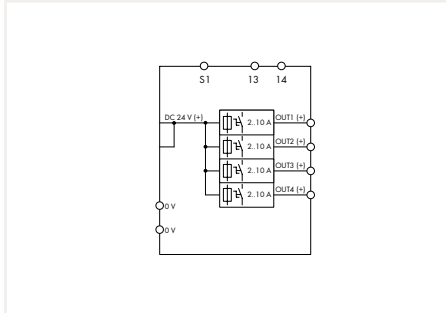
#### Standards and Specifications

Approvals/standards/specifications	CE; UL 508; UL 2367; GL; EN 60950; EN 61000-6-2; EN 61000-6-3
------------------------------------	---------------------------------------------------------------

# Electronic Circuit Breaker; 24 VDC / 2 ... 10 A 787 Series

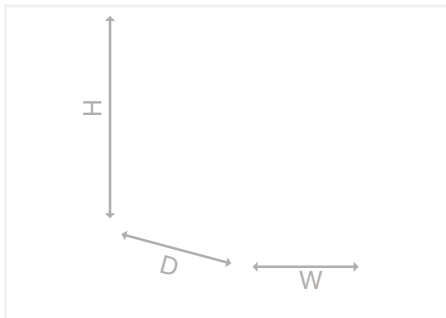


Similar to picture



Electronic Circuit Breaker; 4-channel; Input voltage: 24 VDC; adjustable 2 ... 10 A; Signal contact; Specialty configuration

Item No.	Pack. Unit
787-1664/000-054	1



### Features:

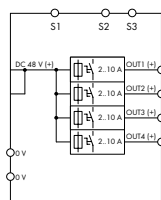
- ECB with four channels, parametrizable
- Time-delayed switching of channels
- Potential-free signal contact 13 / 14 reports "channel switched off" and "tripped channel" – does not support communication via pulse sequence
- Tripped message (group signal)
- Remote input resets all tripped channels
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Total number of channels (module)	4
Nominal output voltage $U_{o, \text{nom}}$	4 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ – Voltage drop)
Voltage drop	$\leq 200$ mV (10 A)
Nominal output current $I_{o, \text{nom}}$	4 x 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No
Signaling and Communication	
Signaling	4 x LED (green/red/orange); 1 x Remote control input (S1); 1 x Group signal contact (13; 14)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms
Efficiency/Power Losses	
Power loss $P_i$	$\leq 0.84$ W (no load); $\leq 10$ W (4 x 10 A)
Efficiency	$\geq 99$ %
Fuse Protection	
Internal fuse	T 15 A per channel
Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$\geq +50$ °C (see instruction manual)
Pollution degree	2
Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g
Standards and Specifications	
Approvals/standards/specifications	CE; UL 508*; UL 2367*; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)

# Electronic Circuit Breaker; 48 VDC / 2 ... 10 A 787 Series

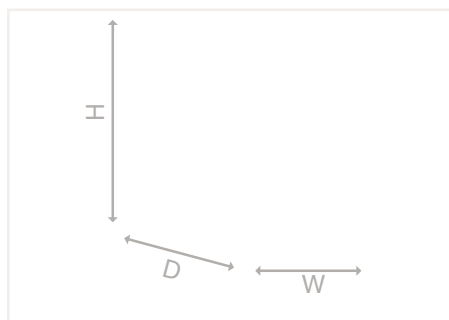


Similar to picture



Electronic Circuit Breaker; 4-channel; Input voltage:  
48 VDC; adjustable 2 ... 10 A; communication-capable

Item No.	Pack. Unit
787-1664/000-200	1



## Features:

- Space-saving ECB with four channels
- Nominal current: 2 ... 10 A (adjustable for each channel via sealable selector switch)
- Switch-on capacity > 23,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input resets all tripped channels
- Remote input for switching on/off any number of channels via pulse sequence

## Input

Nominal input voltage $U_{i, \text{nom}}$	48 VDC
Input voltage range	32 ... 58 VDC

## Output

Total number of channels (module)	4
Nominal output voltage $U_{o, \text{nom}}$	4 x 48 VDC
Output voltage range	32 ... 58 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq 175$ mV (10 A)
Nominal output current $I_{o, \text{nom}}$	4 x 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 23,000 $\mu$ F per channel at 48 VDC, 2.5 mm <sup>2</sup> cable cross section and 2.5 m cable length
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No

## Signaling and Communication

Signaling	4 x LED (green/red/orange); 1 x Remote control input (S1); 2 x Active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 58 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence

## Efficiency/Power Losses

Power loss $P_i$	$\leq 0.84$ W (no load); $\leq 8$ W (4 x 10 A)
Efficiency	$\geq 99$ %

## Fuse Protection

Internal fuse	T 15 A per channel
---------------	--------------------

## Safety and Protection/Environmental Requirements

Isolation voltage (connectors - housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$\geq +50$ °C (see instruction manual)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g

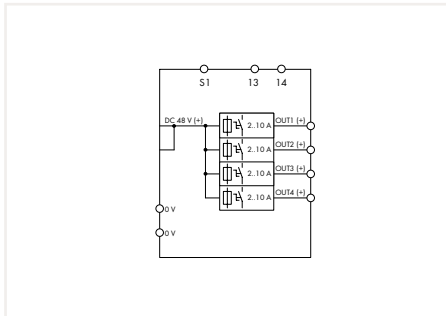
## Standards and Specifications

Approvals/standards/specifications	CE; UL 508*; UL 2367*; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)
------------------------------------	-----------------------------------------------------------------------------

# Electronic Circuit Breaker; 48 VDC / 2 ... 10 A 787 Series

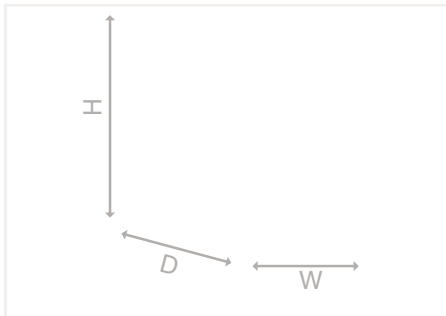


Similar to picture



Electronic Circuit Breaker; 4-channel; Input voltage: 48 VDC; adjustable 2 ... 10 A; Signal contact

Item No.	Pack. Unit
787-1664/000-250	1



#### Features:

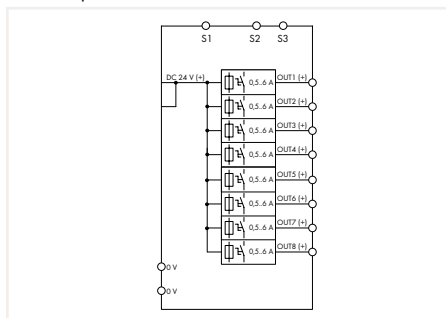
- Space-saving ECB with four channels
- Nominal current: 2 ... 10 A (adjustable for each channel via sealable selector switch)
- Switch-on capacity > 23,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Remote input resets all tripped channels
- Potential-free signal contact 13 / 14 reports "channel switched off" and "tripped channel" – does not support communication via pulse sequence

Input	
Nominal input voltage $U_{i, nom}$	48 VDC
Input voltage range	32 ... 58 VDC
Output	
Total number of channels (module)	4
Nominal output voltage $U_{o, nom}$	4 x 48 VDC
Output voltage range	32 ... 58 VDC ( $U_o$ – Voltage drop)
Voltage drop	$\leq 175$ mV (10 A)
Nominal output current $I_{o, nom}$	4 x 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 23,000 $\mu$ F per channel at 48 VDC, 2.5 mm <sup>2</sup> cable cross section and 2.5 m cable length
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No
Signaling and Communication	
Signaling	4 x LED (green/red/orange); 1 x Remote control input (S1); 1 x Group signal contact (13; 14)
Remote input	Reactivation of all tripped channels via 15 ... 58 VDC pulse for min. 500 ms
Efficiency/Power Losses	
Power loss $P_I$	$\leq 0.84$ W (no load); $\leq 8$ W (4 x 10 A)
Efficiency	$\geq 99$ %
Fuse Protection	
Internal fuse	T 15 A per channel
Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$\geq +50$ °C (see instruction manual)
Pollution degree	2
Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	45 x 90 x 115.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170 g
Standards and Specifications	
Approvals/standards/specifications	CE; UL 508*; UL 2367*; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)

# Electronic Circuit Breaker; with Active Current Limitation; 24 VDC / 0.5 ... 6 A 787 Series

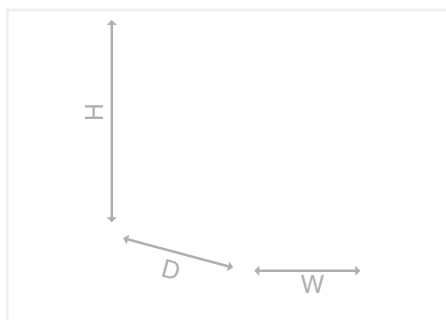


Similar to picture



Electronic Circuit Breaker; 8-channel; Input voltage: 24 VDC; adjustable 0.5 ... 6 A; Active current limitation; communication-capable

Item No.	Pack. Unit
787-1668/006-1000	1



## Features:

- Space-saving ECB with eight channels
- Nominal current: 0.5 ... 6 A (adjustable for each channel via sealable selector switch)
- Active current limitation
- Switch-on capacity > 65,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input resets all tripped channels
- Remote input for switching on/off any number of channels via pulse sequence

## Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC

## Output

Total number of channels (module)	8
Nominal output voltage $U_{o, \text{nom}}$	8 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq$ 155 mV (6 A)
Nominal output current $I_{o, \text{nom}}$	8 x 0.5 / 1 / 2 / 3 / 4 / 6 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 5 s (load-dependent)
Switch-on capacity	> 65,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	Yes
Current limitation	1.7 x $I_{o, \text{nom}}$ typ.

## Signaling and Communication

Signaling	8 x LED (green/red/orange); 1 x Remote control input (S1); 2 x Active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence

## Efficiency/Power Losses

Power loss $P_1$	$\leq$ 1.15 W (no load); $\leq$ 8.6 W (8 x 6 A)
Efficiency	$\geq$ 99 %

## Fuse Protection

Internal fuse	T 15 A per channel
---------------	--------------------

## Safety and Protection/Environmental Requirements

Isolation voltage (connectors - housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	42 x 127 x 142.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	440 g

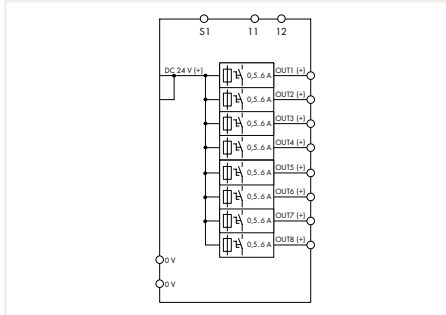
## Standards and Specifications

Approvals/standards/specifications	CE; UL 508*; UL 2367*; GL; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)
------------------------------------	----------------------------------------------------------------------------

# Electronic Circuit Breaker; with Active Current Limitation; 24 VDC / 0.5 ... 6 A 787 Series

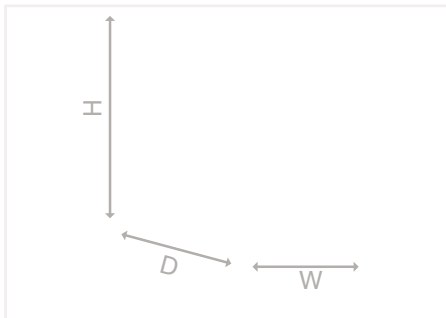


Similar to picture



Electronic Circuit Breaker; 8-channel; Input voltage: 24 VDC; adjustable 0.5 ... 6 A; Active current limitation; Signal contact; Specialty configuration

Item No.	Pack. Unit
787-1668/006-1054	1



## Features:

- Space-saving ECB with eight channels
- Nominal current: 0.5 ... 6 A (adjustable for each channel via sealable selector switch)
- Active current limitation
- Switch-on capacity > 65,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Remote input resets all tripped channels
- Potential-free signal contact 11/12 reports "channel switched off" and "tripped channel" – does not support communication via pulse sequence

Input	
Nominal input voltage $U_{i, nom}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Total number of channels (module)	8
Nominal output voltage $U_{o, nom}$	8 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ – Voltage drop)
Voltage drop	$\leq 155$ mV (6 A)
Nominal output current $I_{o, nom}$	8 x 0.5 / 1 / 2 / 3 / 4 / 6 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 5 s (load-dependent)
Switch-on capacity	> 58,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	Yes
Current limitation	1.3 x $I_{o, nom}$ typ.

Signaling and Communication	
Signaling	8 x LED (green/red/orange); 1 x Remote control input (S1); 1 x Group signal contact (11; 12)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms

Efficiency/Power Losses	
Power loss $P_i$	$\leq 1.15$ W (no load); $\leq 8.6$ W (8 x 6 A)
Efficiency	$\geq 99$ %

Fuse Protection	
Internal fuse	T 15 A per channel

Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

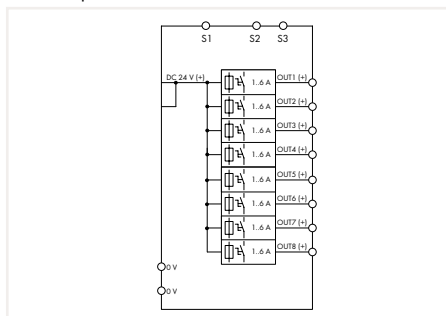
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	42 x 127 x 142.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	440 g

Standards and Specifications	
Approvals/standards/specifications	CE; UL 508*; UL 2367*; GL; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)

# Electronic Circuit Breaker; 24 VDC / 1 ... 6 A 787 Series

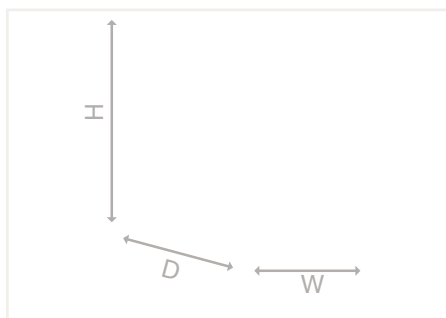


Similar to picture



Electronic Circuit Breaker; 8-channel; Input voltage: 24 VDC; adjustable 1 ... 6 A; communication-capable

Item No.	Pack. Unit
787-1668/106-000	1



## Features:

- Space-saving ECB with eight channels
- Nominal current: 1 ... 6 A (adjustable for each channel via sealable selector switch)
- Switch-on capacity > 50,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input resets all tripped channels
- Remote input for switching on/off any number of channels via pulse sequence

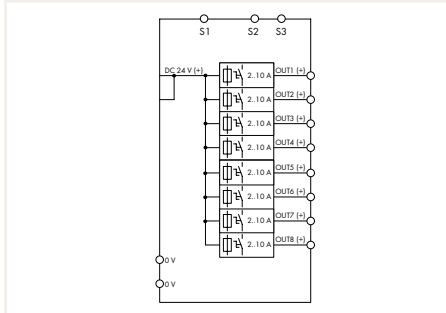
Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Total number of channels (module)	8
Nominal output voltage $U_{o, \text{nom}}$	8 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ – Voltage drop)
Voltage drop	$\leq$ 120 mV (6 A)
Nominal output current $I_{o, \text{nom}}$	8 x 1 / 2 / 3 / 4 / 5 / 6 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No
Signaling and Communication	
Signaling	8 x LED (green/red/orange); 1 x Remote control input (S1); 2 x Active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence
Efficiency/Power Losses	
Power loss $P_1$	$\leq$ 1.32 W (no load); $\leq$ 8 W (8 x 6 A)
Efficiency	$\geq$ 99 %
Fuse Protection	
Internal fuse	T 15 A per channel
Safety and Protection/Environmental Requirements	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2
Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	42 x 127 x 142.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	490 g
Standards and Specifications	
Approvals/standards/specifications	CE; UL 508; UL 2367; GL; EN 60950; EN 61000-6-2; EN 61000-6-3



# Electronic Circuit Breaker; 24 VDC / 2 ... 10 A 787 Series

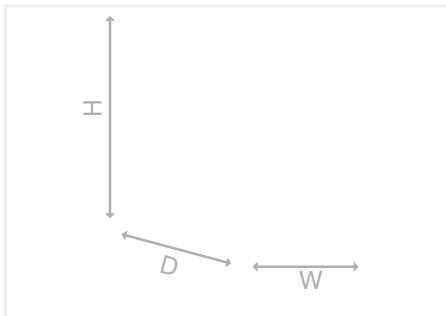


Similar to picture



Electronic Circuit Breaker; 8-channel; Input voltage: 24 VDC; adjustable 2 ... 10 A; communication-capable

Item No.	Pack. Unit
787-1668	1



## Features:

- Space-saving ECB with eight channels
- Nominal current: 2 ... 10 A (adjustable for each channel via sealable selector switch)
- Switch-on capacity > 50,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input resets all tripped channels
- Remote input for switching on/off any number of channels via pulse sequence

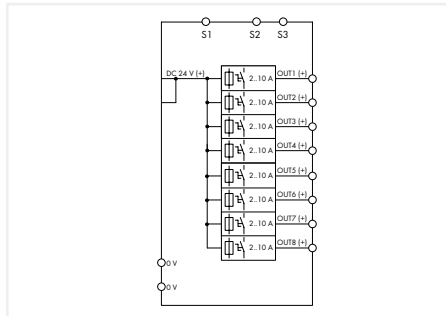
<b>Input</b>	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
<b>Output</b>	
Total number of channels (module)	8
Nominal output voltage $U_{o, \text{nom}}$	8 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq 200$ mV (10 A)
Nominal output current $I_{o, \text{nom}}$	8 x 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No
<b>Signaling and Communication</b>	
Signaling	8 x LED (green/red/orange); 1 x Remote control input (S1); 2 x Active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence
<b>Efficiency/Power Losses</b>	
Power loss $P_i$	$\leq 1.3$ W (no load); $\leq 20$ W (8 x 10 A)
Efficiency	$\geq 99$ %
<b>Fuse Protection</b>	
Internal fuse	T 15 A per channel
<b>Safety and Protection/Environmental Requirements</b>	
Isolation voltage (connectors - housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$\geq +50$ °C (see instruction manual)
Pollution degree	2
<b>Connection Data</b>	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
<b>Geometric Data/Mechanical Data/Material Data</b>	
Width x height x depth (mm)	42 x 127 x 142.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	440 g
<b>Standards and Specifications</b>	
Approvals/standards/specifications	CE; UL 508; UL 2367; GL; EN 60950; EN 61000-6-2; EN 61000-6-3



# Electronic Circuit Breaker; 24 VDC / 2 ... 10 A 787 Series

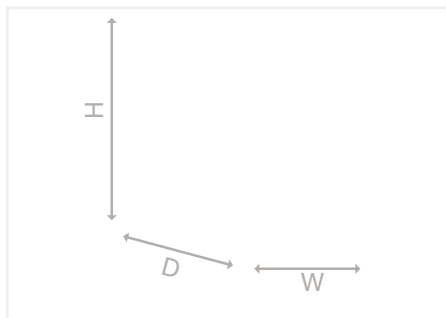


Similar to picture



Electronic Circuit Breaker; 8-channel; Input voltage: 24 VDC; adjustable 2 ... 10 A; communication-capable; Specialty configuration

Item No.	Pack. Unit
787-1668/000-004	1



## Features:

- Space-saving ECB with eight channels
- Nominal current: 2 ... 10 A (adjustable for each channel via sealable selector switch)
- Switch-on capacity > 50,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input resets all tripped channels
- Remote input for switching on/off any number of channels via pulse sequence
- Group signal S3 reports "channel switched off" and "tripped channel"

## Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC

## Output

Total number of channels (module)	8
Nominal output voltage $U_{o, \text{nom}}$	8 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq 200$ mV (10 A)
Nominal output current $I_{o, \text{nom}}$	8 x 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No

## Signaling and Communication

Signaling	8 x LED (green/red/orange); 1 x Remote control input (S1); 2 x Active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence

## Efficiency/Power Losses

Power loss $P_1$	$\leq 1.3$ W (no load); $\leq 20$ W (8 x 10 A)
Efficiency	$\geq 99$ %

## Fuse Protection

Internal fuse	T 15 A per channel
---------------	--------------------

## Safety and Protection/Environmental Requirements

Isolation voltage (connectors - housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$\geq +50$ °C (see instruction manual)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	42 x 127 x 142.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	420 g

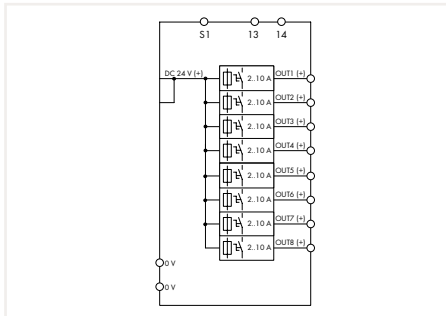
## Standards and Specifications

Approvals/standards/specifications	CE; UL 508; UL 2367; GL; EN 60950; EN 61000-6-2; EN 61000-6-3
------------------------------------	---------------------------------------------------------------

# Electronic Circuit Breaker; 24 VDC / 2 ... 10 A 787 Series

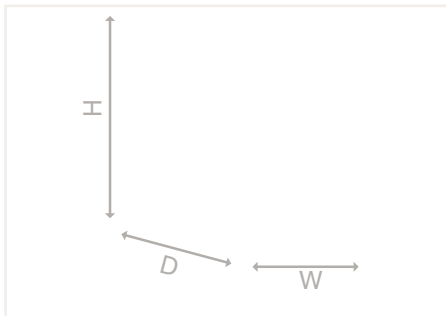


Similar to picture



Electronic Circuit Breaker; 8-channel; Input voltage: 24 VDC; adjustable 2 ... 10 A; Signal contact; Specialty configuration

Item No.	Pack. Unit
787-1668/000-054	1



## Features:

- Space-saving ECB with eight channels
- Nominal current: 2 ... 10 A (adjustable for each channel via sealable selector switch)
- Switch-on capacity > 50,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Remote input resets all tripped channels
- Potential-free signal contact 13 / 14 reports "channel switched off" and "tripped channel" – does not support communication via pulse sequence.

## Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC

## Output

Total number of channels (module)	8
Nominal output voltage $U_{o, \text{nom}}$	8 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_o$ – Voltage drop)
Voltage drop	$\leq 200$ mV (10 A)
Nominal output current $I_{o, \text{nom}}$	8 x 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via selector switch; max. 70 A in total)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No

## Signaling and Communication

Signaling	8 x LED (green/red/orange); 1 x Remote control input (S1); 1 x Group signal contact (13; 14)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms

## Efficiency/Power Losses

Power loss $P_l$	$\leq 1.32$ W (no load); $\leq 20$ W (8 x 10 A)
Efficiency	$\geq 99$ %

## Fuse Protection

Internal fuse	T 15 A per channel
---------------	--------------------

## Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$\geq +50$ °C (see instruction manual)
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	42 x 127 x 142.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	440 g

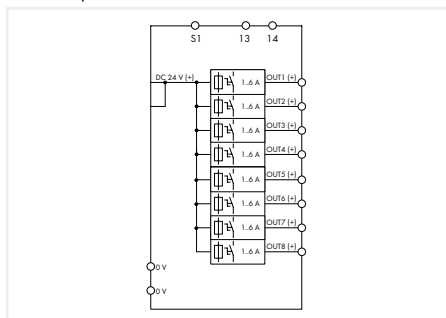
## Standards and Specifications

Approvals/standards/specifications	CE; UL 508*; UL 2367*; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)
------------------------------------	-----------------------------------------------------------------------------

# Electronic Circuit Breaker; 24 VDC / 1 ... 6 A 787 Series

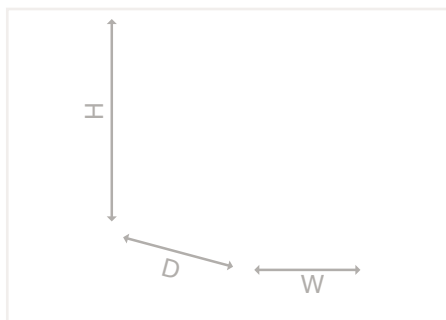


Similar to picture



Electronic Circuit Breaker; 8-channel; Input voltage:  
24 VDC; adjustable 1 ... 6 A; Signal contact

Item No.	Pack. Unit
787-1668/106-054	1



## Features:

- Space-saving ECB with eight channels
- Nominal current: 1 ... 6 A (adjustable for each channel via sealable selector switch)
- Switch-on capacity > 50,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Remote input resets all tripped channels
- Potential-free signal contact 13/14 reports "channel switched off" and "tripped channel" – does not support communication via pulse sequence

## Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC

## Output

Total number of channels (module)	8
Nominal output voltage $U_{o, \text{nom}}$	8 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_i$ – Voltage drop)
Voltage drop	$\leq 120$ mV (6 A)
Nominal output current $I_{o, \text{nom}}$	8 x 1 / 2 / 3 / 4 / 5 / 6 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No

## Signaling and Communication

Signaling	8 x LED (green/red/orange); 1 x Remote control input (S1); 1 x Group signal contact (13; 14)
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms

## Efficiency/Power Losses

Power loss $P_1$	$\leq 0.84$ W (no load); $\leq 8$ W (8 x 6 A)
Efficiency	$\geq 99$ %

## Fuse Protection

Internal fuse	T 15 A per channel
---------------	--------------------

## Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	No derating
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	42 x 127 x 142.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	440 g

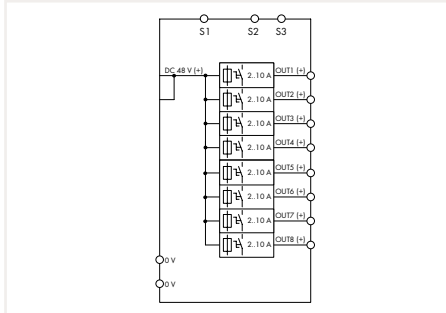
## Standards and Specifications

Approvals/standards/specifications	CE; UL 508*; UL 2367*; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)
------------------------------------	-----------------------------------------------------------------------------

# Electronic Circuit Breaker; 48 VDC / 2 ... 10 A 787 Series

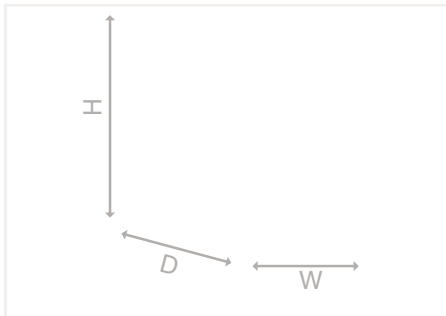


Similar to picture



Electronic Circuit Breaker; 8-channel; Input voltage: 48 VDC; adjustable 2 ... 10 A; communication-capable

Item No.	Pack. Unit
787-1668/000-200	1



#### Features:

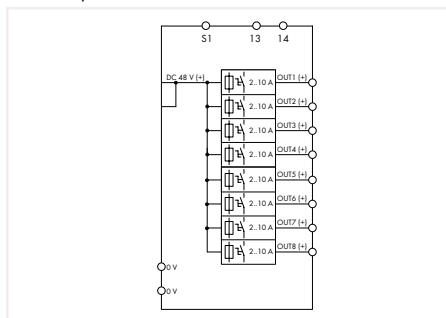
- Space-saving ECB with eight channels
- Nominal current: 2 ... 10 A (adjustable for each channel via sealable selector switch)
- Switch-on capacity > 23,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input for switching on/off any number of channels via pulse sequence

<b>Input</b>	
Nominal input voltage $U_{i, \text{nom}}$	48 VDC
Input voltage range	32 ... 58 VDC
<b>Output</b>	
Total number of channels (module)	8
Nominal output voltage $U_{o, \text{nom}}$	8 x 48 VDC
Output voltage range	32 ... 58 VDC ( $U_i$ - Voltage drop)
Voltage drop	$\leq 200$ mV (10 A)
Nominal output current $I_{o, \text{nom}}$	8 x 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via selector switch; max. 70 A in total)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 23,000 $\mu$ F per channel at 48 VDC, 2.5 mm <sup>2</sup> cable cross section and 2.5 m cable length
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No
<b>Signaling and Communication</b>	
Signaling	8 x LED (green/red/orange); 1 x Remote control input (S1); 2 x Active signal output (S2; S3)
Remote input	Reactivation of all tripped channels via 15 ... 58 VDC pulse for min. 500 ms; Switching on/off any number of channels via pulse sequence
<b>Efficiency/Power Losses</b>	
Power loss $P_i$	$\leq 1.3$ W (no load); $\leq 20$ W (8 x 10 A)
Efficiency	$\geq 99$ %
<b>Fuse Protection</b>	
Internal fuse	T 15 A per channel
<b>Safety and Protection/Environmental Requirements</b>	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$\geq +50$ °C (see instruction manual)
Pollution degree	2
<b>Connection Data</b>	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
<b>Geometric Data/Mechanical Data/Material Data</b>	
Width x height x depth (mm)	42 x 127 x 142.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	440 g
<b>Standards and Specifications</b>	
Approvals/standards/specifications	CE; UL 508*; UL 2367*; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)

# Electronic Circuit Breaker; 48 VDC / 2 ... 10 A 787 Series

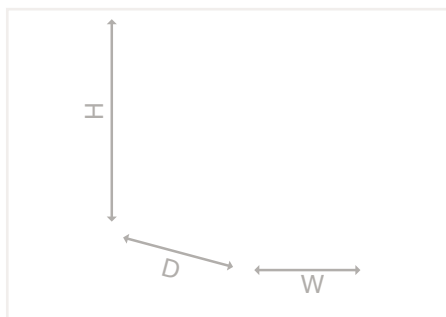


Similar to picture



Electronic Circuit Breaker; 8-channel; Input voltage:  
48 VDC; adjustable 2 ... 10 A; Signal contact

Item No.	Pack. Unit
787-1668/000-250	1

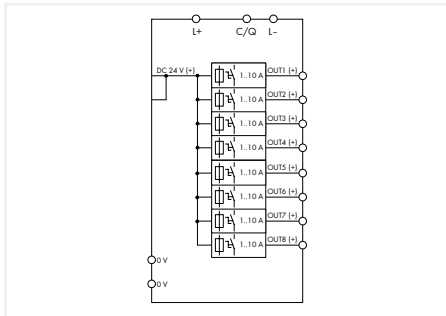


## Features:

- Space-saving ECB with eight channels
- Nominal current: 2 ... 10 A (adjustable for each channel via sealable selector switch)
- Switch-on capacity > 23,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Potential-free signal contact 13 / 14 reports "channel switched off" and "tripped channel" – does not support communication via pulse sequence

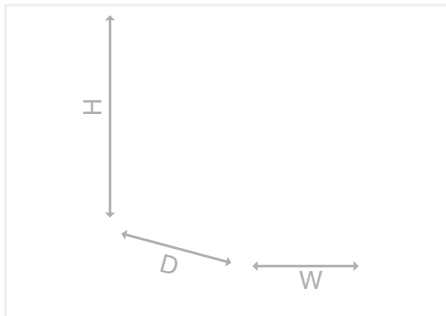
<b>Input</b>	
Nominal input voltage $U_{i, \text{nom}}$	48 VDC
Input voltage range	32 ... 58 VDC
<b>Output</b>	
Total number of channels (module)	8
Nominal output voltage $U_{o, \text{nom}}$	8 x 48 VDC
Output voltage range	32 ... 58 VDC ( $U_i$ – Voltage drop)
Voltage drop	$\leq 200$ mV (10 A)
Nominal output current $I_{o, \text{nom}}$	8 x 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via selector switch; max. 70 A in total)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 23,000 $\mu$ F per channel at 48 VDC, 2.5 mm <sup>2</sup> cable cross section and 2.5 m cable length
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No
<b>Signaling and Communication</b>	
Signaling	8 x LED (green/red/orange); 1 x Remote control input (S1); 1 x Group signal contact (13; 14)
Remote input	Reactivation of all tripped channels via 15 ... 58 VDC pulse for min. 500 ms
<b>Efficiency/Power Losses</b>	
Power loss $P_1$	$\leq 1.3$ W (no load); $\leq 20$ W (8 x 10 A)
Efficiency	$\geq 99$ %
<b>Fuse Protection</b>	
Internal fuse	T 15 A per channel
<b>Safety and Protection/Environmental Requirements</b>	
Isolation voltage (connectors – housing)	500 VDC
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$\geq +50$ °C (see instruction manual)
Pollution degree	2
<b>Connection Data</b>	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
<b>Geometric Data/Mechanical Data/Material Data</b>	
Width x height x depth (mm)	42 x 127 x 142.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	440 g
<b>Standards and Specifications</b>	
Approvals/standards/specifications	CE; UL 508*; UL 2367*; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)

# Electronic Circuit Breaker; 24 VDC / 1 ... 10 A 787 Series



Electronic Circuit Breaker; 8-channel; Input voltage: 24 VDC; adjustable 1 ... 10 A; IO-Link

Item No.	Pack. Unit
787-1668/000-080	1

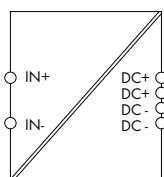


## Features:

- Space-saving ECB with eight channels
- Nominal current: 1 ... 10 A (adjustable for each channel via sealable selector switch or IO-Link interface)
- Switch-on capacity > 50,000  $\mu$ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Status message and current measurement of each individual channel via IO-Link interface
- Switch on/off each channel separately via IO-Link interface

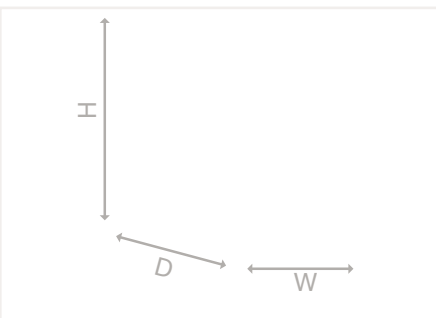
Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Total number of channels (module)	8
Nominal output voltage $U_{o, \text{nom}}$	8 x 24 VDC
Output voltage range	18 ... 30 VDC ( $U_o$ – Voltage drop)
Voltage drop	$\leq 200$ mV (10 A)
Nominal output current $I_{o, \text{nom}}$	8 x 1 / 2 / 3 / 4 / 6 / 8 / 10 A (adjustable for each channel via IO-Link interface); 1, 2, 4, 6, 10 A (adjustable for each channel via selector switch)
Trip time	16 ms ... 100 s (load-dependent)
Switch-on capacity	> 50,000 $\mu$ F per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)
Active current limitation	No
Signaling and Communication	
Signaling	8 x LED (green/red/orange); 1 x IO-Link interface
Remote input	Switching on/off any number of channels via IO-Link interface
Efficiency/Power Losses	
Power loss $P_I$	$\leq 1.3$ W (no load); $\leq 20$ W (8 x 10 A)
Efficiency	$\geq 99$ %
Fuse Protection	
Internal fuse	T 15 A per channel
Safety and Protection/Environmental Requirements	
Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	No
Parallel operation of single channels	Not permitted
Series operation	No
MTBF	> 500,000 h (per IEC 61709)
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	$\geq +50$ °C (see instruction manual)
Pollution degree	2
Connection Data	
Connection technology	CAGE CLAMP®; Push-in CAGE CLAMP®
Input (+) (solid/fine-stranded/AWG)	0.5 ... 10 mm <sup>2</sup> / 0.5 ... 10 mm <sup>2</sup> / 20 ... 8 AWG
Input (-); Output; Signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	42 x 127 x 142.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	440 g
Standards and Specifications	
Approvals/standards/specifications	CE; UL 508*; UL 2367*; GL*; EN 60950; EN 61000-6-2; EN 61000-6-3 (*pending)

## DC/DC Converter; Compact; 24 VDC / 2 A 787 Series



DC/DC Converter; Compact; Input voltage: 110 VDC;  
Output voltage: 24 VDC; Output current: 2 A; electrically  
isolated

Item No.	Pack. Unit
787-1014	1



### Input

Nominal input voltage $U_{i,nom}$	110 VDC
Input voltage range	77 ... 140 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 0.77$ A (77 VDC); $\leq 0.42$ A (140 VDC)
Inrush current	$\leq 30$ A (NTC)
Mains failure hold-up time	$\geq 8$ ms (77 VDC); $> 25$ ms (140 VDC)

### Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Nominal output current $I_{o,nom}$	2 A (24 VDC); 1.6 A (in any mounting position)
Nominal output power	48 W
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Constant current

### Signaling and Communication

Signaling	1 x Status indication LED (green)
-----------	-----------------------------------

### Efficiency/Power Losses

Power loss $P_i$	$\leq 1.9$ W (110 VDC; no load); $\leq 9.9$ W (110 VDC; nominal load)
Efficiency	$\geq 85$ %

### Fuse Protection

Internal fuse	T 4 A / 125 VDC
Recommended backup fusing	Circuit breaker: 6 A, 10 A; Tripping characteristic: B or C

### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-40 \dots +70$ °C
Relative humidity	5 ... 96 % (coated PCB)
Derating	$-1.5$ %/K ( $> +55$ °C)
Pollution degree	2

### Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	72 x 89 x 55; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	250 g

### Standards and Specifications

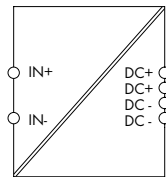
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 50121-3-2; EN 50125*; UL 60950*; UL 508*; DNV GL* (*pending)
------------------------------------	----------------------------------------------------------------------------------------------



## DC/DC Converter; Compact; 24 VDC / 2 A 787 Series

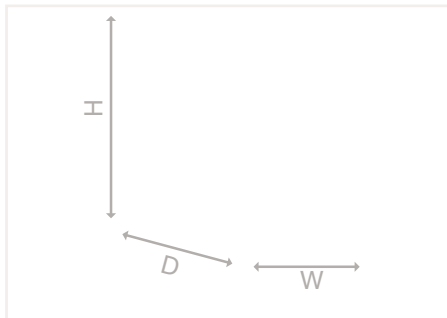


Similar to picture



DC/DC Converter; Compact; Input voltage: 72 VDC;  
Output voltage: 24 VDC; Output current: 2 A; electrically  
isolated

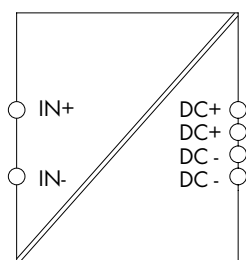
Item No.	Pack. Unit
787-1014/072-000	1



<b>Input</b>	
Nominal input voltage $U_{i, \text{nom}}$	72 VDC
Input voltage range	40 ... 90 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 0.79$ A (72 VDC)
Inrush current	$\leq 30$ A (NTC)
Mains failure hold-up time	$\geq 8$ ms (72 VDC)
<b>Output</b>	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC (SELV) / $\leq 1$ %
Nominal output current $I_{o, \text{nom}}$	2 A (24 VDC); 1.6 A (in any mounting position)
Nominal output power	48 W
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Constant current
<b>Signaling and Communication</b>	
Signaling	1 x Status indication LED (green)
<b>Efficiency/Power Losses</b>	
Power loss $P_i$	$\leq 2$ W (72 VDC; no load); $\leq 9$ W (72 VDC; nominal load)
Efficiency	$\geq 84$ %
<b>Fuse Protection</b>	
Internal fuse	T 4 A / 125 VDC
Recommended backup fusing	Circuit breaker: 6 A, 10 A; Tripping characteristic: B or C
<b>Safety and Protection/Environmental Requirements</b>	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-40 \dots +70$ °C
Relative humidity	5 ... 96 % (coated PCB)
Derating	$-1.5$ %/K ( $> +55$ °C)
Pollution degree	2
<b>Connection Data</b>	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
<b>Geometric Data/Mechanical Data/Material Data</b>	
Width x height x depth (mm)	72 x 89 x 55; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	250 g
<b>Standards and Specifications</b>	
Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 50121-3-2; EN 50125*; UL 60950*; UL 508*; DNV GL* (*pending)

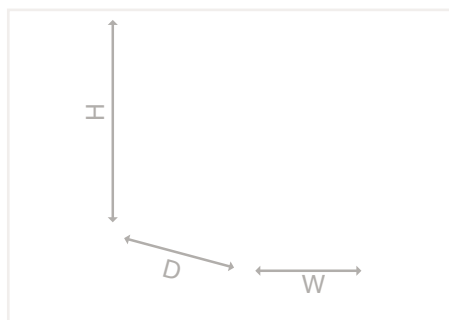


## DC/DC Converter; Compact; 12 VDC / 4 A 787 Series



DC/DC Converter; Compact; Input voltage: 72 VDC;  
Output voltage: 12 VDC; Output current: 4 A; electrically  
isolated

Item No.	Pack. Unit
787-1015/072-000	1



### Features:

- Switched-mode power supply
- Natural convection cooling when horizontally mounted
- Stepped profile, ideal for distribution boards or distribution boxes
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1
- Control deviation:  $\pm 1\%$  ( $\pm 10\%$  within the application range of EN 50121-3-2)
- Suitable for railway applications

### Input

Nominal input voltage $U_{i, \text{nom}}$	72 VDC
Input voltage range	40 ... 90 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 0.79$ A (72 VDC)
Inrush current	$\leq 30$ A (NTC)
Mains failure hold-up time	$\geq 8$ ms (72 VDC)

### Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	12 VDC (SELV) / 1 %
Nominal output current $I_{o, \text{nom}}$	4 A (24 VDC); 3.1 A (in any mounting position)
Nominal output power	48 W
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Constant current

### Signaling and Communication

Signaling	1 x Status indication LED (green)
-----------	-----------------------------------

### Efficiency/Power Losses

Power loss $P_i$	$\leq 1.2$ W (72 VDC; no load); $\leq 8.6$ W (72 VDC; nominal load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 9.7$ W (40 VDC / 12 VDC; 4 A)
Efficiency	$\geq 85\%$

### Fuse Protection

Internal fuse	T 4 A / 125 VDC
Recommended backup fusing	Circuit breaker: 6 A, 10 A; Tripping characteristic: B or C

### Safety and Protection/Environmental Requirements

Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Overvoltage category	II
Short-circuit-protected	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air temperature (operation)	$-40 \dots +70$ °C
Relative humidity	5 ... 96 % (coated PCB)
Derating	$-1.5\%/K$ ( $> +55$ °C)
Pollution degree	2

### Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	72 x 89 x 55; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	235 g

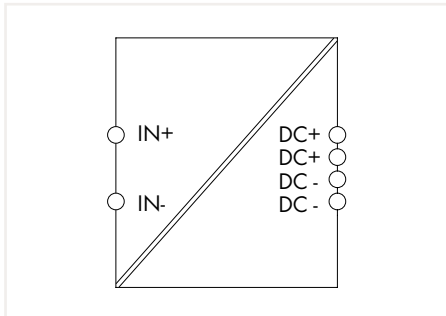
### Standards and Specifications

Approvals/standards/specifications	CE; EN 60950; EN 61204-3; EN 50121-3-2; EN 50125
------------------------------------	--------------------------------------------------

## DC/DC Converter; 12 VDC / 4 A 787 Series

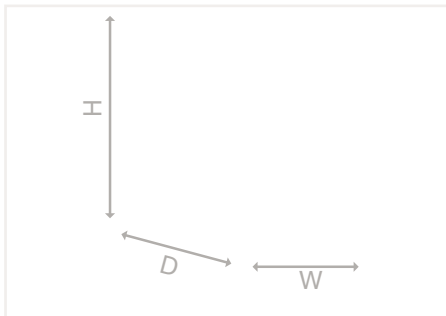


Similar to picture



DC/DC Converter; 24 VDC input voltage; 12 VDC output voltage; 4 A output current; galvanically isolated

	Item No.	Pack. Unit
	787-1650	1



### Features:

- Primary switch mode power supply unit
- Natural convection cooling when horizontally mounted
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) per EN 60950-1
- Adjustment accuracy:  $\pm 1\%$

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 60 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 3.39$ A
Inrush current	$\leq 60$ A (NTC)
Mains failure hold-up time	$\geq 5$ ms (24 VDC)
Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	12 VDC (SELV) / $\leq 1\%$
Output voltage range	11.5 ... 14.5 VDC (adjustable)
Nominal output current $I_{o, \text{nom}}$	4 A
Nominal output power	48 W
Residual ripple	$\leq 50$ mV (peak-to-peak)
Overload behavior	Constant current
Signaling and communication	
Signaling	1 x LED operation status indicator (green)
Efficiency/Power losses:	
Power loss $P_v$	$\leq 1$ W (no load)
Power loss (max.) $P_{I, \text{max}}$	$\leq 11.4$ W (24 VAC; / 3 A)
Efficiency	$\geq 84\%$
Fuse protection:	
Internal fuse	T 4 A
Safety and Protection/Environmental Requirements:	
Insulation voltage (pri.-sec.)	2.2 kV DC
Protection class/protection type	III / IP20 (per EN 60529)
Overvoltage category	II
Short circuit protection	Yes
Parallel operation/series operation	Yes/yes
MTBF	$> 500,000$ h (per IEC 61709)
Surrounding air (operating) temperature	-25 ... 70 °C
Relative humidity	5 ... 96 % (no condensation permissible)
Derating	-2 %/K ( $> 55$ °C)
Pollution degree	2
Connection data	
Connection technology	CAGE CLAMP®
Input/output/signaling (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	45 x 90 x 107.5; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	240 g
Standards and specifications	
Approvals/standards/specifications	CE; EN 60950-1; EN 61204-3; EN 61558-2-16

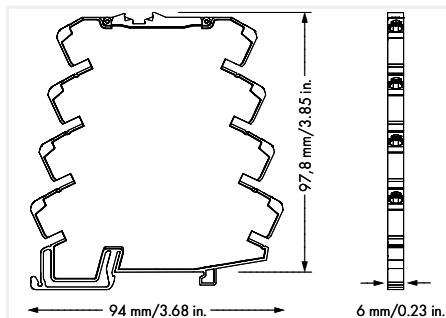
## DC/DC Converter; 5 VDC / 0.5 A 787 Series



DC O.K.	1	DC O.K.	5	n.c.
GND	2		6	n.c.
Vout+	3	OUT	7	Vin+
GND	4	IN	8	GND

DC/DC Converter; Input voltage: 24 VDC; Output voltage: 5 VDC; Output current: 0.5 A

	Item No.	Pack. Unit
	787-2801	1



### Features:

- DC/DC converter in a compact 6 mm housing
- DC/DC converters (787-28xx) supply devices with 5, 10, 12 or 24 VDC from a 24 or 48 VDC power supply with an output power up to 12 W
- Output voltage monitoring via DC OK contact
- Can be commoned with 857 and 2857 Series devices
- Comprehensive range of approvals for multiple applications

### Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	10 ... 30 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 0.34$ A
Inrush current	$\leq 0.5$ A (at nominal input voltage)

### Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	5 VDC / $\leq 3$ %
Output voltage range	$\pm 3$ %
Nominal output current $I_{o, \text{nom}}$	0.5 A
Nominal output power	2.5 W
Mains/load regulation	$\leq 1$ %
Residual ripple	$\leq 20$ mV (peak-to-peak)

### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Short circuit LED (red); 1 x Active signal output ( $U_i$ , max. 4 mA)
-----------	---------------------------------------------------------------------------------------------------

### Efficiency/Power Losses

Power loss $P_i$	$\leq 0.13$ W (no load); $\leq 0.6$ W (nominal load)
Efficiency	$\geq 82.5$ % (at nominal input voltage and nominal output)

### Fuse Protection

Internal fuse	No
---------------	----

### Safety and Protection/Environmental Requirements

Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	Yes
Short-circuit-protected	Yes
Parallel operation/series operation	No/no
MTBF	$> 1,800,000$ h
Surrounding air temperature (operation)	$-25 \dots +70$ °C
Relative humidity	$\leq 95$ % (no condensation permissible)
Derating	No derating
Pollution degree	2

### Connection Data

Number of jumper slots	8
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG

### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	6 x 97.8 x 94; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	36.2 g

### Standards and Specifications

Approvals/standards/specifications	CE; EN 61000-6-2; EN 61000-6-3; EN 60950-1; UL 60950*; UL 508*; ANSI/ISA 12.12.01*; ATEX*; IEC Ex*; DNV GL* (*pending)
------------------------------------	------------------------------------------------------------------------------------------------------------------------

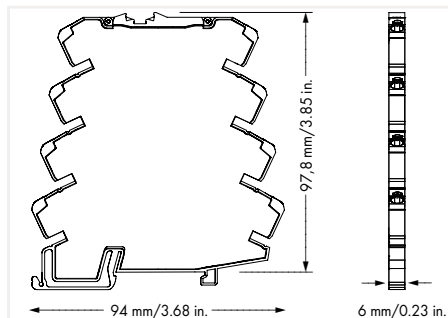
## DC/DC Converter; 10 VDC / 0.5 A 787 Series



DC O.K.	1	DC O.K.	5	n.c.
GND	2		6	n.c.
Vout+	3	OUT	7	Vin+
GND	4	IN	8	GND

DC/DC Converter; Input voltage: 24 VDC; Output voltage: 10 VDC; Output current: 0.5 A

	Item No.	Pack. Unit
	787-2802	1



### Features:

- DC/DC converter in a compact 6 mm housing
- DC/DC converters (787-28xx) supply devices with 5, 10, 12 or 24 VDC from a 24 or 48 VDC power supply with an output power up to 12 W
- Output voltage monitoring via DC OK contact
- Can be commoned with 857 and 2857 Series devices
- Comprehensive range of approvals for multiple applications

### Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	15 ... 30 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 0.42$ A
Inrush current	$\leq 0.5$ A (at nominal input voltage)

### Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	10 VDC / $\pm 2$ %
Output voltage range	$\pm 3$ %
Nominal output current $I_{o, \text{nom}}$	0.5 A
Nominal output power	5 W
Mains/load regulation	$\leq 1$ %
Residual ripple	$\leq 20$ mV (peak-to-peak)

### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Short circuit LED (red); 1 x Active signal output ( $U_i$ , max. 4 mA)
-----------	---------------------------------------------------------------------------------------------------

### Efficiency/Power Losses

Power loss $P_i$	$\leq 0.19$ W (no load); $\leq 0.7$ W (nominal load)
Efficiency	$\geq 89$ % (at nominal input voltage and nominal output)

### Fuse Protection

Internal fuse	No
---------------	----

### Safety and Protection/Environmental Requirements

Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	Yes
Short-circuit-protected	Yes
Parallel operation/series operation	No/no
MTBF	$> 1,800,000$ h
Surrounding air temperature (operation)	$-25 \dots +70$ °C
Relative humidity	$\leq 95$ % (no condensation permissible)
Derating	No derating
Pollution degree	2

### Connection Data

Number of jumper slots	8
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG

### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	6 x 97.8 x 94; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	35.9 g

### Standards and Specifications

Approvals/standards/specifications	CE; EN 61000-6-2; EN 61000-6-3; EN 60950-1; UL 60950*; UL 508*; ANSI/ISA 12.12.01*; ATEX*; IEC Ex*; DNV GL* (*pending)
------------------------------------	------------------------------------------------------------------------------------------------------------------------

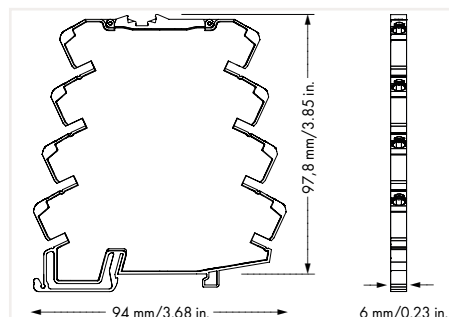
## DC/DC Converter; 12 VDC / 0.5 A 787 Series



DC O.K.	1	DC O.K.	5	n.c.
GND	2		6	n.c.
Vout+	3	OUT	7	Vin+
GND	4	IN	8	GND

DC/DC Converter; Input voltage: 24 VDC; Output voltage: 12 VDC; Output current: 0.5 A

	Item No.	Pack. Unit
	787-2805	1



### Features:

- DC/DC converter in a compact 6 mm housing
- DC/DC converters (787-28xx) supply devices with 5, 10, 12 or 24 VDC from a 24 or 48 VDC power supply with an output power up to 12 W
- Output voltage monitoring via DC OK contact
- Can be commoned with 857 and 2857 Series devices
- Comprehensive range of approvals for multiple applications

### Input

Nominal input voltage $U_{i,nom}$	24 VDC
Input voltage range	15 ... 30 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 0.5$ A
Inrush current	$\leq 0.5$ A (at nominal input voltage)

### Output

Nominal output voltage $U_{o,nom}$ /adjustment accuracy	5 VDC / $\leq 2$ %
Output voltage range	$\pm 2$ %
Nominal output current $I_{o,nom}$	0.5 A
Nominal output power	6 W
Mains/load regulation	$\leq 1$ %
Residual ripple	$\leq 20$ mV (peak-to-peak)

### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Short circuit LED (red); 1 x Active signal output ( $U_i$ , max. 4 mA)
-----------	---------------------------------------------------------------------------------------------------

### Efficiency/Power Losses

Power loss $P_i$	$\leq 0.21$ W (no load); $\leq 0.7$ W (nominal load)
Efficiency	$\geq 90$ % (at nominal input voltage and nominal output)

### Fuse Protection

Internal fuse	No
---------------	----

### Safety and Protection/Environmental Requirements

Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	Yes
Short-circuit-protected	Yes
Parallel operation/series operation	No/no
MTBF	> 1,800,000 h
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	$\leq 95$ % (no condensation permissible)
Derating	No derating
Pollution degree	2

### Connection Data

Number of jumper slots	8
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG

### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	6 x 97.8 x 94; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	48.6 g

### Standards and Specifications

Approvals/standards/specifications	CE; EN 61000-6-2; EN 61000-6-3; EN 60950-1; UL 60950*; UL 508*; ANSI/ISA 12.12.01*; ATEX*; IEC Ex*; DNV GL* (*pending)
------------------------------------	------------------------------------------------------------------------------------------------------------------------

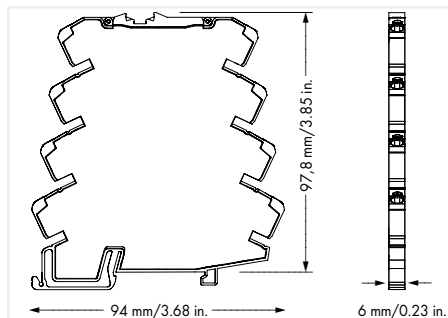
## DC/DC Converter; 24 VDC / 0.25 A 787 Series



DC O.K.	1	DC O.K.	5	n.c.
GND	2		6	n.c.
Vin+	3	IN	7	Vout+
GND	4	OUT	8	GND

DC/DC Converter; Input voltage: 48 VDC; Output voltage: 24 VDC; Output current: 0.25 A

	Item No.	Pack. Unit
	787-2803	1



### Features:

- DC/DC converter in a compact 6 mm housing
- DC/DC converters (787-28xx) supply devices with 5, 10, 12 or 24 VDC from a 24 or 48 VDC power supply with an output power up to 12 W
- Output voltage monitoring via DC OK contact
- Can be commoned with 857 and 2857 Series devices
- Comprehensive range of approvals for multiple applications

### Input

Nominal input voltage $U_{i, \text{nom}}$	48 VDC
Input voltage range	40 ... 55 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 0.34$ A
Inrush current	$\leq 0.5$ A (at nominal input voltage)

### Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	24 VDC / $\leq 3$ %
Output voltage range	$\pm 3$ %
Nominal output current $I_{o, \text{nom}}$	0.5 A
Nominal output power	12 W
Mains/load regulation	$\leq 1$ %
Residual ripple	$\leq 20$ mV (peak-to-peak)

### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Short circuit LED (red); 1 x Active signal output ( $U_r$ , max. 4 mA)
-----------	---------------------------------------------------------------------------------------------------

### Efficiency/Power Losses

Power loss $P_l$	$\leq 0.29$ W (no load); $\leq 1.2$ W (nominal load)
Efficiency	$\geq 91$ % (at nominal input voltage and nominal output)

### Fuse Protection

Internal fuse	No
---------------	----

### Safety and Protection/Environmental Requirements

Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	Yes
Short-circuit-protected	Yes
Parallel operation/series operation	No/no
MTBF	$> 1,800,000$ h
Surrounding air temperature (operation)	$-25 \dots +70$ °C
Relative humidity	$\leq 95$ % (no condensation permissible)
Derating	No derating
Pollution degree	2

### Connection Data

Number of jumper slots	8
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG

### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	6 x 97.8 x 94; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	32.57 g

### Standards and Specifications

Approvals/standards/specifications	CE; EN 61000-6-2; EN 61000-6-3; EN 60950-1; UL 60950*; UL 508*; ANSI/ISA 12.12.01*; ATEX*; IEC Ex*; DNV GL* (*pending)
------------------------------------	------------------------------------------------------------------------------------------------------------------------

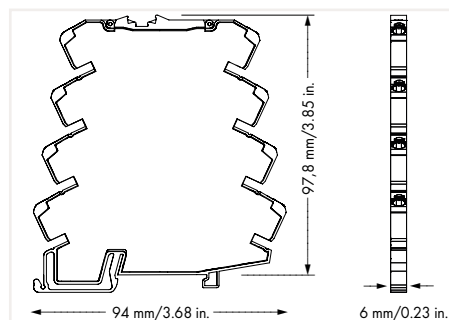
## DC/DC Converter; 5 ... 12 VDC / 0.5 A 787 Series



DC O.K.	1	DC O.K.	5	n.c.
GND	2		6	n.c.
Vout+	3	OUT	7	Vin+
GND	4	IN	8	GND

DC/DC Converter; Input voltage: 24 VDC; Output voltage (adjustable): 5/10/12 VDC; Output current: 0.5 A

	Item No.	Pack. Unit
	787-2810	1



### Features:

- DC/DC converter in a compact 6 mm housing
- DC/DC converters (787-28xx) supply devices with 5, 10, 12 or 24 VDC from a 24 or 48 VDC power supply with an output power up to 12 W
- Output voltage monitoring via DC OK contact
- Can be commoned with 857 and 2857 Series devices
- Comprehensive range of approvals for multiple applications

### Input

Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	15 ... 30 VDC
Nominal mains frequency range	0 Hz
Input current $I_i$	$\leq 0.5$ A
Inrush current	$\leq 0.5$ A (at nominal input voltage)

### Output

Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	5/10/12 VDC (adjustable via DIP switches) / $\leq 3$ %
Output voltage range	$\pm 3$ %
Nominal output current $I_{o, \text{nom}}$	0.5 A
Nominal output power	6 W
Mains/load regulation	$\leq 1$ %
Residual ripple	$\leq 20$ mV (peak-to-peak)

### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Short circuit LED (red); 1 x Active signal output ( $U_i$ , max. 4 mA)
-----------	---------------------------------------------------------------------------------------------------

### Efficiency/Power Losses

Power loss $P_i$	$\leq 0.21$ W (no load); $\leq 0.7$ W (nominal load)
Efficiency	$\geq 82.5$ % (at nominal input voltage and nominal output)

### Fuse Protection

Internal fuse	No
---------------	----

### Safety and Protection/Environmental Requirements

Protection class/protection type	III / IP20 (per EN 60529)
Reverse voltage protection	Yes
Short-circuit-protected	Yes
Parallel operation/series operation	No/no
MTBF	> 1,800,000 h
Surrounding air temperature (operation)	-25 ... +70 °C
Relative humidity	$\leq 95$ % (no condensation permissible)
Derating	No derating
Pollution degree	2

### Connection Data

Number of jumper slots	8
Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG

### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	6 x 97.8 x 94; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	36.4 g

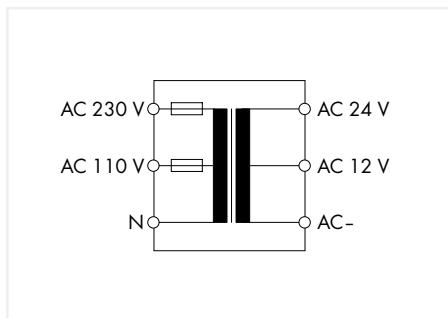
### Standards and Specifications

Approvals/standards/specifications	CE; EN 61000-6-2; EN 61000-6-3; EN 60950-1; UL 60950*; UL 508*; ANSI/ISA 12.12.01*; ATEX*; IEC Ex*; DNV GL* (*pending)
------------------------------------	------------------------------------------------------------------------------------------------------------------------

5

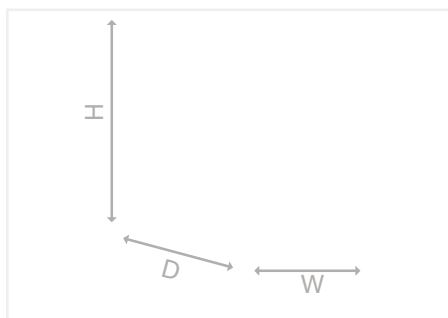


# Transformer Power Supply; 1-Phase; 12 / 24 VAC / 40 VA 787 Series



Transformer Power Supply; Input voltage: 230 VAC;  
Output voltage: 12 ... 24 VAC; Output power: 40 VA

Item No.	Pack. Unit
787-974	1



#### Features:

- Maintenance-free, DIN-rail-mount safety transformer for 12/24 VAC
- Center tap-off modules provide variable input/output voltage
- Enables brief performance peaks
- Peak output power of 45 VA for 1 min/h

#### Input

Nominal input voltage $U_{i, \text{nom}}$	115 VAC; 230 VAC
Input voltage range	0 ... 230 VAC
Nominal mains frequency range	50 ... 60 Hz

#### Output

Nominal output voltage $U_{o, \text{nom}}$	12/24 VAC
Nominal output current $I_{o, \text{nom}}$	3.3 A (115 VAC); 1.67 A (230 VAC)
Load regulation	5 %
Overload behavior	Safety fuse in the primary circuit

#### Efficiency/Power Losses

Power loss $P_1$	$\leq 0.6$ W
------------------	--------------

#### Fuse Protection

Internal fuse	T 1.25 A / 250 VAC; T 0.63 A / 250 VAC
---------------	----------------------------------------

#### Safety and Protection/Environmental Requirements

Isolation voltage (AC)	4.2 kVAC
Protection class/protection type	II / IP20 (per EN 60529)
Overtoltage category	III
Short-circuit-protected	Yes
Parallel operation/series connection	No/yes (with identical power supply)
Surrounding air temperature (operation)	-25 ... +55 °C
Relative humidity	$\leq 90$ %
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

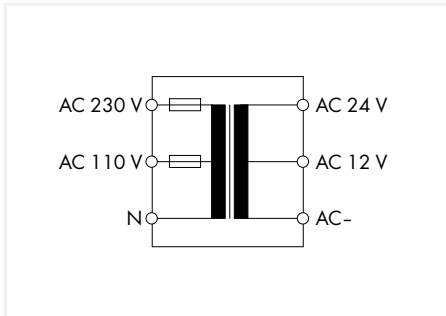
#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	126 x 90 x 54; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1000 g

#### Standards and Specifications

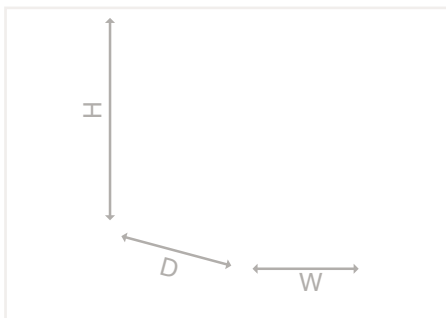
Approvals/standards/specifications	CE; UL 5085; EN 61558-2-6
------------------------------------	---------------------------

# Transformer Power Supply; 1-Phase; 12 / 24 VAC / 63 VA 787 Series



Transformer Power Supply; Input voltage: 230 VAC;  
Output voltage: 12 ... 24 VAC; Output power: 63 VA

	Item No.	Pack. Unit
	787-976	1

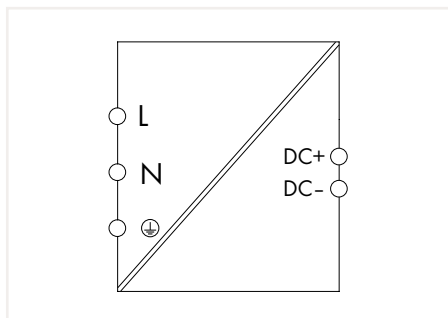


### Features:

- Maintenance-free, DIN-rail-mount safety transformer for 12/24 VAC
- Center tap-off modules provide variable input/output voltage
- Enables brief performance peaks
- Peak output power of 70 VA for 1 min/h

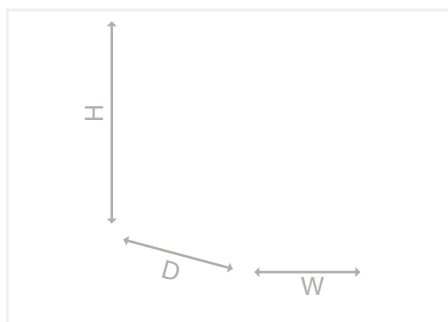
Input	
Nominal input voltage $U_{i, \text{nom}}$	115 VAC; 230 VAC
Input voltage range	0 ... 230 VAC
Nominal mains frequency range	50 ... 60 Hz
Output	
Nominal output voltage $U_{o, \text{nom}}$	12/24 VAC
Nominal output current $I_{o, \text{nom}}$	5.2 A (115 VAC); 2.6 A (230 VAC)
Load regulation	5 %
Overload behavior	Safety fuse in the primary circuit
Efficiency/Power Losses	
Power loss $P_i$	$\leq 0.8$ W
Fuse Protection	
Internal fuse	T 2 A / 250 VAC; T 1.6 A / 250 VAC
Safety and Protection/Environmental Requirements	
Isolation voltage (AC)	4.2 kVAC
Protection class/protection type	II / IP20 (per EN 60529)
Overvoltage category	III
Short-circuit-protected	Yes
Parallel operation/series connection	No/yes (with identical power supply)
Surrounding air temperature (operation)	-25 ... +55 °C
Relative humidity	$\leq 90$ %
Pollution degree	2
Connection Data	
Connection technology	CAGE CLAMP®
Input/output (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	144 x 90 x 54; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1200 g
Standards and Specifications	
Approvals/standards/specifications	CE; UL 5085; EN 61558-2-6

# Switched-Mode Power Supply; 1-Phase; IP67; 24 VDC / 4 A 787 Series



Switched-Mode Power Supply; 1-phase; Output voltage: 24 VDC; Output current: 4 A; PowerBoost; DC OK signal

	Item No.	Pack. Unit
	787-6716	1



#### Features:

- Switched-mode power supply with PowerBoost
- Low-profile, compact design
- Extremely robust, fully encapsulated housing (IP67)
- Active power factor correction
- High efficiency up to 92.3%
- Surrounding air temperature up to 85°C
- Suitable for both parallel and series operation

#### Input

Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC/DC
Input voltage range	90 ... 265 VAC/DC
Nominal mains frequency range	47 ... 63.6 Hz; 0 Hz
Input current $I_i$	$\leq 0.5 \text{ A}$ (250 VAC); $\leq 1.1 \text{ A}$ (100 VAC)
Inrush current	$\leq 9 \text{ A}$
Power factor	$\geq 0.98$
Power factor correction (PFC)	Active
Mains failure hold-up time	$\geq 45 \text{ ms}$

#### Output

Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Output voltage range	$\pm 2 \%$
Nominal output current $I_{o, \text{nom}}$	4 A
Nominal output power	96 W
Residual ripple	$\leq 100 \text{ mV}$ (peak-to-peak); $\leq 20 \text{ mV}$ (rms)
Overload behavior	Constant current

#### Signaling and Communication

Signaling	1 x DC OK LED (green); 1 x Overload LED (red)
-----------	-----------------------------------------------

#### Efficiency/Power Losses

Power loss $P_i$	$\leq 1 \text{ W}$ (no load); $\leq 7.9 \text{ W}$ (nominal load)
Efficiency	$\geq 92.3 \%$ (230 VAC)

#### Fuse Protection

Internal fuse	T 6.3 A
Recommended backup fusing	Circuit breaker: 4 ... 20 A; Characteristic: C; T 20 A in building installations

#### Safety and Protection/Environmental Requirements

Protection class/protection type	I / IP67
Short-circuit-protected	Yes
Parallel operation/series connection	Max. 3 devices/max. 2 devices
MTBF	$> 960,000 \text{ h}$
Surrounding air temperature (operation)	$-40 \dots +85 \text{ }^\circ\text{C}$
Relative humidity	4 ... 100 %
Derating	$-3.84 \text{ W/K}$ ( $> +60 \text{ }^\circ\text{C}$ )

#### Connection Data

Input	7/8"; 3-pole plug
Output	7/8"; 5-pole socket

#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	111 x 141 x 54
Mounting type	Screw mount
Weight	1100 g

#### Standards and Specifications

Approvals/standards/specifications	CE; EN 60950; EN 61204; UL 508
------------------------------------	--------------------------------



## Accessories for IP67 Power Supply Cable 787 Series



### Electrical Data

Operating voltage	600 VAC/VDC
Operating current	9 A

### Safety and Protection/Environmental Requirements

Rated surge voltage	4 kV
Protection type	IP67
Surrounding air temperature (operation)	-25 ... +80 °C

### Connection Data

Sheathed cable diameter	7.4 mm
-------------------------	--------

#### Features:

- 7/8" screw connection: Industry-proven connection technology for a large selection of different conductors
- High degree of protection for safe field applications
- Vibration- and shock-resistant via integrated locking mechanism
- PUR coating

# Accessories for IP67 Power Supply Cable 787 Series



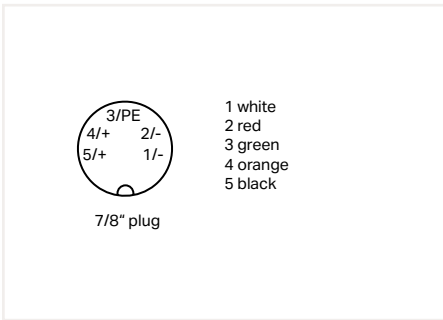
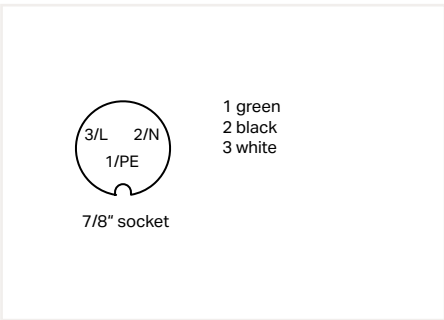
Similar to picture

Power Supply Cable; pre-assembled; 7/8"; 3-pole;  
Straight socket; open-ended

Length	Item No.	Pack. Unit
3 m	787-6716/9310-030	1
5 m	787-6716/9310-050	1
10 m	787-6716/9310-100	1

Power Supply Cable; pre-assembled; 7/8"; 5-pole;  
Straight plug; open-ended

Length	Item No.	Pack. Unit
1.5 m	787-6716/9510-015	1
3 m	787-6716/9510-030	1
5 m	787-6716/9510-050	1



## Accessories for IP67

### Connector

#### 787 Series



Electrical Data	
Operating voltage	600 VAC/VDC
Operating current	9 A
Safety and Protection/Environmental Requirements	
Rated surge voltage	4 kV
Protection type	IP67
Surrounding air temperature (operation)	-25 ... +80 °C
Connection Data	
Sheathed cable diameter	7.4 mm

#### Features:

- 7/8" screw connection: Industry-proven connection technology for a large selection of different conductors
- High degree of protection for safe field applications
- Vibration- and shock-resistant via integrated locking mechanism
- PUR coating

# Accessories for IP67 Connector 787 Series



Connector; 7/8"; 5-pole; Straight plug; Clamping range: 6 ... 8 mm

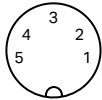
Item No.	Pack. Unit
787-6716/9500-000	1

Connector; 7/8"; 5-pole; Angled plug; Clamping range: 6 ... 8 mm

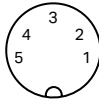
Item No.	Pack. Unit
787-6716/9600-000	1

Connector; 7/8"; 5-pole; Straight socket; Clamping range: 6 ... 8 mm

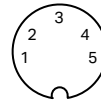
Item No.	Pack. Unit
787-6716/9700-000	1



7/8" plug



7/8" plug



7/8" socket

5



Connector; 7/8"; 5-pole; Angled socket; Clamping range: 6 ... 8 mm

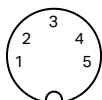
Item No.	Pack. Unit
787-6716/9800-000	1

Connector; 7/8"; 3-pole; T-connector

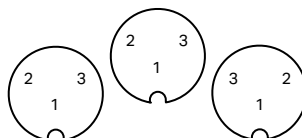
Item No.	Pack. Unit
787-6716/9000-1000	1

Connector; 7/8"; 3-pole; Straight socket

Item No.	Pack. Unit
787-6716/9300-000	1



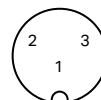
7/8" socket



7/8" socket

7/8" socket

7/8" plug



7/8" socket



# Accessories for IP67 Connector 787 Series

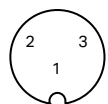


Similar to picture

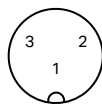
Connector; 7/8"; 3-pole; Angled socket		
Item No.	Pack. Unit	
787-6716/9400-000	1	

Connector; 7/8"; 3-pole; Straight plug		
Item No.	Pack. Unit	
787-6716/9100-000	1	

5



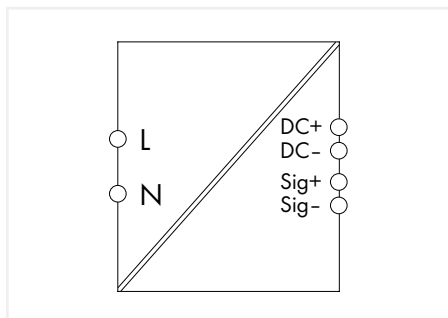
7/8" socket



7/8" plug

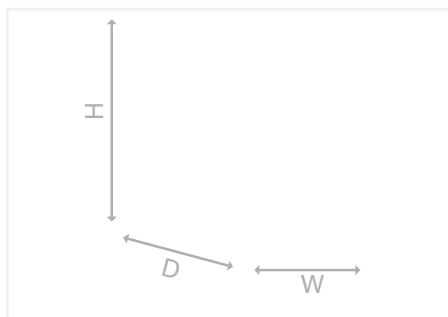


## Power Supply for Fan Control; 1-Phase; 22 VDC / 1 A 787 Series



Switched-Mode Power Supply; 1-phase; Output voltage: 22 VDC; Output current: 1 A

Item No.	Pack. Unit
787-914	1



### Features:

- Power supply for small loads that operate at a variable input voltage
- The output voltage can be adjusted linearly by hand or via an analog voltage signal (0 ... 10 V) in the range from 12 ... 22 V, e.g., for automatically controlling fan speed in control cabinets
- Flat design allows installation in confined spaces
- Variable mounting options for space-saving installation, e.g., in recesses

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	90 ... 264 VAC; 130 ... 373 VDC
Nominal mains frequency range	47 ... 63 Hz; 0 Hz
Input current $I_i$	$\leq 0.6$ A
Inrush current	$\leq 18$ A
Power factor	$\geq 0.45$
Power factor correction (PFC)	Not required
Mains failure hold-up time	$\geq 15$ ms

Output	
Nominal output voltage $U_{o, \text{nom}}$ /adjustment accuracy	22 VDC / $\leq 1$ %
Output voltage range	12 ... 22 VDC $\pm 2.5$ % (adjustable by hand or via signal input)
Nominal output current $I_{o, \text{nom}}$	0.8 A (< 110 VAC); 1 A (110 ... 240 VAC)
Residual ripple	$\leq 100$ mV (peak-to-peak)
Overload behavior	Constant power (in overload range: $1.05 \dots 1.7 \times I_{o, \text{nom}}$ ); Hiccup in the event of a short circuit or permanent overload

Signaling and Communication	
Signaling	1 x Status indication LED (green); 1 x Signal input (10 VDC)
Input signal (voltage)	0 ... 10 V
Input impedance	$\geq 10$ k $\Omega$

Efficiency/Power Losses	
Power loss $P_i$	$\leq 0.8$ W (no load)
Power loss (max.) $P_{i, \text{max}}$	$\leq 4$ W
Efficiency	$\geq 84$ % (230 VAC); $\geq 80$ % (110 VAC)

Fuse Protection	
Internal fuse	1 A / 250 VAC
Recommended backup fusing	Circuit breaker: B6, C4 or higher

Safety and Protection/Environmental Requirements	
Isolation voltage (pri.-sec.)	4.242 kVDC
Protection class/protection type	II / IP20 (per EN 60529)
Reverse voltage protection	Yes (signal input)
Short-circuit-protected	Yes
Parallel operation/series connection	Yes/yes
MTBF	> 500,000 h (at +25 °C per IEC 61709)
Surrounding air temperature (operation)	-20 ... +60 °C
Relative humidity	20 ... 90 % (no condensation permissible)
Derating	-2.47 %/K (> +45 °C)
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

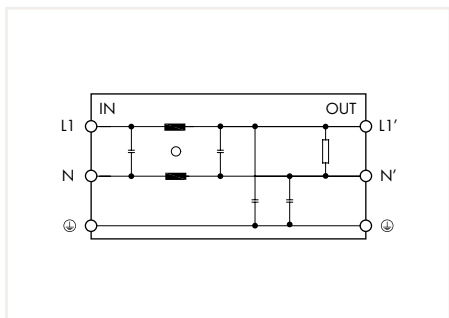
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	45 x 156 x 35; height including fastening clips
Mounting type	DIN-35 rail (EN 60715); Screw mounting
Weight	160 g

Standards and Specifications	
Approvals/standards/specifications	CE; UL 60950; EN 60950; EN 61204-3; EN 61000-6-3

# Radio Interference Suppression Filter;

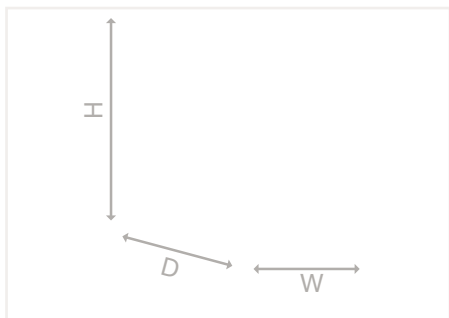
## 1-Phase

## 787 Series



Radio Interference Suppression Filter; 1-phase

Item No.	Pack. Unit
787-980	1



### Features:

- Suppresses interference generated on the mains side of power supplies and electronic devices
- Fulfills general requirements
- Provides a single-stage filter solution
- Efficiently filters out line-bound interference emissions
- Increases the interference immunity of connected loads

### Input

Nominal input voltage $U_{i, \text{nom}}$	250 VAC
Input voltage range	0 ... 250 VAC
Nominal mains frequency range	50 ... 60 Hz
Input current $I_i$	$\leq 10$ A

### Efficiency/Power Losses

Power loss $P_i$	$\leq 4$ W
------------------	------------

### Safety and Protection/Environmental Requirements

Isolation voltage (connectors – housing)	2.7 kVDC
Protection class/protection type	I / IP20 (per EN 60529)
Series connection	No
Surrounding air temperature (operation)	-25 ... +70 °C (device starts at -40 °C, type-tested)
Derating	-2.5 %/K (> +45 °C)
Pollution degree	2

### Connection Data

Connection technology	CAGE CLAMP®
L1, N (solid/fine-stranded/AWG)	0.08 ... 2.5 mm <sup>2</sup> / 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Ground	6.3 x 0.8 mm tab connector

### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	50 x 85 x 100; depth from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	340 g

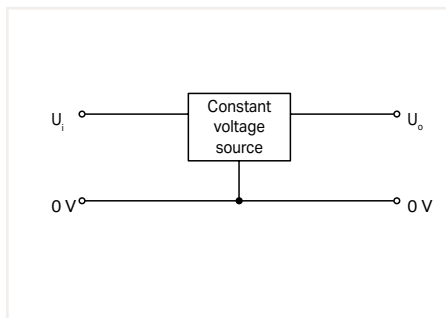
### Standards and Specifications

Approvals/standards/specifications	CE; DIN EN 60939-2
------------------------------------	--------------------

# DIN-Rail-Mount Constant Voltage Source;

## 24 VDC / 3 A

### 289 Series



Constant Voltage Source; Input voltage: 27 ... 35 VDC;  
Output voltage: 24 VDC; Output current: 3 A; with  
mounting feet

	Item No.	Pack. Unit
	289-907	1

#### Input

Input voltage range	27 ... 35 VDC
Nominal mains frequency range	0 Hz

#### Output

Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Output voltage range	$\pm 10 \%$
Nominal output current $I_{o, \text{nom}}$	3 A

#### Safety and Protection/Environmental Requirements

Protection type	IP00 (per EN 60529)
Series operation	No
Surrounding air temperature (operation)	-25 ... +40 °C
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	78.5 x 39 x 66; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	170.7 g

#### Standards and Specifications

Approvals/standards/specifications	CE
------------------------------------	----

#### Accessories

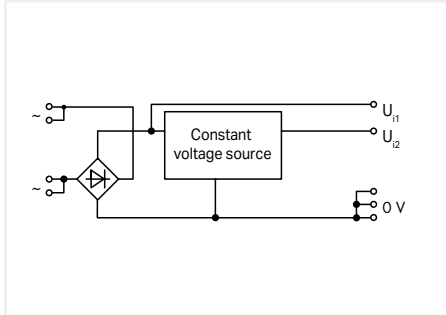


Marking strip; on reel; 7.5 mm wide; not stretchable;  
snap-on type; plain

Color	Item No.	Pack. Unit
white	709-178	1
translucent	709-177	1

5

## DIN-Rail-Mount Constant Voltage Source; 24 VDC / 3 A 288 Series



Constant Voltage Source; Input voltage: 24 VAC; Output voltage: 24 VDC; Output current: 3 A; with mounting carrier

Item No.	Pack. Unit
288-800	1

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VAC
Input voltage range	$\pm 10\%$
Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Output voltage range	$\pm 10\%$
Nominal output current $I_{o, \text{nom}}$	3 A
Safety and Protection/Environmental Requirements	
Protection class/protection type	III / IP00 (per EN 60529)
Series operation	No
Surrounding air temperature (operation)	$-25 \dots +40 \text{ }^\circ\text{C}$
Pollution degree	2
Connection Data	
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	140 x 44 x 85; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	205.7 g
Standards and Specifications	
Approvals/standards/specifications	CE

5

### Accessories



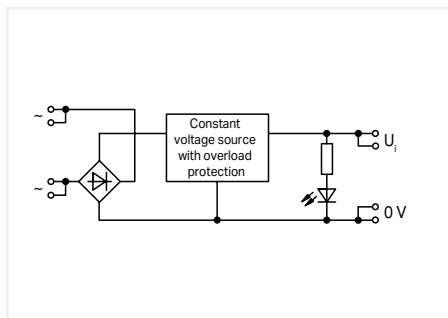
Marking strip; on reel; 7.5 mm wide; not stretchable; snap-on type; plain

Color	Item No.	Pack. Unit
white	709-178	1
translucent	709-177	1

## DIN-Rail-Mount Constant Voltage Source;

### 24 VDC / 5 A

### 288 Series



Constant Voltage Source; Input voltage: 24 VAC; Output voltage: 24 VDC; Output current: 5 A; Electronic overload protection; with mounting carrier

	Item No.	Pack. Unit
	288-801	1

#### Input

Nominal input voltage $U_{i, \text{nom}}$	24 VAC
Input voltage range	$\pm 10\%$

#### Output

Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Output voltage range	$\pm 10\%$
Nominal output current $I_{o, \text{nom}}$	5 A

#### Safety and Protection/Environmental Requirements

Protection class/protection type	III / IP00 (per EN 60529)
Series operation	No
Surrounding air temperature (operation)	0 ... +30 °C
Pollution degree	2

#### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	170 x 85 x 108; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	634 g

#### Standards and Specifications

Approvals/standards/specifications	CE
------------------------------------	----

#### Accessories



Marking strip; on reel; 7.5 mm wide; not stretchable; snap-on type; plain

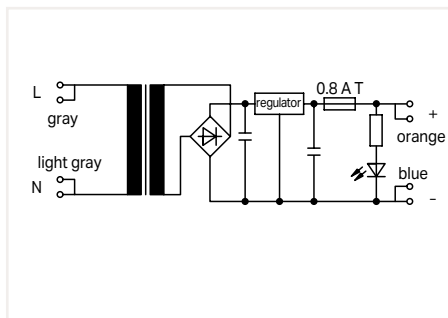
Color	Item No.	Pack. Unit
white	709-178	1
translucent	709-177	1

5





# DIN-Rail-Mount Power Supply Unit; 1-Phase; 24 VDC / 0.5 A 288 Series



Stabilized Power Supply; Input voltage: 230 VAC; Output voltage: 24 VDC; Output current: 0.5 A; with mounting carrier

Item No.	Pack. Unit
288-810	1

## Input

Nominal input voltage $U_{i, \text{nom}}$	230 VAC
Input voltage range	$\pm 10\%$
Nominal mains frequency range	50 ... 60 Hz

## Output

Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Output voltage range	$\pm 4\%$
Nominal output current $I_{o, \text{nom}}$	0.5 A
Residual ripple	$\leq 10$ mV (peak-to-peak)

## Efficiency/Power Losses

Power loss (max.) $P_{I, \text{max}}$	$\leq 30$ W
---------------------------------------	-------------

## Fuse Protection

Internal fuse	T 0.8 A
---------------	---------

## Safety and Protection/Environmental Requirements

Protection class/protection type	III / IP00 (per EN 60529)
Series operation	No
Surrounding air temperature (operation)	0 ... +50 °C
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	77 x 52 x 106; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	569 g

## Standards and Specifications

Approvals/standards/specifications	CE
------------------------------------	----

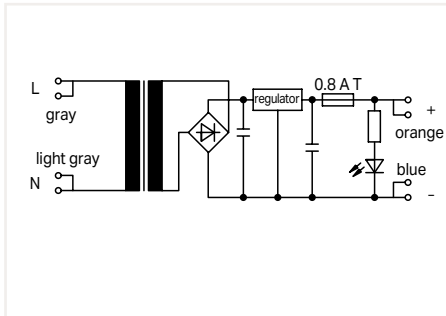
## Accessories



Marking strip; on reel; 7.5 mm wide; not stretchable; snap-on type; plain

Color	Item No.	Pack. Unit
white	709-178	1
translucent	709-177	1

# DIN-Rail-Mount Power Supply Unit; 1-Phase; 12 VDC / 0.5 A 288 Series



Stabilized Power Supply; Input voltage: 230 VAC; Output voltage: 12 VDC; Output current: 0.5 A; with mounting carrier

Item No.	Pack. Unit
288-808	1

## Input

Nominal input voltage $U_{i, \text{nom}}$	230 VAC
Input voltage range	$\pm 10\%$
Nominal mains frequency range	50 ... 60 Hz

## Output

Nominal output voltage $U_{o, \text{nom}}$	12 VDC
Output voltage range	$\pm 4\%$
Nominal output current $I_{o, \text{nom}}$	0.5 A
Residual ripple	$\leq 10$ mV (peak-to-peak)

## Efficiency/Power Losses

Power loss (max.) $P_{I, \text{max}}$	$\leq 23$ W
---------------------------------------	-------------

## Fuse Protection

Internal fuse	T 0.8 A
---------------	---------

## Safety and Protection/Environmental Requirements

Protection class/protection type	II / IP00 (per EN 60529)
Series operation	No
Surrounding air temperature (operation)	0 ... +50 °C
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	77 x 52 x 106; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	560 g

## Standards and Specifications

Approvals/standards/specifications	CE
------------------------------------	----

5

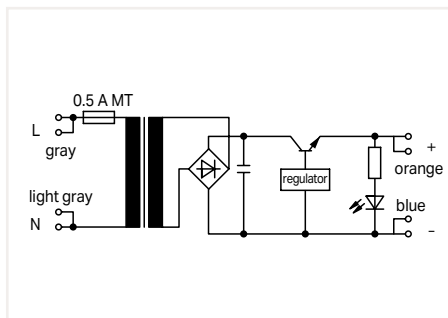
## Accessories



Marking strip; on reel; 7.5 mm wide; not stretchable; snap-on type; plain

Color	Item No.	Pack. Unit
white	709-178	1
translucent	709-177	1

# DIN-Rail-Mount Power Supply Unit; 1-Phase; 24 VDC / 2 A 288 Series



Stabilized Power Supply; Input voltage: 230 VAC; Output voltage: 24 VDC; Output current: 2 A; with mounting carrier

	Item No.	Pack. Unit
	288-812	1

## Input

Nominal input voltage $U_{i, \text{nom}}$	230 VAC
Input voltage range	$\pm 10\%$
Nominal mains frequency range	50 ... 60 Hz

## Output

Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Output voltage range	$\pm 10\%$
Nominal output current $I_{o, \text{nom}}$	2 A
Residual ripple	$\leq 80$ mV (peak-to-peak)

## Efficiency/Power Losses

Power loss (max.) $P_{I, \text{max}}$	$\leq 80$ W
---------------------------------------	-------------

## Fuse Protection

Internal fuse	M 0.5 A; electronic; short-circuit-protected
---------------	----------------------------------------------

## Safety and Protection/Environmental Requirements

Protection class/protection type	III / IP00 (per EN 60529)
Series operation	No
Surrounding air temperature (operation)	0 ... +40 °C
Pollution degree	2

## Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

## Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	182 x 98 x 106; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	1907.3 g

## Standards and Specifications

Approvals/standards/specifications	CE
------------------------------------	----

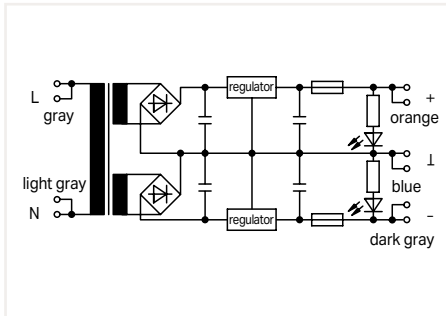
## Accessories



Marking strip; on reel; 7.5 mm wide; not stretchable; snap-on type; plain

Color	Item No.	Pack. Unit
white	709-178	1
translucent	709-177	1

## DIN-Rail-Mount Power Supply Unit; 1-Phase; $\pm 15$ VDC / 2 x 0.5 A 288 Series



Stabilized Power Supply; Input voltage: 230 VAC;  
Output voltage:  $\pm 15$  VDC; Output current: 2 x 0.5 A; with  
mounting carrier

$U_{o, \text{nom}}$	Item No.	Pack. Unit
$\pm 15$ VDC	288-815	1

Input	
Nominal input voltage $U_{i, \text{nom}}$	230 VAC
Input voltage range	$\pm 10$ %
Nominal mains frequency range	50 ... 60 Hz

Output	
Nominal output voltage $U_{o, \text{nom}}$	15 / -15 VDC
Output voltage range	$\pm 4$ %
Nominal output current $I_{o, \text{nom}}$	2 x 0.5 A
Residual ripple	$\leq 10$ mV (peak-to-peak)

Efficiency/Power Losses	
Power loss (max.) $P_{I, \text{max}}$	$\leq 27$ W

Fuse Protection	
Internal fuse	2 x T 0.8 A

Safety and Protection/Environmental Requirements	
Protection class/protection type	III / IP00 (per EN 60529)
Series operation	No
Surrounding air temperature (operation)	0 ... +40 °C
Pollution degree	2

Connection Data	
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG

Geometric Data/Mechanical Data/Material Data	
Width x height x depth (mm)	94 x 57 x 106; height from upper-edge of DIN-rail
Mounting type	DIN-35 rail (EN 60715)
Weight	681.8 g

Standards and Specifications	
Approvals/standards/specifications	CE

### Accessories



Marking strip; on reel; 7.5 mm wide; not stretchable; snap-on type; plain		
Color	Item No.	Pack. Unit
white	709-178	1
translucent	709-177	1

## Accessories

### Communication Cable; with RS-232 Interface

#### 787 Series



Similar to pictured device

RS-232 Communication Cable; 1.8 m long		
for	Item No.	Pack. Unit
787-8xx	787-890	1

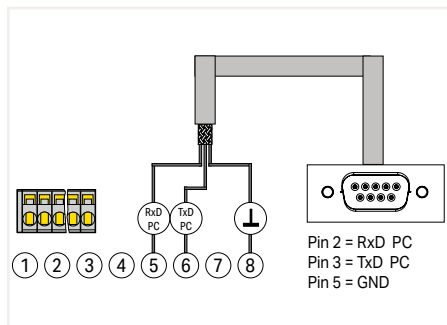
This communication cable is used for configuration and visualization via PC or controller.

It is suitable for all 787-8xx Series devices equipped with an RS-232 serial interface. Download the corresponding PC software for all 787 Series devices at [www.wago.com/epsitron](http://www.wago.com/epsitron).

**5** Function modules for communication with the WAGO-I/O-SYSTEM 750 and other control systems are also available.

**Note:**  
The 787-890 Communication Cable is not electrically isolated.

Signaling and Communication	
Signaling	1 x RS-232 cable
Communication	RS-232 interface
Safety and Protection/Environmental Requirements	
Protection type	IP20 (per EN 60529)
Surrounding air temperature (operation)	-10 ... +70 °C
Connection Data	
Module side (787-8xx)	1 x 8-pole female connector (734-108) with strain relief
PC/controller side	1 x 9 pole D-sub socket
Cable type	3 x 0.34 mm <sup>2</sup> ; shielded
Geometric Data/Mechanical Data/Material Data	
Cable length	1.8 m
Material Data	
Weight	113 g



## Accessories

### Communication Cable; with RS-232 Interface

#### 787 Series



Similar to pictured device

RS-232 Communication Cable; 1.8 m long; for 787-1675		
for	Item No.	Pack. Unit
787-1675	787-892	1

This communication cable is used for configuration and visualization via PC or controller.  
The communication cable is suitable for 787-1675. Download the corresponding PC software for all 787 Series devices at [www.wago.com/epsitron](http://www.wago.com/epsitron).

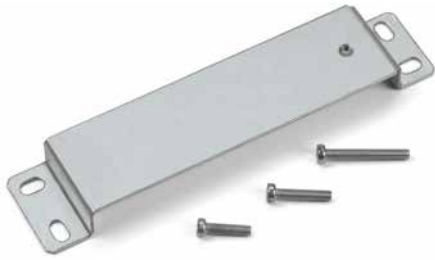
Function modules for communication with the WAGO-I/O-SYSTEM 750 and other control systems are also available.

**Note:**  
The 787-892 Communication Cable is not electrically isolated.

<b>Signaling and Communication</b>	
Signaling	1 x RS-232 cable
Communication	RS-232 interface
<b>Safety and Protection/Environmental Requirements</b>	
Protection type	IP20 (per EN 60529)
Surrounding air temperature (operation)	-10 ... +70 °C
<b>Connection Data</b>	
Module side (787-1675)	1 x 4-pole female connector (734-104) with strain relief
PC/controller side	1 x 9 pole D-sub socket
Cable type	3 x 0.34 mm <sup>2</sup> ; shielded
<b>Geometric Data/Mechanical Data/Material Data</b>	
Cable length	1.8 m
<b>Material Data</b>	
Weight	97 g

## Accessories

### Wall-Mount Adapter 787 Series



#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	35 x 15 x 158.5
Mounting type	Mounting holes: 4 slots, 5.3 mm x 9 mm; Mounting hole spacing: 143 mm x 19.5 mm
Mounting type	Wall-mount
Material	Sheet steel; galvanized
Weight	100 g

Wall-Mount Adapter; for screw mounting 787-8xx devices on a mounting plate or wall without DIN-35 rail

	Item No.	Pack. Unit
	787-895	5

The wall-mount adapter replaces the rail support of the 787-8xx device.  
The adapter is secured to the 787-8xx device via the provided screws.

5



## Accessories

### DIN-Rail Adapter

#### 787 Series



#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	35 x 136.5 x 15.5
Mounting type	Slide both single parts into the guide slot and then screw
Mounting type	DIN-35 rail (EN 60715)
Material	Sheet steel; galvanized
Weight	81 g

DIN-Rail Adapter; secures 787-8xx devices to a DIN-35 rail

	Item No.	Pack. Unit
	787-896	1

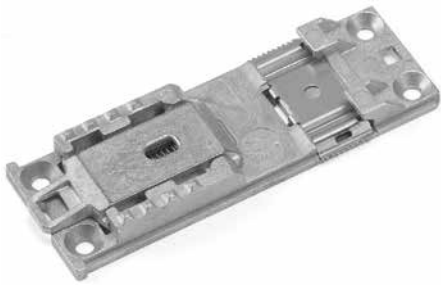
WAGO's 787-896 DIN-Rail Adapter allows both vertical and horizontal mounting of 787-8xx devices. Mounting the adapter to the device is performed by sliding both single parts into the guide slots of the cooling element and then screwing, allowing the position to be easily changed.



## Accessories

### DIN-Rail Adapter

#### 787 Series



#### Geometric Data/Mechanical Data/Material Data

Width x height x depth (mm)	37 x 102.5 x 10.5
Mounting type	Press the adapter into the guide slot
Mounting type	DIN-35 rail (EN 60715)
Material	Zinc die-cast
Weight	96 g

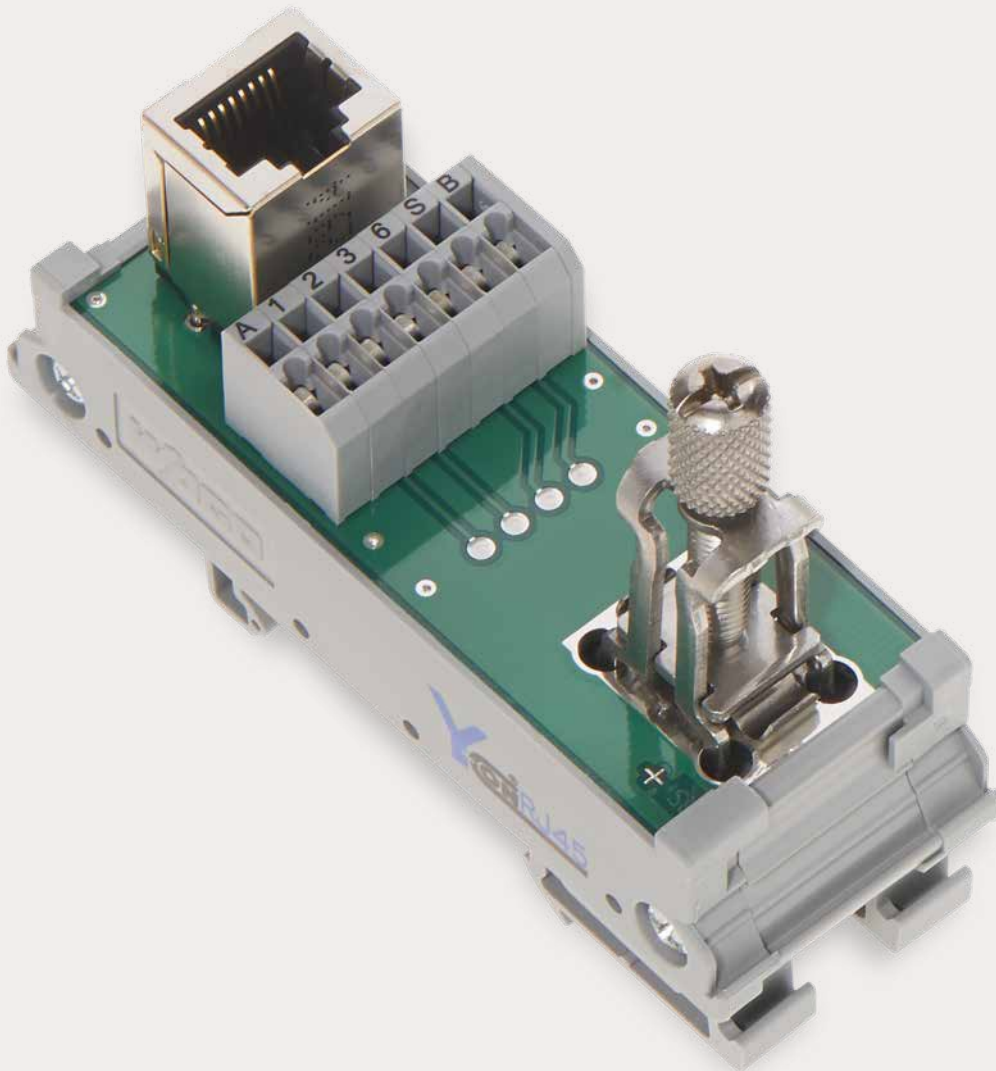
DIN-Rail Adapter; made of zinc die-cast; secures 787-8xx devices to a DIN-34 rail

Item No.	Pack. Unit
787-897	1

WAGO's 787-897 DIN-Rail Adapter allows horizontal mounting of 787-8xx devices. Mounting the adapter to the device is performed by sliding both single parts into the guide slots of the cooling element and then screwing, allowing the position to be easily changed.






5



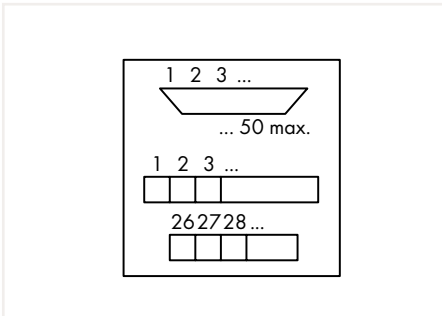
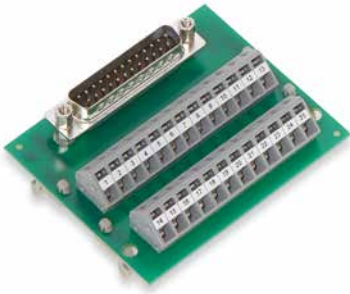


# WAGO Interface Modules

## WAGO Interface Modules

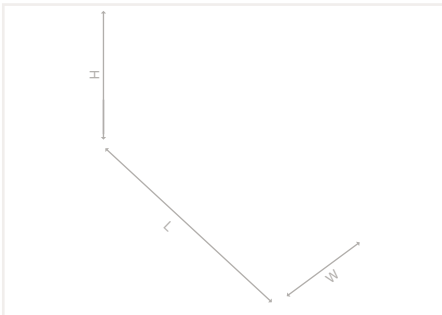
	Page	
	<b>Interface Modules, for D-Sub/HD D-Sub Connectors</b>	
	Male Connectors; for Solder Mating Connectors; 289 Series	568
	Male Connectors; for IDC Mating Connectors; 289 Series	574
	Female Connectors; for Solder Mating Connectors; 289 Series	576
	Female Connectors; for IDC Mating Connectors; 289 Series	584
	<b>Interface Modules; for DIN 41651 Connectors</b>	
	289 Series	586
	<b>Interface Modules; for DIN 41612 Connectors</b>	
	289 Series	590
	<b>Interface Modules; for RJ-45 Connectors</b>	
	RJ-45; 289 Series	596
	RJ-45; with Power Contacts; 289 Series	600
	<b>Sensor/Actuator Modules</b>	
	289 Series	604

# Interface Module for D-Sub Male Connector and Solder Mating Connector 289 Series



Interface Module; D-sub male connector; Solder mating connector; Vertical mating; Double-row PCB terminal blocks; with mounting feet

Pole No.	Width	Item No.	Pack. Unit
9	38 mm	289-445	1
15	53.5 mm	289-446	1
25	79 mm	289-447	1
37	120 mm	289-448	1
50	157 mm	289-449	1



**Notice:**  
Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover.  
The installation regulations must be observed for each individual application.

Electrical Data	
Operating voltage	≤ 30 VAC; ≤ 50 VDC
Nominal current	1 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

Safety and Protection	
Pollution degree	2
Rated voltage	50 V
Rated surge voltage	0.8 kV
Degree of protection	IP00

Connection Data	
Connection type 1	System
Connector 1	D-sub male connector
Strain relief (stud bolt) 1	UNC 4-40
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm² / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm² / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Height from upper-edge of DIN-rail	19 mm / 0.748 inch
Depth	63.5 mm / 2.5 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Au over Ni

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

## Accessories

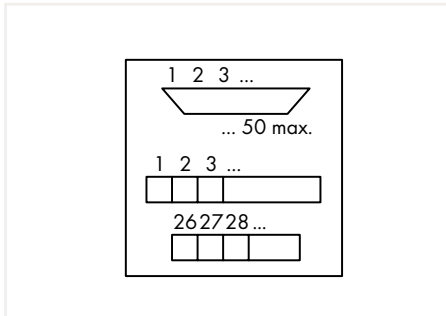


Item No.	Pack. Unit
709-167	10



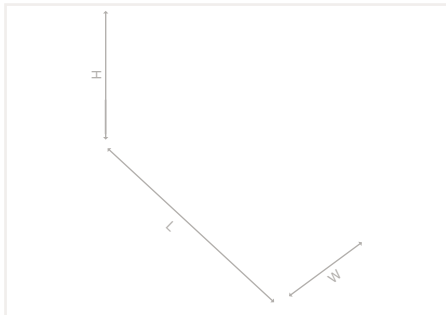
Item No.	Pack. Unit
709-153	10

# Interface Module for D-Sub Male Connector and Solder Mating Connector 289 Series



Interface Module; D-sub male connector; Solder mating connector; Vertical mating; Double-row PCB terminal blocks; with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
9	38 mm	289-545	1
15	46 mm	289-546	1
25	72 mm	289-547	1
37	102 mm	289-548	1
50	94 mm	289-549	1



Electrical Data	
Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	2 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

Safety and Protection	
Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

Connection Data	
Connection type 1	System
Connector 1	D-sub male connector
Strain relief (stud bolt) 1	UNC 4-40
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Height from upper-edge of DIN-rail	34 mm / 1.339 inch
Depth	85 mm / 3.346 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Au over Ni

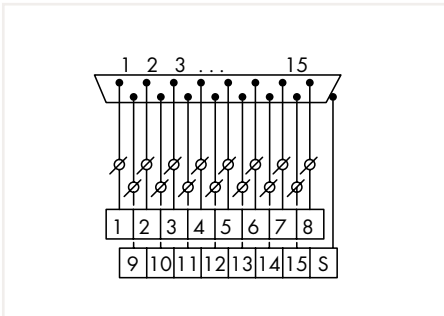
Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories



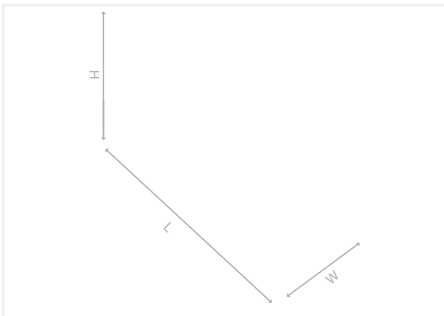
Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel	
Item No.	Pack. Unit
709-178	1

# Interface Module for D-Sub Male Connector and Solder Mating Connector 289 Series



Interface Module; D-sub male connector; Double-deck PCB terminal blocks; with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
9	33.5 mm	289-720	1
15	43.5 mm	289-721	1



**Note:**  
One solder terminal per pole is available for testing and patching (except for shield contact).

**Notice:**  
Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover. The installation regulations must be observed for each individual application.

Electrical Data	
Operating voltage	≤ 30 VAC; ≤ 50 VDC
Nominal current	2 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

Safety and Protection	
Pollution degree	2
Rated voltage	50 V
Rated surge voltage	0.8 kV
Degree of protection	IP00

Connection Data	
Connection type 1	System
Connector 1	D-sub male connector
Strain relief (stud bolt) 1	UNC 4-40
Mating direction 1	Vertical
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Height from upper-edge of DIN-rail	48 mm / 1.89 inch
Depth	85 mm / 3.346 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Au over Ni

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories



Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts	
Item No.	Pack. Unit
709-167	10

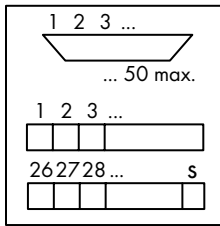


Cover; Type 1; for cover carrier (type 1); 1 m long	
Item No.	Pack. Unit
709-153	10



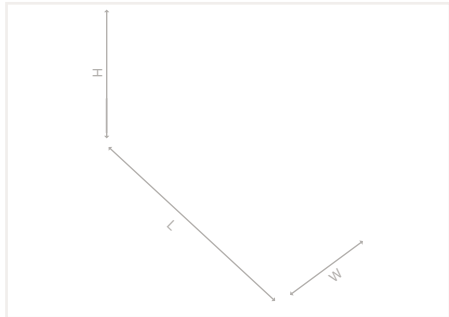
Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel	
Item No.	Pack. Unit
709-178	1

## Interface Module for D-Sub Male Connector and Solder Mating Connector 289 Series



Interface Module; D-sub male connector; Solder mating connector; Vertical mating; Double-row PCB terminal blocks; with mounting carrier; with shield connection

Pole No.	Width	Item No.	Pack. Unit
9	38.5 mm	289-585	1
15	46 mm	289-586	1
25	71.5 mm	289-587	1
37	102 mm	289-588	1



Electrical Data	
Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	2 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

Safety and Protection	
Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

Connection Data	
Connection type 1	System
Connector 1	D-sub male connector
Strain relief (stud bolt) 1	UNC 4-40
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Height from upper-edge of DIN-rail	34 mm / 1.339 inch
Depth	85 mm / 3.346 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Au over Ni

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

Standards and Specifications	
Standards/specifications	UL 840

### Accessories

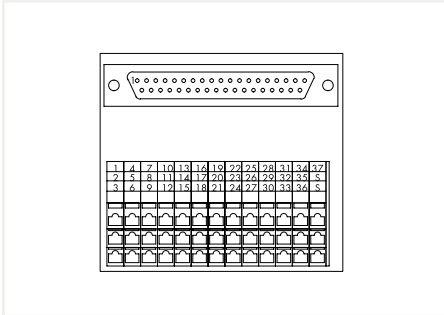


Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

Item No.	Pack. Unit
709-178	1

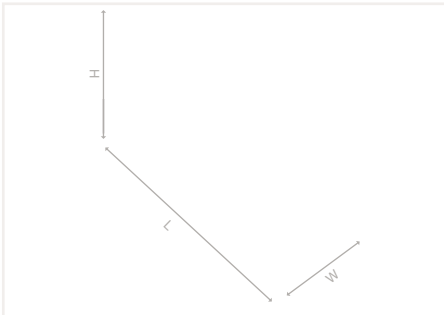


# Interface Module for D-Sub Male Connector and Solder Mating Connector 289 Series



Interface Module; D-sub male connector; Solder mating connector; Vertical mating; Triple-deck PCB terminal blocks; with mounting carrier; with shield connection

Pole No.	Width	Item No.	Pack. Unit
25	56 mm	289-620	1
37	74 mm	289-621	1



### Electrical Data

Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	2 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

### Safety and Protection

Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

### Connection Data

Connection type 1	System
Connector 1	D-sub male connector
Strain relief (stud bolt) 1	UNC 4-40
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Height from upper-edge of DIN-rail	62 mm / 2.441 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Contact material (connector)	Au over Ni
------------------------------	------------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Standards and Specifications

Standards/specifications	UL 840
--------------------------	--------

### Accessories

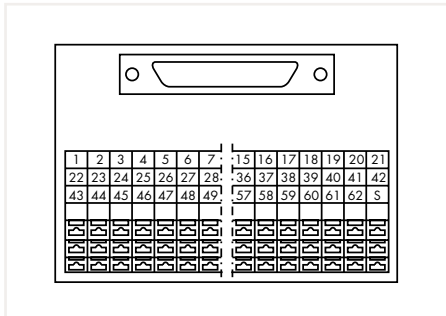


Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

Item No.	Pack. Unit
709-178	1

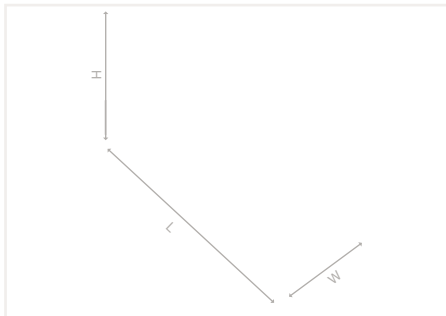
6

## Interface Module for HD D-Sub Male Connector 289 Series



Interface Module; HD D-sub male connector; Triple-deck PCB terminal blocks; with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
15	35 mm	289-714	1
62	108 mm	289-710	1



### Electrical Data

Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	1 A
Contact resistance (max.)	15 mΩ
Performance level	3 / 50 mating cycles

### Safety and Protection

Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

### Connection Data

Connection type 1	System
Connector 1	HD D-sub male connector
Strain relief (stud bolt) 1	UNC 4-40
Mating direction 1	Vertical
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Height from upper-edge of DIN-rail	62 mm / 2.441 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Contact material (connector)	Au over Ni
------------------------------	------------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

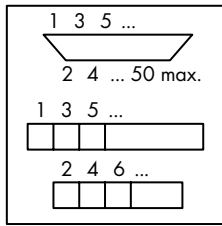
### Accessories



Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

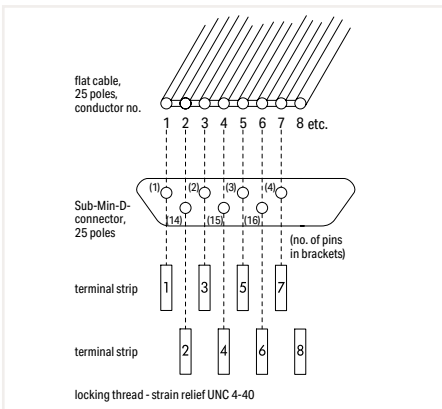
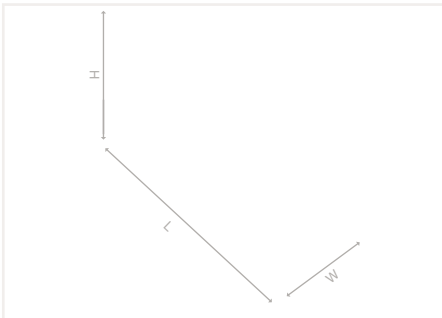
Item No.	Pack. Unit
709-178	1

# Interface Module for D-Sub Male Connector and IDC Mating Connector 289 Series



Interface Module; D-sub male connector; IDC mating connector; Vertical mating; Double-row PCB terminal blocks; with mounting feet

Pole No.	Width	Item No.	Pack. Unit
9	38 mm	289-440	1
15	53.5 mm	289-441	1
25	79 mm	289-442	1
37	120 mm	289-443	1
50	157 mm	289-444	1



**Notice:**  
Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover.  
The installation regulations must be observed for each individual application.

Electrical Data	
Operating voltage	≤ 30 VAC; ≤ 50 VDC
Nominal current	1 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

Safety and Protection	
Pollution degree	2
Rated voltage	50 V
Rated surge voltage	0.8 kV
Degree of protection	IP00

Connection Data	
Connection type 1	System
Connector 1	D-sub male connector
Strain relief (stud bolt) 1	UNC 4-40
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Height from upper-edge of DIN-rail	19 mm / 0.748 inch
Depth	63.5 mm / 2.5 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Au over Ni

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

## Accessories

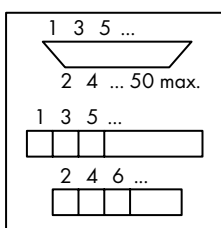


Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts	<b>Item No.</b>	<b>Pack. Unit</b>
	709-167	10



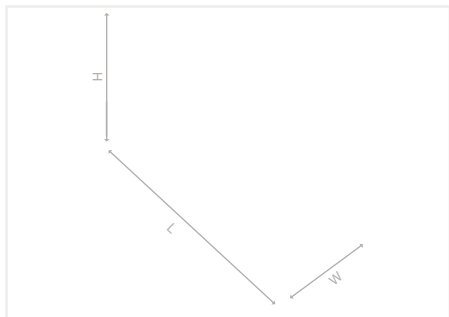
Cover; Type 1; for cover carrier (type 1); 1 m long	<b>Item No.</b>	<b>Pack. Unit</b>
	709-153	10

# Interface Module for D-Sub Male Connector and IDC Mating Connector 289 Series



Interface Module; D-sub male connector; IDC mating connector; Vertical mating; Triple-row PCB terminal blocks; with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
9	38 mm	289-540	1
15	46 mm	289-541	1
25	72 mm	289-542	1
37	102 mm	289-543	1
50	94 mm	289-544	1



Electrical Data	
Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	2 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

Safety and Protection	
Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

Connection Data	
Connection type 1	System
Connector 1	D-sub male connector
Strain relief (stud bolt) 1	UNC 4-40
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Height from upper-edge of DIN-rail	34 mm / 1.339 inch
Depth	85 mm / 3.346 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Au over Ni

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

Standards and Specifications	
Standards/specifications	UL 840

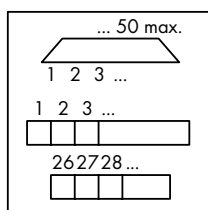
### Accessories



Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel	
Item No.	Pack. Unit
709-178	1

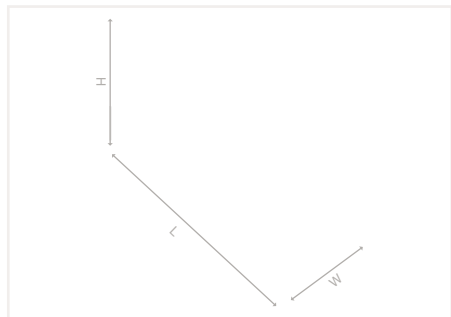
6

# Interface Module for D-Sub Female Connector and Solder Mating Connector 289 Series



Interface Module; D-sub female connector; Solder mating connector; Vertical mating; Double-row PCB terminal blocks; with mounting feet

Pole No.	Width	Item No.	Pack. Unit
9	38 mm	289-455	1
15	53,5	289-456	1
25	79 mm	289-457	1
37	120 mm	289-458	1
50	157 mm	289-459	1



**Notice:**  
Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover.  
The installation regulations must be observed for each individual application.

Electrical Data	
Operating voltage	≤ 30 VAC; ≤ 50 VDC
Nominal current	1 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

Safety and Protection	
Pollution degree	2
Rated voltage	50 V
Rated surge voltage	0.8 kV
Degree of protection	IP00

Connection Data	
Connection type 1	System
Connector 1	D-Sub female connector
Strain relief (stud bolt) 1	UNC 4-40
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm² / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm² / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Height from upper-edge of DIN-rail	19 mm / 0.748 inch
Depth	63.5 mm / 2.5 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Au over Ni

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

## Accessories

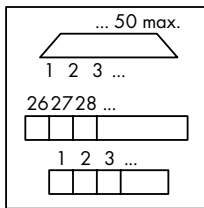


Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts	
Item No.	Pack. Unit
709-167	10



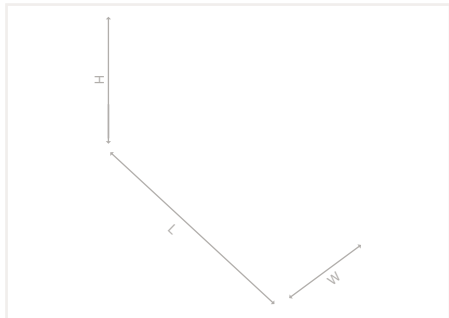
Cover; Type 1; for cover carrier (type 1); 1 m long	
Item No.	Pack. Unit
709-153	10

## Interface Module for D-Sub Female Connector and Solder Mating Connector 289 Series



Interface Module; D-sub female connector; Solder mating connector; Vertical mating; Double-row PCB terminal blocks; with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
9	38 mm	289-555	1
15	46 mm	289-556	1
25	72 mm	289-557	1
37	102 mm	289-558	1
50	94 mm	289-559	1



Electrical Data	
Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	2 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

Safety and Protection	
Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

Connection Data	
Connection type 1	System
Connector 1	D-Sub female connector
Strain relief (stud bolt) 1	UNC 4-40
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Height from upper-edge of DIN-rail	34 mm / 1.339 inch
Depth	85 mm / 3.346 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Au over Ni

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

Standards and Specifications	
Standards/specifications	UL 840

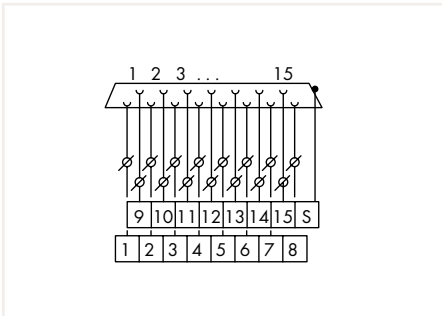
### Accessories



Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

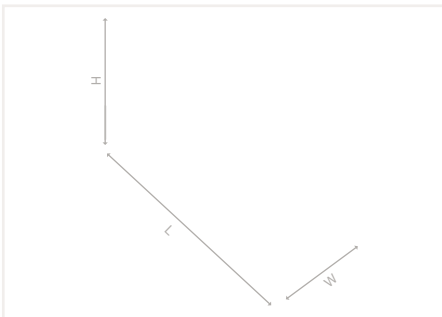
Item No.	Pack. Unit
709-178	1

# Interface Module for D-Sub Female Connector 289 Series



Interface Module; D-sub female connector; Double-deck PCB terminal blocks; with mounting carrier; with solder terminal

Pole No.	Width	Item No.	Pack. Unit
9	33.5 mm	289-725	1
15	43.5 mm	289-726	1



**Note:**  
One solder terminal per pole is available for testing and patching (except for shield contact).

**Notice:**  
Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover. The installation regulations must be observed for each individual application.

Electrical Data	
Operating voltage	≤ 30 VAC; ≤ 50 VDC
Nominal current	2 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

Safety and Protection	
Pollution degree	2
Rated voltage	50 V
Rated surge voltage	0.8 kV
Degree of protection	IP00

Connection Data	
Connection type 1	System
Connector 1	D-Sub female connector
Strain relief (stud bolt) 1	UNC 4-40
Mating direction 1	Vertical
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Height from upper-edge of DIN-rail	48 mm / 1.89 inch
Depth	85 mm / 3.346 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Au over Ni

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories



Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts	
Item No.	Pack. Unit
709-167	10

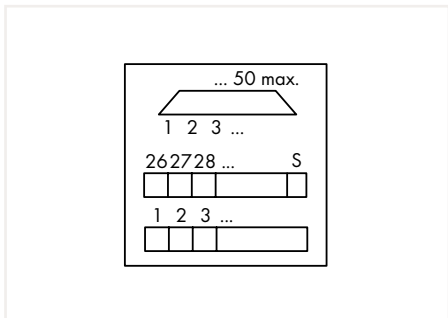


Cover; Type 1; for cover carrier (type 1); 1 m long	
Item No.	Pack. Unit
709-153	10



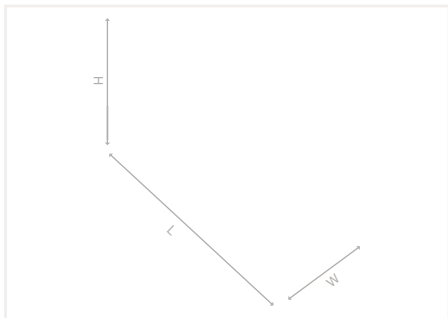
Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel	
Item No.	Pack. Unit
709-178	1

# Interface Module for D-Sub Female Connector and Solder Mating Connector 289 Series



Interface Module; D-sub female connector; Solder mating connector; Vertical mating; Double-row PCB terminal blocks; with mounting carrier; with shield connection

Pole No.	Width	Item No.	Pack. Unit
9	33 mm	289-575	1
15	43 mm	289-576	1
25	68.5 mm	289-577	1
37	99 mm	289-578	1



Electrical Data	
Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	2 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

Safety and Protection	
Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

Connection Data	
Connection type 1	System
Connector 1	D-Sub female connector
Strain relief (stud bolt) 1	UNC 4-40
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Height from upper-edge of DIN-rail	34 mm / 1.339 inch
Depth	85 mm / 3.346 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Au over Ni

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

Standards and Specifications	
Standards/specifications	UL 840

### Accessories

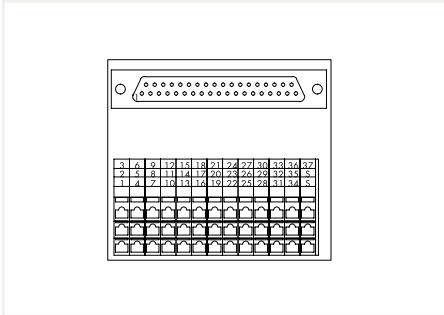


Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel		
Item No.	Pack. Unit	
709-178	1	

6

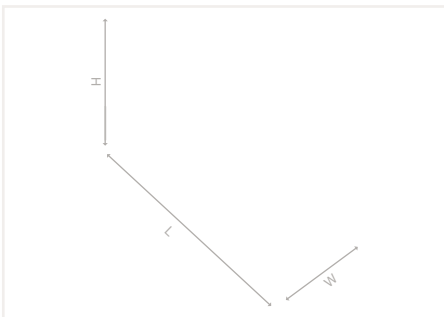


# Interface Module for D-Sub Female Connector and Solder Mating Connector 289 Series



Interface Module; D-sub female connector; Solder mating connector; Vertical mating; Triple-deck PCB terminal blocks; with mounting carrier; with shield connection

Pole No.	Width	Item No.	Pack. Unit
25	56 mm	289-623	1
37	74 mm	289-624	1



### Electrical Data

Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	2 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

### Safety and Protection

Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

### Connection Data

Connection type 1	System
Connector 1	D-Sub female connector
Strain relief (stud bolt) 1	UNC 4-40
Mating direction 1	Vertical
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Height from upper-edge of DIN-rail	62 mm / 2.441 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Contact material (connector)	Au over Ni
------------------------------	------------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Standards and Specifications

Standards/specifications	UL 840
--------------------------	--------

### Accessories

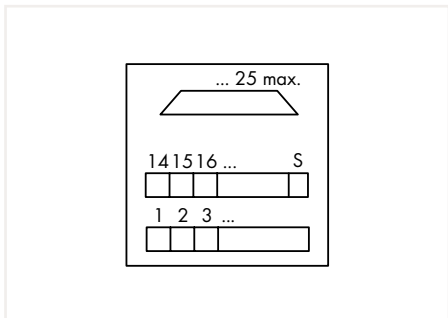


Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

Item No.	Pack. Unit
709-178	1

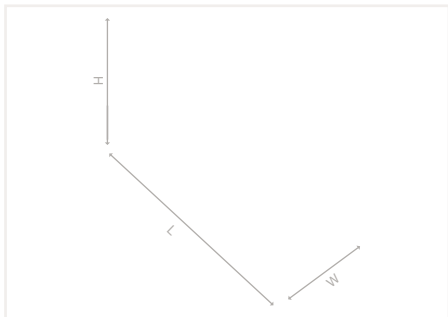
6

# Interface Module for D-Sub Female Connector 289 Series



Interface Module; D-sub female connector;  
Double-deck PCB terminal blocks; with mounting  
carrier; with shield connection

Pole No.	Width	Item No.	Pack. Unit
9	33 mm	289-650	1
25	68.5 mm	289-652	1



Electrical Data	
Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	2 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

Safety and Protection	
Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

Connection Data	
Connection type 1	System
Connector 1	D-Sub female connector
Strain relief (stud bolt) 1	UNC 4-40
Mating direction 1	Vertical
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Height from upper-edge of DIN-rail	48 mm / 1.89 inch
Depth	85 mm / 3.346 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Au over Ni

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

Standards and Specifications	
Standards/specifications	UL 840

### Accessories

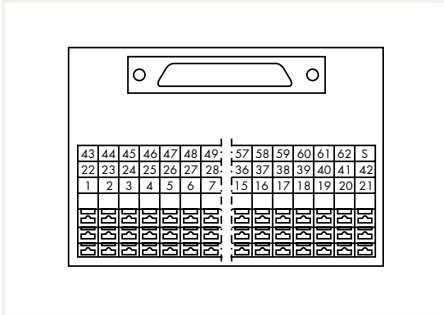


Marking strip; for mounting carrier; 7.5 mm wide;  
50 m reel

Item No.	Pack. Unit
709-178	1

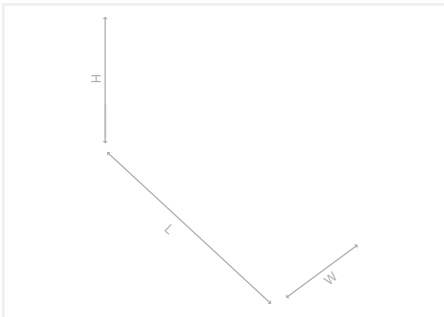
6

# Interface Module for HD D-Sub Female Connector 289 Series



Interface Module; HD D-sub female connector;  
Triple-deck PCB terminal blocks; with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
15	35 mm	289-713	1
44	79 mm	289-707	1
62	108 mm	289-708	1



### Electrical Data

Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	1 A
Contact resistance (max.)	15 mΩ
Performance level	3 / 50 mating cycles

### Safety and Protection

Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

### Connection Data

Connection type 1	System
Connector 1	HD D-sub female connector
Strain relief (stud bolt) 1	UNC 4-40
Mating direction 1	Vertical
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Height from upper-edge of DIN-rail	62 mm / 2.441 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Contact material (connector)	Au over Ni
------------------------------	------------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories



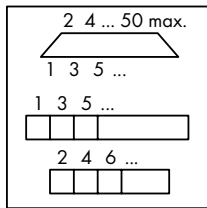
Marking strip; for mounting carrier; 7.5 mm wide;  
50 m reel

Item No.	Pack. Unit
709-178	1

6

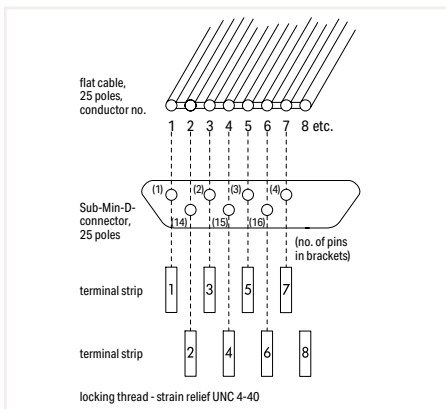
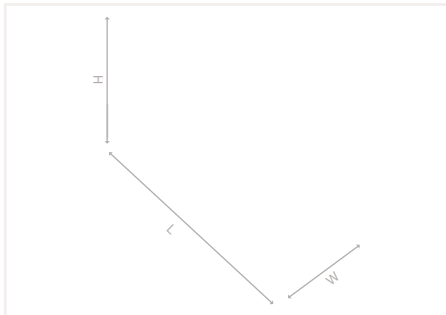
6

# Interface Module for D-Sub Female Connector and IDC Mating Connector 289 Series



Interface Module; D-sub female connector; IDC mating connector; Vertical mating; Double-row PCB terminal blocks; with mounting feet

Pole No.	Width	Item No.	Pack. Unit
9	38 mm	289-450	1
15	53.5 mm	289-451	1
25	79 mm	289-452	1
37	120 mm	289-453	1
50	157 mm	289-454	1



**Notice:**  
Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover.  
The installation regulations must be observed for each individual application.

Electrical Data	
Operating voltage	≤ 30 VAC; ≤ 50 VDC
Nominal current	1 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

Safety and Protection	
Pollution degree	2
Rated voltage	50 V
Rated surge voltage	0.8 kV
Degree of protection	IP00

Connection Data	
Connection type 1	System
Connector 1	D-Sub female connector
Strain relief (stud bolt) 1	UNC 4-40
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Height from upper-edge of DIN-rail	19 mm / 0.748 inch
Depth	63.5 mm / 2.5 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Au over Ni

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

## Accessories



Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts

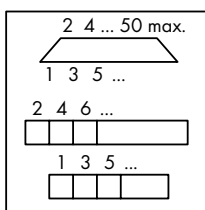
Item No.	Pack. Unit
709-167	10



Cover; Type 1; for cover carrier (type 1); 1 m long

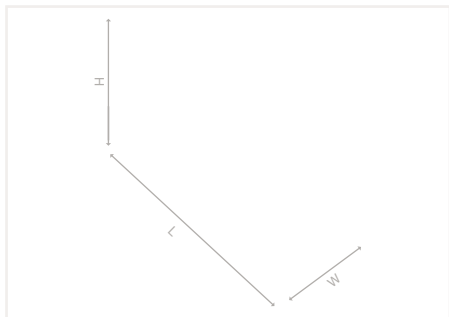
Item No.	Pack. Unit
709-153	10

# Interface Module for D-Sub Female Connector and IDC Mating Connector 289 Series



Interface Module; D-sub female connector; IDC mating connector; Vertical mating; Double-row PCB terminal blocks; with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
9	38 mm	289-550	1
15	46 mm	289-551	1
25	72 mm	289-552	1
37	102 mm	289-553	1
50	94 mm	289-554	1



Electrical Data	
Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	2 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

Safety and Protection	
Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

Connection Data	
Connection type 1	System
Connector 1	D-Sub female connector
Strain relief (stud bolt) 1	UNC 4-40
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Height from upper-edge of DIN-rail	34 mm / 1.339 inch
Depth	85 mm / 3.346 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Au over Ni

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

Standards and Specifications	
Standards/specifications	UL 840

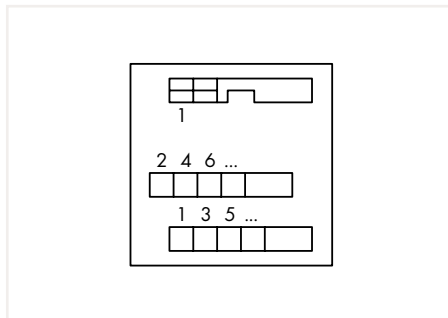
### Accessories



Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel	
Item No.	Pack. Unit
709-178	1

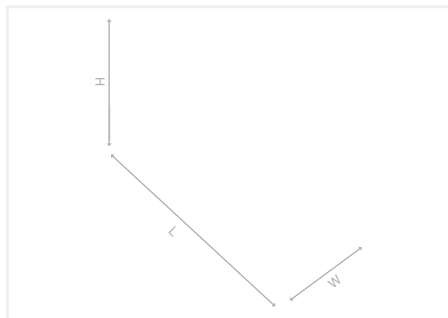
6

# Interface Module for DIN 41651 Connector 289 Series



Interface Module; DIN 41651 connector; Double-row PCB terminal blocks; with mounting feet

Pole No.	Width	Item No.	Pack. Unit
10	41 mm	289-401	1
14	51.5 mm	289-402	1
16	56.5 mm	289-403	1
20	66.5 mm	289-404	1
26	81 mm	289-405	1
34	102 mm	289-406	1
40	126 mm	289-407	1
50	151 mm	289-408	1
64	187 mm	289-409	1



**Notice:**  
Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover.  
The installation regulations must be observed for each individual application.

### Electrical Data

Operating voltage	≤ 30 VAC; ≤ 50 VDC
Nominal current	1 A
Performance level	3 / 50 mating cycles

### Safety and Protection

Pollution degree	2
Rated voltage	50 V
Rated surge voltage	0.8 kV
Degree of protection	IP00

### Connection Data

Connection type 1	System
Connector 1	DIN 41651 male connector
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Height from upper-edge of DIN-rail	28 mm / 1.102 inch
Depth	63.5 mm / 2.5 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Contact material (connector)	Au over Ni
------------------------------	------------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories

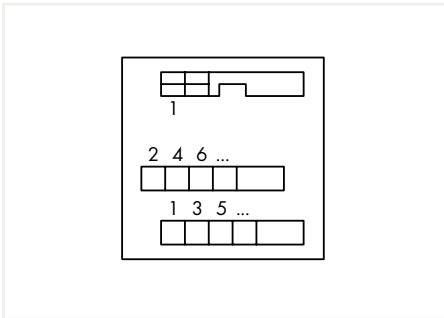
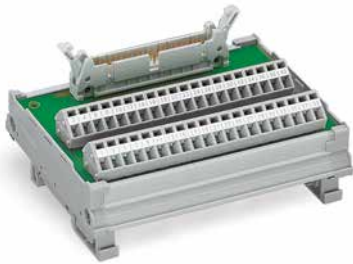


Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts	
Item No.	Pack. Unit
709-167	10



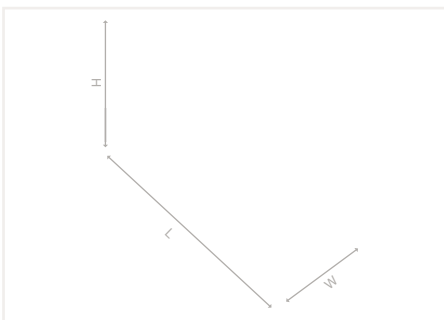
Cover; Type 1; for cover carrier (type 1); 1 m long	
Item No.	Pack. Unit
709-153	10

# Interface Module for DIN 41651 Connector 289 Series



Interface Module; DIN 41651 connector; Double-row PCB terminal blocks; with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
10	38 mm	289-501	1
14	43 mm	289-502	1
16	46 mm	289-503	1
20	53.5 mm	289-504	1
26	71 mm	289-505	1
34	94 mm	289-506	1
40	114 mm	289-507	1
50	132 mm	289-508	1
64	170 mm	289-509	1
64	120 mm	289-510	1



### Electrical Data

Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	1 A
Performance level	3 / 50 mating cycles

### Safety and Protection

Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

### Connection Data

Connection type 1	System
Connector 1	DIN 41651 male connector
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Height from upper-edge of DIN-rail	36 mm / 1.417 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Contact material (connector)	Au over Ni
------------------------------	------------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories

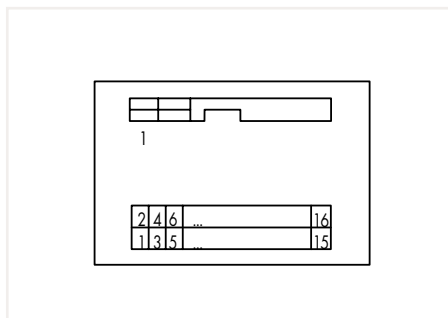


Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

Item No.	Pack. Unit
709-178	1

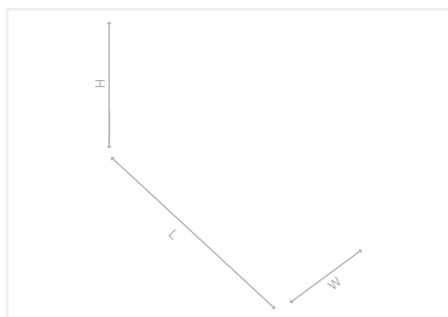


## Interface Module for DIN 41651 Connector 289 Series



Interface Module; DIN 41651 connector; Double-deck PCB terminal blocks; with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
10	35 mm	289-611	1
14	40 mm	289-612	1
16	45 mm	289-613	1



### Electrical Data

Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	1 A
Performance level	3 / 50 mating cycles

### Safety and Protection

Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

### Connection Data

Connection type 1	System
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Height from upper-edge of DIN-rail	48 mm / 1.89 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Contact material (connector)	Au over Ni
------------------------------	------------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

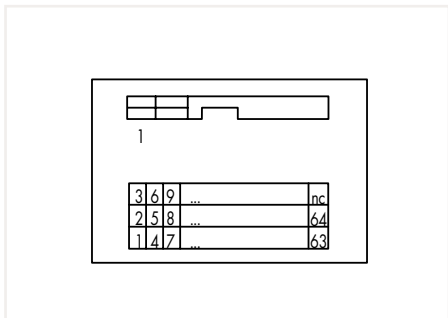
### Accessories



Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

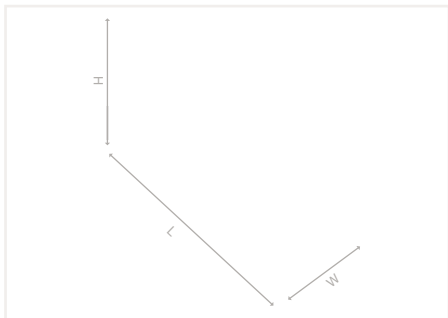
Item No.	Pack. Unit
709-178	1

# Interface Module for DIN 41651 Connector 289 Series



Interface Module; DIN 41651 connector; Triple-deck PCB terminal blocks; with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
20	47 mm	289-614	1
26	55 mm	289-615	1
34	65 mm	289-616	1
40	74 mm	289-617	1
50	88 mm	289-618	1
64	114 mm	289-619	1



### Electrical Data

Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	1 A
Performance level	3 / 50 mating cycles

### Safety and Protection

Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

### Connection Data

Connection type 1	System
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Height from upper-edge of DIN-rail	62 mm / 2.441 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Contact material (connector)	Au over Ni
------------------------------	------------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +55 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories

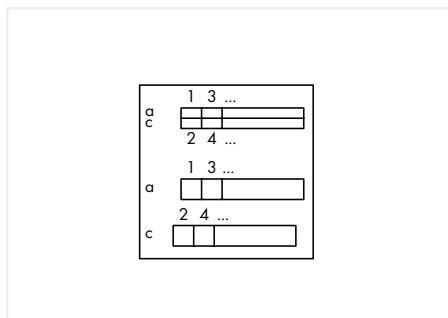


Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

Item No.	Pack. Unit
709-178	1

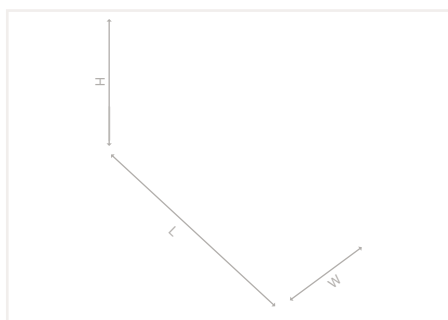
6

# Interface Module for DIN 41612 Connector; Type C; IDC Mating Connector 289 Series



Interface Module; DIN 41612 connector; IDC mating connector; Vertical mating; Double-row PCB terminal blocks; with mounting feet; Type C

Pole No.	Width	Item No.	Pack. Unit
32	79 mm	289-422	1



**Notice!**  
Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover.  
The installation regulations must be observed for each individual application.

Electrical Data	
Operating voltage	≤ 30 VAC; ≤ 50 VDC
Nominal current	1 A
Contact resistance (max.)	30 mΩ
Performance level	2 / 200 mating cycles

Safety and Protection	
Pollution degree	2
Rated voltage	50 V
Rated surge voltage	0.8 kV
Degree of protection	IP00

Connection Data	
Pole No.	32
Connection type 1	System
Connector 1	D-sub male connector
Strain relief (stud bolt) 1	UNC 4-40
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Width	79 mm / 3.11 inch
Height from upper-edge of DIN-rail	19 mm / 0.748 inch
Depth	63.5 mm / 2.5 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Au over Ni
Weight	52 g

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories

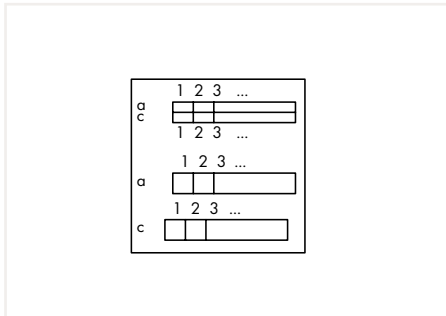


Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts	
Item No.	Pack. Unit
709-167	10



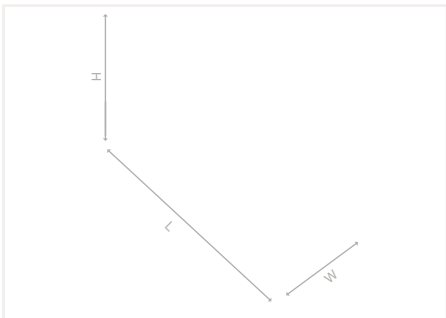
Cover; Type 1; for cover carrier (type 1); 1 m long	
Item No.	Pack. Unit
709-153	10

# Interface Module for DIN 41612 Connector; Type C; Solder Mating Connector 289 Series



Interface Module; DIN 41612 connector; Solder mating connector; Horizontal mating; Double-row PCB terminal blocks; with mounting feet; Type C

Pole No.	Width	Item No.	Pack. Unit
64	187 mm	289-427	1



### Notice!

Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover.

The installation regulations must be observed for each individual application.

### Electrical Data

Operating voltage	≤ 30 VAC; ≤ 50 VDC
Nominal current	1 A
Contact resistance (max.)	20 mΩ
Performance level	2 / 400 mating cycles

### Safety and Protection

Pollution degree	2
Rated voltage	50 V
Rated surge voltage	0.8 kV
Degree of protection	IP00

### Connection Data

Pole No.	64
Connection type 1	System
Connector 1	DIN 41612 male connector
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	187 mm / 7.362 inch
Height from upper-edge of DIN-rail	21 mm / 0.827 inch
Depth	63.5 mm / 2.5 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Contact material (connector)	Copper alloy; gold plated
Weight	107.6 g

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories



Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts

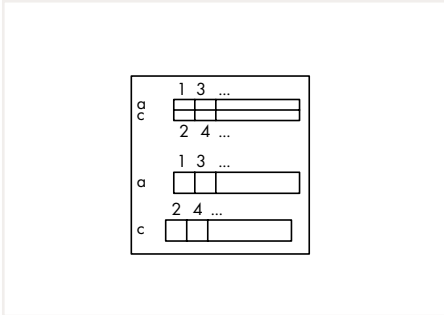
Item No.	Pack. Unit
709-167	10



Cover; Type 1; for cover carrier (type 1); 1 m long

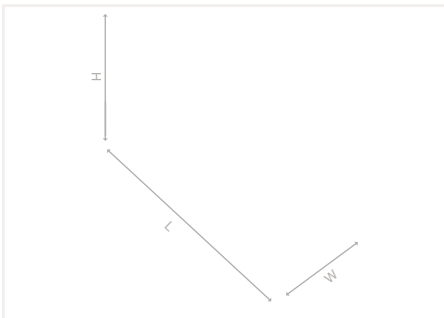
Item No.	Pack. Unit
709-153	10

# Interface Module for DIN 41612 Connector; Type C; IDC Mating Connector 289 Series



Interface Module; DIN 41612 connector; IDC mating connector; Vertical mating; Double-row PCB terminal blocks; with mounting carrier; Type C

Pole No.	Width	Item No.	Pack. Unit
64	171 mm	289-522	1



### Electrical Data

Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	1 A
Contact resistance (max.)	20 mΩ
Performance level	2 / 400 mating cycles

### Safety and Protection

Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV
Degree of protection	IP20

### Connection Data

Pole No.	64
Connection type 1	System
Connector 1	DIN 41612 male connector
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	171 mm / 6.732 inch
Height from upper-edge of DIN-rail	34 mm / 1.339 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Contact material (connector)	Copper alloy; gold plated
Weight	165.4 g

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

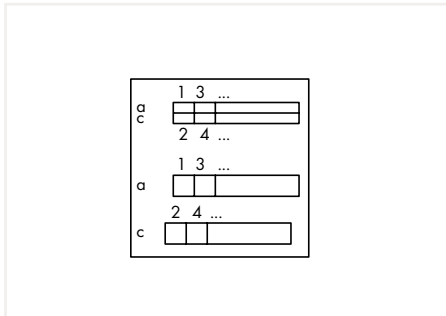
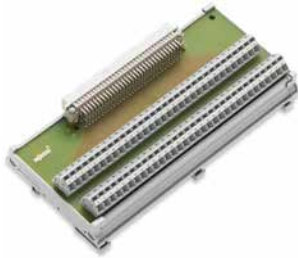
### Accessories



Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

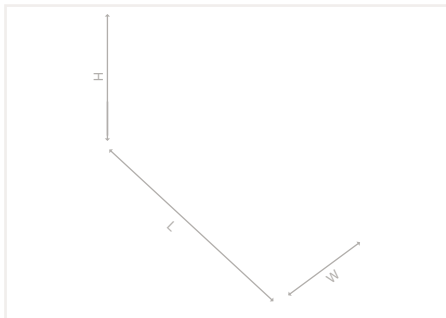
Item No.	Pack. Unit
709-178	1

# Interface Module for DIN 41612 Connector; Type C; IDC Mating Connector 289 Series



Interface Module; DIN 41612 connector; IDC mating connector; Horizontal mating; Double-row PCB terminal blocks; with mounting carrier; Type C

Pole No.	Width	Item No.	Pack. Unit
64	171 mm	289-523	1



### Notice!

Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover.

The installation regulations must be observed for each individual application.

### Electrical Data

Operating voltage	≤ 30 VAC; ≤ 50 VDC
Nominal current	1 A
Contact resistance (max.)	20 mΩ
Performance level	2 / 400 mating cycles

### Safety and Protection

Pollution degree	2
Rated voltage	50 V
Rated surge voltage	0.8 kV
Degree of protection	IP00

### Connection Data

Pole No.	64
Connection type 1	System
Connector 1	DIN 41612 male connector
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	171 mm / 6.732 inch
Height from upper-edge of DIN-rail	34 mm / 1.339 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Contact material (connector)	Copper alloy; gold plated
Weight	159.3 g

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories



Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts

Item No.	Pack. Unit
709-167	10



Cover; Type 1; for cover carrier (type 1); 1 m long

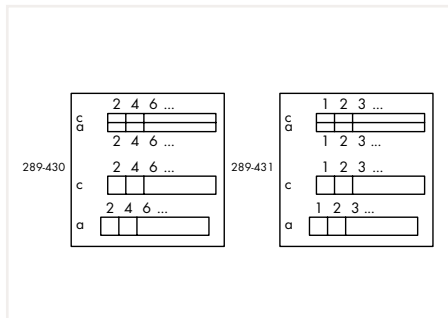
Item No.	Pack. Unit
709-153	10



Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

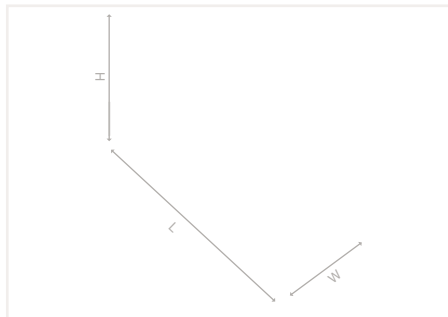
Item No.	Pack. Unit
709-178	1

# Interface Module for DIN 41612 Connector; Type C; Solder Mating Connector 289 Series



Interface Module; DIN 41612 connector; Solder mating connector; Vertical mating; Double-row PCB terminal blocks; with mounting feet; Type C

Pole No.	Width	Item No.	Pack. Unit
32	97 mm	289-430	1
64	187 mm	289-431	1



**Notice!**

Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover. The installation regulations must be observed for each individual application.

### Electrical Data

Operating voltage	≤ 30 VAC; ≤ 50 VDC
Nominal current	1 A
Contact resistance (max.)	20 mΩ
Performance level	2 / 400 mating cycles

### Safety and Protection

Pollution degree	2
Rated voltage	50 V
Rated surge voltage	0.8 kV
Degree of protection	IP00

### Connection Data

Connection type 1	System
Connector 1	DIN 41612 female connector
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Height from upper-edge of DIN-rail	21 mm / 0.827 inch
Depth	63.5 mm / 2.5 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Contact material (connector)	Copper alloy; gold plated
------------------------------	---------------------------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories

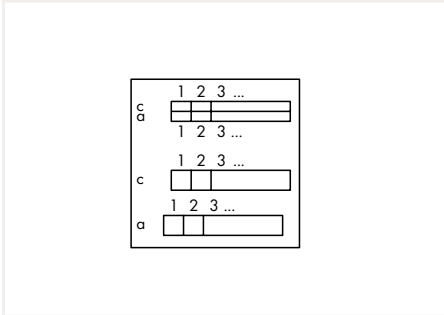


Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts			
Item No.	Pack. Unit		
709-167	10		



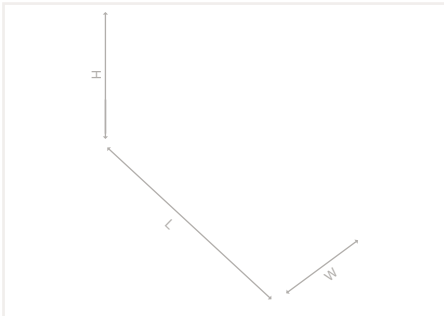
Cover; Type 1; for cover carrier (type 1); 1 m long			
Item No.	Pack. Unit		
709-153	10		

# Interface Module for DIN 41612 Connector; Type C; Solder Mating Connector 289 Series



Interface Module; DIN 41612 connector; Solder mating connector; Vertical mating; Double-row PCB terminal blocks; with mounting carrier; Type C

Pole No.	Width	Item No.	Pack. Unit
64	171 mm	289-531	1



Electrical Data	
Operating voltage	≤ 100 VAC; ≤ 125 VDC
Nominal current	1 A
Contact resistance (max.)	20 mΩ
Performance level	2 / 400 mating cycles

Safety and Protection	
Pollution degree	2
Rated surge voltage	0.8 kV
Degree of protection	IP20

Connection Data	
Pole No.	64
Connection type 1	System
Connector 1	DIN 41612 female connector
Connection type 2	Field
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Width	171 mm / 6.732 inch
Height from upper-edge of DIN-rail	34 mm / 1.339 inch
Depth	85 mm / 3.346 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Contact material (connector)	Copper alloy; gold plated
Weight	164.4 g

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

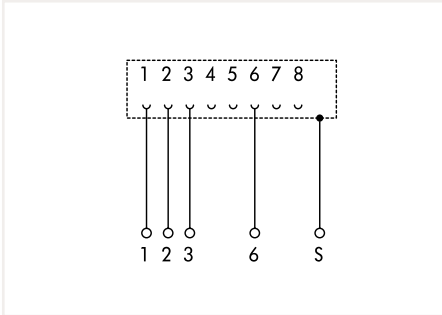
### Accessories



Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel	
Item No.	Pack. Unit
709-178	1

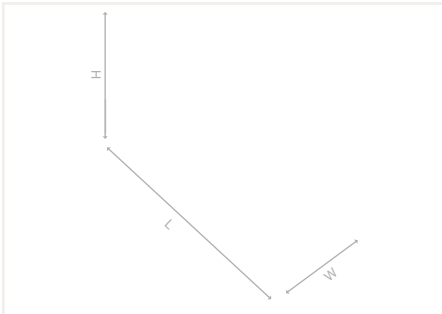


# Interface Module for RJ-45 Connector 289 Series



Interface Module; RJ-45; PCB terminal blocks; Cat. 5; with mounting carrier; with shield connection

	Item No.	Pack. Unit
	289-174	1
with shield clamping saddle	289-174/790-108	1



### Electrical Data

Nominal current	1.5 A
Contact resistance (typ.)	20 mΩ
Insulation resistance	> 500 MΩ
Transmission length (max.)	100 m
Connection cable	Min. Cat. 5

### Safety and Protection

Dielectric strength (contact/contact)	1 kV <sub>rms</sub>
---------------------------------------	---------------------

### Connection Data

Connection type 1	System
Connector 1	RJ-45; shielded
Connection type 2	System
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 1.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor 2	0.08 ... 1.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Mating cycles	500

### Physical Data

Width	24 mm / 0.945 inch
Height from upper-edge of DIN-rail	40 mm / 1.575 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	32.6 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +85 °C (Actuation: -35 ... +85 °C)
Surrounding air temperature (storage)	-40 ... +85 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories

Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

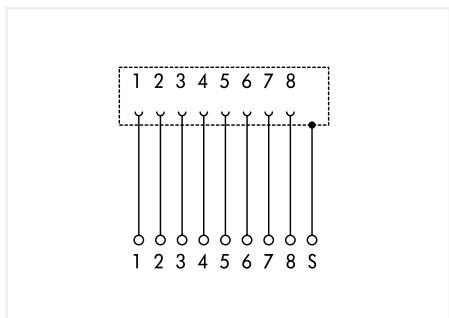
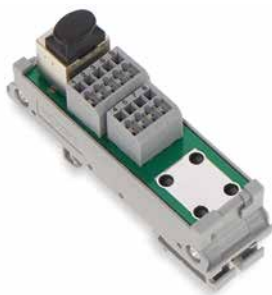
Item No.	Pack. Unit
709-178	1

Shield clamping saddle; 11 mm wide; Connectable shield diameter: up to 8 mm

Item No.	Pack. Unit
790-108	50 (10)

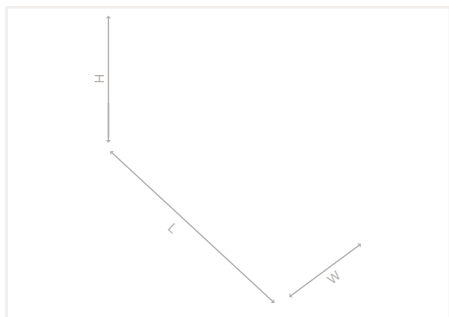
6

## Interface Module for RJ-45 Connector 289 Series



Interface Module; RJ-45; Double-row PCB terminal blocks; Cat. 5; with mounting carrier; with shield connection

	Item No.	Pack. Unit
	289-175	1
with shield clamping saddle	289-175/790-108	1



### Electrical Data

Nominal current	1.5 A
Contact resistance (typ.)	20 mΩ
Insulation resistance	> 500 MΩ
Transmission length (max.)	100 m
Connection cable	Min. Cat. 5
WAGO Shield Clamping Saddle	11 mm wide; cable diameter up to 8 mm

### Safety and Protection

Dielectric strength (contact/contact)	1 kV <sub>rms</sub>
---------------------------------------	---------------------

### Connection Data

Connection type 1	System
Connector 1	RJ-45 (shielded)
Connection type 2	System
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 1.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor 2	0.08 ... 1.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Mating cycles	500

### Physical Data

Width	24 mm / 0.945 inch
Height from upper-edge of DIN-rail	40 mm / 1.575 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	49 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +85 °C (Actuation: -35 ... +85 °C)
Surrounding air temperature (storage)	-40 ... +85 °C
Surrounding air (operating) temperature for UL	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Standards and Specifications

Standards/specifications	UL 840
--------------------------	--------

### Accessories



Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

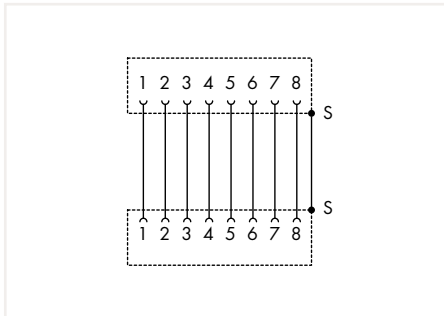
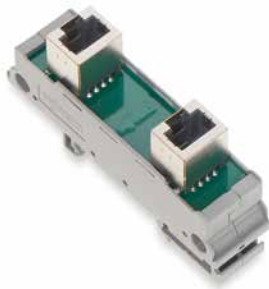
Item No.	Pack. Unit
709-178	1



Shield clamping saddle; 11 mm wide; Connectable shield diameter: up to 8 mm

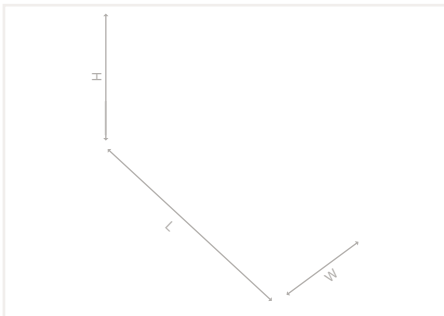
Item No.	Pack. Unit
790-108	50 (10)

# Interface Module for RJ-45 Connector 289 Series



Interface Module; RJ-45; RJ-45; Cat. 5;  
with mounting carrier

Item No.	Pack. Unit
289-172	1



### Electrical Data

Operating voltage	≤ 30 VAC; ≤ 42 VDC
Nominal current	1.5 A
Contact resistance (typ.)	20 mΩ
Insulation resistance	> 500 MΩ
Transmission length (max.)	100 m
Connection cable	Min. Cat. 5

### Safety and Protection

Dielectric strength (contact/contact)	1 kV <sub>rms</sub>
---------------------------------------	---------------------

### Connection Data

Connection type 1	System
Connector 1	RJ-45 (shielded)
Connection type 2	System
Connector 2	RJ-45 (shielded)
Mating cycles	500

### Physical Data

Width	20.5 mm / 0.807 inch
Height from upper-edge of DIN-rail	51 mm / 2.008 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	28.3 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Surrounding air (operating) temperature for UL	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Standards and Specifications

Standards/specifications	UL 840
--------------------------	--------

### Accessories



Marking strip; for mounting carrier; 7.5 mm wide;  
50 m reel

Item No.	Pack. Unit
709-178	1

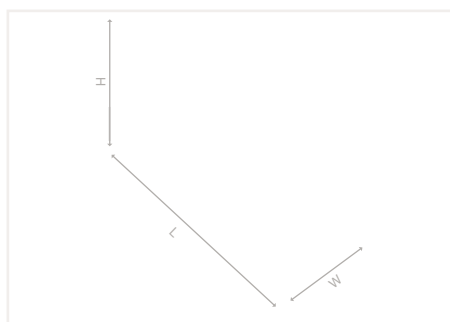
6

## Interface Module for RJ-45 Connector 289 Series



Interface Module; RJ-45; IDC; Cat. 6; with mounting carrier; with shield connection

	Item No.	Pack. Unit
	289-195	1



### Electrical Data

Contact resistance (typ.)	50 mΩ (20 °C)
Connection cable	Min. Cat. 6

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Pole No.	8
Connection type 1	System
Connector 1	RJ-45 (shielded)
Connection type 2	System
Connection technology 2	IDC
Solid conductor 2	0.2 ... 0.32 mm <sup>2</sup> / 24 ... 22 AWG
Stranded conductor (2)	0.2 ... 0.32 mm <sup>2</sup> / 26/7 ... 22/7 AWG
Strip length 2	0.8 ... 1.6 mm / 0.03 ... 0.06 inch
Mating cycles	750

### Physical Data

Width	26.8 mm / 1.056 inch
Height from upper-edge of DIN-rail	64.4 mm / 2.535 inch
Depth	81.4 mm / 3.205 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

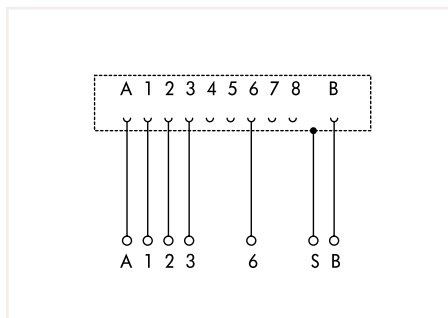
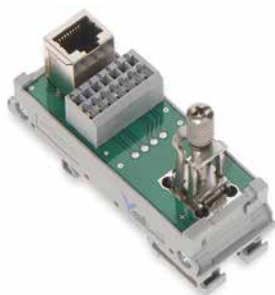
### Material Data

Contact material (connector)	Au over Ni
Weight	51 g

### Environmental Requirements

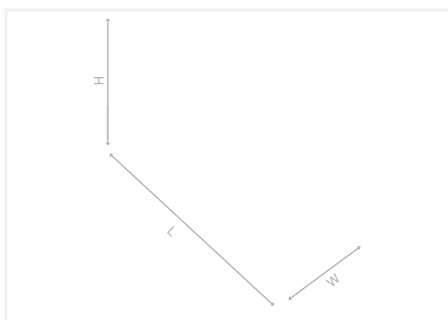
Surrounding air temperature (operation)	-10 ... +60 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 95 % (non-condensing)

## Interface Module for RJ-45 Connector; with Power Contacts 289 Series



Interface Module; RJ-45; with power contacts; PCB terminal blocks; Cat. 5; with mounting carrier; with shield connection; with shield clamping saddle

Item No.	Pack. Unit
289-178	1



### Electrical Data

Operating voltage	≤ 35 VAC; ≤ 50 VDC
Nominal current	2.1 A
Contact resistance (typ.)	40 mΩ
Insulation resistance	> 500 MΩ
Transmission length (max.)	100 m
Connection cable	Min. Cat. 5
WAGO Shield Clamping Saddle	11 mm wide; cable diameter up to 8 mm

### Safety and Protection

Dielectric strength (contact/contact)	1 kV <sub>rms</sub>
---------------------------------------	---------------------

### Connection Data

Connection type 1	System
Connector 1	RJ-45 (shielded); with two additional power contacts
Connection type 2	System
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 1.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor 2	0.08 ... 1.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Mating cycles	1000

### Physical Data

Width	30 mm / 1.181 inch
Height from upper-edge of DIN-rail	67 mm / 2.638 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	51.7 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +85 °C (Actuation: -35 ... +85 °C)
Surrounding air temperature (storage)	-40 ... +85 °C
Relative humidity	≤ 85 % (non-condensing)

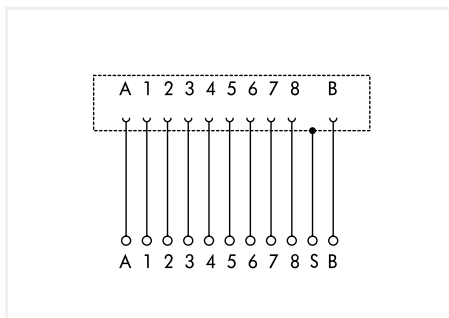
### Accessories



Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

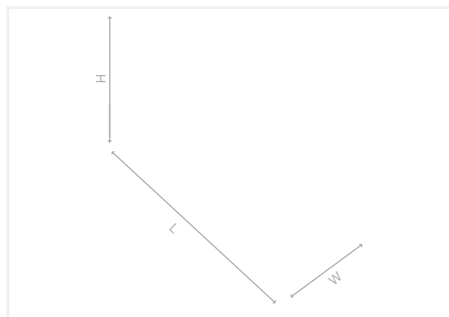
Item No.	Pack. Unit
709-178	1

# Interface Module for RJ-45 Connector; with Power Contacts 289 Series



Interface Module; RJ-45; with power contacts; Double-row PCB terminal blocks; Cat. 5; with mounting carrier; with shield connection; with shield clamping saddle

Item No.	Pack. Unit
289-179	1



### Electrical Data

Operating voltage	≤ 35 VAC; ≤ 50 VDC
Nominal current	2.1 A
Contact resistance (typ.)	40 mΩ
Insulation resistance	> 500 MΩ
Transmission length (max.)	100 m
Connection cable	Min. Cat. 5
WAGO Shield Clamping Saddle	11 mm wide; cable diameter up to 8 mm

### Safety and Protection

Dielectric strength (contact/contact)	1 kV <sub>rms</sub>
---------------------------------------	---------------------

### Connection Data

Connection type 1	System
Connector 1	RJ-45 (shielded); with two additional power contacts
Connection type 2	System
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 1.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor 2	0.08 ... 1.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Mating cycles	1000

### Physical Data

Width	30 mm / 1.181 inch
Height from upper-edge of DIN-rail	67 mm / 2.638 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	52.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +85 °C (Actuation: -35 ... +85 °C)
Surrounding air temperature (storage)	-40 ... +85 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories

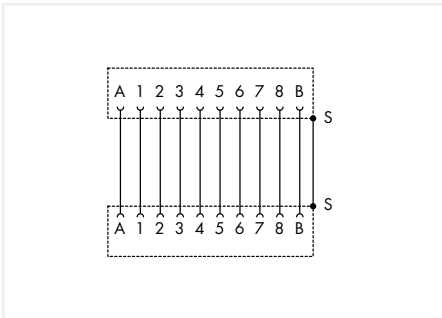


Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

Item No.	Pack. Unit
709-178	1

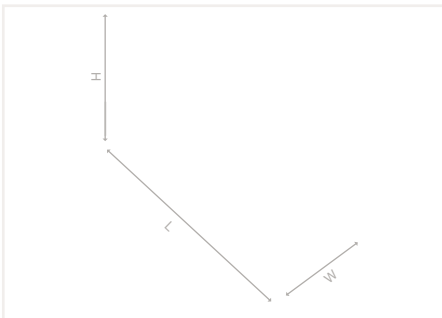
6

# Interface Module for RJ-45 Connector; with Power Contacts 289 Series



Interface Module; RJ-45; with power contacts; RJ-45; Cat. 5; with mounting carrier

Item No.	Pack. Unit
289-176	1



### Electrical Data

Operating voltage	≤ 35 VAC; ≤ 50 VDC
Nominal current	2.1 A
Contact resistance (typ.)	40 mΩ
Insulation resistance	> 500 MΩ
Transmission length (max.)	100 m
Connection cable	Min. Cat. 5

### Safety and Protection

Dielectric strength (contact/contact)	1 kV <sub>rms</sub>
---------------------------------------	---------------------

### Connection Data

Connection type 1	System
Connector 1	RJ-45 (shielded); with two additional power contacts
Connection type 2	System
Connector 2	RJ-45 (shielded); with two additional power contacts
Mating cycles	1000

### Physical Data

Width	30 mm / 1.181 inch
Height from upper-edge of DIN-rail	51 mm / 2.008 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	29.4 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories

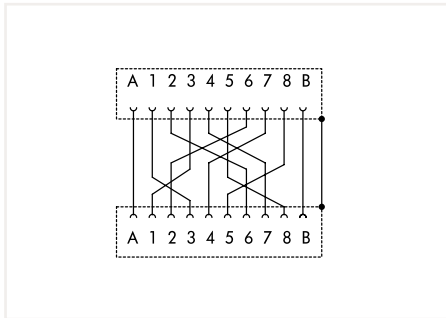
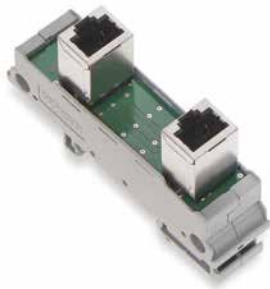


Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

Item No.	Pack. Unit
709-178	1

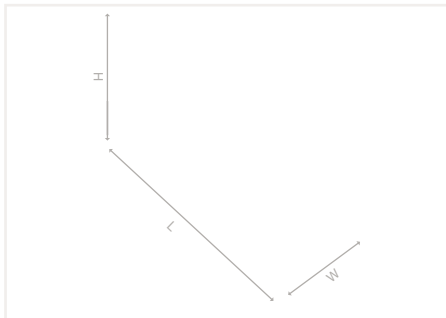
6

# Interface Module for RJ-45 Connector; with Power Contacts 289 Series



Interface Module; RJ-45; with cross-over power contacts; RJ-45; Cat. 5; with mounting carrier

Item No.	Pack. Unit
289-177	1



### Electrical Data

Operating voltage	≤ 35 VAC; ≤ 50 VDC
Nominal current	2.1 A
Contact resistance (typ.)	40 mΩ
Insulation resistance	> 500 MΩ
Transmission length (max.)	100 m
Connection cable	Min. Cat. 5

### Safety and Protection

Dielectric strength (contact/contact)	1 kV <sub>rms</sub>
---------------------------------------	---------------------

### Connection Data

Connection type 1	System
Connector	RJ-45 (shielded); with two additional power contacts
Connection type 2	System
Connector	RJ-45 (shielded); with two additional power contacts
Mating cycles	1000

### Physical Data

Width	30 mm / 1.181 inch
Height from upper-edge of DIN-rail	51 mm / 2.008 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	34.3 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +85 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories

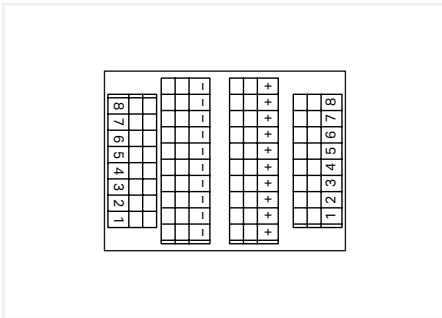
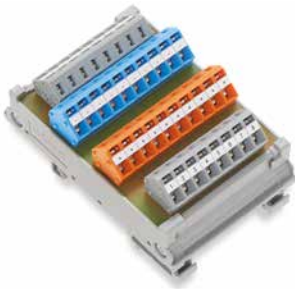


Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

Item No.	Pack. Unit
709-178	1

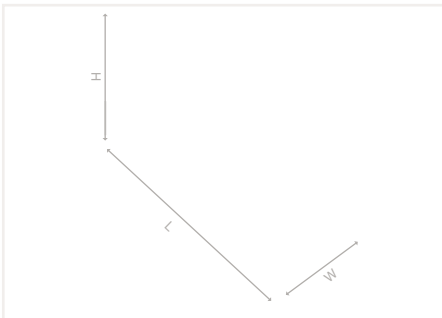


# Sensor/Actuator Module 289 Series



Sensor/Actuator Module; 8-channel digital input;  
3 conductors; with mounting carrier

Item No.	Pack. Unit
289-664	1



### Electrical Data

Operating voltage	≤ 100 VAC; ≤ 125 VDC
Total current	8 A
Current per connection (max.)	1 A

### Safety and Protection

Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	56 mm / 2.205 inch
Height from upper-edge of DIN-rail	34 mm / 1.339 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	73 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

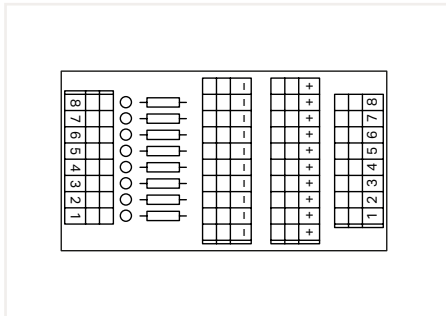
### Accessories



Marking strip; for mounting carrier; 7.5 mm wide;  
50 m reel

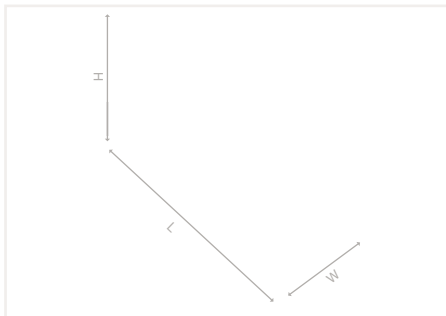
Item No.	Pack. Unit
709-178	1

## Sensor/Actuator Module 289 Series



Sensor/Actuator Module; 8-channel digital input;  
3 conductors; High-side switching;  
Status indicator: red; with mounting carrier

Item No.	Pack. Unit
289-665	1



### Electrical Data

Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Total current	8 A
Current per connection (max.)	1 A
Power consumption (status indication)	5.2 mA

### Safety and Protection

Pollution degree	2
Rated voltage	100 V
Rated surge voltage	0.8 kV

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	56 mm / 2.205 inch
Height from upper-edge of DIN-rail	34 mm / 1.339 inch
Depth	105 mm / 4.134 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	83.6 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

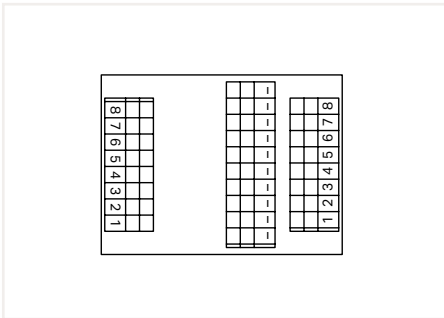
### Accessories



Marking strip; for mounting carrier; 7.5 mm wide;  
50 m reel

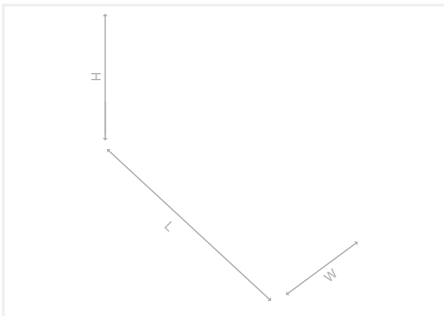
Item No.	Pack. Unit
709-178	1

# Sensor/Actuator Module 289 Series



Sensor/Actuator Module; 8-channel digital output;  
2 conductors; with mounting carrier

Item No.	Pack. Unit
289-667	1



### Electrical Data

Operating voltage	≤ 100 VAC; ≤ 125 VDC
Total current	8 A
Current per connection (max.)	1 A

### Safety and Protection

Pollution degree	2
Rated voltage	100 V
Rated surge voltage	1.5 kV

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	56 mm / 2.205 inch
Height from upper-edge of DIN-rail	34 mm / 1.339 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	64 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

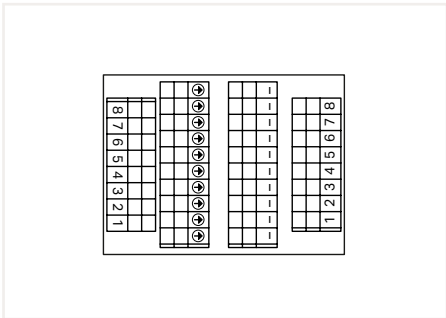
### Accessories



Marking strip; for mounting carrier; 7.5 mm wide;  
50 m reel

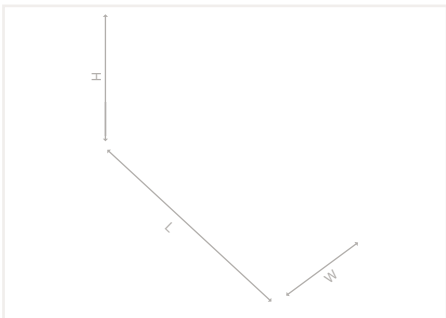
Item No.	Pack. Unit
709-178	1

# Sensor/Actuator Module 289 Series



Sensor/Actuator Module; 8-channel digital output; 2 conductors; with functional ground; with mounting carrier

Item No.	Pack. Unit
289-671	1



### Electrical Data

Operating voltage	≤ 100 VAC; ≤ 125 VDC
Total current	8 A
Current per connection (max.)	1 A

### Safety and Protection

Pollution degree	2
Rated voltage	100 V
Rated surge voltage	1.5 kV

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	56 mm / 2.205 inch
Height from upper-edge of DIN-rail	34 mm / 1.339 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	70.8 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

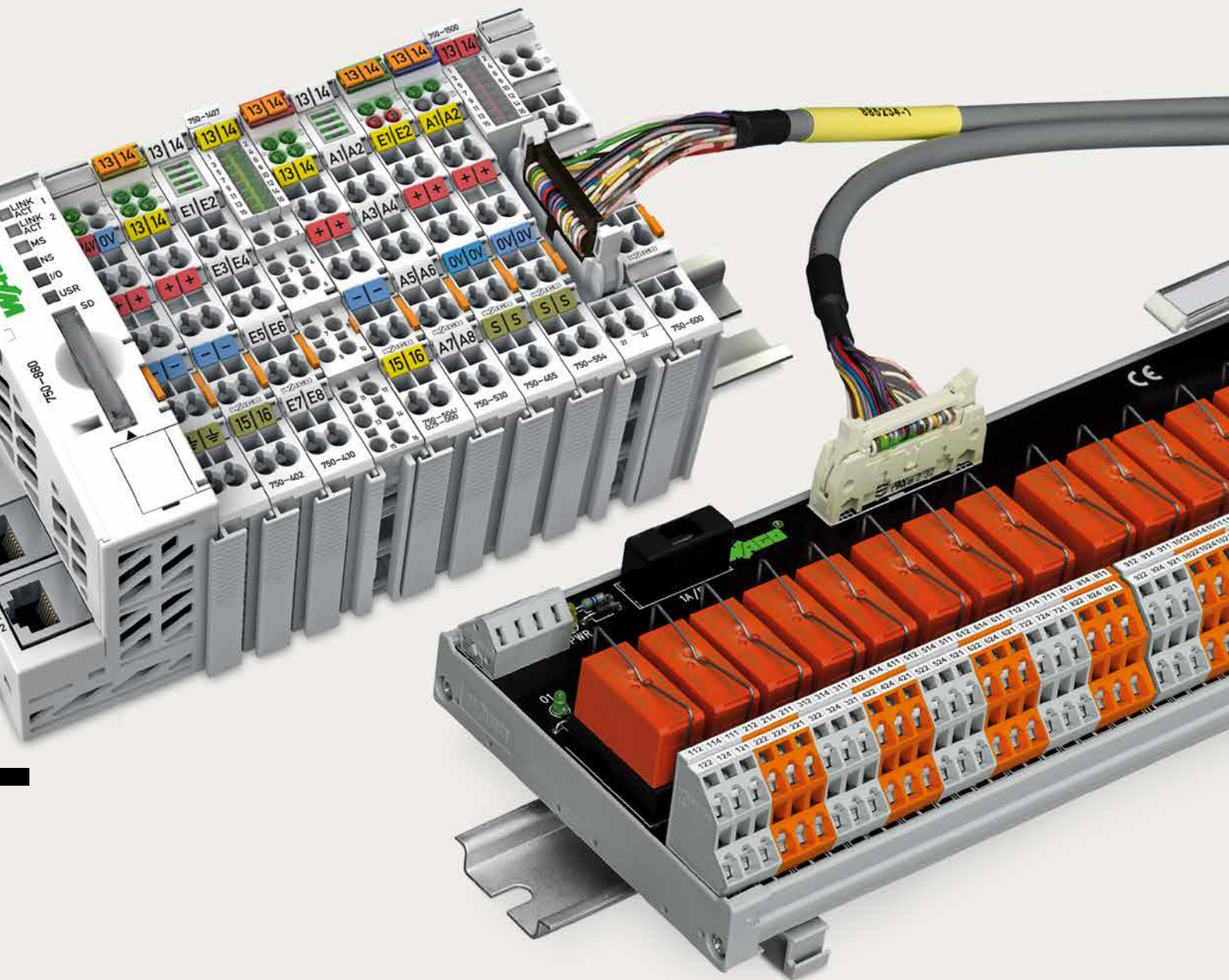
6

### Accessories






Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

Item No.	Pack. Unit
709-178	1



# WAGO System Wiring

## WAGO System Wiring

	Page
	<b>WAGO System Wiring</b> Overview and Application Notes 610
	<b>Interface Modules for System Wiring</b> Input/Output Modules; 704 Series Interface Adapters; 857 Series 614 630
	<b>WAGO Interface Cables; 706 Series</b> for 289; 704 Series for Interface Adapters 634 648



## WAGO System Wiring Overview and Application Examples

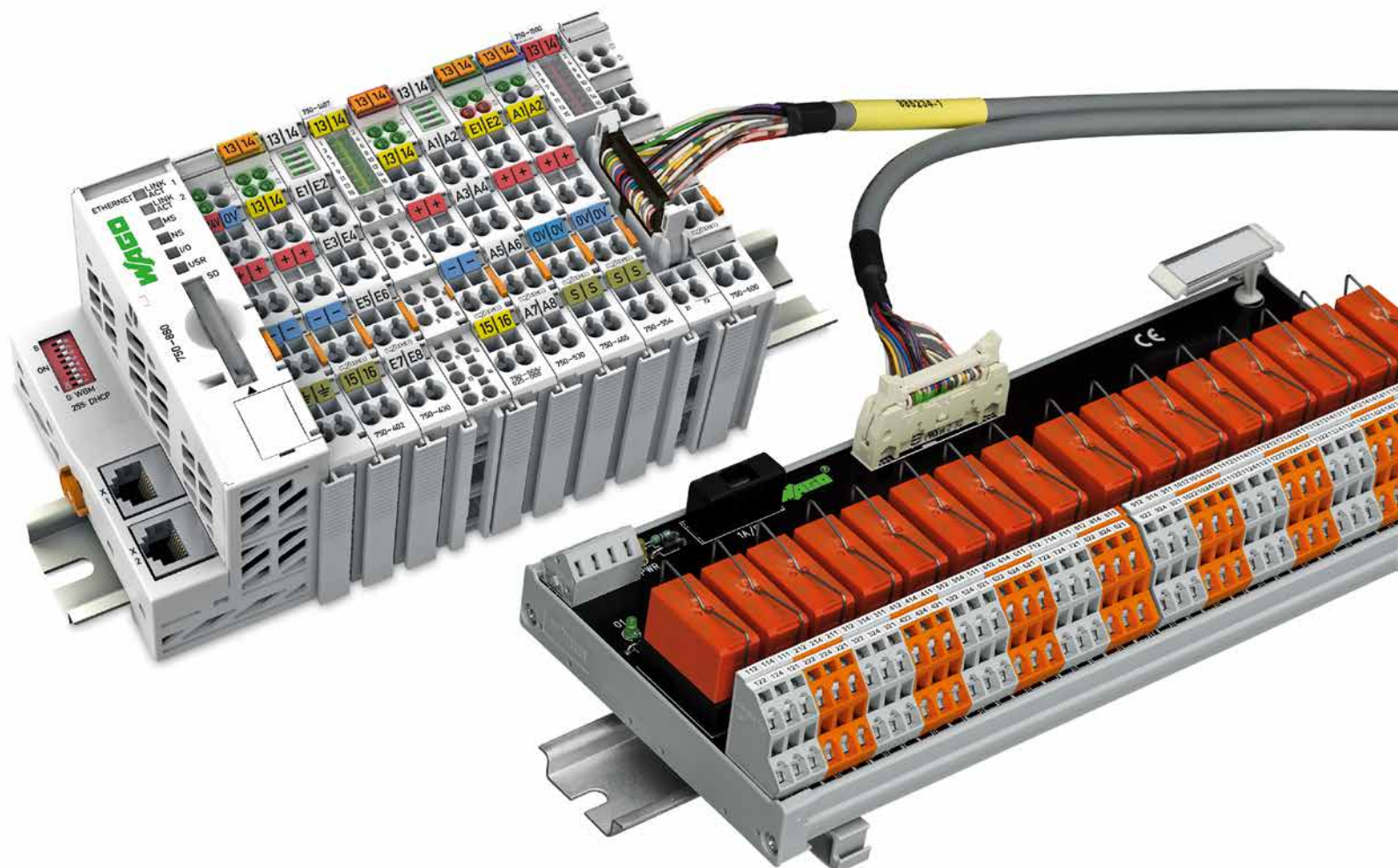
### 16-Channel I/O Module with Interface Module

The 750-14xx and 750-15xx I/O Modules with a pluggable connector per DIN 41651 offer 16 digital channels in a module less than 1/2 inch (12 mm) wide. Offering quick connections and a space-efficient design, the DIN-rail-mount interface modules simplify installation in confined areas and conveniently relocate the termination point. When combined with WAGO's interface modules (e.g., Item No. 289-614, 289-611), a control cabinet can be pre-wired before installation to minimize wiring time and errors. This is beneficial as wiring can be performed independently of construction.

The programmed controller can be installed right before start-up, saving valuable time during final stages of project completion. The I/O modules are also ideal for connecting series machines or relay modules tasked with the higher loads common to buildings and industrial applications. The interface modules also combine the advantages of relays (e.g., manual operation or rapid replacement with socket-mounted versions) with the benefits of a modern I/O system. Another ideal application would be the integration of pneumatic controllers into a fieldbus network.

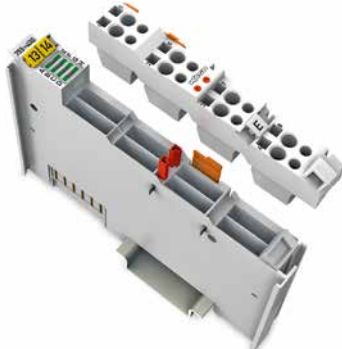

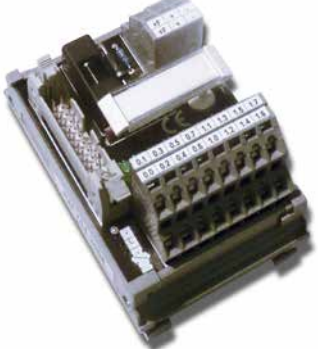
Most pneumatic modules have an appropriate connector and can be controlled by the WAGO-I/O-SYSTEM.

Six variants are available: two 16-channel input or output modules (one high-side and one low-side switching variant), as well as two versions combining 8 inputs and 8 outputs.



# WAGO System Wiring

## Overview and Application Examples

Application Example		
WAGO-I/O-SYSTEM 750/753	WAGO Interface Cable	WAGO Interface Module
		
753-430 (x2); 16 DI	WAGO 753 T8ES; 2 m long 706-7753/301-200	T16ES 704-2004

WAGO-I/O-SYSTEM 753			WAGO Interface Cable		WAGO Interface Modules	
I/O Modules			Item No.	Qty.	Type	Qty.
DI	753-430 (x1)	8 DI	706-7753/300-XXX	1	T8ES	1
	753-430 (x2)	16 DI	706-7753/301-XXX	1	T16ES	1
	753-431 (x1)	8 DI	706-7753/300-XXX	1	T8ES	1
	753-431 (x2)	16 DI	706-7753/301-XXX	1	T16ES	1
DO	753-530 (x1)	8 DO	706-7753/300-XXX	1	T8ES/T8S	1
	753-530 (x2)	16 DO	706-7753/301-XXX	1	T16ES/T16S	1

For an overview of cables and interface modules, see page 622.

WAGO-I/O-SYSTEM 750			WAGO Interface Cable		WAGO Interface Modules	
I/O Modules			Item No.	Qty.	Type	Qty.
DI	750-1400	16 DI	706-3057/300-XXX	1	T16ES	1
DO	750-1500	16 DO	706-3057/300-XXX	1	T16ES	1
DI/DO	750-1502	8 DI/8 DO	706-7753/302-XXX	1	T8ES/T8S	1/1
	750-1502	8 DI/8 DO	706-3057/300-XXX	1	T16ES	1

For an overview of cables and interface modules, see page 622.



## WAGO System Wiring Overview and Application Examples

SIEMENS S7-300			WAGO Interface Cable		WAGO Interface Modules	
			Item No.	Qty.	Type	Qty.
CPU	6ES7 313-5BE01-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 313-5BF03-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 313-6BE01-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 313-6BF03-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 313-6CE01-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 313-6CF03-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 314-6BF01-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 314-6BG03-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 314-6CF01-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
6ES7 314-6CG03-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1	
DI	6ES7 321-1BH02-0AA0	16 DI	706-2300/300-XXX	1	T16ES	1
	6ES7 321-1BH10-0AA0	16 DI	706-2300/300-XXX	1	T16ES	1
	6ES7 321-1BH80-0AA0	16 DI	706-2300/300-XXX	1	T16ES	1
	6ES7 321-1BL00-0AA0	32 DI	706-2300/301-XXX	1	T16ES	2
	6ES7 321-1BL80-0AA0	32 DI	706-2300/301-XXX	1	T16ES	2
	6ES7 321-1BP00-0AA0	64 DI	706-2300/100-XXX	2	T16ES	4
	6ES7 321-7BH01-0AA0	16 DI	706-2300/101-XXX	1	T16ES	1
6ES7 321-7BH80-0AA0	16 DI	706-2300/101-XXX	1	T16ES	1	
DO	6ES7 322-1BH01-0AA0	16 DO	706-2300/300-XXX	1	T16ES/T16S	1
	6ES7 322-1BH10-0AA0	16 DO	706-2300/300-XXX	1	T16ES/T16S	1
	6ES7 322-1BH80-0AA0	16 DO	706-2300/300-XXX	1	T16ES/T16S	1
	6ES7 322-1BL00-0AA0	32 DO	706-2300/301-XXX	1	T16ES/T16S	2
	6ES7 322-1BP00-0AA0	64 DO	706-2300/200-XXX	2	T16ES/T16S	4
	6ES7 322-1EH01-0AA0	16 DO	706-2300/300-XXX	1	T16ES/T16S	1
6ES7 322-8BF00-0AB0	8 DO	706-2300/201-XXX	1	T8ES/T8S	1	
AI	6ES7 331-7HF01-0AB0	8 AI	706-2300/400-XXX	1	A8ES	1
	6ES7 331-7KF02-0AB0	8 AI	706-2300/400-XXX	1	A8ES	1
	6ES7 331-7NF00-0AB0	8 AI	706-2300/404-XXX	1	A8ES	1
	6ES7 331-7NF10-0AB0	8 AI	706-2300/406-XXX	1	A8ES	1
	6ES7 331-7SF00-0AB0	8 AI	706-2300/400-XXX	1	A8ES	1
	6ES7 331-7TF00-0AB0	8 AI	706-2300/400-XXX	1	A8ES	1
AO	6ES7 332-5HB01-0AB0	2 AO	706-2300/500-XXX	1	A4ES	1
	6ES7 332-5HB81-0AB0	2 AO	706-2300/500-XXX	1	A4ES	1
	6ES7 332-5HD01-0AB0	4 AO	706-2300/500-XXX	1	A4ES	1
	6ES7 332-5HF00-0AB0	8 AO	706-2300/502-XXX	1	A8ES	1
	6ES7 332-7ND02-0AB0	4 AO	706-2300/500-XXX	1	A4ES	1
	6ES7 332-8TF00-0AB0	8 AO	706-2300/400-XXX	1	A8ES	1

System cables for:

- GEFANUC 90-30 / ALSPA 80-35
- SCHNEIDER M340
- SCHNEIDER QUANTUM
- SCHNEIDER TSX 37 (Micro)
- SCHNEIDER TSX 57 (Premium)
- ROCKWELL COMPACT LOGIX (1769)
- ROCKWELL CONTROL LOGIX (1756)

are available upon request.

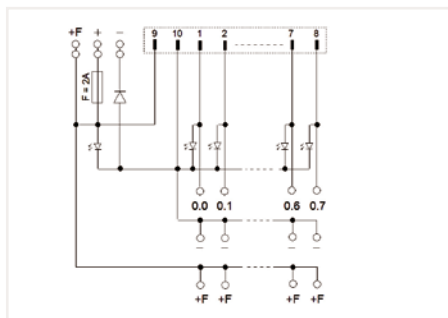
## WAGO System Wiring Overview and Application Examples

WAGO Interface Modules			
	Type	Item No.	
D/DO	T8ES	289-611	see page 588
		704-2003	see page 614
	T8S	704-5003	see page 615
		704-5013	see page 616
	T16ES	289-614	see page 589
		704-2004	see page 617
		704-2024	see page 618
		704-2044	see page 619
		704-2054	see page 620
		704-5004	see page 623
	T16S	704-5014	see page 623
		704-5024	see page 621
		704-5034	see page 624
		704-5044	see page 622
		704-5054	see page 625
		704-5064	see page 627
704-5074		see page 626	
AI/AO	A4ES	704-8012	see page 628
	A8ES	704-8013	see page 629

WAGO Interface Cable			
	Type	Item No.	
D/DO	WAGO-753 T8ES	706-7753/300-XXX	see www.wago.com
	WAGO-753 T16ES	706-7753/301-XXX	see www.wago.com
	WAGO-750 HE T8E8S	706-7753/302-XXX	see page 635
	TSX T16ES	706-3057/300-XXX	see page 634
	S7-300 T16E	706-2300/101-XXX	see page 637
	S7-300 2 x T16E	706-2300/100-XXX	see page 636
	S7-300 T8S	706-2300/201-XXX	see page 639
	S7-300 2 x T16S	706-2300/200-XXX	see page 638
	S7-300 T16ES	706-2300/300-XXX	See page 640
	S7-300 2 x T16ES	706-2300/301-XXX	see page 641
AI/AO	S7-300 A8E	706-2300/400-XXX	see page 642
	S7-300 A8E11	706-2300/404-XXX	see page 643
	S7-300 A8E12	706-2300/406-XXX	see page 644
	S7-300 A4SI	706-2300/500-XXX	see page 645
	S7-300 A8SI	706-2300/502-XXX	see page 646

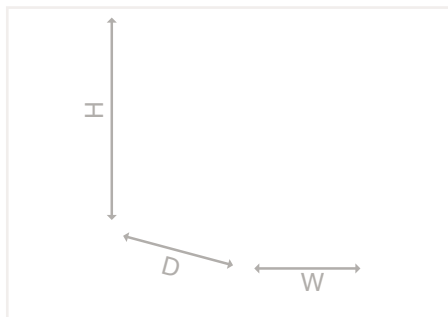
Cable Length Overview			
Item No.	-XXX	Length	Example
706-2300/201-XXX	-100	1 m	706-2300/201-100
	-200	2 m	706-2300/201-200
	-300	3 m	706-2300/201-300

## Interface Module for System Wiring 704 Series



Interface Module for System Wiring;  
DIN 41651 connector; Male connector; 10-pole;  
8-channel digital input or output; 3-wire connection;  
Triple-deck PCB terminal blocks; with mounting carrier

	Item No.	Pack. Unit
	704-2003	1



### Electrical Data

Inputs/Outputs	8-channel digital input or output
Circuit type	3-wire connection
Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Power consumption (status indication)	5 mA
Total current	2 A
Limiting continuous current	1 A
Status indicator	Green LED (channel); Yellow LED (power supply)
Internal fuse	2 A

### Safety and Protection

Rated voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2

### Connection Data

Connection type 1	System
Pole number 1	10
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	24
Design 2	PCB terminal blocks; triple-deck
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 3	Power supply
Pole number 3	6
Design 3	PCB terminal blocks; double-deck
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	56 mm / 2.205 inch
Height from upper-edge of DIN-rail	63 mm / 2.48 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
Housing design	Mounting carrier

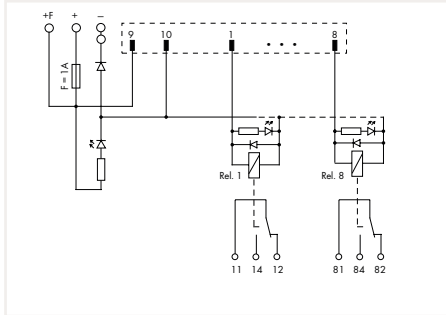
### Material Data

Weight	92 g
--------	------

### Environmental Requirements

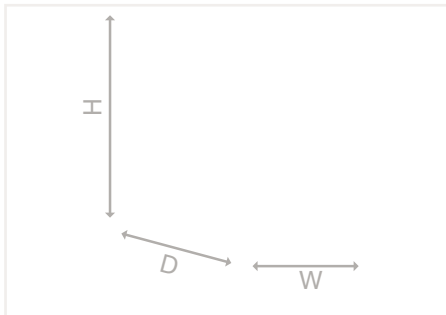
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

## Interface Module for System Wiring 704 Series



Interface Module for System Wiring;  
DIN 41651 connector; Male connector; 10-pole;  
8-channel relay output; 1 changeover contact;  
1 x cut-out; Triple-deck PCB terminal blocks;  
with mounting carrier

	Item No.	Pack. Unit
	704-5003	1



Electrical Data	
Inputs/Outputs	8-channel relay output
Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Number of changeover/switchover contacts	1
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC; 48 VDC
Switching power (resistive) max.	1250 VA (AC)/50 W (DC)
Mechanical life (NO; resistive load; 23 °C)	10 x 10 <sup>6</sup> switching operations
Status indicator	Green LED (channel); Yellow LED (power supply)
Internal fuse	Supply: 1 A; Relay output: -
WAGO Basic Relay	857-152

Safety and Protection	
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1 kV <sub>rms</sub>

Connection Data	
Connection type 1	System
Pole number 1	10
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	24
Design 2	PCB terminal blocks; triple-deck
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 3	Power supply
Pole number 3	4
Design 3	PCB terminal blocks
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Width	70 mm / 2.756 inch
Height from upper-edge of DIN-rail	65 mm / 2.559 inch
Depth	105 mm / 4.134 inch

Mechanical Data	
Mounting type	DIN-35 rail
Housing design	Mounting carrier

Material Data	
Contact material (relay)	AgNi 90/10
Weight	230 g

Environmental Requirements	
Surrounding air temperature (operation)	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

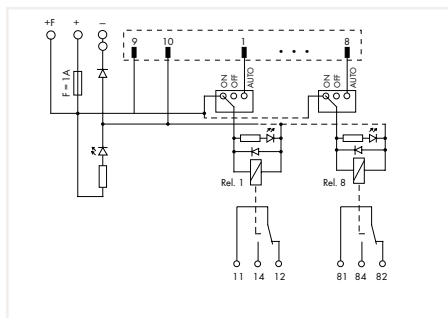
### Accessories



Basic Relay; 1 changeover contact; 24 VDC;  
Limiting continuous current: 6 A; 5 mm wide;  
15 mm high

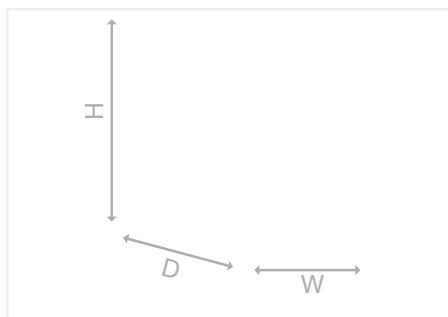
	Item No.	Pack. Unit
	857-152	20

## Interface Module for System Wiring 704 Series



Interface Module for System Wiring;  
DIN 41651 connector; Male connector; 10-pole;  
8-channel relay output; 1 changeover contact;  
1 x cut-out; Triple-deck PCB terminal blocks;  
with manual operation; with mounting carrier

Item No.	Pack. Unit
704-5013	1



### Electrical Data

Inputs/Outputs	8-channel relay output
Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Number of changeover/switchover contacts	1
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC; 48 VDC
Switching power (resistive) max.	1250 VA (AC)/50 W (DC)
Mechanical life (NO; resistive load; 23 °C)	10 x 10 <sup>6</sup> switching operations
Status indicator	Green LED (channel); Yellow LED (power supply)
Internal fuse	Supply: 1 A; Relay output: -
WAGO Basic Relay	857-152
Specialty functions	Manual operation

### Safety and Protection

Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection type 1	System
Pole number 1	10
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	24
Design 2	PCB terminal blocks; triple-deck
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 3	Power supply
Pole number 3	4
Design 3	PCB terminal blocks
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	70 mm / 2.756 inch
Height from upper-edge of DIN-rail	65 mm / 2.559 inch
Depth	105 mm / 4.134 inch

### Mechanical Data

Mounting type	DIN-35 rail
Housing design	Mounting carrier

### Material Data

Contact material (relay)	AgNi 90/10
Weight	240 g

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

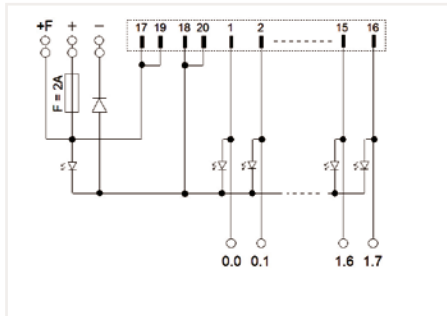
### Accessories



Basic Relay; 1 changeover contact; 24 VDC;  
Limiting continuous current: 6 A; 5 mm wide;  
15 mm high

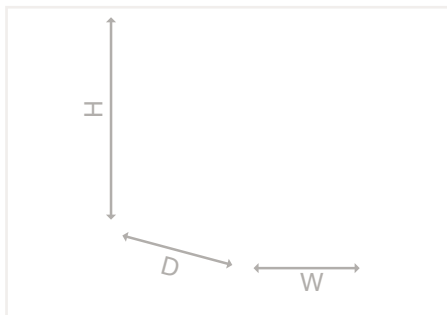
Item No.	Pack. Unit
857-152	20

## Interface Module for System Wiring 704 Series



Interface Module for System Wiring;  
DIN 41651 connector; Male connector; 20-pole;  
16-channel digital input or output; 1-wire connection;  
Double-deck PCB terminal blocks;  
with mounting carrier

	Item No.	Pack. Unit
	704-2004	1



Electrical Data	
Inputs/Outputs	16-channel digital input or output
Circuit type	1-wire connection
Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Power consumption (status indication)	5 mA
Total current	2 A
Limiting continuous current	1 A
Status indicator	Green LED (channel); Yellow LED (power supply)
Internal fuse	2 A

Safety and Protection	
Rated voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2

Connection Data	
Connection type 1	System
Pole number 1	20
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	16
Design 2	PCB terminal blocks; double-deck
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 3	Power supply
Pole number 3	6
Design 3	PCB terminal blocks; double-deck
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

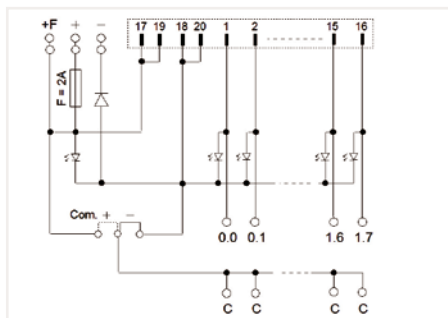
Physical Data	
Width	55 mm / 2.165 inch
Height from upper-edge of DIN-rail	50 mm / 1.969 inch
Depth	85 mm / 3.346 inch

Mechanical Data	
Mounting type	DIN-35 rail
Housing design	Mounting carrier

Material Data	
Weight	80 g

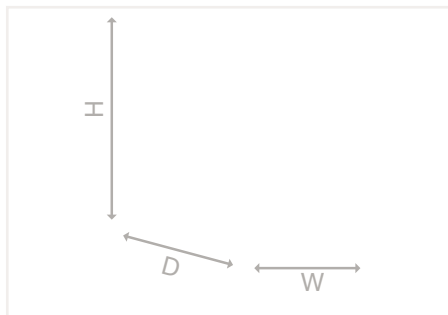
Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

## Interface Module for System Wiring 704 Series



Interface Module for System Wiring;  
DIN 41651 connector; Male connector; 20-pole;  
16-channel digital input or output; 2-wire connection;  
Double-deck PCB terminal blocks;  
with mounting carrier

	Item No.	Pack. Unit
	704-2024	1



### Electrical Data

Inputs/Outputs	16-channel digital input or output
Circuit type	2-wire connection
Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Power consumption (status indication)	5 mA
Total current	2 A
Limiting continuous current	1 A
Status indicator	Green LED (channel); Yellow LED (power supply)
Internal fuse	2 A

### Safety and Protection

Rated voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2

### Connection Data

Connection type 1	System
Pole number 1	20
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	32
Design 2	PCB terminal blocks; double-deck
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 3	Power supply
Pole number 3	6
Design 3	PCB terminal blocks; double-deck
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	85 mm / 3.346 inch
Height from upper-edge of DIN-rail	50 mm / 1.969 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
Housing design	Mounting carrier

### Material Data

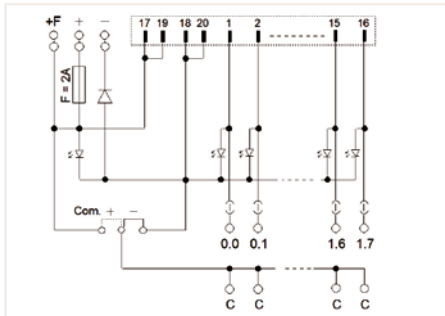
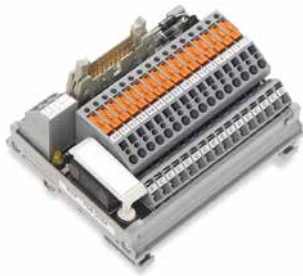
Weight	112.3 g
--------	---------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

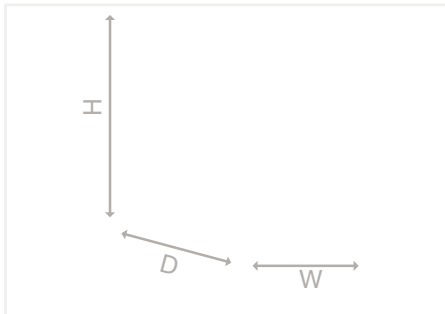
# Interface Module for System Wiring

## 704 Series



Interface Module for System Wiring;  
DIN 41651 connector; Male connector; 20-pole;  
16-channel digital input or output; 2-wire connection;  
Disconnect/test terminal blocks for PCBs;  
with mounting carrier

	Item No.	Pack. Unit
	704-2044	1



Electrical Data	
Inputs/Outputs	16-channel digital input or output
Circuit type	2-wire connection
Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Power consumption (status indication)	5 mA
Total current	2 A
Limiting continuous current	1 A
Status indicator	Green LED (channel); Yellow LED (power supply)
Internal fuse	2 A
Specialty functions	Disconnect and test terminal blocks

Safety and Protection	
Rated voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2

Connection Data	
Connection type 1	System
Pole number 1	20
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	16
Design 2	PCB terminal blocks
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	8 ... 9 mm / 0.31 ... 0.35 inch
Connection type 3	Field
Pole number 3	16
Design 3	PCB terminal blocks
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 4	Power supply
Connection technology 4	CAGE CLAMP®
Solid conductor 4	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 4	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Width	99 mm / 3.74 inch
Height from upper-edge of DIN-rail	50 mm / 1.969 inch
Depth	85 mm / 3.346 inch

Mechanical Data	
Mounting type	DIN-35 rail
Housing design	Mounting carrier

Material Data	
Weight	184.1 g

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

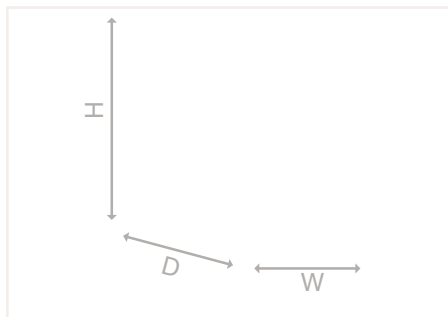


## Interface Module for System Wiring 704 Series



Interface Module for System Wiring;  
DIN 41651 connector; Male connector; 20-pole;  
16-channel digital input or output; 3-wire connection;  
Triple-deck PCB terminal blocks; with mounting carrier

	Item No.	Pack. Unit
	704-2054	1



### Electrical Data

Inputs/Outputs	16-channel digital input or output
Circuit type	3-wire connection
Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Power consumption (status indication)	5 mA
Total current	2 A
Limiting continuous current	1 A
Status indicator	Green LED (channel); Yellow LED (power supply)
Internal fuse	2 A

### Safety and Protection

Rated voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2

### Connection Data

Connection type 1	System
Pole number 1	20
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	48
Design 2	PCB terminal blocks; triple-deck
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 3	Power supply
Pole number 3	6
Design 3	PCB terminal blocks; double-deck
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	85 mm / 3.346 inch
Height from upper-edge of DIN-rail	50 mm / 1.969 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
Housing design	Mounting carrier

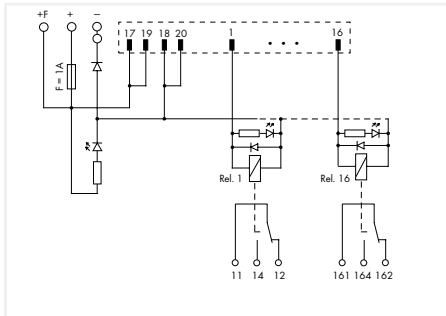
### Material Data

Weight	143 g
--------	-------

### Environmental Requirements

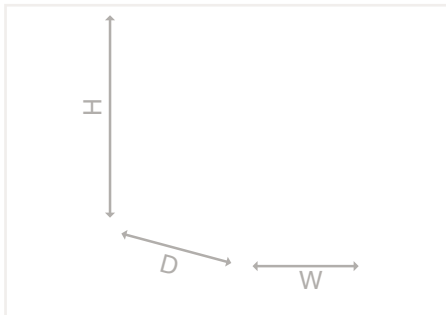
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

## Interface Module for System Wiring 704 Series



Interface Module for System Wiring;  
DIN 41651 connector; Male connector; 20-pole;  
16-channel relay output; 1 changeover contact;  
1 x cut-out; Triple-deck PCB terminal blocks;  
with mounting carrier

	Item No.	Pack. Unit
	704-5024	1



### Electrical Data

Inputs/Outputs	16-channel relay output
Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Number of changeover/switchover contacts	1
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC; 48 VDC
Switching power (resistive) max.	1250 VA (AC)/50 W (DC)
Mechanical life (NO; resistive load; 23 °C)	10 x 10 <sup>6</sup> switching operations
Status indicator	Green LED (channel); Yellow LED (power supply)
Internal fuse	Supply: 1 A; Relay output: -
WAGO Basic Relay	788-152

### Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection type 1	System
Pole number 1	20
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	48
Design 2	PCB terminal blocks; triple-deck
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 3	Power supply
Pole number 3	4
Design 3	PCB terminal blocks
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	111 mm / 4.37 inch
Height from upper-edge of DIN-rail	65 mm / 2.559 inch
Depth	105 mm / 4.134 inch

### Mechanical Data

Mounting type	DIN-35 rail
Housing design	Mounting carrier

### Material Data

Contact material (relay)	AgNi 90/10
Weight	300 g

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

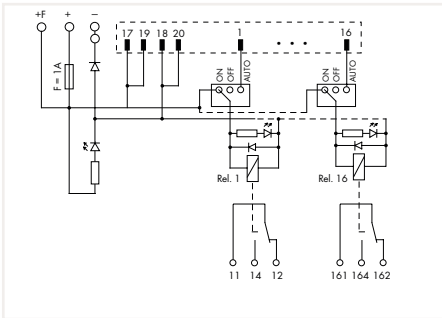
### Accessories



Basic Relay; 1 changeover contact; 24 VDC;  
Limiting continuous current: 6 A; 5 mm wide;  
15 mm high

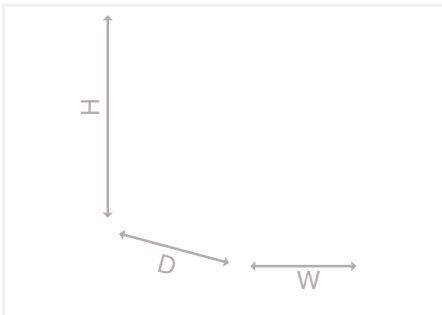
	Item No.	Pack. Unit
	857-152	20

# Interface Module for System Wiring 704 Series



Interface Module for System Wiring;  
DIN 41651 connector; Male connector; 20-pole;  
16-channel relay output; 1 changeover contact;  
1 x cut-out; Triple-deck PCB terminal blocks;  
with manual operation; with mounting carrier

Item No.	Pack. Unit
704-5044	1



### Electrical Data

Inputs/Outputs	16-channel relay output
Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Number of changeover/switchover contacts	1
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC; 48 VDC
Switching power (resistive) max.	1250 VA (AC)/50 W (DC)
Mechanical life (NO; resistive load; 23 °C)	10 x 10 <sup>6</sup> switching operations
Status indicator	Green LED (channel); Yellow LED (power supply)
Internal fuse	Supply: 1 A; Relay output: -
Specialty functions	Manual operation

### Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection type 1	System
Pole number 1	20
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	48
Design 2	PCB terminal blocks; triple-deck
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 3	Power supply
Pole number 3	4
Design 3	PCB terminal blocks
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	111 mm / 4.37 inch
Height from upper-edge of DIN-rail	65 mm / 2.559 inch
Depth	105 mm / 4.134 inch

### Mechanical Data

Mounting type	DIN-35 rail
Housing design	Mounting carrier

### Material Data

Contact material (relay)	AgNi 90/10
Weight	319 g

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories

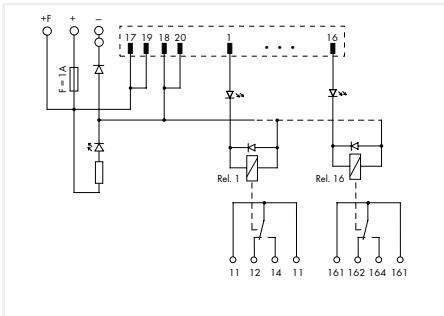


Basic Relay; 1 changeover contact; 24 VDC;  
Limiting continuous current: 6 A; 5 mm wide;  
15 mm high

Item No.	Pack. Unit
857-152	20

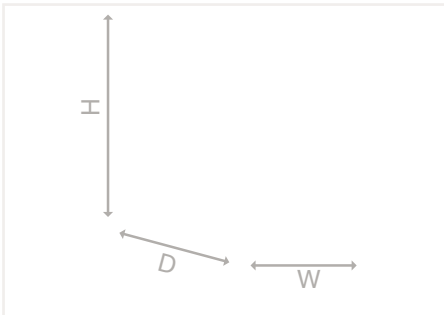
7

# Interface Module for System Wiring 704 Series



Interface Module for System Wiring;  
DIN 41651 connector; Male connector; 20-pole;  
16-channel relay output; 1 changeover contact;  
1 x cut-out; Double-deck PCB terminal blocks;  
with mounting carrier

	Item No.	Pack. Unit
with miniature switching relay	704-5004	1
without miniature switching relay	704-5014	



### Electrical Data

Inputs/Outputs	16-channel relay output
Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Number of changeover/switchover contacts	1
Limiting continuous current	5 A
Making capacity	2 ms; 16 A
Switching voltage (max.)	250 VAC; 48 VDC
Switching power (resistive) max.	1250 VA (AC)/50 W (DC)
Mechanical life (NO; resistive load; 23 °C)	30 x 10 <sup>6</sup> switching operations
Status indicator	Green LED (channel); Yellow LED (power supply)
Internal fuse	Supply: 1 A; Relay output: -
WAGO Basic Relay	788-154

### Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	3 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection type 1	System
Pole number 1	20
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	64
Design 2	PCB terminal blocks; double-deck
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 3	Power supply
Pole number 3	4
Design 3	PCB terminal blocks; double-deck
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	180 mm / 7.087 inch
Height from upper-edge of DIN-rail	50 mm / 1.969 inch
Depth	105 mm / 4.134 inch

### Mechanical Data

Mounting type	DIN-35 rail
Housing design	Mounting carrier

### Material Data

Contact material (relay)	AgNi 90/10
Weight	550 g

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

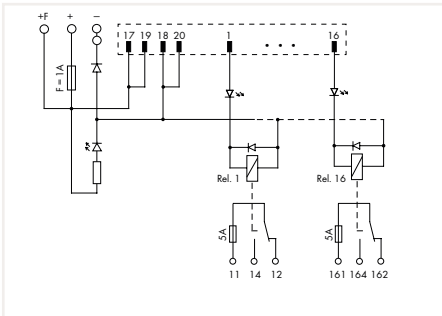
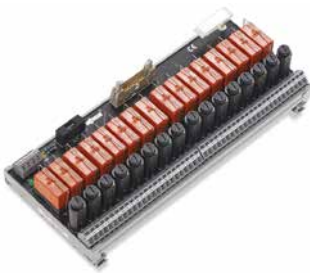
### Accessories



Basic Relay; 1 changeover contact; Limiting continuous current: 16 A; 13 mm wide; 15 mm high

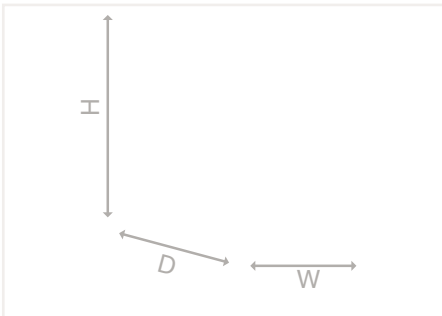
Item No.	Pack. Unit
788-154	20

# Interface Module for System Wiring 704 Series



Interface Module for System Wiring;  
DIN 41651 connector; Male connector; 20-pole;  
16-channel relay output; 1 changeover contact;  
1 x cut-out; PCB terminal blocks; with output fuse;  
with mounting carrier

Item No.	Pack. Unit
704-5034	1



### Electrical Data

Inputs/Outputs	16-channel relay output
Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Number of changeover/switchover contacts	1
Limiting continuous current	5 A
Making capacity	2 ms; 16 A
Switching voltage (max.)	250 VAC; 48 VDC
Switching power (resistive) max.	1250 VA (AC)/50 W (DC)
Mechanical life (NO; resistive load; 23 °C)	30 x 10 <sup>6</sup> switching operations
Status indicator	Green LED (channel); Yellow LED (power supply)
Internal fuse	Supply: 1 A; Relay output: 5 A
Specialty functions	Output fuse

### Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection type 1	System
Pole number 1	20
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	48
Design 2	PCB terminal blocks
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 3	Power supply
Pole number 3	4
Design 3	PCB terminal blocks
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	247 mm / 9.724 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	105 mm / 4.134 inch

### Mechanical Data

Mounting type	DIN-35 rail
Housing design	Mounting carrier

### Material Data

Contact material (relay)	AgNi 90/10
Weight	685 g

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories

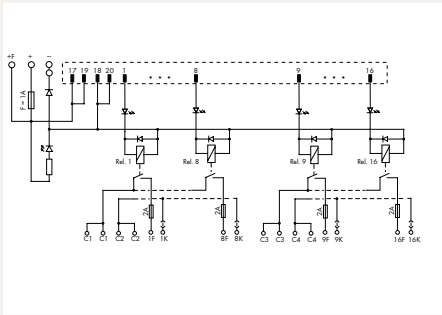
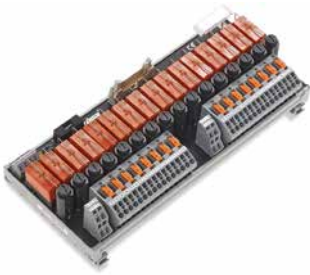


Basic Relay; 1 changeover contact; Limiting continuous current: 16 A; 13 mm wide; 15 mm high

Item No.	Pack. Unit
788-154	20

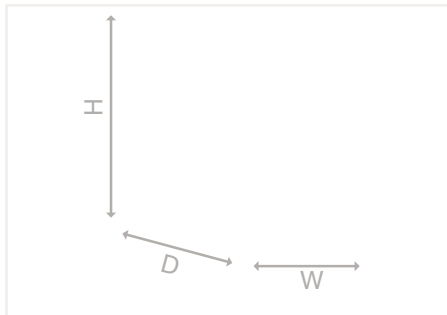
7

## Interface Module for System Wiring 704 Series



Interface Module for System Wiring;  
DIN 41651 connector; Male connector; 20-pole;  
16-channel relay output; 1 changeover contact;  
1 x cut-out; Disconnect/test terminal blocks for PDBs;  
with output fuse; with mounting carrier

	Item No.	Pack. Unit
	704-5054	1



Electrical Data	
Inputs/Outputs	16-channel relay output
Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Number of make contacts/switch-on contacts	1
Limiting continuous current	2 A
Switching voltage (max.)	250 VAC; 48 VDC
Switching power (resistive) max.	500 VA (AC)/50 W (DC)
Mechanical life (NO; resistive load; 23 °C)	30 x 10 <sup>6</sup> switching operations
Status indicator	Green LED (channel); Yellow LED (power supply)
Internal fuse	Supply: 1 A; Relay output: 2 A
Specialty functions	Disconnect/test terminal blocks; Output fuse

Safety and Protection	
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1 kV <sub>rms</sub>

Connection Data	
Connection type 1	System
Pole number 1	20
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	32
Design 2	PCB terminal blocks
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	8 ... 9 mm / 0.31 ... 0.35 inch
Connection type 3	Field
Pole number 3	8
Design 3	PCB terminal blocks; double-deck
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 4	Power supply
Connection technology 4	CAGE CLAMP®
Solid conductor 4	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 4	5 ... 6 mm / 0.2 ... 0.24 inch

Physical Data	
Width	240 mm / 9.449 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	105 mm / 4.134 inch

Mechanical Data	
Mounting type	DIN-35 rail
Housing design	Mounting carrier

Material Data	
Contact material (relay)	AgNi 90/10
Weight	770 g

Environmental Requirements	
Surrounding air temperature (operation)	-25 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

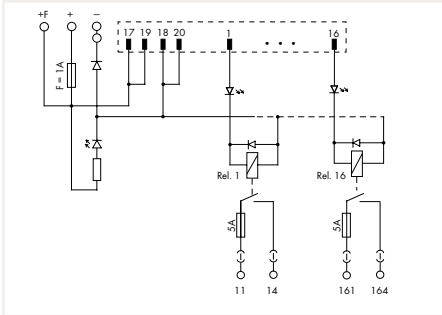
### Accessories



Basic Relay; 1 changeover contact; Limiting continuous current: 16 A; 13 mm wide; 15 mm high

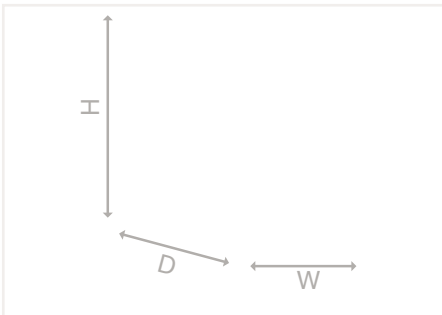
	Item No.	Pack. Unit
	788-154	20

# Interface Module for System Wiring 704 Series



Interface Module for System Wiring;  
DIN 41651 connector; Male connector; 20-pole;  
16-channel relay output; 1 changeover contact;  
1 x cut-out; Disconnect/test terminal blocks for PDBs;  
with output fuse; with mounting carrier

Item No.	Pack. Unit
704-5074	1



### Electrical Data

Inputs/Outputs	16-channel relay output
Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Number of make contacts/switch-on contacts	1
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC; 48 VDC
Switching power (resistive) max.	1250 VA (AC)/50 W (DC)
Mechanical life (NO; resistive load; 23 °C)	30 x 10 <sup>6</sup> switching operations
Status indicator	Green LED (channel); Yellow LED (power supply)
Internal fuse	Supply: 1 A; Relay output: 5 A
WAGO Basic Relay	788-154
Specialty functions	Disconnect/test terminal blocks; Output fuse

### Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1 kV <sub>rms</sub>

### Connection Data

Connection type 1	System
Pole number 1	20
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	32
Design 2	PCB terminal blocks
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	8 ... 9 mm / 0.31 ... 0.35 inch
Connection type 3	Power supply
Pole number 3	4
Design 3	PCB terminal blocks
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	240 mm / 9.449 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	105 mm / 4.134 inch

### Mechanical Data

Mounting type	DIN-35 rail
Housing design	Mounting carrier

### Material Data

Contact material (relay)	AgNi 90/10
Weight	785 g

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

### Accessories



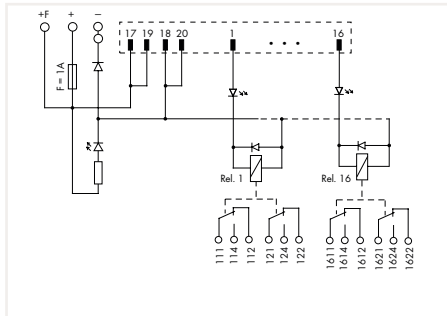
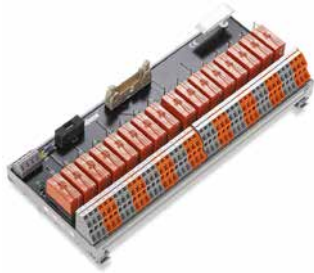
Basic Relay; 1 changeover contact; Limiting continuous current: 16 A; 13 mm wide; 15 mm high

Item No.	Pack. Unit
788-154	20

7

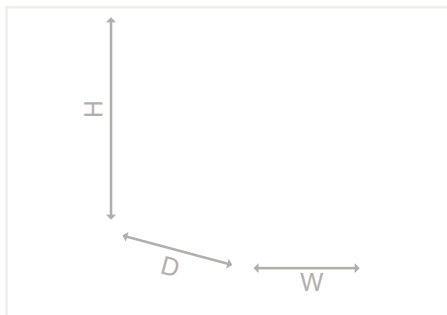


# Interface Module for System Wiring 704 Series



Interface Module for System Wiring;  
DIN 41651 connector; Male connector; 20-pole;  
16-channel relay output; 2 changeover contacts;  
Double-deck PCB terminal blocks;  
with mounting carrier

	Item No.	Pack. Unit
	704-5064	1



## Electrical Data

Inputs/Outputs	16-channel relay output
Nominal operating voltage	24 VDC
Operating voltage range	±10 %
Number of changeover/switchover contacts	2
Limiting continuous current	5 A
Making capacity	2 ms; 8 A
Switching voltage (max.)	250 VAC; 48 VDC
Switching power (resistive) max.	1000 VA (AC)/50 W (DC)
Mechanical life (NO; resistive load; 23 °C)	30 x 10 <sup>6</sup> switching operations
Status indicator	Green LED (channel); Yellow LED (power supply)
Internal fuse	Supply: 1 A; Relay output: -
WAGO Basic Relay	788-156

## Safety and Protection

Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	4 kV <sub>rms</sub>
Dielectric strength, load/load circuit (AC, 1 min)	1 kV <sub>rms</sub>

## Connection Data

Connection type 1	System
Pole number 1	20
Connector 1	DIN 41651 male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	96
Design 2	PCB terminal blocks; double-deck
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 3	Power supply
Pole number 3	4
Design 3	PCB terminal blocks
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

## Physical Data

Width	247 mm / 9.724 inch
Height from upper-edge of DIN-rail	50 mm / 1.969 inch
Depth	105 mm / 4.134 inch

## Mechanical Data

Mounting type	DIN-35 rail
Housing design	Mounting carrier

## Material Data

Contact material (relay)	AgNi 90/10
Weight	645 g

## Environmental Requirements

Surrounding air temperature (operation)	-25 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

## Accessories

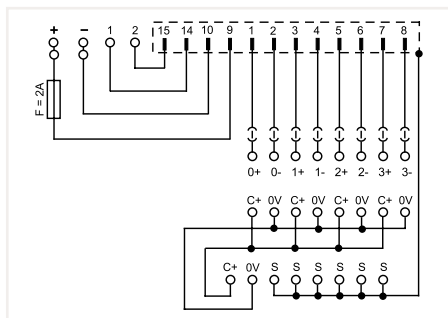


Basic Relay; 2 changeover contacts; Limiting continuous current: 8 A; 13 mm wide; 15 mm high

	Item No.	Pack. Unit
	788-156	20

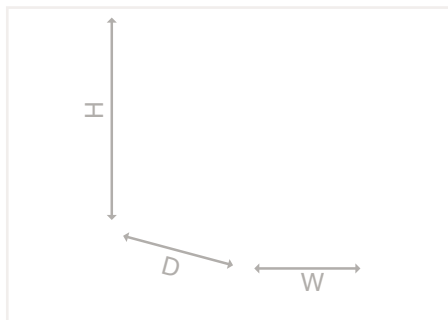


## Interface Module for System Wiring 704 Series



Interface Module for System Wiring; D-sub; Male connector; 15-pole; 4-channel analog input or output; 4 conductors; Disconnect/test terminal blocks for PCBs; with mounting carrier

Item No.	Pack. Unit
704-8012	1



### Electrical Data

Inputs/Outputs	4-channel analog input or output
Circuit type	4-wire connection
Operating voltage	≤ 48 VDC
Limiting continuous current	1 A
Internal fuse	Supply: 2 A
Specialty functions	Disconnect and test terminal blocks

### Safety and Protection

Rated voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2

### Connection Data

Connection type 1	System
Pole number 1	15
Connector 1	D-sub male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	8
Design 2	PCB terminal blocks
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	8 ... 9 mm / 0.31 ... 0.35 inch
Connection type 3	Field
Pole number 3	16
Design 3	PCB terminal blocks; double-row
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 4	Power supply
Connection technology 4	CAGE CLAMP®
Solid conductor 4	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 4	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	66 mm / 2.598 inch
Height from upper-edge of DIN-rail	50 mm / 1.969 inch
Depth	105 mm / 4.134 inch

### Mechanical Data

Mounting type	DIN-35 rail
Housing design	Mounting carrier

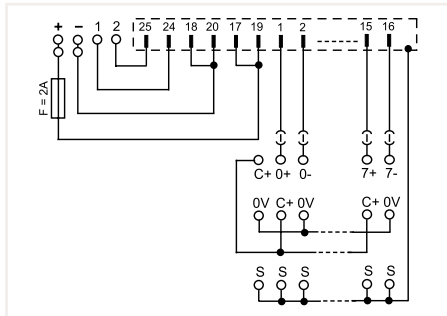
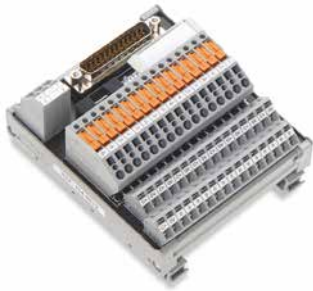
### Material Data

Weight	131 g
--------	-------

### Environmental Requirements

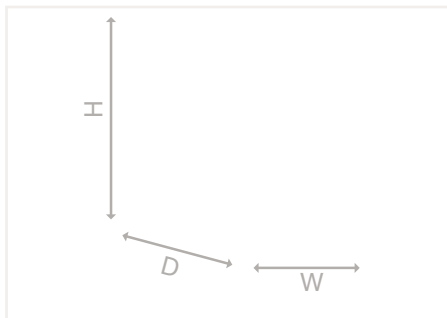
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

## Interface Module for System Wiring 704 Series



Interface Module for System Wiring; D-sub; Male connector; 25-pole; 8-channel analog input or output; 4 conductors; Disconnect/test terminal blocks for PCBs; with mounting carrier

Item No.	Pack. Unit
704-8013	1



### Electrical Data

Inputs/Outputs	8-channel analog input or output
Circuit type	4-wire connection
Operating voltage	≤ 48 VDC
Limiting continuous current	1 A
Internal fuse	Supply: 2 A
Specialty functions	Disconnect and test terminal blocks

### Safety and Protection

Rated voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2

### Connection Data

Connection type 1	System
Pole number 1	25
Connector 1	D-sub male connector
Mating direction 1	Vertical
Connection type 2	Field
Pole number 2	16
Design 2	PCB terminal blocks
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	8 ... 9 mm / 0.31 ... 0.35 inch
Connection type 3	Field
Pole number 3	32
Design 3	PCB terminal blocks; double-row
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 4	Power supply
Connection technology 4	CAGE CLAMP®
Solid conductor 4	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 4	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	92 mm / 3.62 inch
Height from upper-edge of DIN-rail	50 mm / 1.969 inch
Depth	105 mm / 4.134 inch

### Mechanical Data

Mounting type	DIN-35 rail
Housing design	Mounting carrier

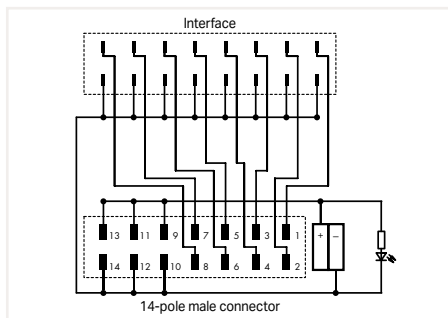
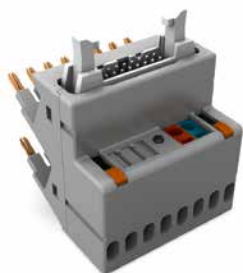
### Material Data

Weight	190 g
--------	-------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C
Relative humidity	≤ 85 % (non-condensing)

# Interface Adapter 857 Series



Interface Adapter, 14-pole; High-side switching input

Item No.	Pack. Unit
857-981	1

Electrical Data	
Inputs/Outputs	8-Channel Digital Input
Circuit type	High-side switching input
Nominal operating voltage	24 VDC
Operating voltage range	±30 %
Total current	3 A
Limiting continuous current	1 A
Contact resistance	≤ 20 mΩ
Status indicator	Green LED

Safety and Protection	
Test voltage	500 VAC; 50 Hz; 1 min

Connection Data	
Connection type 1	System
Pole number 1	14
Connector 1	DIN 41651 male connector
Performance level 1	3
Connection type 2	Field
Pole number 2	16
Design 2	Plug for jumper slot
Connection type 3	Power supply
Pole number 3	2
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

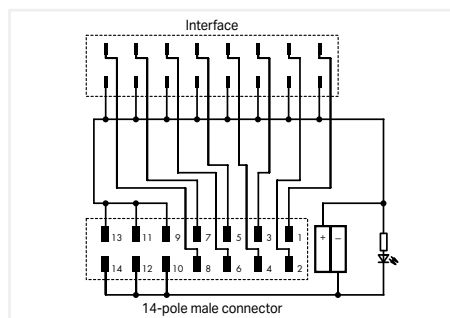
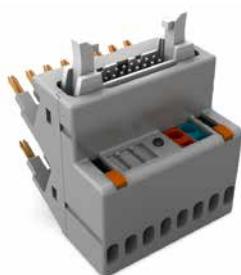
Mechanical Data	
Mounting type	Pluggable module

Material Data	
Weight	45 g

Environmental Requirements	
Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

7

## Interface Adapter 857 Series



Interface Adapter; 14-pole; High-side switching output

Item No.	Pack. Unit
857-982	1

### Electrical Data

Inputs/Outputs	8-channel digital output
Circuit type	High-side switching output
Nominal operating voltage	24 VDC
Operating voltage range	±30 %
Total current	3 A
Limiting continuous current	1 A
Contact resistance	≤ 20 mΩ
Status indicator	Green LED

### Safety and Protection

Test voltage	500 VAC; 50 Hz; 1 min
--------------	-----------------------

### Connection Data

Connection type 1	System
Pole number 1	14
Connector 1	DIN 41651 male connector
Performance level 1	3
Connection type 2	Field
Pole number 2	16
Design 2	Plug for jumper slot
Connection type 3	Power supply
Pole number 3	2
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

### Mechanical Data

Mounting type	Pluggable module
---------------	------------------

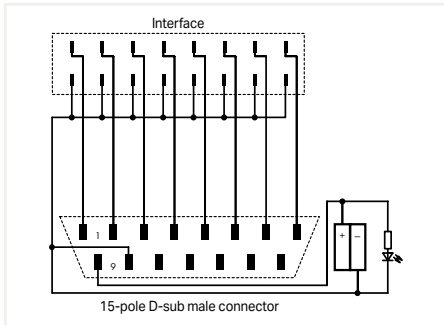
### Material Data

Weight	44.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

# Interface Adapter 857 Series



Interface Adapter, 15-pole; High-side switching input

Item No.	Pack. Unit
857-986	1

### Electrical Data

Inputs/Outputs	8-Channel Digital Input
Circuit type	High-side switching input
Nominal operating voltage	24 VDC
Operating voltage range	±30 %
Total current	3 A
Limiting continuous current	1 A
Contact resistance	≤ 10 mΩ
Status indicator	Green LED

### Safety and Protection

Test voltage	500 VAC; 50 Hz; 1 min
--------------	-----------------------

### Connection Data

Connection type 1	System
Pole number 1	15
Connector 1	D-sub male connector
Performance level 1	2
Connection type 2	Field
Pole number 2	16
Design 2	Plug for jumper slot
Connection type 3	Power supply
Pole number 3	2
Connection technology 3	CAGE CLAMP®
Solid conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor 3	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length 3	5 ... 6 mm / 0.2 ... 0.24 inch

### Mechanical Data

Mounting type	Pluggable module
---------------	------------------

### Material Data

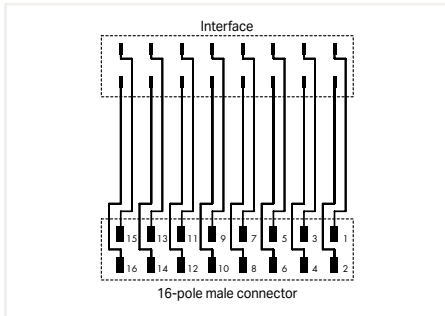
Weight	48.2 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

7

## Interface Adapter 857 Series



Interface Adapter; with 16-pole ribbon cable connector (DIN 41651); analog

	Item No.	Pack. Unit
	857-980	1

Electrical Data	
Inputs/Outputs	8-channel analog input or output
Circuit type	Analog
Limiting continuous current	1 A
Contact resistance	≤ 20 mΩ

Safety and Protection	
Pollution degree	2
Overvoltage category	III
Test voltage	500 VAC; 50 Hz; 1 min

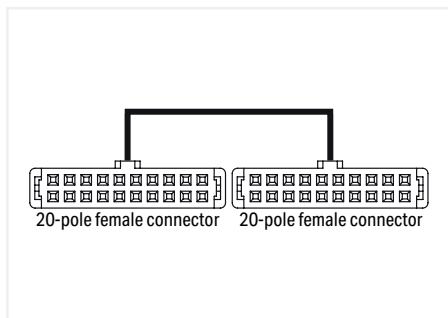
Connection Data	
Connection type 1	System
Pole number 1	16
Connector 1	DIN 41651 male connector
Performance level 1	3
Connection type 2	Field
Pole number 2	16
Design 2	Plug for jumper slot

Mechanical Data	
Mounting type	Pluggable module

Material Data	
Weight	41.4 g

Environmental Requirements	
Surrounding air temperature (operation)	-20 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

## System Cable; for 289/704 Series; Paired with WAGO-I/O-SYSTEM 750 706 Series



System Cable; for Schneider TSX; 16 digital inputs or outputs; Conductor cross section: 0.14 mm<sup>2</sup>/24 AWG

Length	Item No.	Pack. Unit
1 m	706-3057/300-100	1
2 m	706-3057/300-200	1
3 m	706-3057/300-300	1

WAGO's System Cables provide fast and easy connection of WAGO I/O Modules equipped with a pluggable connector (750-1400, -1402, -1500, -1501, -1502) to appropriate interface or relay modules (16-channel) featuring a 20-pole pluggable connector.

The cables are available in 1-, 2- and 3-meter lengths; each has one 20-pole pluggable connector at both ends.

### Note:

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

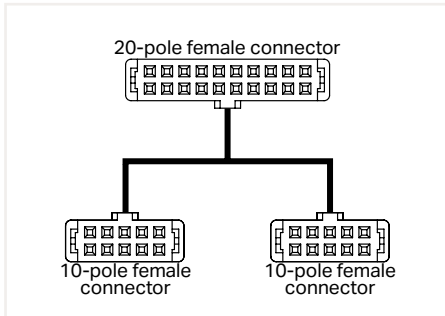
### Connection Data

Connectors	2 x 20-pole DIN 41651 connector
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
-----------------------------------------	----------------

## System Cable; for 289/704 Series; Paired with WAGO-I/O-SYSTEM 750 706 Series



System Cable; for 750 Series WAGO-I/O-SYSTEM;  
8 digital inputs and 8 digital outputs;  
Conductor cross section: 0.14 mm<sup>2</sup>/24 AWG

Length	Item No.	Pack. Unit
1 m	706-7753/302-100	1
2 m	706-7753/302-200	1

WAGO's System Cables provide fast and easy connection of WAGO I/O Modules equipped with a pluggable connector (750-1400, -1402, -1500, -1501, -1502) to appropriate interface or relay modules featuring a 10-pole pluggable connector. For example, this cable connects two relay modules (8-channel) to a WAGO I/O Module.

The cables are available in 1- and 2-meter lengths; each has one 20-pole and two 10-pole pluggable connectors at both ends.

### Note:

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	1 x 20-pole DIN 41651 connector; 2 x 10-pole DIN 41651 connector
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
-----------------------------------------	----------------



## System Cable; for 289/704 Series; Paired with Siemens S7-300 706 Series



System Cable; for Siemens S7-300;  
2 x 16 digital inputs; Conductor cross section:  
0.14 mm<sup>2</sup>/24 AWG

Length	Item No.	Pack. Unit
1 m	706-2300/100-100	1
2 m	706-2300/100-200	1
3 m	706-2300/100-300	1

### Note:

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	1 x Fujitsu FCN-367-J40; 2 x 20-pole DIN 41651 connector
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
-----------------------------------------	----------------

## System Cable; for 289/704 Series; Paired with Siemens S7-300 706 Series



System Cable; for Siemens S7-300;  
16 digital inputs; Conductor cross section:  
0.14 mm<sup>2</sup>/24 AWG

Length	Item No.	Pack. Unit
1 m	706-2300/101-100	1
2 m	706-2300/101-200	1
3 m	706-2300/101-300	1

**Note:**

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	1 x Siemens 6ES7-392-1BJ00-0AA0; 1 x 20-pole DIN 41651 connector
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
-----------------------------------------	----------------

## System Cable; for 289/704 Series; Paired with Siemens S7-300 706 Series



System Cable; for Siemens S7-300;  
2 x 16 digital outputs; Conductor cross section:  
0.14 mm<sup>2</sup>/24 AWG

Length	Item No.	Pack. Unit
1 m	706-2300/200-100	1
2 m	706-2300/200-200	1
3 m	706-2300/200-300	1

### Note:

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	1 x Fujitsu FCN-367-J40; 2 x 20-pole DIN 41651 connector
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
-----------------------------------------	----------------

## System Cable; for 289/704 Series; Paired with Siemens S7-300 706 Series



Similar to pictured device

System Cable; for Siemens S7-300;  
8 digital outputs; Conductor cross section:  
0.14 mm<sup>2</sup>/24 AWG

Length	Item No.	Pack. Unit
1 m	706-2300/201-100	1
2 m	706-2300/201-200	1
3 m	706-2300/201-300	1

**Note:**

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	1 x Siemens 6ES7-392-1BJ00-0AA0; 1 x 10-pole DIN 41651 connector
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
-----------------------------------------	----------------

## System Cable; for 289/704 Series; Paired with Siemens S7-300 706 Series



System Cable; for Siemens S7-300;  
16 digital inputs or outputs; Conductor cross section:  
0.14 mm<sup>2</sup>/24 AWG

Length	Item No.	Pack. Unit
1 m	706-2300/300-100	1
2 m	706-2300/300-200	1
3 m	706-2300/300-300	1

### Note:

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	1 x Siemens 6ES7-392-1BJ00-0AA0; 1 x 20-pole DIN 41651 connector
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
-----------------------------------------	----------------

## System Cable; for 289/704 Series; Paired with Siemens S7-300 706 Series



System Cable; for Siemens S7-300;  
2 x 16 digital inputs or outputs; Conductor cross section: 0.14 mm<sup>2</sup>/24 AWG

Length	Item No.	Pack. Unit
1 m	706-2300/301-100	1
2 m	706-2300/301-200	1
3 m	706-2300/301-300	1

**Note:**

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	1 x Siemens 6ES7-392-1BM00-0AA0; 2 x 20-pole DIN 41651 connector
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
-----------------------------------------	----------------

## System Cable; for 289/704 Series; Paired with Siemens S7-300 706 Series



System Cable; for Siemens S7-300;  
8 analog inputs; Conductor cross section:  
0.25 mm<sup>2</sup>/22 AWG

Length	Item No.	Pack. Unit
1 m	706-2300/400-100	1
2 m	706-2300/400-200	1
3 m	706-2300/400-300	1

### Note:

When using more than 10 wires, the maximum current per wire must be reduced to 1 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	2 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	1 x Siemens 6ES7-392-1BJ00-0AA0; 1 x 25-pole D-sub female connector
Color code	DIN VDE 47100
Wire cross section	0.25 mm <sup>2</sup> /22 AWG Li YCY

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
-----------------------------------------	----------------

## System Cable; for 289/704 Series; Paired with Siemens S7-300 706 Series



System Cable; for Siemens S7-300;  
8 analog inputs (current); Conductor cross section:  
0.25 mm<sup>2</sup>/22 AWG

Length	Item No.	Pack. Unit
1 m	706-2300/404-100	1
2 m	706-2300/404-200	1
3 m	706-2300/404-300	1

**Note:**

When using more than 10 wires, the maximum current per wire must be reduced to 1 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	2 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	1 x Siemens 6ES7-392-1BM00-0AA0; 1 x 25-pole D-sub female connector
Color code	DIN VDE 47100
Wire cross section	0.25 mm <sup>2</sup> /22 AWG Li YCY

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
-----------------------------------------	----------------



## System Cable; for 289/704 Series; Paired with Siemens S7-300 706 Series



System Cable; for Siemens S7-300;  
8 analog inputs (current); Conductor cross section:  
0.25 mm<sup>2</sup>/22 AWG

Length	Item No.	Pack. Unit
1 m	706-2300/406-100	1
2 m	706-2300/406-200	1
3 m	706-2300/406-300	1

**Note:**

When using more than 10 wires, the maximum current per wire must be reduced to 1 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	2 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	1 x Siemens 6ES7-392-1BM00-0AA0; 1 x 25-pole D-sub female connector
Color code	DIN VDE 47100
Wire cross section	0.25 mm <sup>2</sup> /22 AWG Li YCY

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
-----------------------------------------	----------------

## System Cable; for 289/704 Series; Paired with Siemens S7-300 706 Series



System Cable; for Siemens S7-300;  
4 analog outputs (current); Conductor cross section:  
0.25 mm<sup>2</sup>/22 AWG

Length	Item No.	Pack. Unit
1 m	706-2300/500-100	1
2 m	706-2300/500-200	1
3 m	706-2300/500-300	1

**Note:**

When using more than 10 wires, the maximum current per wire must be reduced to 1 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	2 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	1 x Siemens 6ES7-392-1BJ00-0AA0; 1 x 15-pole D-sub female connector
Color code	DIN VDE 47100
Wire cross section	0.25 mm <sup>2</sup> /22 AWG Li YCY

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
-----------------------------------------	----------------

## System Cable; for 289/704 Series; Paired with Siemens S7-300 706 Series



System Cable; for Siemens S7-300;  
8 analog outputs (current); Conductor cross section:  
0.25 mm<sup>2</sup>/22 AWG

Length	Item No.	Pack. Unit
1 m	706-2300/502-100	1
2 m	706-2300/502-200	1
3 m	706-2300/502-300	1

### Note:

When using more than 10 wires, the maximum current per wire must be reduced to 1 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	2 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	1 x Siemens 6ES7-392-1BM00-0AA0; 1 x 25-pole D-sub female connector
Color code	DIN VDE 47100
Wire cross section	0.25 mm <sup>2</sup> /22 AWG Li YCY

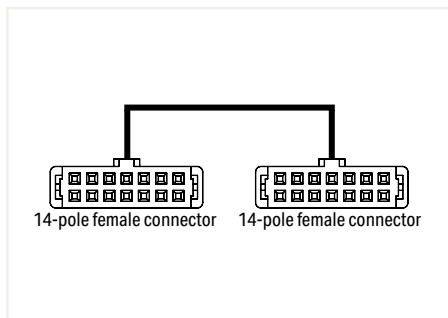
### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
-----------------------------------------	----------------



## Connection Cable; Paired with an Interface Adapter

### 706 Series



Connection Cable; 14-pole;  
DIN 41651 connector; 14-pole; DIN 41651 connector;  
Conductor cross section: 0.14 mm<sup>2</sup>/24 AWG

Length	Item No.	Pack. Unit
1 m	706-753/300-100	1
2 m	706-753/300-200	1
3 m	706-753/300-300	1

WAGO's 14-pole connection cables transmit the signal one-to-one from the 14-pole connector and are available in 1-, 2- and 3-meter lengths.

They are suitable for system wiring when paired with WAGO's Interface Adapters (Item No. 857-981 and 857-982).

#### Note:

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

#### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

#### Safety and Protection

Degree of protection	IP20
----------------------	------

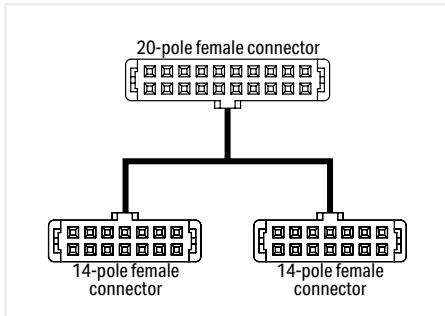
#### Connection Data

Connectors	2 x 14-pole DIN 41651 connector
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

#### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
-----------------------------------------	----------------

## System Cable; Paired with an Interface Adapter 706 Series



System Cable; for 750 Series WAGO I/O-SYSTEM;  
2 x 8 analog inputs or outputs; Conductor cross  
section: 0.14 mm<sup>2</sup>/24 AWG

Length	Item No.	Pack. Unit
1 m	706-7753/304-100	1
2 m	706-7753/304-200	1
3 m	706-7753/304-300	1

WAGO's System Cables provide fast and easy connection of WAGO I/O Modules equipped with pluggable connectors. The following WAGO I/O Modules and WAGO Adapters are compatible:

750-1500 (16 DO) --> 857-981 (DO)

750-1502 (8 DO / 8 DI) --> 857-981 (DO) and 857-982 (DI)

The cables are available in 1-, 2- and 3-meter lengths; each has one 20-pole or two 14-pole pluggable connectors at both ends.

They are suitable for system wiring when paired with WAGO's Interface Adapters (Item No. 857-981 and 857-982).

**Note:**

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

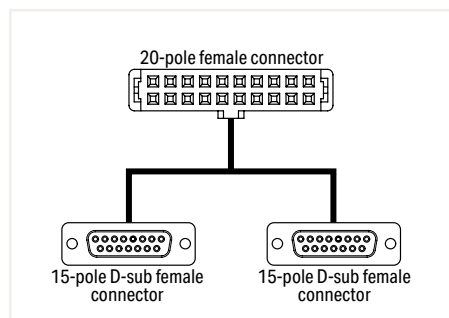
Connectors	1 x 20-pole DIN 41651 connector; 2 x 14-pole DIN 41651 connector
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
-----------------------------------------	----------------

## System Cable; Paired with an Interface Adapter

### 706 Series



System Cable; for 750 Series WAGO-I/O-SYSTEM; 2 x 8 digital inputs or outputs; D-sub; Conductor cross section: 0.14 mm<sup>2</sup>/24 AWG; for 857 Series Relay Modules

Length	Item No.	Pack. Unit
1 m	706-7753/306-100	1
2 m	706-7753/306-200	1
3 m	706-7753/306-300	1

7 WAGO's System Cables provide fast and easy connection of WAGO I/O Modules equipped with pluggable connectors. The following WAGO I/O Modules and D-sub Adapters are compatible:

750-1500 (16 DO) --> 857-986 (DO)

The cables are available in 1-, 2- and 3-meter lengths; each has one 20-pole or two 15-pole pluggable connectors at both ends.

They are suitable for system wiring when paired with WAGO's Interface Adapter (Item No. 857-986).

#### Note:

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

#### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

#### Safety and Protection

Degree of protection	IP20
----------------------	------

#### Connection Data

Connectors	1 x 20-pole DIN 41651 connector; 2 x 15-pole DIN 41652 D-sub socket
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

#### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
-----------------------------------------	----------------

## Connection Cable; Paired with an Interface Adapter 706 Series



### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

### Safety and Protection

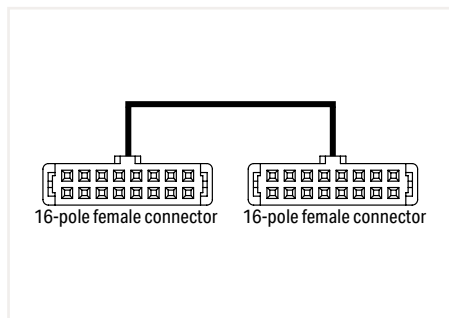
Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	2 x 16-pole DIN 41651 connector
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
-----------------------------------------	----------------



Connection Cable; 16-pole;  
DIN 41651 connector; 16-pole; DIN 41651 connector;  
Conductor cross section: 0.14 mm<sup>2</sup>/24 AWG

Length	Item No.	Pack. Unit
1 m	706-753/301-100	1
2 m	706-753/301-200	1
3 m	706-753/301-300	1

WAGO's 16-pole connection cables transmit the signal one-to-one from the 16-pole connector and are available in 1-, 2- and 3-meter lengths. Signal transmission from the 857-980 Interface Adapter is also possible.

They are suitable for system wiring when paired with WAGO's Interface Adapter (Item No. 857-980).

#### Note:

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.



## Connection Cable; Paired with an Interface Adapter

### 706 Series



Connection Cable; 10-pole;  
DIN 41651 connector; open-ended; Conductor cross  
section: 0.14 mm<sup>2</sup>/24 AWG; UR components

Length	Item No.	Pack. Unit
2 m	706-100/1301-200	1

Color coding		HE 10 10-pol.
acc. to DIN VDE 47100		Contact number
white		1
brown		2
green		3
yellow		4
grey		5
pink		6
blue		7
red		8
black		9
violet		10

#### Note:

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

#### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

#### Safety and Protection

Degree of protection	IP20
----------------------	------

#### Connection Data

Connectors	1 x 10-pole DIN 41651 connector; open-ended
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

#### Physical Data

Cable length	2 m
--------------	-----

#### Material Data

Weight	162 g
--------	-------

#### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
-----------------------------------------	----------------

## Connection Cable; Paired with an Interface Adapter 706 Series



Connection Cable; 14-pole;  
DIN 41651 connector; open-ended; Conductor cross  
section: 0.14 mm<sup>2</sup>/24 AWG; UR components

Length	Item No.	Pack. Unit
2 m	706-100/1303-200	1

Color coding		HE 10 14-pole
acc. to DIN VDE 47100		Contact number
white		1
brown		2
green		3
yellow		4
grey		5
pink		6
blue		7
red		8
black		9
violet		10
grey/pink		11
red/blue		12
white/green		13
brown/green		14

### Note:

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	1 x 14-pole connector per DIN 41651; open-ended
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

### Physical Data

Cable length	2 m
--------------	-----

### Material Data

Weight	199 g
--------	-------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
-----------------------------------------	----------------

## Connection Cable; Paired with an Interface Adapter

### 706 Series



Connection Cable; 16-pole;  
DIN 41651 connector; open-ended; Conductor cross  
section: 0.14 mm<sup>2</sup>/24 AWG; UR components

Length	Item No.	Pack. Unit
2 m	706-100/1602-200	1

Color Coding		HE 10 16-pole
acc. to DIN VDE 47100		Contact Number
white		1
brown		2
green		3
yellow		4
gray		5
pink		6
blue		7
red		8
black		9
violet		10
gray/pink		11
red/blue		12
white/green		13
brown/green		14
white/yellow		15
yellow/brown		16

#### Note:

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

#### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

#### Safety and Protection

Degree of protection	IP20
----------------------	------

#### Connection Data

Connectors	1 x 16-pole connector per DIN 41651; open-ended
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

#### Physical Data

Cable length	2 m
--------------	-----

#### Material Data

Weight	202 g
--------	-------

#### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
-----------------------------------------	----------------

## Connection Cable; Paired with an Interface Adapter 706 Series



Connection Cable; 20-pole;  
DIN 41651 connector; open-ended; Conductor cross  
section: 0.14 mm<sup>2</sup>/24 AWG; UR components

Length	Item No.	Pack. Unit
2 m	706-100/1300-200	1

Color coding acc. to DIN VDE 47100		HE 10 20-pole Contact number
white		1
brown		2
green		3
yellow		4
gray		5
pink		6
blue		7
red		8
black		9
violet		10
grey/pink		11
red/blue		12
white/green		13
brown/green		14
white/yellow		15
yellow/brown		16
white/grey		17
grey/brown		18
white/pink		19
pink/brown		20

**Note:**

When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

### Electrical Data

Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A

### Safety and Protection

Degree of protection	IP20
----------------------	------

### Connection Data

Connectors	1 x 20-pole connector per DIN 41651; open-ended
Color code	DIN VDE 47100
Wire cross section	0.14 mm <sup>2</sup> /24 AWG LiYY

### Physical Data

Cable length	2 m
--------------	-----

### Material Data

Weight	176.6 g
--------	---------





### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
-----------------------------------------	----------------

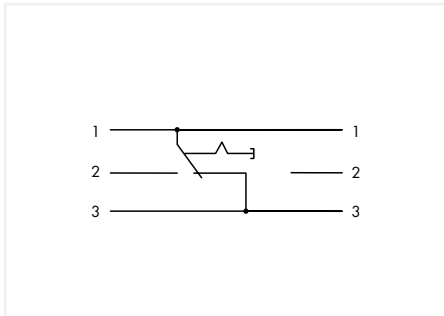


# WAGO Interface Modules with Specialty Functions

## WAGO Interface Modules with Specialty Functions

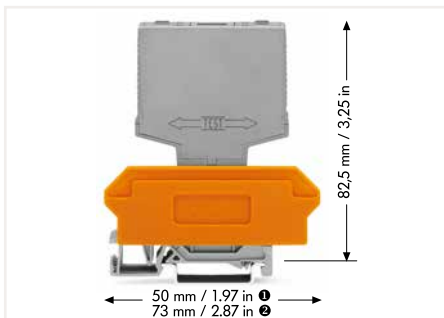
		Page
	<b>Switching Modules</b>	
	Switching Modules; 286 Series	658
	Switching Modules; 2042 Series	660
	Switching Modules; 789 Series	662
	Manual Operation Modules; 789 Series	668
	<b>Component Modules</b>	
	Component Modules with Diodes; 286 Series	670
	Component Modules with Diodes; 289 Series	672
	Component Modules with Resistors; 289 Series	678
	PCB for Self-Assembly; 289 Series	681
	<b>Potential Distribution Modules</b>	
	Potential Distribution Modules; 288 Series	682
	Potential Distribution Modules; 830 Series	688
	<b>Modules with Additional Specialty Functions</b>	
	Current Flow Monitoring Modules; 286 Series	702
	Component Modules with a Fuse; 286 Series	704
	AND Gate Module; 286 Series	706

# Switching Module 286 Series



Switching Module; with changeover rocker switch;  
Switching voltage: 250 VAC; Switching current: 6 A

Item No.	Pack. Unit
286-895	1



### Electrical Data

Switching voltage (max.) AC	250 V
Switching voltage (max.) DC	24 V
Switching current (resistive) max.	6 A
Switching current (motor load) max.	4 A
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Contact gab	≥ 3 mm

### Physical Data

Width	15 mm / 0.591 inch
-------	--------------------

### Mechanical Data

Mounting type	Pluggable module for receptacle terminal blocks
---------------	-------------------------------------------------

### Material Data

Weight	20.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +40 °C
-----------------------------------------	----------------

8

### Accessories



Terminal block for pluggable modules; 6-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-619	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-609	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

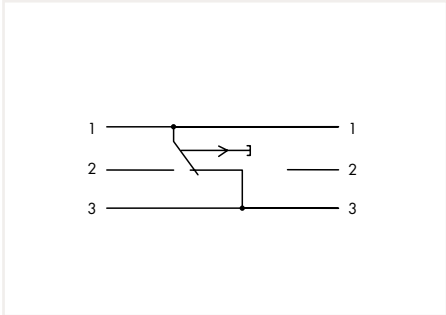
Item No.	Pack. Unit
280-763	25



WSB marker card; white; for 5 ... 17.5 mm terminal block width; 10 strips with 10 markers/card

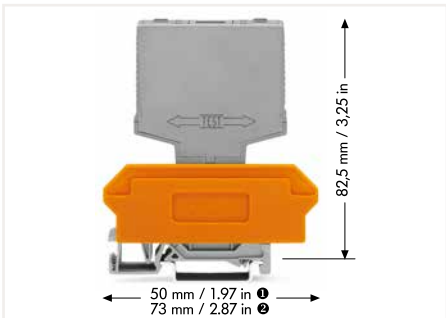
Marking	Item No.	Pack. Unit
1 ... 10	209-702	5
S	209-682	5

# Switching Module 286 Series



Switching Module; with momentary switch;  
Switching voltage: 250 VAC; Switching current: 6 A

Item No.	Pack. Unit
286-896	1



### Electrical Data

Switching voltage (max.) AC	250 V
Switching voltage (max.) DC	24 V
Switching current (resistive) max.	6 A
Switching current (motor load) max.	4 A
Electrical life (NO; resistive load; 23 °C)	50 x 10 <sup>3</sup> switching operations
Contact gap	≥ 3 mm

### Physical Data

Width	15 mm / 0.591 inch
-------	--------------------

### Mechanical Data

Mounting type	Pluggable module for receptacle terminal blocks
---------------	-------------------------------------------------

### Material Data

Weight	19.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +40 °C
-----------------------------------------	----------------

### Accessories



Terminal block for pluggable modules; 6-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-619	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-609	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Item No.	Pack. Unit
280-763	25

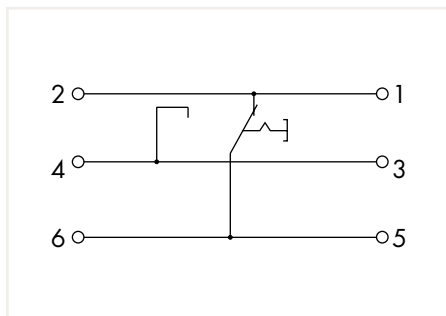


WSB marker card; white; for 5 ... 17.5 mm terminal block width; 10 strips with 10 markers/card

Marking	Item No.	Pack. Unit
1 ... 10	209-702	5
S	209-682	5



## Switching Module 2042 Series



Switching Module; with changeover rocker switch;  
Switching voltage: 250 VAC

	Item No.	Pack. Unit
	2042-1008	10

### Technical Data

Switching voltage (max.)	250 VAC
Switching current (max.)	10 A
Inrush current (max.)	128 A
Contact resistance	≤ 20 mΩ
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations (UL: 6 x 10 <sup>3</sup> switching operations)

### Safety and Protection

Dielectric strength, open contact (AC, 1 min)	1.5 kV <sub>rms</sub>
Rated voltage	250 V
Insulation resistance	≥ 100 MΩ (500 VDC; new condition)
Overtoltage category	II
Pollution degree	2
Protection class	IP20

### Physical Data

Width	15.5 mm / 0.61 inch
Height	87 mm / 3.425 inch
Height from the surface	68 mm / 2.677 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Flammability class per UL94	V0
Weight	78.4 g

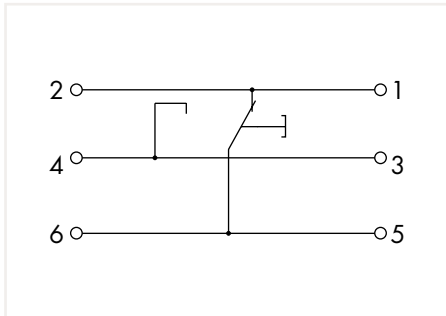
### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Operating altitude (max.)	2000 m

### Standards and Specifications

Conformity marking	CE
Standards/specifications	EN 61010-2-201; EN 50155; EN 61373

## Switching Module 2042 Series



Switching Module; with momentary switch;  
Switching voltage: 250 VAC

	Item No.	Pack. Unit
	2042-1108	10

### Technical Data

Switching voltage (max.)	250 VAC
Switching current (max.)	10 A
Inrush current (max.)	128 A
Contact resistance	≤ 20 mΩ
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations (UL: 6 x 10 <sup>3</sup> switching operations)

### Safety and Protection

Dielectric strength, open contact (AC, 1 min)	1.5 kV <sub>rms</sub>
Rated voltage	250 V
Insulation resistance	≥ 100 MΩ (500 VDC; new condition)
Overvoltage category	II
Pollution degree	2
Protection class	IP20

### Physical Data

Width	15.5 mm / 0.61 inch
Height	87 mm / 3.425 inch
Height from the surface	68 mm / 2.677 inch
Depth	52 mm / 2.047 inch

### Mechanical Data

Mounting type	Pluggable module for TOPJOB® S Carrier Terminal Block
---------------	-------------------------------------------------------

### Material Data

Flammability class per UL94	V0
Weight	78.4 g

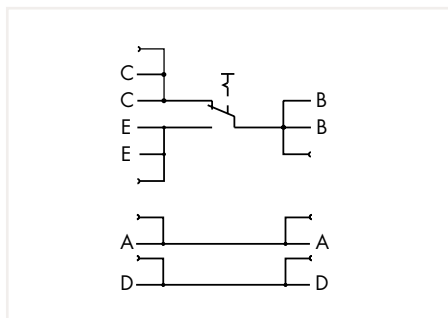
### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C
Operating altitude (max.)	2000 m

### Standards and Specifications

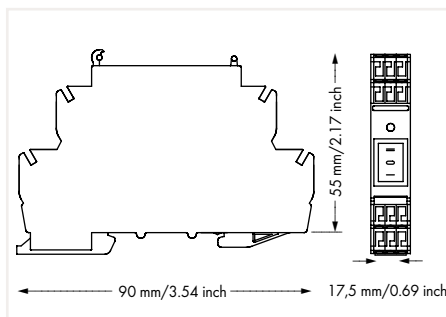
Conformity marking	CE
Standards/specifications	EN 61010-2-201; EN 50155; EN 61373

## Switching Module 789 Series



Switching Module; with changeover rocker switch;  
Switching voltage: 250 VAC; Switching current: 10 A

Item No.	Pack. Unit
789-800	1



### Electrical Data

Switching voltage (max.)	≤ 250 VAC
Switching current (resistive) max.	10 A
Inrush current (max.)	100 A (capacitive)
Contact material	Ag alloy
Contact gap	≥ 3 mm
Contact resistance	≤ 100 mΩ (12 V / 1 ADC, new condition)
Insulation resistance	> 100 MΩ (500 VDC, new condition)
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations
Mechanical life	100 x 10 <sup>3</sup> switching operations

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV
Dielectric strength, open contact (AC, 1 min)	1.25 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

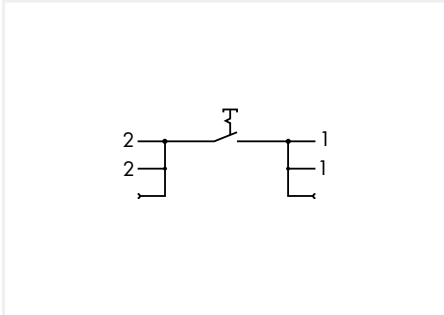
### Material Data

Weight	41.7 g
--------	--------

### Environmental Requirements

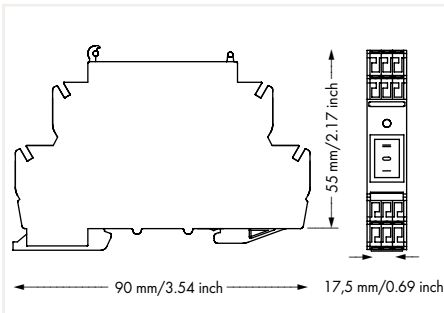
Surrounding air temperature (operation)	-20 ... +55 °C
Surrounding air temperature (storage)	-40 ... +80 °C

## Switching Module 789 Series



Switching Module; with off switch;  
Switching voltage: 250 VAC; Switching current: 16 A

	Item No.	Pack. Unit
	789-801	1



### Electrical Data

Switching voltage (max.)	≤ 250 VAC
Switching current (resistive) max.	16 A
Inrush current (max.)	100 A (capacitive)
Contact material	Ag alloy
Contact gap	≥ 3 mm
Contact resistance	≤ 100 mΩ (12 V / 1 ADC, new condition)
Insulation resistance	> 100 MΩ (500 VDC, new condition)
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations
Mechanical life	50 x 10 <sup>3</sup> switching operations

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV
Dielectric strength, open contact (AC, 1 min)	1.25 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

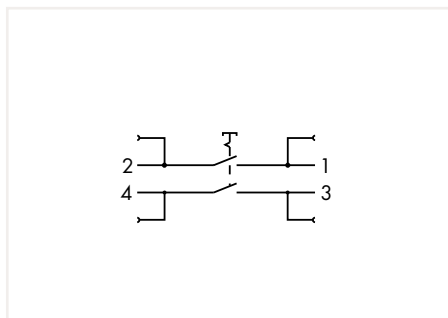
### Material Data

Weight	41.7 g
--------	--------

### Environmental Requirements

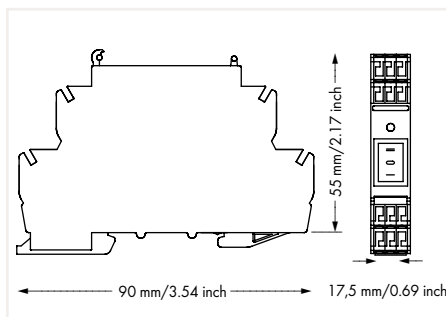
Surrounding air temperature (operation)	-20 ... +55 °C
Surrounding air temperature (storage)	-40 ... +80 °C

## Switching Module 789 Series



Switching Module; with 2-pole off switch;  
Switching voltage: 250 VAC; Switching current: 16 A

Item No.	Pack. Unit
789-802	1



### Electrical Data

Switching voltage (max.)	≤ 250 VAC
Switching current (resistive) max.	16 A
Inrush current (max.)	100 A (capacitive)
Contact material	Ag alloy
Contact gap	≥ 3 mm
Contact resistance	≤ 100 mΩ (12 V / 1 ADC, new condition)
Insulation resistance	> 100 MΩ (500 VDC, new condition)
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations
Mechanical life	50 x 10 <sup>3</sup> switching operations

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV
Dielectric strength, open contact (AC, 1 min)	1.25 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

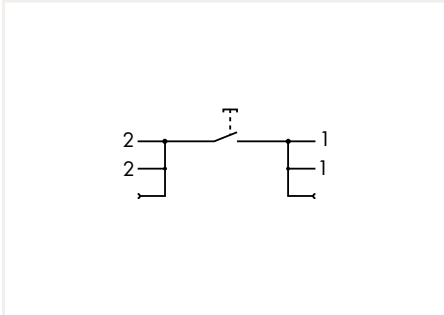
### Material Data

Weight	44.1 g
--------	--------

### Environmental Requirements

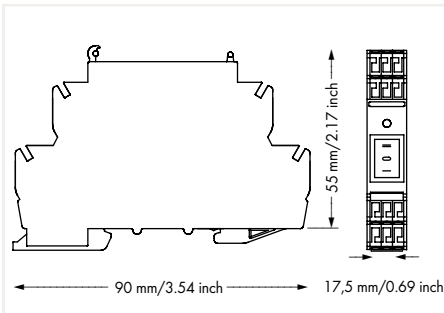
Surrounding air temperature (operation)	-20 ... +55 °C
Surrounding air temperature (storage)	-40 ... +80 °C

## Switching Module 789 Series



Switching Module; with off button;  
Switching voltage: 250 VAC; Switching current: 16 A

	Item No.	Pack. Unit
	789-803	1



### Electrical Data

Switching voltage (max.)	≤ 250 VAC
Switching current (resistive) max.	16 A
Inrush current (max.)	100 A (capacitive)
Contact material	Ag alloy
Contact gap	≥ 3 mm
Contact resistance	≤ 100 mΩ (12 V / 1 ADC, new condition)
Insulation resistance	> 100 MΩ (500 VDC, new condition)
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations
Mechanical life	50 x 10 <sup>3</sup> switching operations

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV
Dielectric strength, open contact (AC, 1 min)	1.25 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

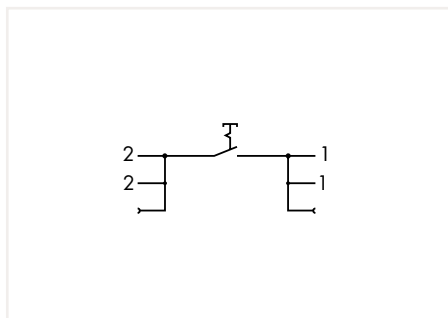
### Material Data

Weight	42.4 g
--------	--------

### Environmental Requirements

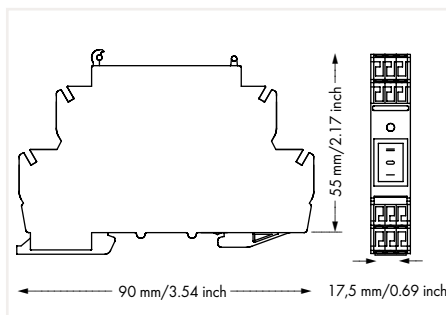
Surrounding air temperature (operation)	-20 ... +55 °C
Surrounding air temperature (storage)	-40 ... +80 °C

## Switching Module 789 Series



Switching Module; with off button;  
Switching voltage: 250 VAC; Switching current: 16 A

	Item No.	Pack. Unit
	789-804	1



### Electrical Data

Switching voltage (max.)	≤ 250 VAC
Switching current (resistive) max.	16 A
Inrush current (max.)	100 A (capacitive)
Contact material	Ag alloy
Contact gap	≥ 3 mm
Contact resistance	≤ 100 mΩ (12 V / 1 ADC, new condition)
Insulation resistance	> 100 MΩ (500 VDC, new condition)
Electrical life (NO; resistive load; 23 °C)	10 x 10 <sup>3</sup> switching operations
Mechanical life	50 x 10 <sup>3</sup> switching operations

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV
Dielectric strength, open contact (AC, 1 min)	1.25 kV <sub>rms</sub>

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip Length	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	17.5 mm / 0.689 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	40.8 g
--------	--------

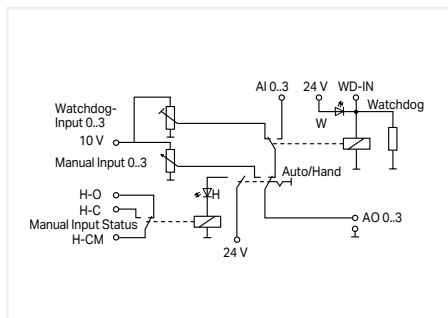
### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +55 °C
Surrounding air temperature (storage)	-40 ... +80 °C



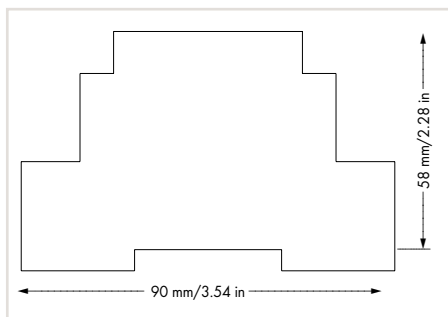


## Manual Operation Module 789 Series



### Manual Operation Module; 4 analog outputs

Item No.	Pack. Unit
789-811	1



### Short description:

The 789-811 Analog Manual Operation Module monitors 0 ... 3 analog inputs. Depending on both manual/automatic switch and watchdog input, 0 to 10 V set voltage is transmitted to the output.

### Electrical Data

Nominal operating voltage	24 VDC
Operating voltage range	±20 %
Inputs	No. 1 / 10: 24 V; Power supply; No. 2: GND; No. 3 / 4 / 5 / 6: AI-0 ... 3; Input 0 ... 3; 0 ... 10 V / max. 20 mA; No. 11: WD-IN; Watchdog input; 24 V / max. 20 mA
Outputs	No. 7: H-C; Manual operation; "closed"; No. 8: H-CM; Manual operation; "common"; No. 9: H-O; Manual operation; "open"; No. 12 / 15 / 18 / 21: DO-0 ... 3-NC; Channel 0 ... 3; Break contact; 250 VAC / 30 VDC; 8 A; No. 13 / 16 / 19 / 22: DO-0 ... 3-CM; Channel 0 ... 3; Common; No. 14 / 17 / 20 / 23: DO-0 ... 3-NO; Channel 0 ... 3; Make contact; 250 VAC / 30 VDC; 8 A

### Connection Data

Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.08 ... 1.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor 1	0.08 ... 1.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length 1	7 mm / 0.28 inch
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	106 mm / 4.173 inch
Height from upper-edge of DIN-rail	58 mm / 2.283 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

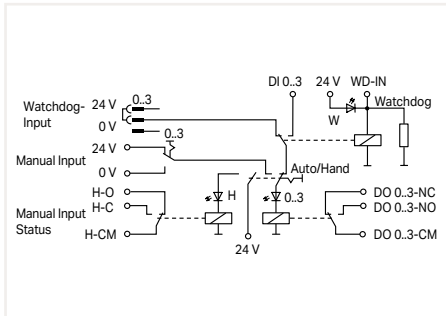
Weight	199.5 g
--------	---------

### Environmental Requirements

Surrounding air temperature (operation)	0 ... 50 °C
Surrounding air temperature (storage)	-25 ... +70 °C

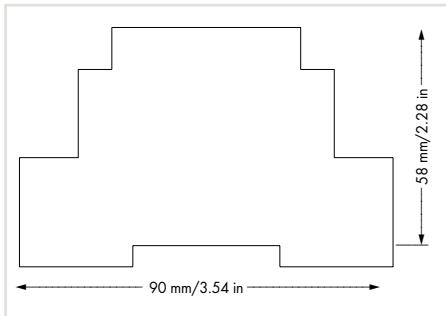
# Manual Operation Module

## 789 Series



### Manual Operation Module; 4 digital outputs

Item No.	Pack. Unit
789-810	1



### Short description:

The 789-810 Digital Manual Operation Module monitors 0 ... 3 inputs and indicates their status via green LED and power relay's changeover contact. Depending on both the manual/automatic switch and watchdog input, the states 0 or 1 are transmitted (electrically isolated) via relay to the output.

### Electrical Data

Nominal operating voltage	24 VDC
Operating voltage range	±20 %
Inputs	No. 1 / 10: 24 V; Power supply; No. 2: GND; No. 3 / 4 / 5 / 6: DI-0 ... 3; Input 0 ... 3; 24 V / max. 20 mA; No.11: WD-IN; Watchdog input; 24 V / max. 20 mA
Outputs	No. 7: H-C; Manual operation; "closed"; No. 8: H-CM; Manual operation; "common"; No. 9: H-O; Manual operation; "open"; No. 12 / 15 / 18 / 21: GND; No. 13 / 16 / 19 / 22: AO-0 ... 3; Output 0 ... 3; 0 ... 10 V / max. 20 mA; No. 14 / 17 / 20 / 23: GND

### Safety and Protection

Dielectric strength (input/output)	4 kV
------------------------------------	------

### Connection Data

Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.08 ... 1.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor 1	0.08 ... 1.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length 1	7 mm / 0.28 inch
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	106 mm / 4.173 inch
Height from upper-edge of DIN-rail	58 mm / 2.283 inch
Depth	90 mm / 3.543 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

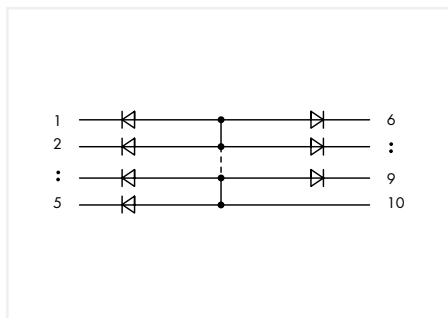
### Material Data

Weight	251.6 g
--------	---------

### Environmental Requirements

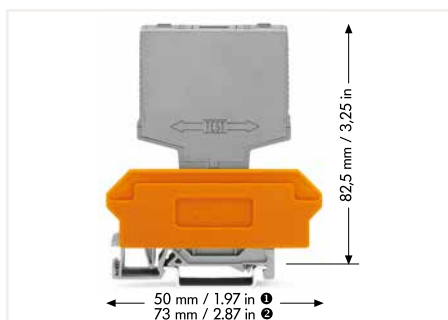
Surrounding air temperature (operation)	0 ... 50 °C
Surrounding air temperature (storage)	-25 ... +70 °C

## Component Module with Diodes 286 Series



Component Module with a Diode; 1N4007 diode;  
with common anode; plugs into rail-mount terminal  
block; 10 mm wide

Module Width	Diodes	Item No.	Pack. Unit
10 mm/0.394 inch	3	286-803	1
15 mm/0.591 inch	5	286-805	1
20 mm/0.787 inch	7	286-807	1
25 mm/0.984 inch	9	286-809	1



### Note:

Max. admissible current per the manufacturer's data sheet  
– with all diodes loaded, the continuous current must be  
reduced.

### Electrical Data

Operating voltage	≤ 250 VAC/DC
Rectified current for each diode (resistive)	1 A
Peak reverse voltage	1000 V

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV

### Mechanical Data

Mounting type	Pluggable module for receptacle terminal blocks
---------------	-------------------------------------------------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
-----------------------------------------	----------------

# Component Module with Diodes 286 Series

## Accessories



Terminal block for pluggable modules; 4-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
12 mm	280-618	40



Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
12 mm	280-608	40



Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
15 mm	280-762	30



Terminal block for pluggable modules; 6-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
17 mm	280-619	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
17 mm	280-609	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
20 mm	280-763	25



Terminal block for pluggable modules; 8-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
22 mm	280-638	20



Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
22 mm	280-628	20



Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
25 mm	280-764	20



Terminal block for pluggable modules; 10-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
27 mm	280-639	15



Terminal block for pluggable modules; 20-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

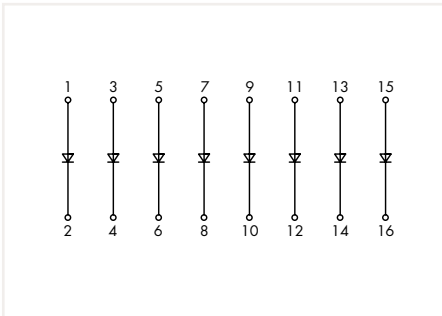
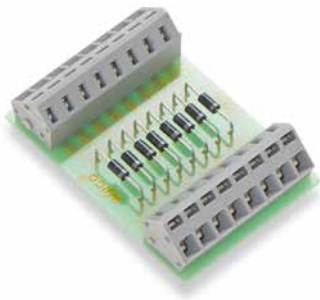
Width	Item No.	Pack. Unit
27 mm	280-629	15



Terminal block for pluggable modules; 20-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

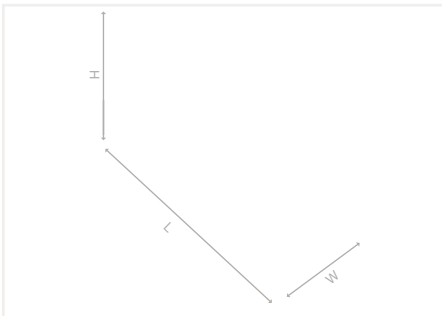
Width	Item No.	Pack. Unit
30 mm	280-765	15

# Component Module with Diodes 289 Series



Component Module with Diodes; with 8 diodes;  
1N4007 diode

Item No.	Pack. Unit
289-101	1



**Notice!**  
Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover.  
The installation regulations must be observed for each individual application.

**Note:**  
Max. admissible current per the manufacturer's data sheet – with all diodes loaded, the continuous current must be reduced.

### Electrical Data

Operating voltage	≤ 250 VAC/DC
Rectified current for each diode	1 A
Forward voltage per diode	1.1 V
Forward current per diode (resistive)	1 A
Peak reverse voltage	1000 V
Leakage current	50 µA

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV
Protection class	IP00

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	47 mm / 1.85 inch
Height from upper-edge of DIN-rail	31.5 mm / 1.24 inch
Depth	65.5 mm / 2.579 inch

### Mechanical Data

Mounting type	Mounting on DIN-rail via DIN-rail adapter
---------------	-------------------------------------------

### Material Data

Weight	24.9 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
-----------------------------------------	----------------

### Accessories



Mounting carrier; for screw or DIN-rail mounting		
Item No.	Pack. Unit	
288-001	50	



Universal mounting foot; for DIN-15/35/32 rails		
Item No.	Pack. Unit	
288-002	100	

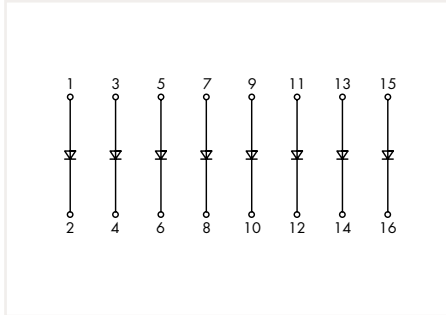
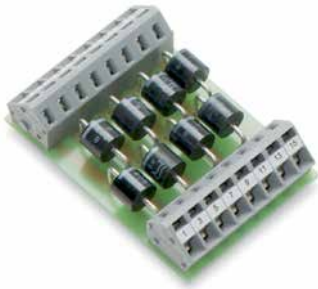


Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts		
Item No.	Pack. Unit	
709-167	10	



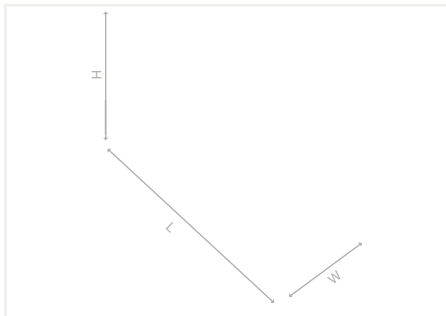
Cover; Type 1; for cover carrier (type 1); 1 m long		
Item No.	Pack. Unit	
709-153	10	

## Component Module with Diodes 289 Series



Component Module with Diodes; with 8 diodes;  
P600B diode

	Item No.	Pack. Unit
	289-103	1



### Notice!

Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover.

The installation regulations must be observed for each individual application.

### Note:

Max. admissible current per the manufacturer's data sheet – with all diodes loaded, the continuous current must be reduced.

### Electrical Data

Operating voltage	≤ 100 VAC/DC
Rectified current for each diode	6 A
Forward voltage per diode	1 V
Forward current per diode (resistive)	6 A
Peak reverse voltage	100 V
Leakage current	5 μA

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV
Protection class	IP00

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	47 mm / 1.85 inch
Height from upper-edge of DIN-rail	31.5 mm / 1.24 inch
Depth	65.5 mm / 2.579 inch

### Mechanical Data

Mounting type	Mounting on DIN-rail via DIN-rail adapter
---------------	-------------------------------------------

### Material Data

Weight	19 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
-----------------------------------------	----------------

### Accessories



Mounting carrier; for screw or DIN-rail mounting

	Item No.	Pack. Unit
	288-001	50



Universal mounting foot; for DIN-15/35/32 rails

	Item No.	Pack. Unit
	288-002	100



Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts

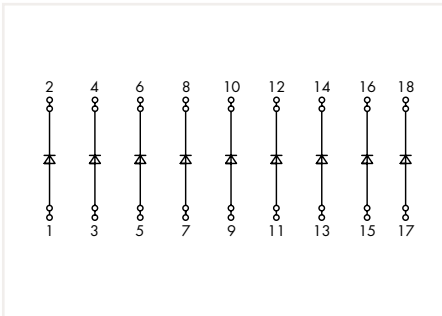
	Item No.	Pack. Unit
	709-167	10



Cover; Type 1; for cover carrier (type 1); 1 m long

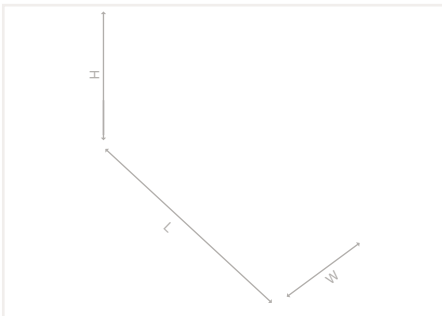
	Item No.	Pack. Unit
	709-153	10

# Component Module with Diodes 289 Series



Component Module with Diodes; with 9 diodes;  
1N5408 diode

Item No.	Pack. Unit
289-105	1



**Notice!**

Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover. The installation regulations must be observed for each individual application.

**Note:**

Max. admissible current per the manufacturer's data sheet – with all diodes loaded, the continuous current must be reduced.

**Electrical Data**

Operating voltage	≤ 250 VAC/DC
Rectified current for each diode	3 A
Forward voltage per diode	1.3 V
Forward current per diode (resistive)	3 A
Peak reverse voltage	1000 V
Leakage current	10 μA

**Safety and Protection**

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV
Protection class	IP00

**Connection Data**

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

**Physical Data**

Width	51 mm / 2.008 inch
Height from upper-edge of DIN-rail	48 mm / 1.89 inch
Depth	85 mm / 3.346 inch

**Mechanical Data**

Mounting type	DIN-35 rail
---------------	-------------

**Material Data**

Weight	80.6 g
--------	--------

**Environmental Requirements**

Surrounding air temperature (operation)	-25 ... +40 °C
-----------------------------------------	----------------

**Accessories**

Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts

Item No.	Pack. Unit
709-167	10

Cover; Type 1; for cover carrier (type 1); 1 m long

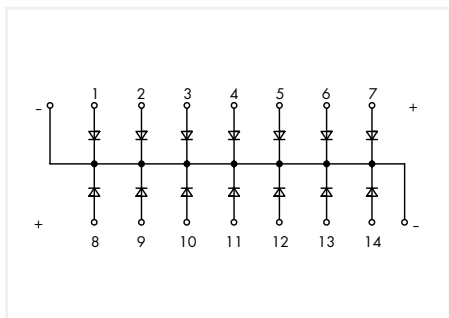
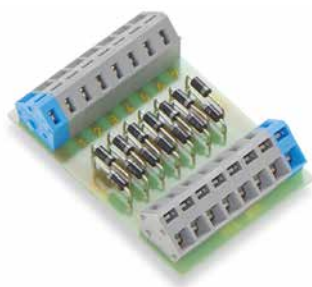
Item No.	Pack. Unit
709-153	10

Marking strip; for mounting carrier; 7.5 mm wide; 50 m reel

Item No.	Pack. Unit
709-178	1

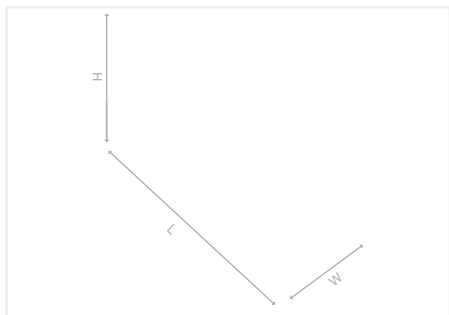
8

## Component Module with Diodes 289 Series



Component Module with Diodes; with 14 diodes;  
1N4007 diode; with common cathode

	Item No.	Pack. Unit
	289-111	1



### Notice!

Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover.

The installation regulations must be observed for each individual application.

### Note:

Max. admissible current per the manufacturer's data sheet – with all diodes loaded, the continuous current must be reduced.

### Electrical Data

Operating voltage	≤ 250 VAC/DC
Rectified current for each diode	1 A
Forward voltage per diode	1.1 V
Forward current per diode (resistive)	1 A
Peak reverse voltage	1000 V
Leakage current	50 μA

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV
Protection class	IP00

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	47 mm / 1.85 inch
Height from upper-edge of DIN-rail	31.5 mm / 1.24 inch
Depth	65.5 mm / 2.579 inch

### Mechanical Data

Mounting type	Mounting on DIN-rail via DIN-rail adapter
---------------	-------------------------------------------

### Material Data

Weight	25.6 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
-----------------------------------------	----------------

### Accessories



Mounting carrier; for screw or DIN-rail mounting

	Item No.	Pack. Unit
	288-001	50



Universal mounting foot; for DIN-15/35/32 rails

	Item No.	Pack. Unit
	288-002	100



Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts

	Item No.	Pack. Unit
	709-167	10

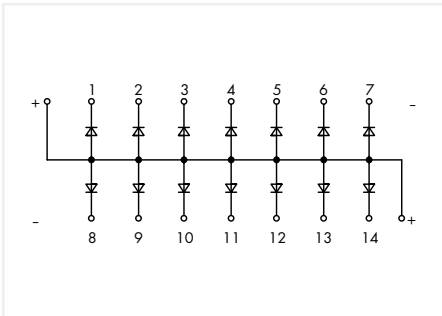
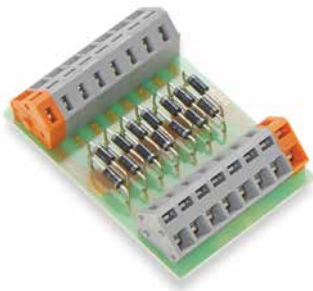


Cover; Type 1; for cover carrier (type 1); 1 m long

	Item No.	Pack. Unit
	709-153	10

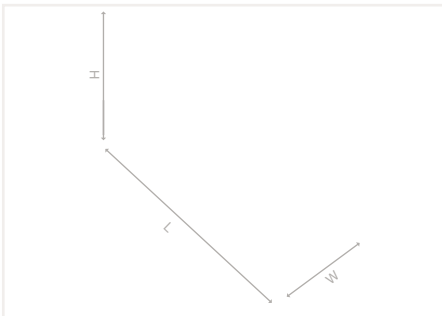


# Component Module with Diodes 289 Series



Component Module with Diodes; with 14 diodes;  
1N4007 diode; with common anode

Item No.	Pack. Unit
289-121	1



**Notice!**  
Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover.  
The installation regulations must be observed for each individual application.

**Note:**  
Max. admissible current per the manufacturer's data sheet – with all diodes loaded, the continuous current must be reduced.

### Electrical Data

Operating voltage	≤ 250 VAC/DC
Rectified current for each diode	1 A
Forward voltage per diode	1.1 V
Forward current per diode (resistive)	1 A
Peak reverse voltage	1000 V
Reverse current per diode	50 μA

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV
Protection class	IP00

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	47 mm / 1.85 inch
Height from upper-edge of DIN-rail	31.5 mm / 1.24 inch
Depth	65.5 mm / 2.579 inch

### Mechanical Data

Mounting type	Mounting on DIN-rail via DIN-rail adapter
---------------	-------------------------------------------

### Material Data

Weight	25.3 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
-----------------------------------------	----------------

### Accessories



Mounting carrier; for screw or DIN-rail mounting		
Item No.	Pack. Unit	
288-001	50	



Universal mounting foot; for DIN-15/35/32 rails		
Item No.	Pack. Unit	
288-002	100	

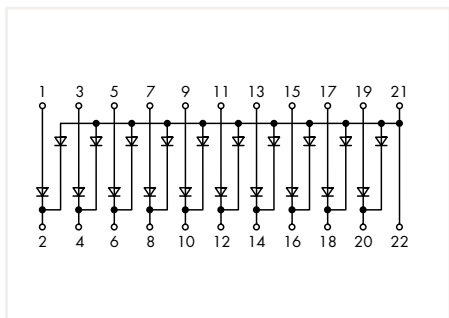


Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts		
Item No.	Pack. Unit	
709-167	10	



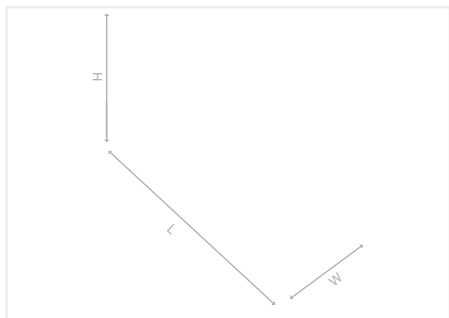
Cover; Type 1; for cover carrier (type 1); 1 m long		
Item No.	Pack. Unit	
709-153	10	

## Component Module with Diodes 289 Series



Component Module with Diodes; with 20 diodes;  
EM513 diode

	Item No.	Pack. Unit
	289-151	1



### Notice!

Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover.

The installation regulations must be observed for each individual application.

### Note:

Max. admissible current per the manufacturer's data sheet – with all diodes loaded, the continuous current must be reduced.

### Electrical Data

Operating voltage	≤ 250 VAC/DC
Rectified current for each diode	1 A
Forward voltage per diode	1.1 V
Forward current per diode (resistive)	1 A
Peak reverse voltage	1600 V
Leakage current	50 μA

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV
Protection class	IP00

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	69 mm / 2.717 inch
Height from upper-edge of DIN-rail	21 mm / 0.827 inch
Depth	50 mm / 1.969 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	35.5 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
-----------------------------------------	----------------

### Accessories



Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts

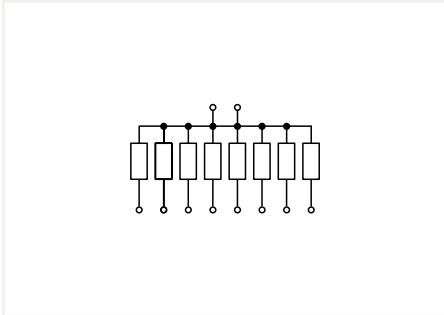
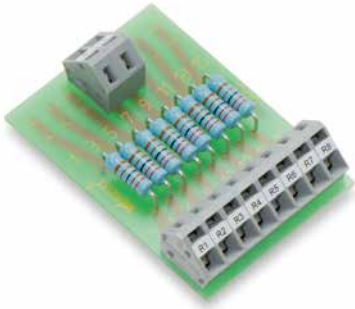
	Item No.	Pack. Unit
	709-167	10



Cover; Type 1; for cover carrier (type 1); 1 m long

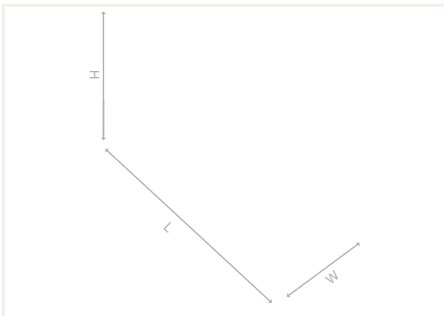
	Item No.	Pack. Unit
	709-153	10

# Component Module with Resistors 289 Series



Component Module with Resistors; with 8 resistors; 2K2 resistor; 1 Watt

Item No.	Pack. Unit
289-113	1



**Note:**

- Max. admissible capacity of a single resistor – with all resistors loaded, the max. admissible power dissipation must be reduced.
- Other resistors are available upon request!

### General Specifications

Operating voltage	≤ 40 VAC/DC
Power dissipation, component (P70)	1 W
Resistance	2K2
Resistor type	DIN 0414
Temperature coefficient	50 ppm
Tolerance	± 1 %

### Safety and Protection

Rated voltage	250 V
Rated surge voltage	4 kV

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	47 mm / 1.85 inch
Height from upper-edge of DIN-rail	31.5 mm / 1.24 inch
Depth	65.5 mm / 2.579 inch

### Mechanical Data

Mounting type	Mounting on DIN-rail via DIN-rail adapter
---------------	-------------------------------------------

### Material Data

Weight	18.9 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
-----------------------------------------	----------------

### Accessories



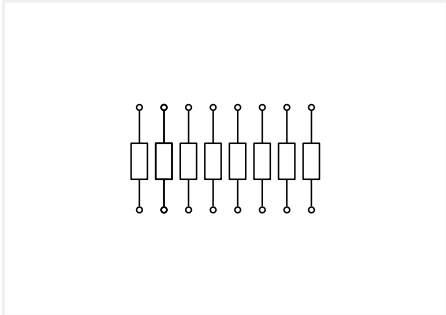
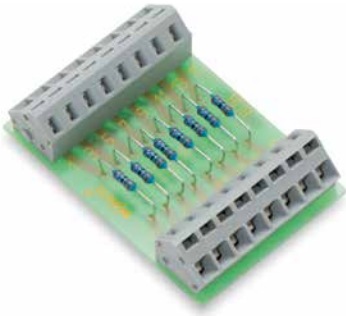
Mounting carrier; for screw or DIN-rail mounting	Item No.	Pack. Unit
	288-001	50



Universal mounting foot; for DIN-15/35/32 rails	Item No.	Pack. Unit
	288-002	100

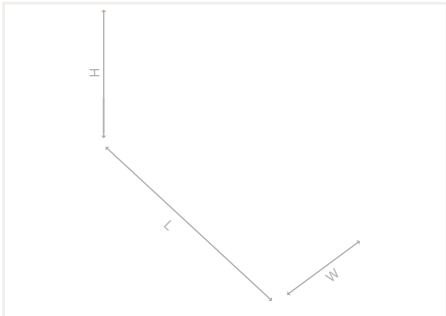
8

## Component Module with Resistors 289 Series



Component Module with Resistors; with 8 resistors;  
2K7 resistor; 0.6 Watt

	Item No.	Pack. Unit
	289-114	1



### Note:

- Max. admissible capacity of a single resistor – with all resistors loaded, the max. admissible power dissipation must be reduced.
- Other resistors are available upon request!

### General Specifications

Operating voltage	≤ 40 VAC/DC
Power dissipation, component (P70)	0.6 W
Resistance	2K7
Resistor type	DIN 0207
Temperature coefficient	50 ppm
Tolerance	±1 %

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	47 mm / 1.85 inch
Height from upper-edge of DIN-rail	31.5 mm / 1.24 inch
Depth	65.5 mm / 2.579 inch

### Mechanical Data

Mounting type	Mounting on DIN-rail via DIN-rail adapter
---------------	-------------------------------------------

### Material Data

Weight	23.4 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
-----------------------------------------	----------------

### Accessories



Mounting carrier; for screw or DIN-rail mounting

	Item No.	Pack. Unit
	288-001	50



Universal mounting foot; for DIN-15/35/32 rails

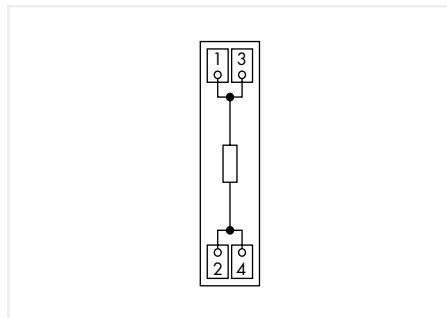
	Item No.	Pack. Unit
	288-002	100

# Component Module with Resistors

## 289 Series

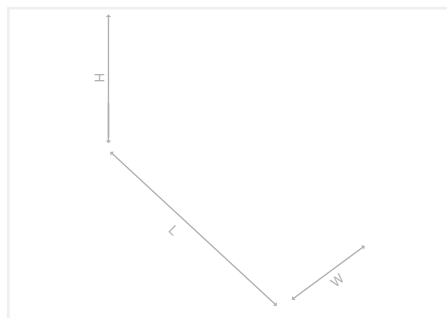


Picture of 289-128/003-000



### Component Module with a Resistor; with 1 resistor; 5 Watt

Resistance	Item No.	Pack. Unit
100R	289-128/005-000	1
270R	289-128/006-000	1
2K4	289-128/001-000	1
4K7	289-128/002-000	1
6K8	289-128/003-000	1
9K1	289-128	1



### Notice!

Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover. The installation regulations must be observed for each individual application.

### Note:

- Depending on operating conditions, the components' temperature may exceed the limit temperature for accessible parts.
- Other resistors are available upon request!

### General Specifications

Power dissipation, component (P70)	5 W
Temperature coefficient	50 ppm
Tolerance	±10 %

### Safety and Protection

Protection class	IP00*
------------------	-------

### Connection Data

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	13 mm / 0.512 inch
Height from upper-edge of DIN-rail	34 mm / 1.339 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

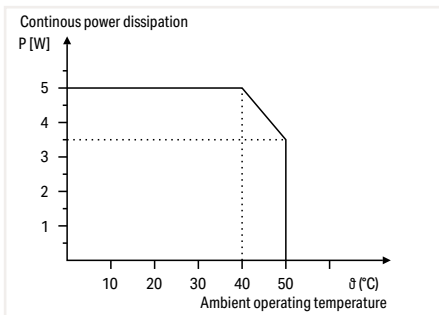
Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	19.1 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C (derating must be observed)
Surrounding air temperature (storage)	-40 ... +70 °C



Derating

### Accessories

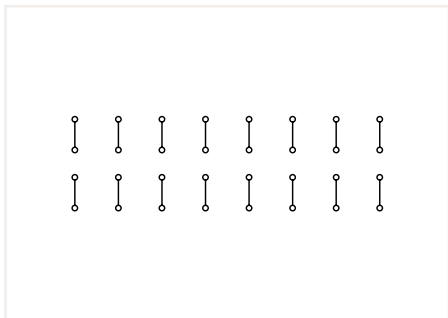
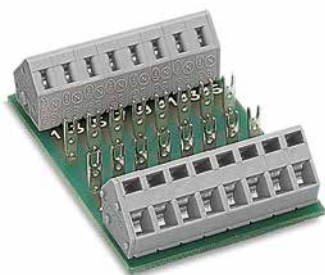


Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts		
Item No.	Pack. Unit	
709-167	10	



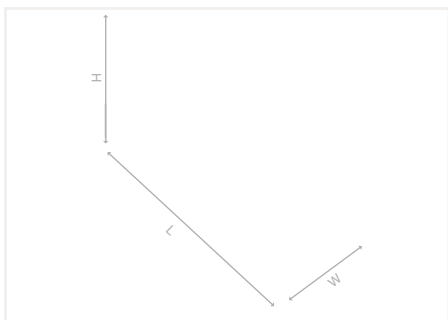
Cover; Type 1; for cover carrier (type 1); 1 m long		
Item No.	Pack. Unit	
709-153	10	

# PCB for Self-Assembly 289 Series



PCB for Self-Assembly; with 8 mounting positions

	Item No.	Pack. Unit
	289-102	1
with solder terminals	289-131	1



**Notice!**

Live parts are likely to be touched! Protection against direct contact must be provided by the equipment manufacturer, e.g., using a WAGO 709 Series Cover (see "Accessories") or a similar cover. The installation regulations must be observed for each individual application.

**General Specifications**

Operating voltage	≤ 250 VAC/DC
Nominal current	3 A

**Safety and Protection**

Protection class	IP00
------------------	------

**Connection Data**

Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	5 ... 6 mm / 0.2 ... 0.24 inch

**Physical Data**

Width	47 mm / 1.85 inch
Height from upper-edge of DIN-rail	31.5 mm / 1.24 inch
Depth	65.5 mm / 2.579 inch

**Mechanical Data**

Mounting type	Mounting on DIN-rail via DIN-rail adapter
---------------	-------------------------------------------

**Material Data**

Weight	22.2 g
--------	--------

**Environmental Requirements**

Surrounding air temperature (operation)	-25 ... +40 °C
-----------------------------------------	----------------

**Accessories**



Mounting carrier; for screw or DIN-rail mounting		
Item No.	Pack. Unit	
288-001	50	



Universal mounting foot; for DIN-15/35/32 rails		
Item No.	Pack. Unit	
288-002	100	

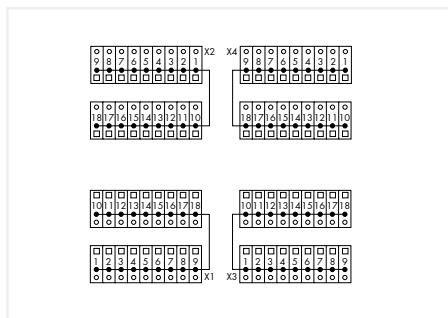
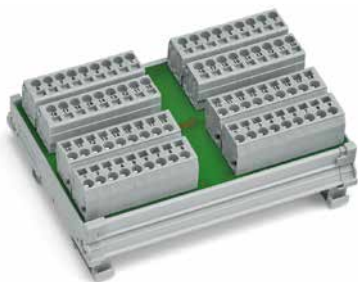


Cover carrier; Type 1; incl. mounting/securing screws and knurled nuts		
Item No.	Pack. Unit	
709-167	10	



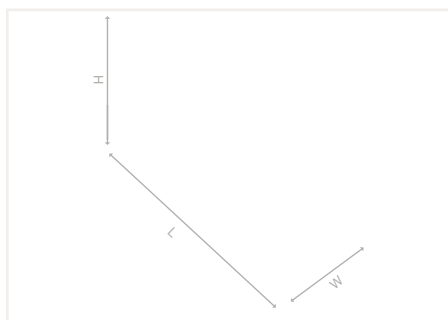
Cover; Type 1; for cover carrier (type 1); 1 m long		
Item No.	Pack. Unit	
709-153	10	

# Potential Distribution Module 288 Series



Potential Distribution Module; 4 potentials;  
each with 18 connection points

Item No.	Pack. Unit
288-825	1



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	12 A
Current per connection (max.)	12 A

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV

### Connection Data

Total number of potentials	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip Length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	115 mm / 4.528 inch
Height from upper-edge of DIN-rail	45 mm / 1.772 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

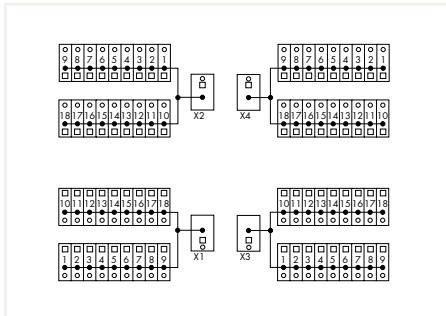
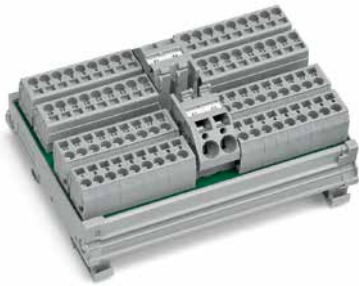
### Material Data

Weight	156.6 g
--------	---------

### Environmental Requirements

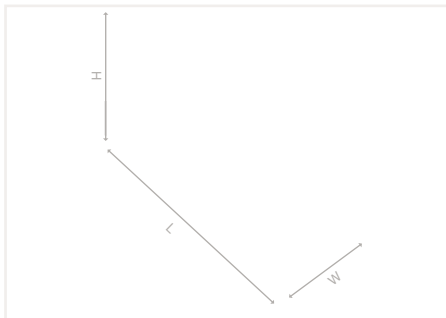
Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +80 °C

## Potential Distribution Module 288 Series



Potential Distribution Module; 4 potentials;  
each with 19 connection points

Item No.	Pack. Unit
288-837	1



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	32 A
Current per connection (max.)	12 A

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV

### Connection Data

Total number of potentials	4
Connection type 1	Power supply
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Fine-stranded conductor 1	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Strip length 1	11 ... 12 mm / 0.43 ... 0.47 inch
Connection type 2	Connection points
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	115 mm / 4.528 inch
Height from upper-edge of DIN-rail	45 mm / 1.772 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	178.2 g
--------	---------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +80 °C

### Accessories

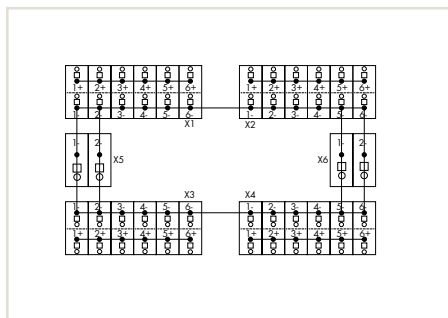


Comb-style jumper bar; 2-way

Item No.	Pack. Unit
745-382	250 (50)

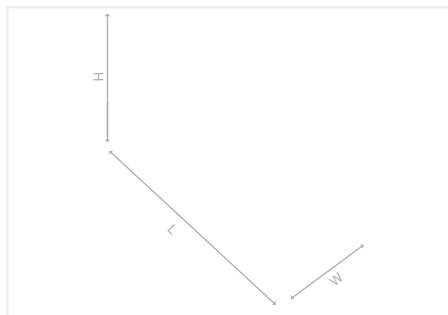


## Potential Distribution Module 288 Series



Potential Distribution Module; 4 potentials;  
each with 6 connection points

Item No.	Pack. Unit
288-867	1



### Features:

- May be used with electronic circuit breakers for 24 and 0 VDC power distribution, as a substitute for rail-mount terminal blocks
- Four potential groups for four output circuits
- Six connection points per potential group for positive and negative potentials
- On-unit commoned negative potential with optional commoning to adjacent modules via comb-style jumper bar (745-682)
- Marker carrier is available

### General Specifications

Nominal operating voltage	24 VDC
Total current 0 V (max.)	40 A
Total current per potential (max.)	10 A
Current per connection (max.)	10 A

### Safety and Protection

Pollution degree	2
Rated voltage	50 V
Rated surge voltage	0.8 kV

### Connection Data

Total number of potentials	4
Connection type 1	Connection points
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 1	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 1	5 ... 6 mm / 0.2 ... 0.24 inch
Connection type 2	Power supply
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.2 ... 16 mm <sup>2</sup> / 24 ... 6 AWG
Fine-stranded conductor 2	0.2 ... 16 mm <sup>2</sup> / 24 ... 6 AWG
Strip length 2	12 ... 13 mm / 0.47 ... 0.51 inch

### Physical Data

Width	105 mm / 4.134 inch
Height from upper-edge of DIN-rail	50 mm / 1.969 inch
Depth	70 mm / 2.756 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	136.2 g
--------	---------

### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Surrounding air temperature (storage)	-40 ... +70 °C

### Accessories

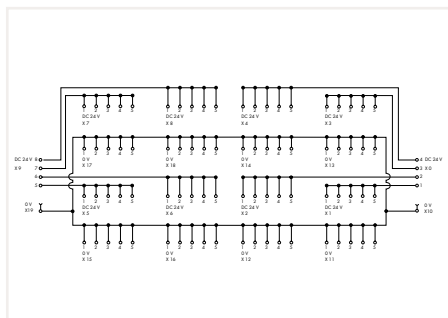


Comb-style jumper bar; 2-way

Item No.	Pack. Unit
745-682	400 (50)

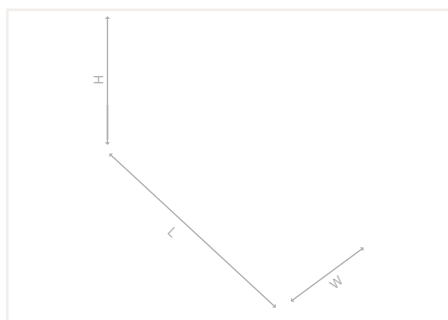


# Potential Distribution Module 288 Series



Potential Distribution Module; 8 potentials;  
each with 6 connection points;  
with 42 ground connection points

Item No.	Pack. Unit
288-870/000-040	1



### Features:

- May be used with electronic circuit breakers for 24 and 0 VDC power distribution, as a substitute for rail-mount terminal blocks
- Pre-wiring and electrical isolation of current paths via pluggable *picoMAX*® Female Headers
- Optional coding pins (2092-1610) protect against any inadvertent mixing of female headers
- Optional gripping plates with sliding connector release (2092-1601/002-000 or 2092-1602/002-000) provide conductor strain relief
- 0 V may be supplied to the adjacent modules via comb-style jumper bar (745-682) (Derating with jumper bar: -1 A/K > 60 °C surrounding air temperature)

### General Specifications

Nominal operating voltage	24 VDC
Total current 0 V (max.)	76 A
Total current per potential (max.)	10 A
Current per connection (max.)	10 A

### Connection Data

Total number of potentials	8
Connection type 1	Power supply 0 V
Mating direction 1	45°
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.2 ... 16 mm <sup>2</sup> / 24 ... 6 AWG
Fine-stranded conductor 1	0.2 ... 16 mm <sup>2</sup> / 24 ... 6 AWG
Strip length 1	12 ... 13 mm / 0.47 ... 0.51 inch
Connection type 2	Power supply 24 V; connection points
Mating direction 2	Vertical
Connection technology 2	Push-in CAGE CLAMP®
Solid conductor 2	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Fine-stranded conductor 2	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Strip length 2	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	154 mm / 6.063 inch
Height from upper-edge of DIN-rail	49 mm / 1.929 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	226.9 g
--------	---------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C (no condensation)
Surrounding air temperature (storage)	-40 ... +85 °C

### Accessories



Comb-style jumper bar; 2-way



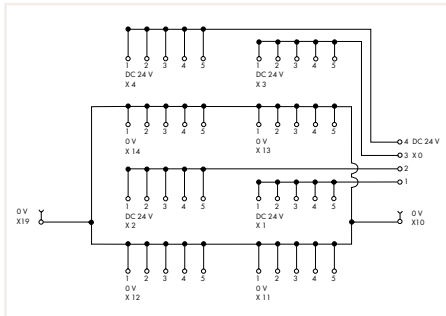
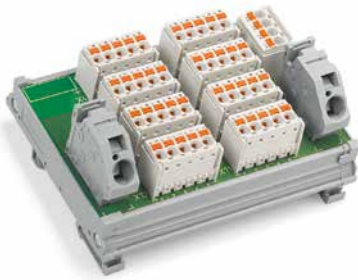
Coding pin carrier



Gripping plate with sliding connector release

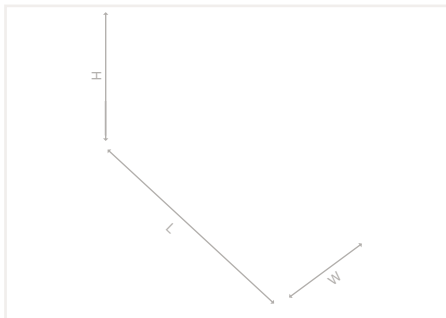
Item No.	Pack. Unit	Item No.	Pack. Unit	Description	Item No.	Pack. Unit
745-682	400 (50)	2092-1610	100 (25)	3- to 4-pole	2092-1601/002-000	100 (25)
				5- to 8-pole	2092-1602/002-000	100 (25)

# Potential Distribution Module 288 Series



Potential Distribution Module; 4 potentials;  
each with 6 connection points;  
with 22 ground connection points

Item No.	Pack. Unit
288-870/000-030	1



### Features:

- May be used with electronic circuit breakers for 24 and 0 VDC power distribution, as a substitute for rail-mount terminal blocks
- Pre-wiring and electrical isolation of current paths via pluggable *picoMAX*® Female Headers
- Optional coding pins (2092-1610) protect against any inadvertent mixing of female headers
- Optional gripping plates with sliding connector release (2092-1601/002-000 or 2092-1602/002-000) provide conductor strain relief
- 0 V may be supplied to the adjacent modules via comb-style jumper bar (745-682)

### General Specifications

Nominal operating voltage	24 VDC
Total current 0 V (max.)	40 A
Total current per potential (max.)	10 A
Current per connection (max.)	10 A

### Connection Data

Total number of potentials	4
Connection type 1	Power supply 0 V
Mating direction 1	45°
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.2 ... 16 mm <sup>2</sup> / 24 ... 6 AWG
Fine-stranded conductor 1	0.2 ... 16 mm <sup>2</sup> / 24 ... 6 AWG
Strip length 1	12 ... 13 mm / 0.47 ... 0.51 inch
Connection type 2	Power supply 24 V; connection points
Mating direction 2	Vertical
Connection technology 2	Push-in CAGE CLAMP®
Solid conductor 2	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Fine-stranded conductor 2	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Strip length 2	9 ... 10 mm / 0.35 ... 0.39 inch

### Physical Data

Width	100 mm / 3.937 inch
Height from upper-edge of DIN-rail	49 mm / 1.929 inch
Depth	85 mm / 3.346 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	140.4 g
--------	---------

### Environmental Requirements

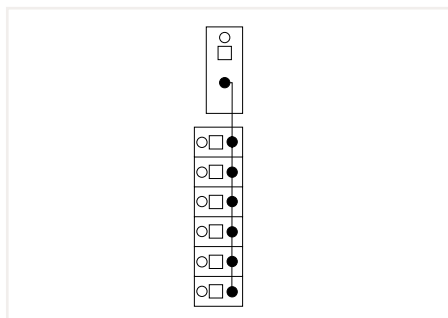
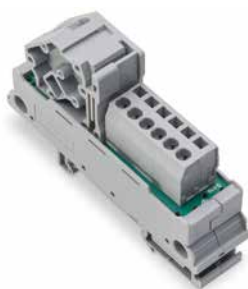
Surrounding air temperature (operation)	-25 ... +70 °C (no condensation)
Surrounding air temperature (storage)	-40 ... +85 °C

### Accessories



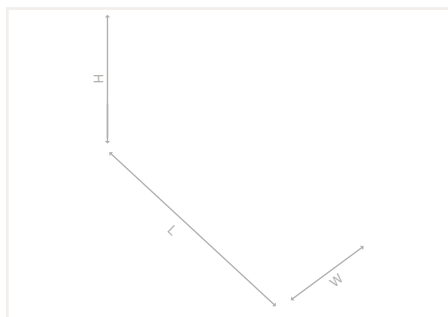
Comb-style jumper bar; 2-way		Coding pin carrier		Gripping plate with sliding connector release		
Item No.	Pack. Unit	Item No.	Pack. Unit	Description	Item No.	Pack. Unit
745-682	400 (50)	2092-1610	100 (25)	3- to 4-pole	2092-1601/002-000	100 (25)
				5- to 8-pole	2092-1602/002-000	100 (25)

## Potential Distribution Module 830 Series



Potential Distribution Module; 1 potential;  
with 1 input clamping point; Conductor cross section  
up to 16 mm<sup>2</sup>/6 AWG; with 6 output clamping points;  
Conductor cross section up to 2.5 mm<sup>2</sup>/12 AWG

Color	Item No.	Pack. Unit
gray	830-800/000-302	10
blue	830-800/000-302/ 000-006	10



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	65 A
Current per connection (max.)	12 A

### Connection Data

Total number of potentials	1
Connection type 1	Input
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.2 ... 16 mm <sup>2</sup> / 24 ... 6 AWG
Fine-stranded conductor 1	0.2 ... 16 mm <sup>2</sup> / 24 ... 6 AWG
Strip length 1	11 ... 12 mm / 0.43 ... 0.47 inch
Connection type 2	Output
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	21 mm / 0.81 inch
Height from upper-edge of DIN-rail	49 mm / 1.98 inch
Depth	85 mm / 3.35 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	51 g
--------	------

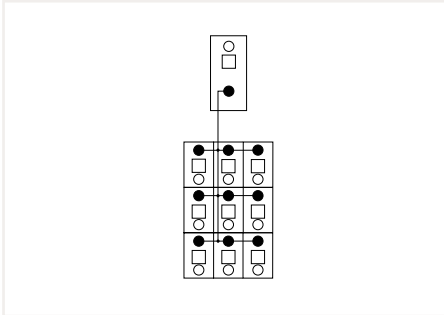
### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Relative humidity	≤ 95 % (no condensation permissible)

### Standards and Specifications

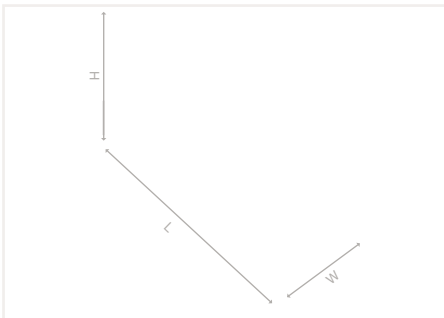
Standards/specifications	cULus 61010-2-201
--------------------------	-------------------

## Potential Distribution Module 830 Series



Potential Distribution Module; 1 potential;  
with 1 input clamping point; Conductor cross section  
up to 16 mm<sup>2</sup>/6 AWG; with 9 output clamping points;  
Conductor cross section up to 2.5 mm<sup>2</sup>/12 AWG

Color	Item No.	Pack. Unit
gray	830-800/000-303	10



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	65 A
Current per connection (max.)	10 A

### Connection Data

Total number of potentials	1
Connection type 1	Input
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.2 ... 16 mm <sup>2</sup> / 24 ... 6 AWG
Fine-stranded conductor 1	0.2 ... 16 mm <sup>2</sup> / 24 ... 6 AWG
Strip length 1	11 ... 12 mm / 0.43 ... 0.47 inch
Connection type 2	Output
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	21 mm / 0.81 inch
Height from upper-edge of DIN-rail	62 mm / 2.44 inch
Depth	85 mm / 3.35 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	63 g
--------	------

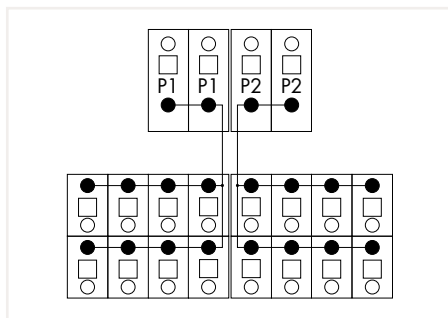
### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Relative humidity	≤ 95 % (no condensation permissible)

### Standards and Specifications

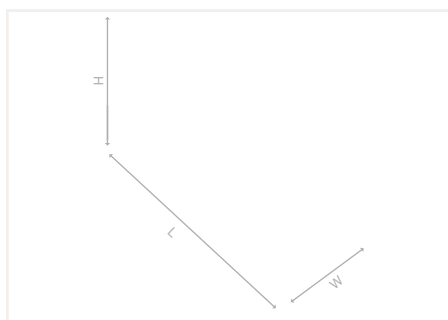
Standards/specifications	cULus 61010-2-201
--------------------------	-------------------

## Potential Distribution Module 830 Series



Potential Distribution Module; 2 potentials;  
with 2 input clamping points; Conductor cross section  
up to 6 mm<sup>2</sup>/10 AWG; each with 8 output clamping  
points; Conductor cross section up to 2.5 mm<sup>2</sup>/12 AWG

Color	Item No.	Pack. Unit
gray	830-800/000-305	6



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	30 A
Current per connection (max.)	10 A

### Connection Data

Total number of potentials	2
Connection type 1	Input
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Fine-stranded conductor 1	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Strip length 1	11 ... 12 mm / 0.43 ... 0.47 inch
Connection type 2	Output
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	49 mm / 1.92 inch
Height from upper-edge of DIN-rail	38 mm / 1.47 inch
Depth	55 mm / 2.17 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	70 g
--------	------

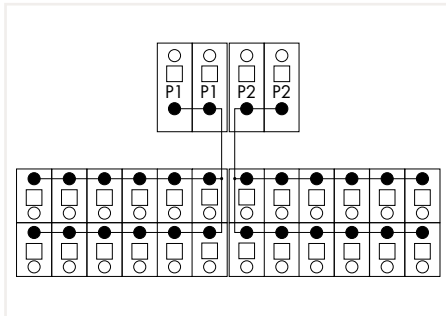
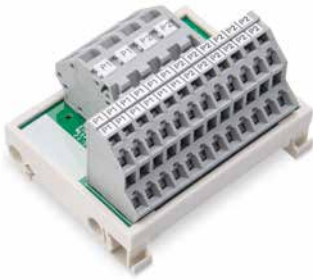
### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Relative humidity	≤ 95 % (no condensation permissible)

### Standards and Specifications

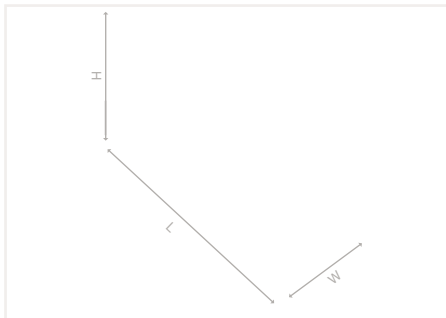
Standards/specifications	cULus 61010-2-201
--------------------------	-------------------

## Potential Distribution Module 830 Series



Potential Distribution Module; 2 potentials;  
with 2 input clamping points; Conductor cross section  
up to 6 mm<sup>2</sup>/10 AWG; each with 12 output clamping  
points; Conductor cross section up to 2.5 mm<sup>2</sup>/12 AWG

Color	Item No.	Pack. Unit
gray	830-800/000-306	6



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	30 A
Current per connection (max.)	10 A

### Connection Data

Total number of potentials	2
Connection type 1	Input
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Fine-stranded conductor 1	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Strip length 1	11 ... 12 mm / 0.43 ... 0.47 inch
Connection type 2	Output
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	69 mm / 2.72 inch
Height from upper-edge of DIN-rail	38 mm / 1.47 inch
Depth	55 mm / 2.17 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	103.1 g
--------	---------

### Environmental Requirements

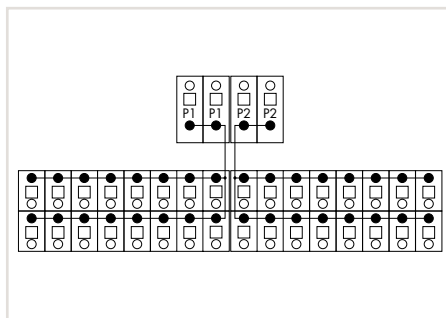
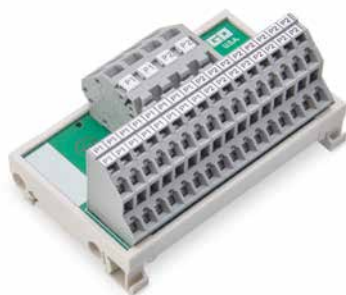
Surrounding air temperature (operation)	-20 ... +50 °C
Relative humidity	≤ 95 % (no condensation permissible)

### Standards and Specifications

Standards/specifications	cULus 61010-2-201
--------------------------	-------------------

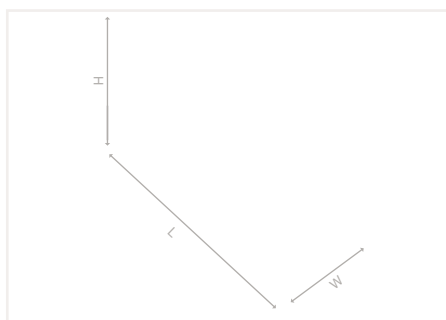


## Potential Distribution Module 830 Series



Potential Distribution Module; 2 potentials;  
with 2 input clamping points; Conductor cross section  
up to 6 mm<sup>2</sup>/10 AWG; each with 16 output clamping  
points; Conductor cross section up to 2.5 mm<sup>2</sup>/12 AWG

Color	Item No.	Pack. Unit
gray	830-800/000-307	6



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	30 A
Current per connection (max.)	10 A

### Connection Data

Total number of potentials	2
Connection type 1	Input
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Fine-stranded conductor 1	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Strip length 1	11 ... 12 mm / 0.43 ... 0.47 inch
Connection type 2	Output
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	89 mm / 3.51 inch
Height from upper-edge of DIN-rail	38 mm / 1.47 inch
Depth	55 mm / 2.17 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	118.9 g
--------	---------

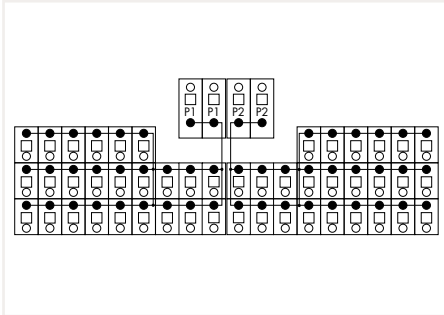
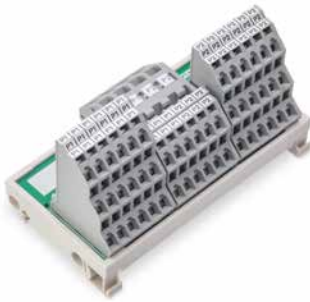
### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Relative humidity	≤ 95 % (no condensation permissible)

### Standards and Specifications

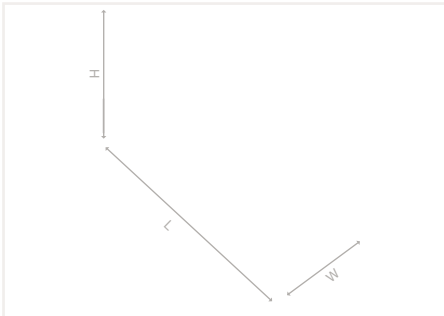
Standards/specifications	cULus 61010-2-201
--------------------------	-------------------

## Potential Distribution Module 830 Series



Potential Distribution Module; 2 potentials;  
with 2 input clamping points; Conductor cross section  
up to 16 mm<sup>2</sup>/6 AWG; each with 24 output clamping  
points; Conductor cross section up to 2.5 mm<sup>2</sup>/12 AWG

Color	Item No.	Pack. Unit
gray	830-800/000-308	6



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	30 A
Current per connection (max.)	10 A

### Connection Data

Total number of potentials	2
Connection type 1	Input
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Fine-stranded conductor 1	0.2 ... 6 mm <sup>2</sup> / 24 ... 10 AWG
Strip length 1	11 ... 12 mm / 0.43 ... 0.47 inch
Connection type 2	Output
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	102 mm / 4.02 inch
Height from upper-edge of DIN-rail	38 mm / 1.47 inch
Depth	55 mm / 2.17 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	158.9 g
--------	---------

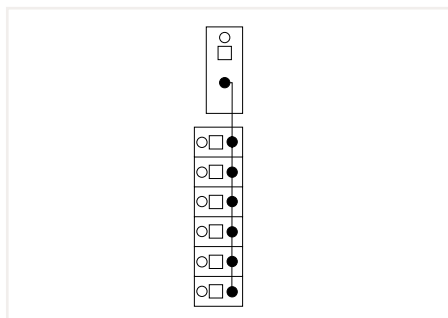
### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Relative humidity	≤ 95 % (no condensation permissible)

### Standards and Specifications

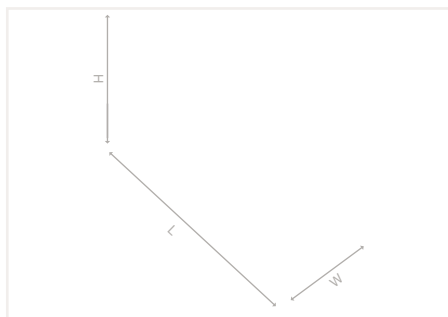
Standards/specifications	cULus 61010-2-201
--------------------------	-------------------

## Potential Distribution Module 830 Series



Potential Distribution Module; 1 potential; with 1 input clamping point; Conductor cross section up to 16 mm<sup>2</sup>/6 AWG; Lever; with 6 output clamping points; Conductor cross section up to 2.5 mm<sup>2</sup>/12 AWG

Color	Item No.	Pack. Unit
gray	830-800/000-312	10
blue	830-800/000-312/000-006	10



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	65 A
Current per connection (max.)	12 A

### Connection Data

Total number of potentials	1
Connection type 1	Input
Connection technology 1	CAGE CLAMP®
Solid conductor 1	1.5 ... 16 mm <sup>2</sup> / 16 ... 6 AWG
Fine-stranded conductor 1	1.5 ... 16 mm <sup>2</sup> / 16 ... 6 AWG
Strip length 1	12 ... 13 mm / 0.47 ... 0.51 inch
Connection type 2	Output
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	21 mm / 0.81 inch
Height from upper-edge of DIN-rail	49 mm / 1.98 inch
Depth	85 mm / 3.35 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	57.8 g
--------	--------

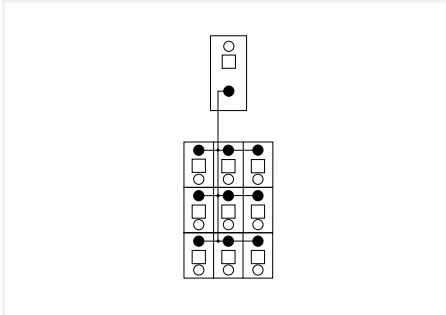
### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Relative humidity	≤ 95 % (no condensation permissible)

### Standards and Specifications

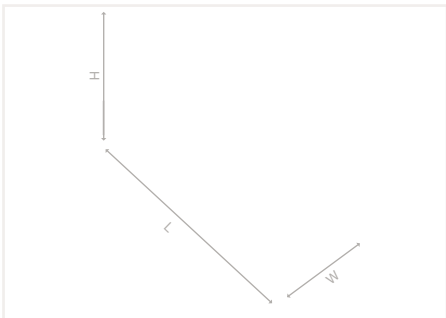
Standards/specifications	cULus 61010-2-201
--------------------------	-------------------

## Potential Distribution Module 830 Series



Potential Distribution Module; 1 potential;  
with 1 input clamping point; Conductor cross section  
up to 16 mm<sup>2</sup>/6 AWG; Lever; with 9 output clamping  
points; Conductor cross section up to 2.5 mm<sup>2</sup>/12 AWG

Color	Item No.	Pack. Unit
gray	830-800/000-313	10



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	65 A
Current per connection (max.)	10 A

### Connection Data

Total number of potentials	1
Connection type 1	Input
Connection technology 1	CAGE CLAMP®
Solid conductor 1	1.5 ... 16 mm <sup>2</sup> / 16 ... 6 AWG
Fine-stranded conductor 1	1.5 ... 16 mm <sup>2</sup> / 16 ... 6 AWG
Strip length 1	12 ... 13 mm / 0.47 ... 0.51 inch
Connection type 2	Output
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	21 mm / 0.81 inch
Height from upper-edge of DIN-rail	62 mm / 2.44 inch
Depth	85 mm / 3.35 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	61.9 g
--------	--------

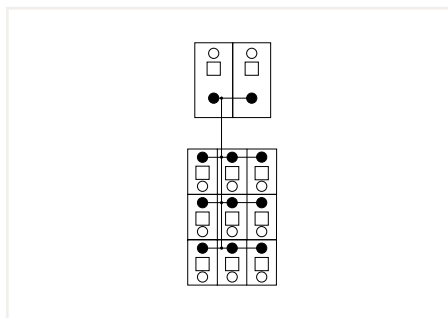
### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Relative humidity	≤ 95 % (no condensation permissible)

### Standards and Specifications

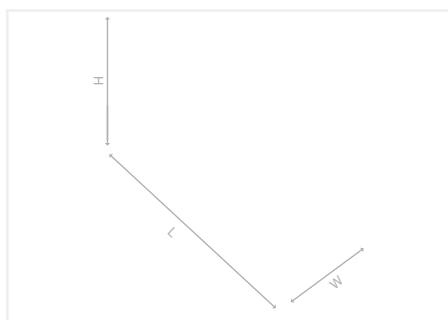
Standards/specifications	cULus 61010-2-201
--------------------------	-------------------

## Potential Distribution Module 830 Series



Potential Distribution Module; 1 potential; with 2 input clamping points; Conductor cross section up to 6 mm<sup>2</sup>/10 AWG; Lever; with 9 output clamping points; Conductor cross section up to 2.5 mm<sup>2</sup>/12 AWG

Color	Item No.	Pack. Unit
gray	830-800/000-314	10



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	30 A
Current per connection (max.)	10 A

### Connection Data

Total number of potentials	1
Connection type 1	Input
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Fine-stranded conductor 1	0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Strip length 1	11 mm / 0.43 inch
Connection type 2	Output
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	21 mm / 0.81 inch
Height from upper-edge of DIN-rail	62 mm / 2.44 inch
Depth	85 mm / 3.35 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	62.6 g
--------	--------

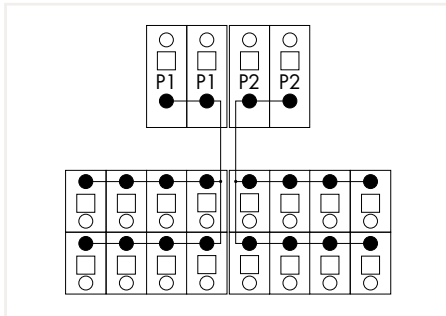
### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Relative humidity	≤ 95 % (no condensation permissible)

### Standards and Specifications

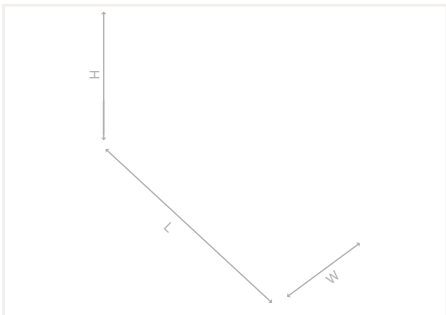
Standards/specifications	cULus 61010-2-201
--------------------------	-------------------

## Potential Distribution Module 830 Series



Potential Distribution Module; 2 potentials;  
with 2 input clamping points; Conductor cross section  
up to 6 mm<sup>2</sup>/10 AWG; Lever, each with 8 output  
clamping points; Conductor cross section up to  
2.5 mm<sup>2</sup>/12 AWG

Color	Item No.	Pack. Unit
gray	830-800/000-315	10



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	30 A
Current per connection (max.)	10 A

### Connection Data

Total number of potentials	2
Connection type 1	Input
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Fine-stranded conductor 1	0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Strip length 1	11 ... 12 mm / 0.43 ... 0.47 inch
Connection type 2	Output
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	49 mm / 1.92 inch
Height from upper-edge of DIN-rail	38 mm / 1.47 inch
Depth	55 mm / 2.17 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	87.5 g
--------	--------

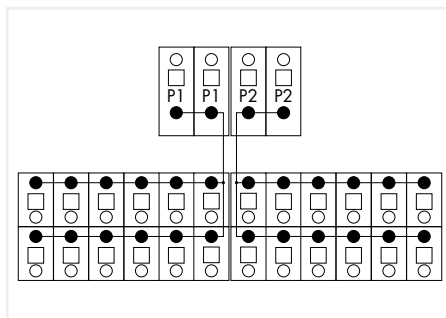
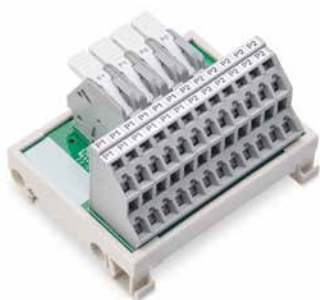
### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Relative humidity	≤ 95 % (no condensation permissible)

### Standards and Specifications

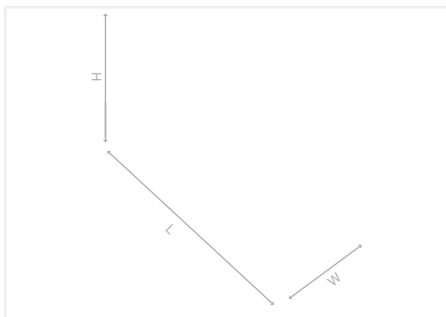
Standards/specifications	cULus 61010-2-201
--------------------------	-------------------

## Potential Distribution Module 830 Series



Potential Distribution Module; 2 potentials;  
with 2 input clamping points; Conductor cross section  
up to 6 mm<sup>2</sup>/10 AWG; Lever; each with 12 output  
clamping points; Conductor cross section up to  
2.5 mm<sup>2</sup>/12 AWG

Color	Item No.	Pack. Unit
gray	830-800/000-316	6



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	30 A
Current per connection (max.)	10 A

### Connection Data

Total number of potentials	2
Connection type 1	Input
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Fine-stranded conductor 1	0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Strip length 1	11 ... 12 mm / 0.43 ... 0.47 inch
Connection type 2	Output
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	69 mm / 2.72 inch
Height from upper-edge of DIN-rail	38 mm / 1.47 inch
Depth	55 mm / 2.17 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	101.6 g
--------	---------

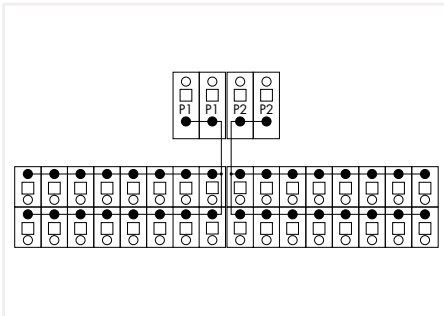
### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Relative humidity	≤ 95 % (no condensation permissible)

### Standards and Specifications

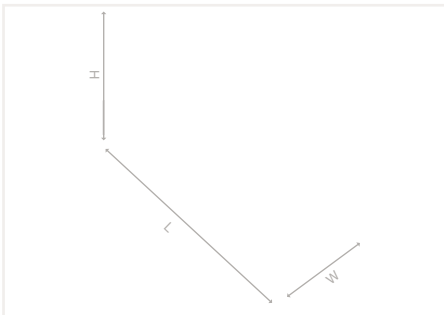
Standards/specifications	cULus 61010-2-201
--------------------------	-------------------

## Potential Distribution Module 830 Series



Potential Distribution Module; 2 potentials;  
with 2 input clamping points; Conductor cross section  
up to 6 mm<sup>2</sup>/10 AWG; Lever; each with 16 output  
clamping points; Conductor cross section up to  
2.5 mm<sup>2</sup>/12 AWG

Color	Item No.	Pack. Unit
gray	830-800/000-317	6



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	30 A
Current per connection (max.)	10 A

### Connection Data

Total number of potentials	2
Connection type 1	Input
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Fine-stranded conductor 1	0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Strip length 1	11 ... 12 mm / 0.43 ... 0.47 inch
Connection type 2	Output
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	89 mm / 3.51 inch
Height from upper-edge of DIN-rail	38 mm / 1.47 inch
Depth	55 mm / 2.17 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	119.7 g
--------	---------

### Environmental Requirements

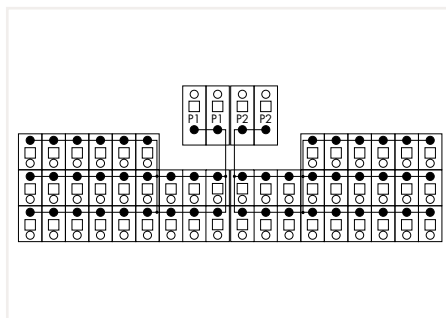
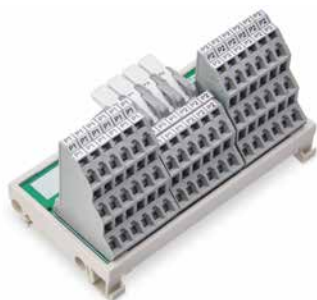
Surrounding air temperature (operation)	-20 ... +50 °C
Relative humidity	≤ 95 % (no condensation permissible)

### Standards and Specifications

Standards/specifications	cULus 61010-2-201
--------------------------	-------------------

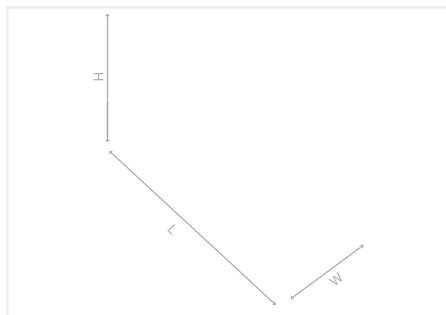


## Potential Distribution Module 830 Series



Potential Distribution Module; 2 potentials;  
with 2 input clamping points; Conductor cross section  
up to 16 mm<sup>2</sup>/6 AWG; Lever; each with 24 output  
clamping points; Conductor cross section up to  
2.5 mm<sup>2</sup>/12 AWG

Color	Item No.	Pack. Unit
gray	830-800/000-318	3



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	30 A
Current per connection (max.)	10 A

### Connection Data

Total number of potentials	2
Connection type 1	Input
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Fine-stranded conductor 1	0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Strip length 1	11 ... 12 mm / 0.43 ... 0.47 inch
Connection type 2	Output
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	102 mm / 4.02 inch
Height from upper-edge of DIN-rail	53 mm / 2.02 inch
Depth	55 mm / 2.17 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	127.4 g
--------	---------

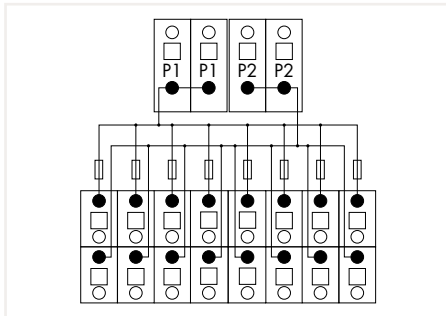
### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Relative humidity	≤ 95 % (no condensation permissible)

### Standards and Specifications

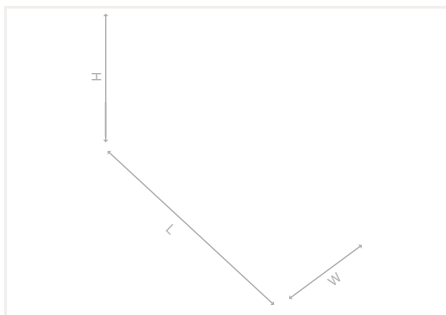
Standards/specifications	cULus 61010-2-201
--------------------------	-------------------

## Potential Distribution Module 830 Series



Potential Distribution Module; 2 potentials; with 2 input clamping points; Conductor cross section up to 6 mm<sup>2</sup>/10 AWG; Lever; each with 8 output clamping points; Conductor cross section up to 2.5 mm<sup>2</sup>/12 AWG; with fuse

Color	Item No.	Pack. Unit
gray	830-800/000-319	3



### General Specifications

Operating voltage	≤ 250 VAC/DC
Total current per potential (max.)	30 A
Fuse capacity (max.)	6.3 A

### Connection Data

Total number of potentials	2
Connection type 1	Input
Connection technology 1	CAGE CLAMP®
Solid conductor 1	0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Fine-stranded conductor 1	0.5 ... 6 mm <sup>2</sup> / 20 ... 10 AWG
Strip length 1	11 ... 12 mm / 0.43 ... 0.47 inch
Connection type 2	Output
Connection technology 2	CAGE CLAMP®
Solid conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor 2	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Strip length 2	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	98 mm / 3.85 inch
Height from upper-edge of DIN-rail	48 mm / 1.89 inch
Depth	106 mm / 4.18 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	181.5 g
--------	---------

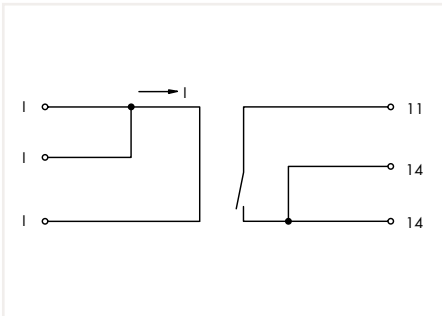
### Environmental Requirements

Surrounding air temperature (operation)	-20 ... +50 °C
Relative humidity	≤ 95 % (no condensation permissible)

### Standards and Specifications

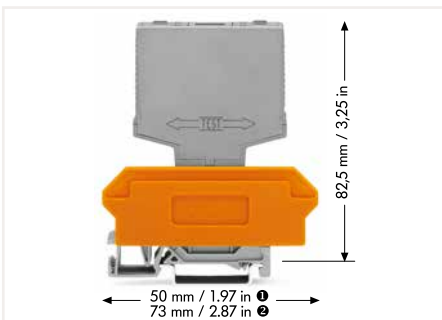
Standards/specifications	cULus 61010-2-201
--------------------------	-------------------

# Current Flow Monitoring Module 286 Series



Current Flow Monitoring Module;  
DC current flow monitoring module; 0.4 ... 3.5 A;  
Relay with 1 make contact (1a)

Item No.	Pack. Unit
286-662	1



### General Specifications

Operating voltage	12 ... 28 VDC
Measurement span (max.)	0.4 ... 3.5 ADC (-20 ... +40 °C) 0.4 ... 3 ADC (-20 ... +60 °C) 0.4 ... 2 ADC (-20 ... +70 °C)
Turn on/off point	0.35 A / 0.07 A
Voltage drop at input	24 ... 210 mV
Response time	0.5 ms
Number of make contacts/switch-on contacts	1
Switching voltage (max.)	200 VDC
Limiting continuous current	0.5 A
Switching power (resistive) max.	10 W (DC)

### Safety and Protection

Dielectric strength input/output (AC, 1 min)	1.5 kV
----------------------------------------------	--------

### Mechanical Data

Mounting type	Pluggable module for receptacle terminal blocks
---------------	-------------------------------------------------

### Material Data

Weight	22.7 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
-----------------------------------------	----------------

### Accessories



Terminal block for pluggable modules; 6-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
17 mm	280-619	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

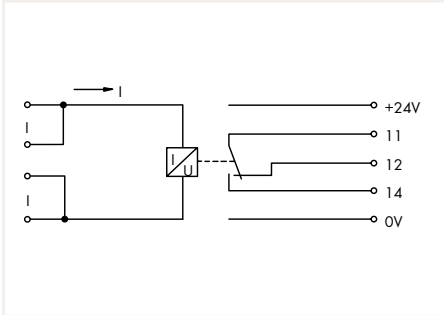
Width	Item No.	Pack. Unit
17 mm	280-609	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
20 mm	280-763	25

# Current Flow Monitoring Module 286 Series



Current Flow Monitoring Module;  
AC current flow monitoring module; 1 ... 10 AAC;  
Relay with 1 changeover contact (1u); adjustable

	Item No.	Pack. Unit
	286-665	1



### General Specifications

Nominal operating voltage	24 VDC
Power consumption at nominal supply voltage	28 mA
Voltage drop at input	23 ... 850 mV
Measurement span (max.)	1 ... 10 A (AC)
Switching threshold (adjustable) min.	1 A
Response time	200 ms
Number of changeover/switchover contacts	1
Number of break contacts/switch-off contacts	1
Limiting continuous current	5 A
Switching voltage (max.)	250 VAC
Switching power (resistive) max.	1250 VA (AC)
Status indicator	Red LED; Energized relay (current < switching threshold)

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV
Dielectric strength input/output (AC, 1 min)	1.5 kV

### Mechanical Data

Mounting type	Pluggable module for receptacle terminal blocks
---------------	-------------------------------------------------

### Material Data

Weight	58 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
Surrounding air temperature (storage)	-40 ... +70 °C

### Accessories



Terminal block for pluggable modules; 10-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
27 mm	280-639	15



Terminal block for pluggable modules; 20-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

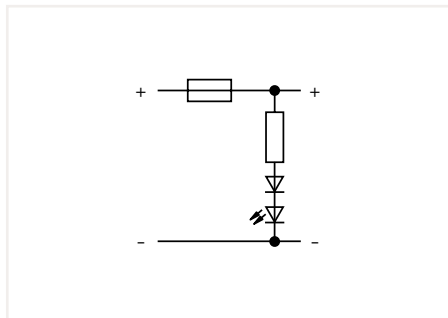
Width	Item No.	Pack. Unit
27 mm	280-629	15



Terminal block for pluggable modules; 20-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

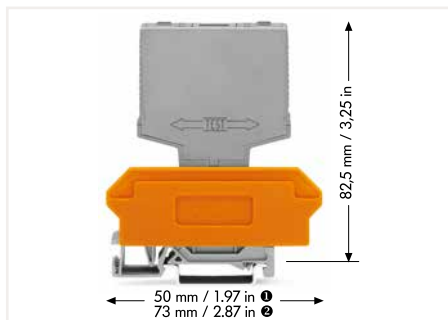
Width	Item No.	Pack. Unit
30 mm	280-765	15

# Component Module with a Fuse 286 Series



Component Module with a Fuse;  
for 5 x 20 mm microfuse; Nominal voltage: 24 VAC/DC

	Item No.	Pack. Unit
	286-890	1



### General Specifications

Nominal operating voltage	24 VAC/DC
Leakage current in case of a blown fuse	5 mA
Fuse capacity (max.)	6.3 A

### Safety and Protection

Pollution degree	3
Rated voltage	250 V
Rated surge voltage	4 kV
Test voltage	2.5 kV

### Physical Data

Width	10 mm / 0.394 inch
-------	--------------------

### Mechanical Data

Mounting type	Pluggable module for receptacle terminal blocks
---------------	-------------------------------------------------

### Material Data

Weight	14.6 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
-----------------------------------------	----------------

8

### Accessories



Terminal block for pluggable modules; 4-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
12 mm	280-618	40



Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

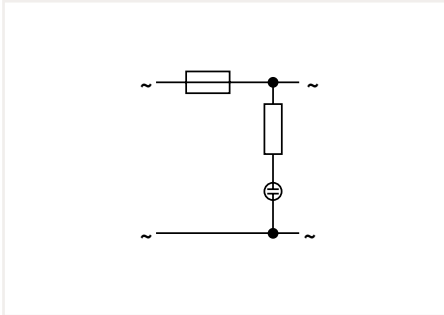
Width	Item No.	Pack. Unit
12 mm	280-608	40



Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

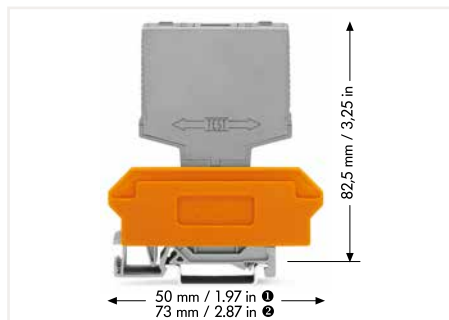
Width	Item No.	Pack. Unit
15 mm	280-762	30

## Component Module with a Fuse 286 Series



Component Module with a Fuse;  
for 5 x 20 mm microfuse; Nominal voltage: 230 VAC/DC

	Item No.	Pack. Unit
	286-891	1



### General Specifications

Nominal operating voltage	230 VAC/DC
Leakage current in case of a blown fuse	0.5 mA
Fuse capacity (max.)	6.3 A

### Safety and Protection

Pollution degree	3
Rated voltage	250 V
Rated surge voltage	4 kV
Test voltage	2.5 kV

### Physical Data

Width	10 mm / 0.394 inch
-------	--------------------

### Mechanical Data

Mounting type	Pluggable module for receptacle terminal blocks
---------------	-------------------------------------------------

### Material Data

Weight	14.1 g
--------	--------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
-----------------------------------------	----------------

### Accessories



Terminal block for pluggable modules; 4-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
12 mm	280-618	40



Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

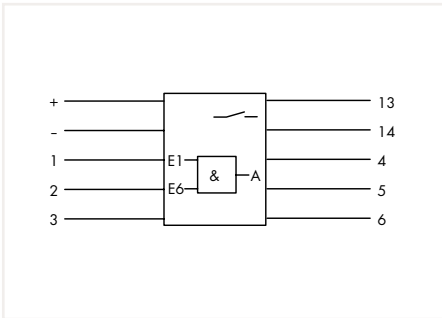
Width	Item No.	Pack. Unit
12 mm	280-608	40



Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

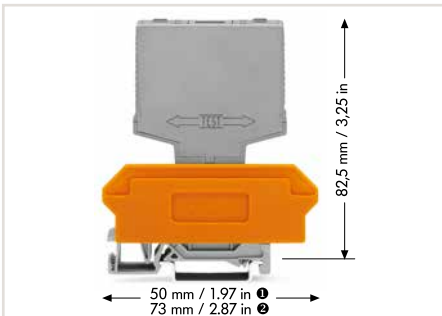
Width	Item No.	Pack. Unit
15 mm	280-762	30

# AND Gate Module 286 Series



AND Gate Module; with 6 inputs

Item No.	Pack. Unit
286-826	1



### General Specifications

Nominal operating voltage	24 VDC
Operating voltage	24 ... 27.5 VDC
Limiting continuous current	3 A
Power consumption at nominal supply voltage	34.6 mA
Number of make contacts/switch-on contacts	1
Switching voltage (max.)	250 VAC; 120 VDC
Switching power (resistive) max.	750 VA / 120 W

### Safety and Protection

Pollution degree	2
Rated voltage	250 V
Rated surge voltage	4 kV
Dielectric strength input/output (AC, 1 min)	2.5 kV

### Physical Data

Width	25 mm / 0.984 inch
-------	--------------------

### Mechanical Data

Mounting type	Pluggable module for receptacle terminal blocks
---------------	-------------------------------------------------

### Material Data

Weight	34 g
--------	------

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +40 °C
-----------------------------------------	----------------

8

### Accessories



Terminal block for pluggable modules; 10-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
27 mm	280-639	15



Terminal block for pluggable modules; 20-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

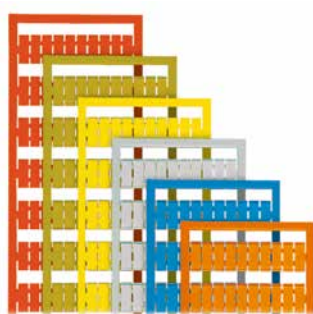
Width	Item No.	Pack. Unit
27 mm	280-629	15



Terminal block for pluggable modules; 20-pole; with 4-conductor terminal blocks; with marker carrier; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
30 mm	280-765	15

## Accessories



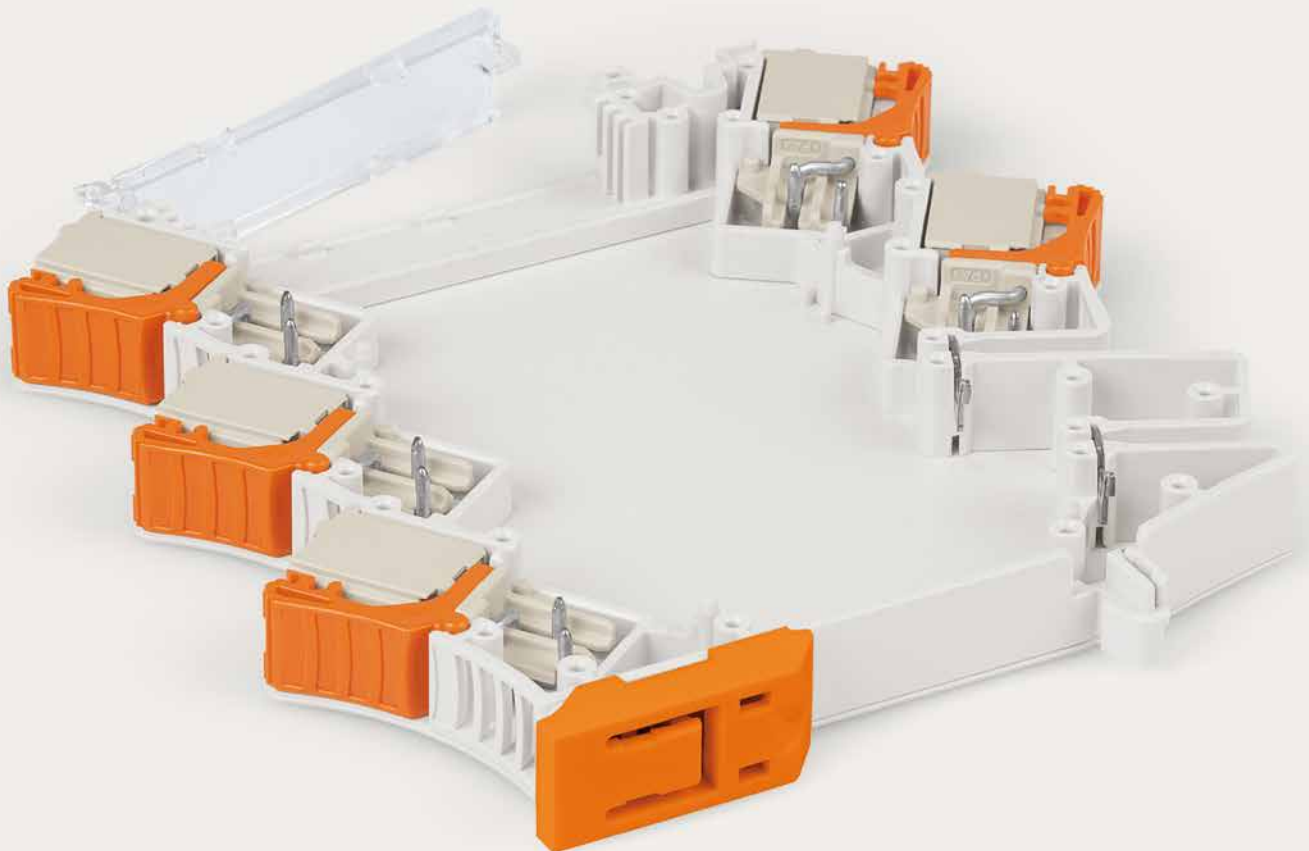
WSB marker card; WSB marker width: 4 mm; 10 strips with 10 markers/card

Marking	Item No.	Pack. Unit
K	209-782	50
1 ... 10 (10 x)	209-702	5
A1; A2; 13; 14	209-952	50
A1; A2; 11; 12	209-953	50
11; 12; 14; A1; A2; A2; 11; 12; 14	209-994	50
12; A1; A2; 24; 11; 14; 21; 22	209-995	50
A1; A1; A2; A2; 11; 12; 13; 14; 23; 24	209-693	50
12; A1; A2; 23; 24; 11; 13; 14; 21; 22	209-691	50
12; A1; A2; 23; 24; 11; 13; 14; 33; 34	209-690	50
14; A1; A2; 33; 34; 13; 23; 24; 43; 44	209-692	50
A1; A2; 32; 31; 34; 42; 41; 12; 11; 14; 22; 21; 24; 44	249-656	50
L+; 1; L-; 11; 12; 13; 14	209-954	50
A1; A2; A3; 11; 12; 14	249-607	50
A1; A1; A2; A2; 12; 11; 11; 14	209-996	50
A1; A1; St; A2; A2; 12; 11; 11; 14	209-601	50
U1; U2; U3; U4; OV; 12; 11; 11; 14; 14	209-951	50
U	209-789	50
A1; A2; A2; 1; 3; 2	209-685	50
A1; A2; A2; 1; 2; 2	209-686	50
A1+; A1+; A2-; A2-; 1; RL1; RL2; 2	209-955	50
A1+; A1+; A2-; A2-; 1+; 1+; A; 2-	249-651	50
+/-	209-552	50
1; 2; 3; OV; +UB; OUT; ERR.; OV	249-622	50
1; 2; OV; +UB; OUT; ERR.; OV	249-623	50
Lin; Lin; Lout; Lout; 24V; UA; UA; OV	209-957	50
Lin; Lin; Lout; 11; 14; 14; Lin; Lin; Lout	249-654	50
lin; lin; lout; lout; 24V; 11; 12; 14; OV	209-997	50
S	209-682	50
V	209-784	50
F1 ... F10	209-787	50
D	209-783	50
+; -; 1; 2; 3; 13; 14; 4; 5; 6	249-608	50
L; N; Ackn.; Failure; Test; N; 14; 24	249-606	50
A1; A2; Ackn.; Failure; 12; 11; 11; 14	249-653	50

WSB marker card; plain; WSB marker width: 4 mm; 10 strips with 10 markers/card



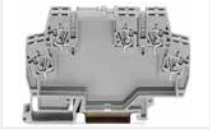


Color	Item No.	Pack. Unit
○ white	209-701	100
● yellow	209-701/000-002	100
● red	209-701/000-005	100
● blue	209-701/000-006	100
○ gray	209-701/000-007	100
● orange	209-701/000-012	100
● light green	209-701/000-017	100
● green	209-701/000-023	100
● violet	209-701/000-024	100



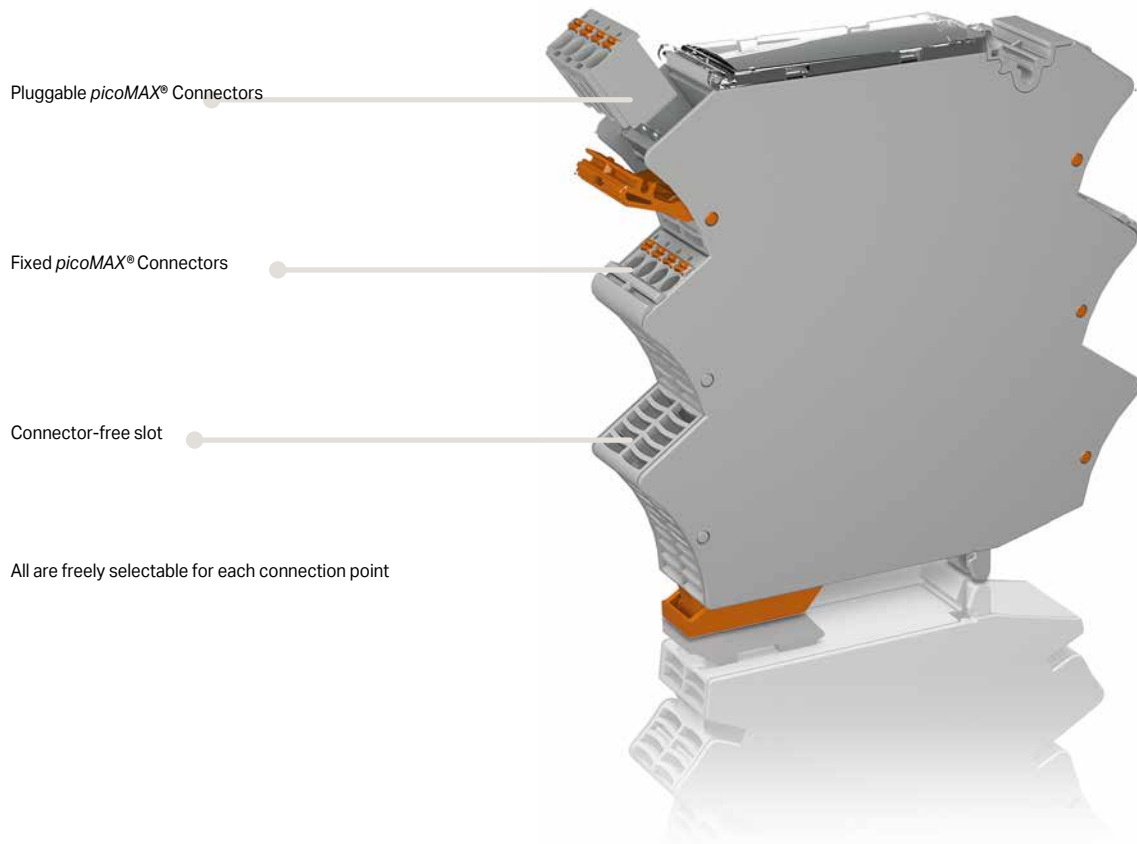


## WAGO Empty Housings

## WAGO Empty Housings

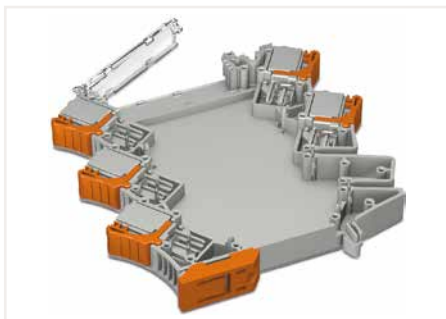
		Page
	<b>Empty Housings; 2857 Series</b>	
	Overview and Configuration	710
	Modular Empty Housings	712
	Stripboards	714
	<b>Empty Component Plug Housings; 280, 286, 786 Series</b>	
	Empty Component Plug Housings; for Receptacle Terminal Blocks; for Self-Assembly	716
	Empty Component Plug Housings; for Carrier Terminal Blocks; for Self-Assembly	718
	<b>Empty Housings; 859 Series</b>	
	Empty Housings; for Rail-Mount Terminal Blocks	720
	<b>Empty Housings; 789 Series</b>	
	DIN-Rail-Mount Enclosures	722
	Accessories; 789 Series	723
	<b>Mounting Carriers; 209, 288 Series</b>	
	DIN-Rail Mount PCB Carriers	724
	DIN-Rail-Mount PCB Carriers and Feet	725

# Modular Empty Housings Overview and Configuration 2857 Series

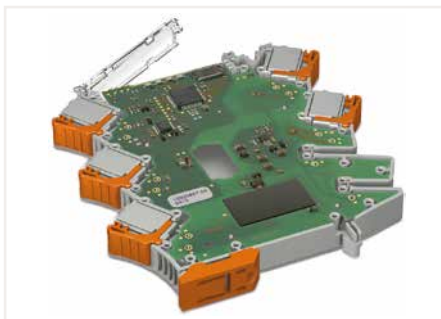


## 9

Supplied as a pre-assembled unit:



1. Pre-assembled unit










2. Insert and solder the PCB.



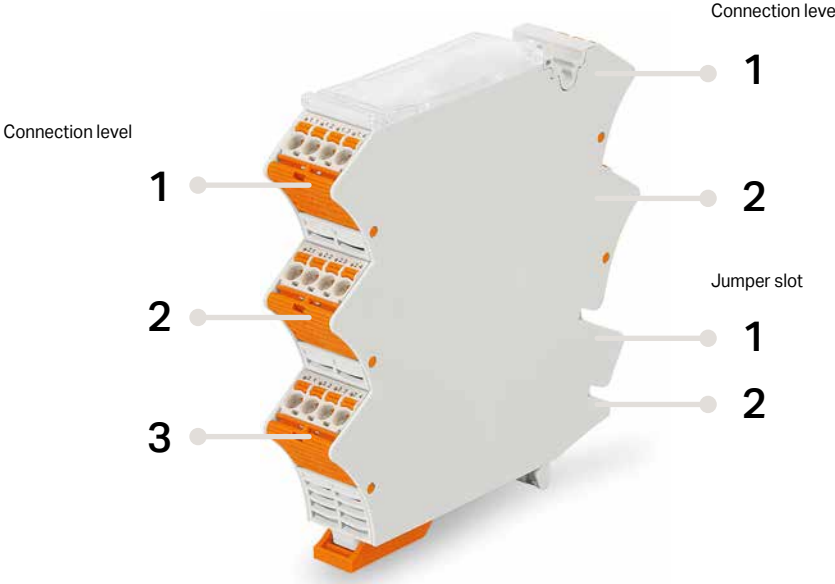
3. Snap on the side wall.

Housing configuration:

Housing width: 12.5 mm	 2857-101	 2857-102	 2857-103	-
Housing width: 22.5 mm	 2857-121	 2857-122	 2857-123	 2857-124
Connection levels	2-2	3-2	3-3	1-1
Jumper slots	2-2	0-2	0-0	2-2

Mixed configuration (fixed/removable/empty slot) upon request!

Example of connection level and jumper slot assignment:



Connection levels	3-2
Jumper slots	0-2

## Modular Empty Housings 2857 Series



- *picoMAX*® female connectors, with coding keys, 4-pole
- Pre-assembled unit
- Flexible conductor termination
- Customizable connection levels
- Various marking options available
- Sealable, transparent cover
- Commoning via jumpers (859-402)

### Electrical Data (*picoMAX*® 5.0 Female Connector)

Ratings per	IEC/EN 60664-1		
Overvoltage category	III	III	II
Pollution degree	3	2	2
Rated voltage	250 V	320 V	630 V
Rated surge voltage	4 kV	4 kV	4 kV
Rated current	16 A	16 A	16 A
Approvals per	UL 1059		
Use Group	B	C	D
Rated voltage UL	300 V	-	300 V
Rated current UL	15 A	-	10 A

### Connection Data

Connection technology	Push-in CAGE CLAMP®
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Conductor connection direction to PCB	45 °
Solid conductor	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Fine-stranded conductor	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Fine-stranded conductor; with insulated ferrule	0.2 ... 1.5 mm <sup>2</sup>
Fine-stranded conductor; with uninsulated ferrule	0.2 ... 2.5 mm <sup>2</sup>

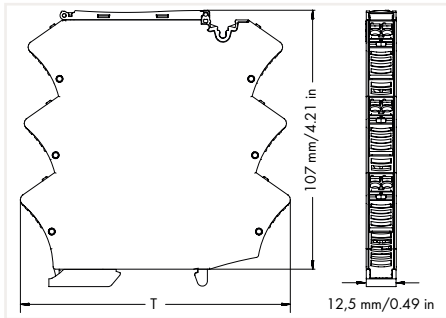
### Material Data (*picoMAX*® 5.0 Female Connector)

Material group	I
Insulation material	Polyphthalamide (PPA GF)
Flammability class per UL94	V0
Limit temperature range	-60 ... +100 °C
Clamping spring material	Chrome nickel spring steel (CrNi)
Contact material	Electrolytic copper (Ecu)
Contact plating	Tin-plated

### Material Data (Empty Housing)

Housing material	PC
Flammability class	V0
Surrounding air temperature	-40 ... +70 °C
Storage temperature	-40 ... +85 °C

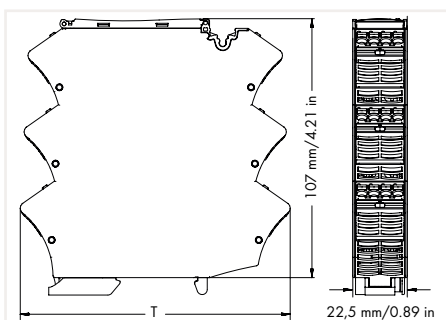
# Modular Empty Housing; for DIN-35 Rail 2857 Series



Housing width: 12.5 mm		
Description	Item No.	Pack. Unit
2-2 connection levels, 2-2 jumper slots	2857-101	10
3-2 connection levels, 0-2 jumper slots	2857-102	10
3-3 connection levels, 0-0 jumper slots	2857-103	10

Technical Data: Empty Housing	
Dimensions (mm) W x H x D	12.5 x 107 x 108 (2857-101) 12.5 x 107 x 110 (2857-102) 12.5 x 107 x 112 (2857-103) Height from upper-edge of DIN-rail
Power loss	2 W

Accessories		
Description	Item No.	Pack. Unit
Coding pin carrier	2092-1610	1
Jumper	859-402	1



Housing width: 22.5 mm		
Description	Item No.	Pack. Unit
2-2 connection levels, 2-2 jumper slots	2857-121	5
3-2 connection levels, 0-2 jumper slots	2857-122	5
3-3 connection levels, 0-0 jumper slots	2857-123	5
1-1 connection levels, 2-2 jumper slots	2857-124	5

Technical Data: Empty Housing	
Dimensions (mm) W x H x D	22.5 x 107 x 108 (2857-121) 22.5 x 107 x 110 (2857-122) 22.5 x 107 x 112 (2857-123) 22.5 x 107 x 105 (2857-124) Height from upper-edge of DIN-rail
Power loss	3 W (max.)

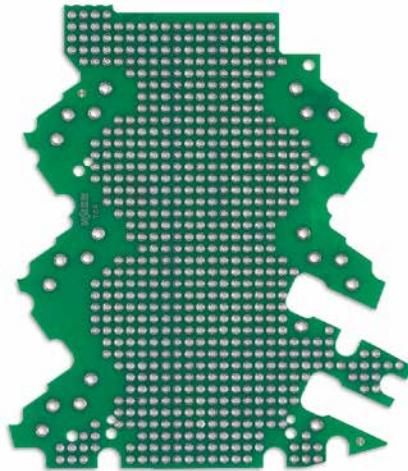
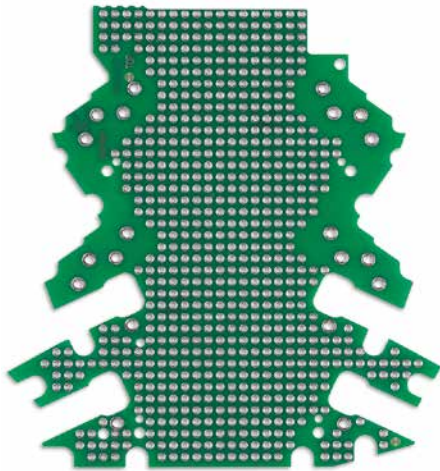
Accessories		
Description	Item No.	Pack. Unit
Coding pin carrier	2092-1610	1
Jumper	859-402	1

PU = Packaging Unit; SPU = Subpackaging Unit

# Stripboard; for installation in 12.5 mm and 22.5 mm empty housings 2857 Series

Connection levels: 2-2; Jumper slots: 2-2

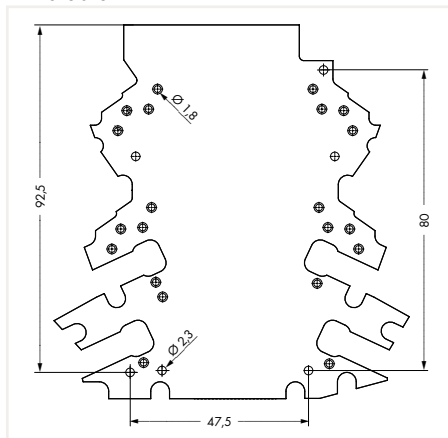
Connection levels: 3-2; Jumper slots: 0-2



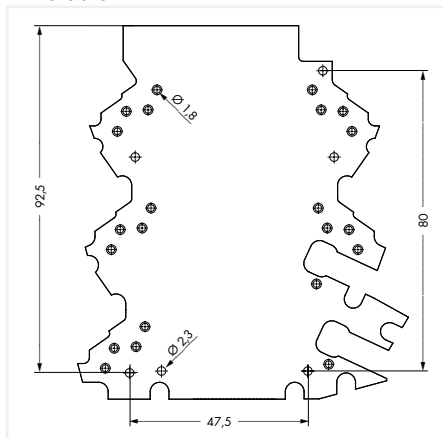
Item No.	PU (SPU)
2857-191/3140-000	5 (1)

Item No.	PU (SPU)
2857-192/3140-000	5 (1)

Dimensions in mm



Dimensions in mm



9

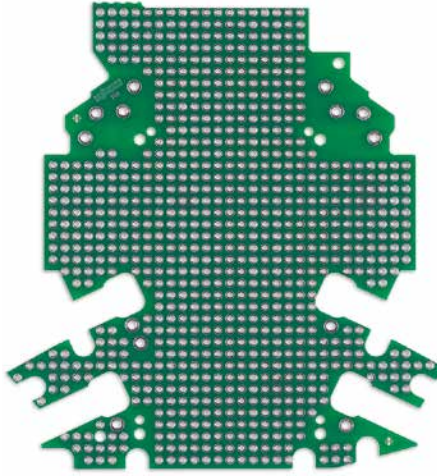
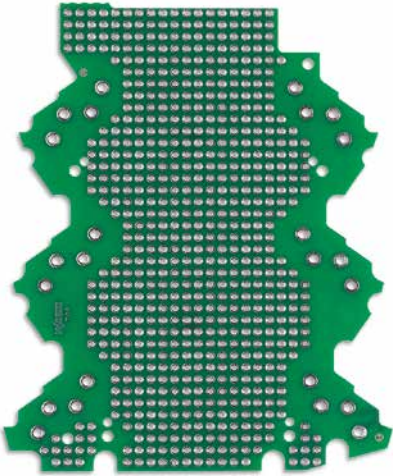
PU = Packaging Unit; SPU = Subpackaging Unit



# Stripboard; for installation in 12.5 mm and 22.5 mm empty housings 2857 Series

Connection levels: 3-3; Jumper slots: 0-0

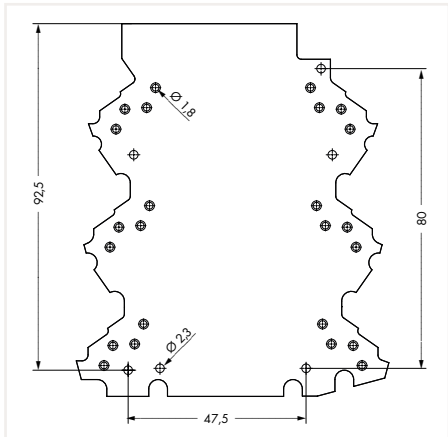
Connection levels: 1-1; Jumper slots: 2-2



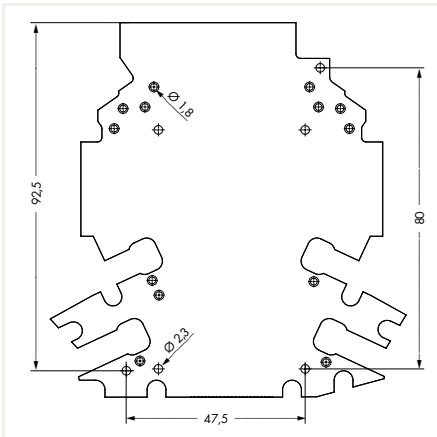
Item No.	PU (SPU)
2857-193/3140-000	5 (1)

Item No.	PU (SPU)
2857-194/3140-000	5 (1)

Dimensions in mm



Dimensions in mm



PU = Packaging Unit; SPU = Subpackaging Unit



# Empty Component Plug Housing for Receptacle Terminal Blocks; for Self-Assembly 286/786 Series



No components should be mounted in this area

When mounting a PCB vertically, do not mount components on or over the top edge of the PCB

Bausteinbreite	10	15	20	25
Bestückungshöhe vor LP	4,2	9,2	14,2	19,2
X = Gesamtbreite LP	8	13	18	23

### Empty Component Plug Housing; 286 Series

Type	Pole	Width	Item No.	Pack. Unit
9	4	10 mm / 0.394 inch	286-110	1
10	6	15 mm / 0.591 inch	286-111	1
11	8	20 mm / 0.787 inch	286-112	1
12	10	25 mm / 0.984 inch	286-113	1

### Technical Data

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Per contact	6 A
Module height	82.5 mm (from upper-edge of DIN-35 rail)



No components should be mounted in this area

When mounting a PCB vertically, do not mount components on or over the top edge of the PCB

Bausteinbreite	15	20	25
Bestückungshöhe vor LP	9,2	14,2	19,2
X = Gesamtbreite LP	13	18	23

### Empty Component Plug Housing; 786 Series

Type	Pole	Width	Item No.	Pack. Unit
14	6	15 mm / 0.591 inch	786-101	1
15	8	20 mm / 0.787 inch	786-102	1
16	10	25 mm / 0.984 inch	786-103	1

### Technical Data

Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Per contact	6 A
Module height	82.5 mm (from upper-edge of DIN-35 rail)

# Empty Component Plug Housing for Receptacle Terminal Blocks; for Self-Assembly 286/786 Series

## Accessories



Terminal block for pluggable modules; 4-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
12 mm	280-618	40



Terminal block for pluggable modules; 8-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
12 mm	280-608	40



Terminal block for pluggable modules; 6-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
17 mm	280-619	30



Terminal block for pluggable modules; 12-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
17 mm	280-609	30



Terminal block for pluggable modules; 8-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
22 mm	280-638	20



Terminal block for pluggable modules; 16-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
22 mm	280-628	20



Terminal block for pluggable modules; 10-pole; with 2-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
27 mm	280-639	15



Terminal block for pluggable modules; 20-pole; with 4-conductor terminal blocks; with orange separator; for 35 x 15 mm and 35 x 7.5 mm DIN-rails; 2.5 mm<sup>2</sup>

Width	Item No.	Pack. Unit
27 mm	280-629	15



Unlocking pliers for component plug housings

Item No.	Pack. Unit
210-492	1



WSB marker card; white; for 5 ... 17.5 mm terminal block width; 10 strips with 10 markers/card

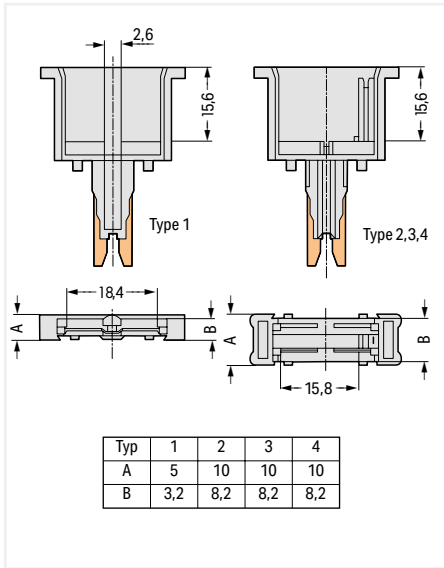
Marking	Item No.	Pack. Unit
plain	209-501	5
1 ... 10	209-702	5

# Empty Component Plug Housing for Carrier Terminal Blocks; for Self-Assembly 280 Series



Empty Component Plug Housing			
	Description	Item No.	Pack. Unit
Type 1	2-pole; 5 mm/0.197 inch wide; Plug inside dimensions (W/H/D): 3.2/15/15 mm	280-801	100
Type 2	2-pole; 10 mm/0.394 inch wide; Plug inside dimensions (W/H/D): 8.2/15/15 mm	280-802	50
Type 3	4-pole; 10 mm/0.394 inch wide; Plug inside dimensions (W/H/D): 8.2/15/15 mm	280-804	50

Technical Data	
Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Per contact	6 A (max.)



## Accessories

9



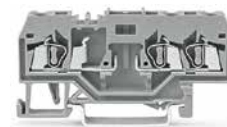
2-conductor carrier terminal block; Marking on both sides; gray; Terminal block width: 5 mm / 0.197 inch; Cross sections: 0.08 ... 2.5 mm<sup>2</sup> / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Item No.	Pack. Unit
280-616	100



2-conductor carrier terminal block; Marking in center position; gray; Terminal block width: 5 mm / 0.197 inch; Cross sections: 0.08 ... 2.5 mm<sup>2</sup> / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Item No.	Pack. Unit
280-916	100



3-conductor carrier terminal block; gray; Terminal block width: 5 mm / 0.197 inch; Cross sections: 0.08 ... 2.5 mm<sup>2</sup> / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Item No.	Pack. Unit
280-610	100



4-conductor carrier terminal block; Marking on both sides; gray; Terminal block width: 5 mm / 0.197 inch; Cross sections: 0.08 ... 2.5 mm<sup>2</sup> / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Item No.	Pack. Unit
280-606	100



4-conductor carrier terminal block; Marking in center position; gray; Terminal block width: 5 mm / 0.197 inch; Cross sections: 0.08 ... 2.5 mm<sup>2</sup> / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

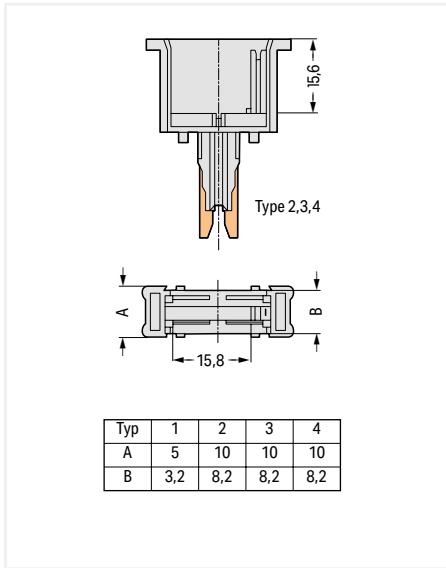
Item No.	Pack. Unit
280-686	100

# Empty Component Plug Housing for Through Terminal Blocks; for Self-Assembly 280 Series



Empty Component Plug Housing			
	Description	Item No.	Pack. Unit
Type 4	2-pole; 10 mm/0.394 inch wide; Plug inside dimensions (W/H/D): 8.2/15/15 mm	280-803	50

Technical Data	
Rated voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Per contact	6 A (max.)



## Accessories



2-conductor through terminal block; Marking on both sides; gray; Terminal block width: 5 mm / 0.197 inch; Cross sections: 0.08 ... 2.5 mm<sup>2</sup> / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Item No.	Pack. Unit
280-601	100



2-conductor through terminal block; Marking in center position; gray; Terminal block width: 5 mm / 0.197 inch; Cross sections: 0.08 ... 2.5 mm<sup>2</sup> / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Item No.	Pack. Unit
280-901	100



3-conductor through terminal block; gray; Terminal block width: 5 mm / 0.197 inch; Cross sections: 0.08 ... 2.5 mm<sup>2</sup> / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Item No.	Pack. Unit
280-681	100



4-conductor through terminal block; Marking on both sides; gray; Terminal block width: 5 mm / 0.197 inch; Cross sections: 0.08 ... 2.5 mm<sup>2</sup> / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Item No.	Pack. Unit
280-621	100



4-conductor through terminal block; Marking in center position; gray; Terminal block width: 5 mm / 0.197 inch; Cross sections: 0.08 ... 2.5 mm<sup>2</sup> / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

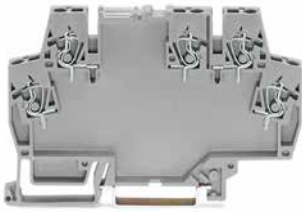
Item No.	Pack. Unit
280-833	100



2-conductor through terminal block; gray; Terminal block width: 5 mm / 0.197 inch; Cross sections: 0.08 ... 2.5 mm<sup>2</sup> / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

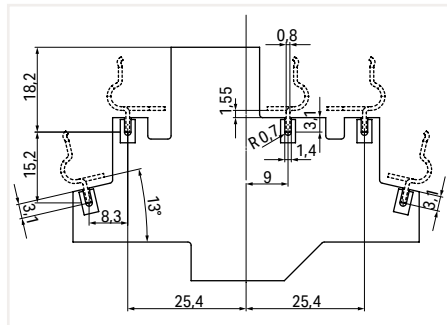
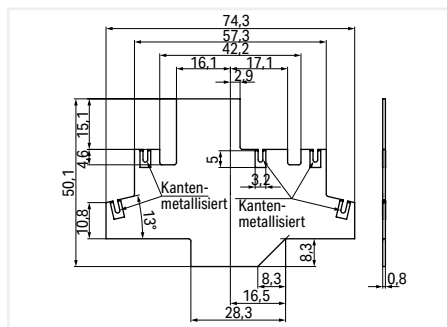
Item No.	Pack. Unit
280-101	100

# Empty Rail-Mount Terminal Block Housing 859 Series



Universal Modular Component Plug Housing as Rail-Mount Terminal Block

	Item No.	Pack. Unit
	859-110	1



PCB dimensions

### Safety and Protection

Protection class	IP00
Protection class with end and intermediate plate	IP20

### Connection Data

Connection points (number)	5
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 in
Height from upper-edge of DIN-rail	56 mm / 2.205 in
Depth	91 mm / 3.583 in

### Mechanical Data

Mounting type	DIN-35 rail
Mounting position	Any

### Material Data

Color	Gray
Flammability class per UL94	V0
Housing material	PA 6.6
Weight	14.4 g

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

## 9

### Accessories



End and intermediate plate; 1 mm thick; gray

	Item No.	Pack. Unit
	859-525	100 (25)

Push-in type jumper bar; light gray; insulated; 18 A

Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)

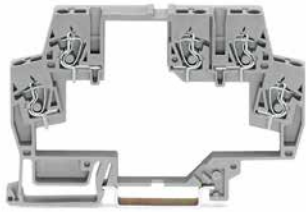
Test pin; 1 mm Ø; with solder connection for test cable

	Item No.	Pack. Unit
	735-500	100 (1)

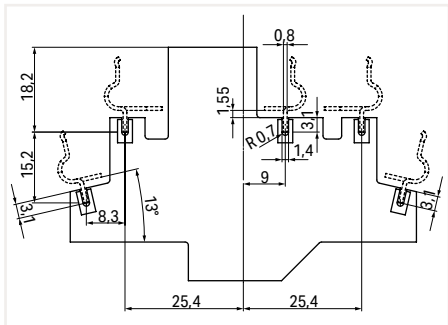
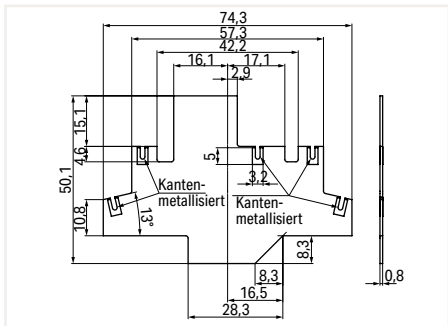
Item no. suffix for colored push-in type jumper bars

yellow	... /000-029
red	... /000-005
blue	... /000-006

# Empty Rail-Mount Terminal Block Housing 859 Series



Frame to Enlarge Terminal block Width		
Item No.	Pack. Unit	
859-501	1	



PCB dimensions

### Safety and Protection

Protection class	IP00
Protection class with end and intermediate plate	IP20

### Connection Data

Connection points (number)	5
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	8 mm / 0.315 in
Height from upper-edge of DIN-rail	56 mm / 2.205 in
Depth	91 mm / 3.583 in

### Mechanical Data

Mounting type	DIN-35 rail
Mounting position	Any

### Material Data

Color	Gray
Flammability class per UL94	V0
Housing material	PA 6.6
Weight	14.4 g

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

### Accessories



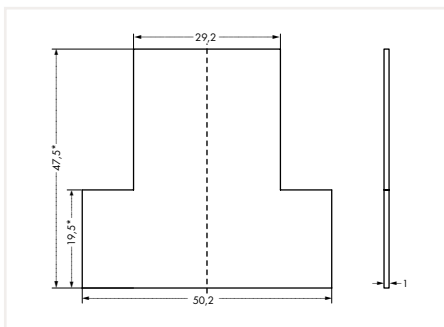
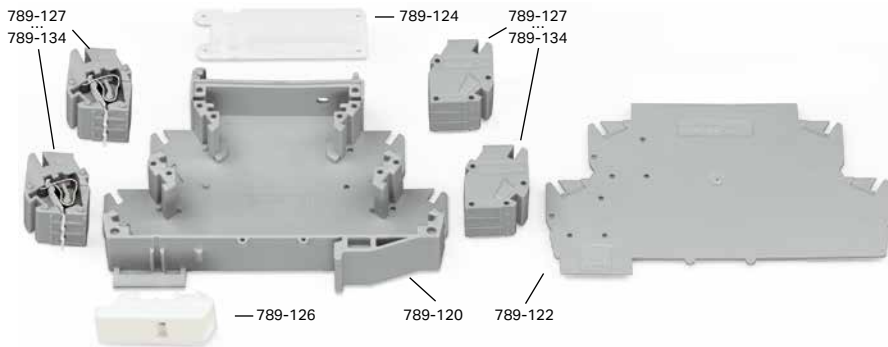
End and intermediate plate; 1 mm thick; gray		
Item No.	Pack. Unit	
859-525	100 (25)	

Push-in type jumper bar; light gray; insulated; 18 A		
Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)

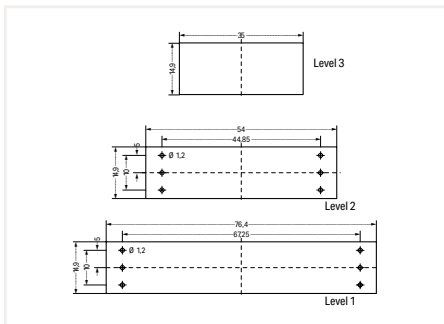
Test pin; 1 mm Ø; with solder connection for test cable		
Item No.	Pack. Unit	
735-500	100 (1)	

Item no. suffix for colored push-in type jumper bars	
yellow	... /000-029
red	... /000-005
blue	... /000-006

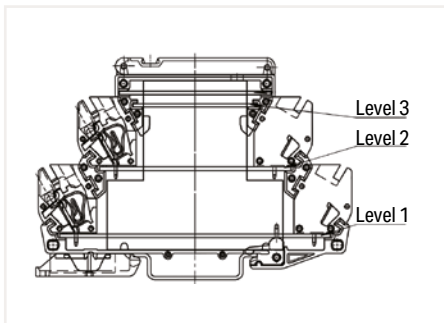
# DIN-Rail-Mount Enclosures 789 Series



PCB dimensions, horizontal mounting  
\*less 4.5 mm when mounting a vertical PCB on level 1



PCB dimensions, vertical mounting:  
(PCB thickness max. 1.5 mm) in level 1;  
(PCB thickness max. 1 mm) in level 2 and 3



### Universal Modular Component Plug Housing; as rail-mount terminal block

Description	Item No.	Pack. Unit
Housing: 55 mm	789-120	1
Top cover: 55 mm	789-122	1
Cover; transparent	789-124	1
Release mechanism	789-126	1
Compact terminal block; 3-pole: CCC*	789-127	1
Compact terminal block; 3-pole: COC*	789-128	1
Compact terminal block; 3-pole: CCO*	789-129	1
Compact terminal block; 3-pole: OCC*	789-130	1
Compact terminal block; 3-pole: OCO*	789-131	1
Compact terminal block; 3-pole: OOO*	789-132	1
Compact terminal block; 3-pole: OOC*	789-133	1
Compact terminal block; 3-pole: COO*	789-134	1

\*C = with clamping spring; O = without clamping spring, enclosure open on the right side

### Electrical Data

Rated nominal voltage	250 V
Rated surge voltage	4 kV

### Safety and Protection

Pollution degree	3
Protection class	IP20

### Connection Data

Width	17.5 mm
Height	55 mm
Depth	90 mm
Dimensions (note)	Height from upper-edge of DIN-rail

### Physical Data

Connection technology	CAGE CLAMP®
Cross sections	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

### Mechanical Data

Mounting position	Any
-------------------	-----

### Material Data

Housing material	PA 66
Flammability class	V0
Color	Gray (similar to RAL 7038)

### Environmental Requirements

Surrounding air temperature (operation)	-25 ... +70 °C
Surrounding air temperature (storage)	-40 ... +85 °C

9

## Accessories



Operating tool with a partially insulated shaft; Type 2; (3.5 x 0.5) mm blade

	Item No.	Pack. Unit
	210-720	50



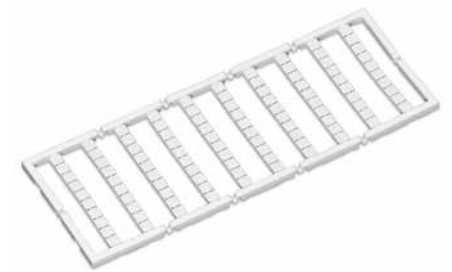
Felt-tip pen; for permanent marking

	Item No.	Pack. Unit
	210-110	200



Push-in type jumper bar; 12-way; Nominal current: 16 A; uninsulated

	Item No.	Pack. Unit
	789-112	100

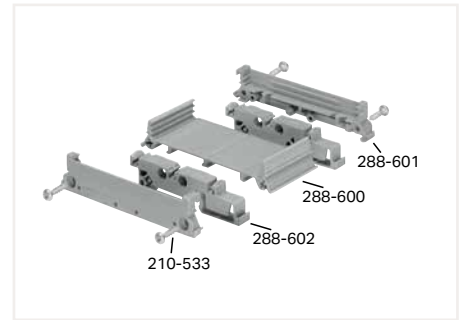
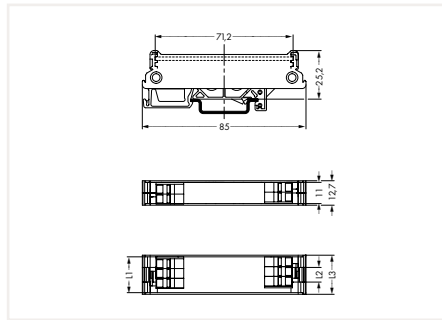


Mini-WSB marker card; Marker width: 5 mm; 10 strips with 10 markers/card

Marking	Item No.	Pack. Unit
plain	248-501	50
1 ... 10 (10 x)	248-502	5
11 ... 20 (10 x)	248-503	5
21 ... 30 (10 x)	248-504	5
31 ... 40 (10 x)	248-505	5
41 ... 50 (10 x)	248-506	5
1 ... 50 (2 x)	248-566	5
K1 ... K10	248-450	50
K11 ... K20	248-451	50
K100	248-452	50
U1 ... U10	248-453	50
U11 ... U20	248-454	50
U100	248-455	50



# DIN-Rail Mount PCB Carriers 288 Series



Mounting Carrier, Size 1

Length calculation for a complete mounting carrier:

PCB length: L1

Base length: L2 = L1 - 11 mm

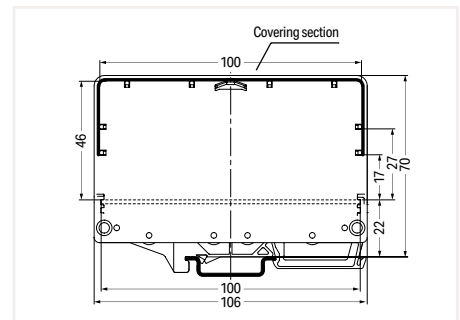
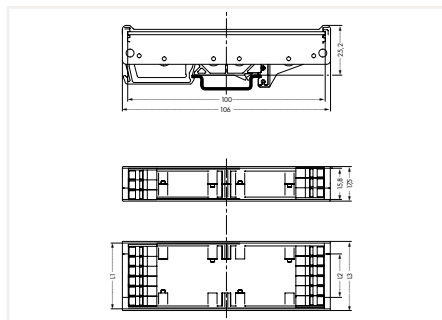
Mounting carrier length: L3 = L1 + 2 mm

Lateral cover, size 1, 6.35 mm thick

Free space between base and PCB (when using upper PCB groove): 5 mm

PCB tolerances: 1.5 mm ± 0.2 mm (thickness), ± 0.2 mm (length/width), -0.1/+0.3 for milling contours

Mounting Carrier; Size 1		
Description	Item No.	Pack. Unit
Lateral cover; Type 1; small; 6.35 mm thick	288-601	1
Foot for DIN-35 rail	288-602	1
Carrier base; Size 1; 1 m long	288-600	1



Length calculation for a complete mounting carrier:

PCB length: L1

Base length: L2 = L1 - 15.8 mm

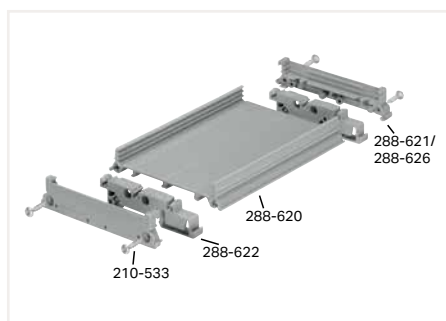
Mounting carrier length: L3 = L1 + 2 mm

Cover length: L4 = L1

Lateral cover, size 2, 8.75 mm thick

Free space between base and PCB (when using upper PCB groove): 5 mm

PCB tolerances: 1.5 mm ± 0.2 mm (thickness), ± 0.2 mm (length/width), -0.1/+0.3 for milling contours



Mounting Carrier, Size 2

Mounting Carrier; Size 2		
Description	Item No.	Pack. Unit
Lateral cover; Type 2; small; 8.75 mm thick	288-621	1
Lateral cover; Type 2; large; 8.75 mm thick	288-626	1
Foot for DIN-35 rail	288-622	1
Carrier base; Size 2; 1 m long	288-620	1
Cover; Size 2; 1 m long	288-627	1

## Accessories; for all mounting carriers

### Marking strip



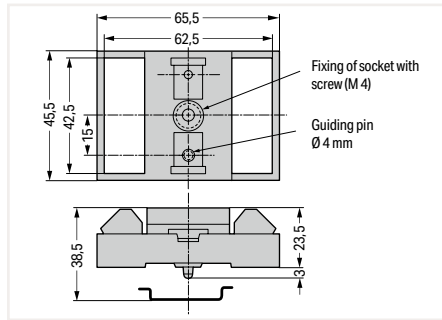
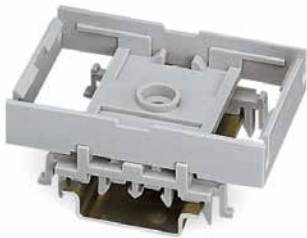
Description	Item No.	Pack. Unit
Phillips screw 2.9 x 13*	210-533	25
Marking strip 7.5 x 0.5 mm; 1 m long; translucent	709-196	1

\* Two screws per lateral cover; for a module length of 35 mm or higher; lateral covers must be riveted for smaller modules. Rivet length depends on module length (rivets are not offered by WAGO).

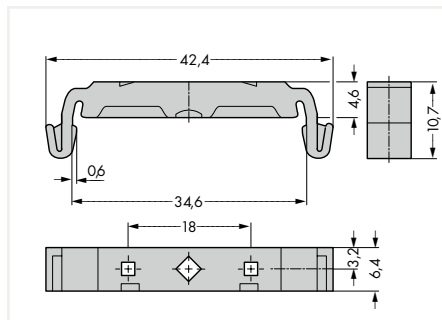
PU = Packaging Unit; SPU = Subpackaging Unit

# DIN-Rail-Mount PCB Carriers and Feet

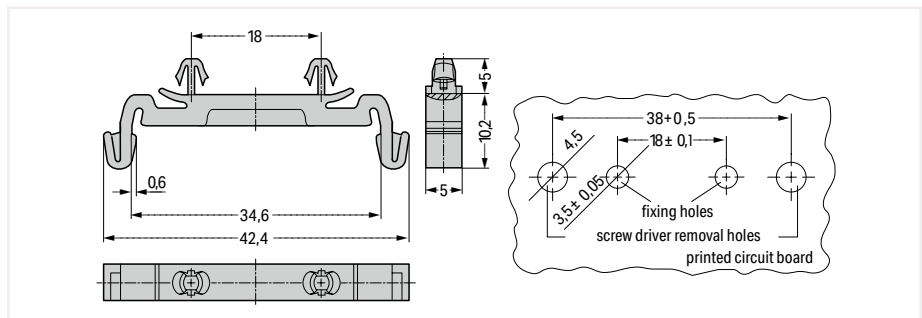
## 288/209 Series



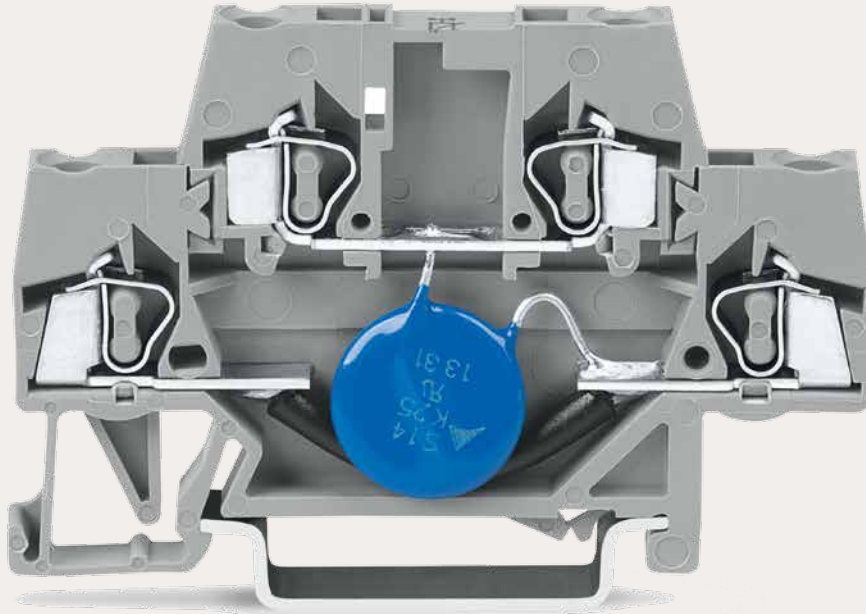
Mounting carrier			
Description		Item No.	Pack. Unit
Mounting carrier	For screw or DIN-rail mounting via universal snap-on type mounting feet (to be ordered separately)	288-001	1
Universal mounting foot	Snap-fit type; for DIN-15, DIN-32 and DIN-35 rails	288-002	10
Mounting carrier for PCBs	Suitable for a "Eurocard" PCB (100 x 160 mm)	288-003	1



Mounting foot			
Description		Item No.	Pack. Unit
Mounting foot		209-120	25
Mounting screw	for mounting foot (209-1209)	209-119	50






Mounting foot			
Description		Item No.	Pack. Unit
Mounting foot		209-188	25



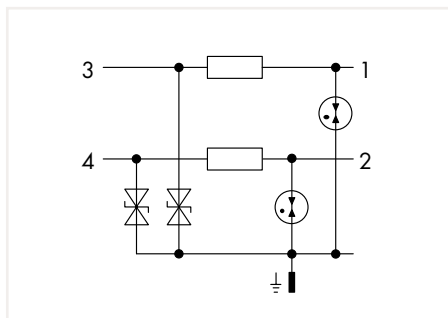
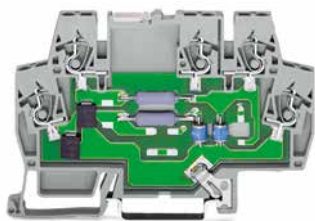
## WAGO Overvoltage Protection

## WAGO Overvoltage Protection

		Page
	<b>Rail-Mount Terminal Blocks with Overvoltage Protection</b>	
	792 Series	728
	Accessories	734
	<b>Rail-Mount Terminal Blocks with Surge Arresters</b>	
	280 Series	736
	Accessories	782
	<b>Double-Deck Terminal Blocks with Surge Arresters</b>	
	280 Series	768
	Accessories	782

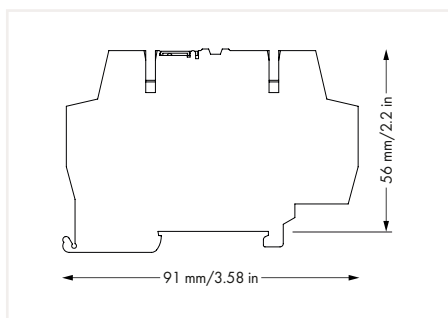
## Rail-Mount Terminal Block; with Overvoltage Protection; for DIN-35 Rail

### 792 Series



Surge Protection Module for Signal Technology;  
Nominal voltage: 24 VDC; for 2 signal paths with common surge arrester; for asymmetric interfaces; 2-stage; 6 mm wide

Nominal Voltage	Item No.	Pack. Unit
24 VDC	792-800	1



#### Short description:

Surge protection devices for IT systems and devices in the voltage range up to 60 V (except custom solutions, e.g., telephone systems with ringing voltage)

Overvoltage protection is also possible for DIN-35 rail-mount terminal blocks. Multi-stage surge arresters in rail-mount terminal blocks (792-80x Series) of just 6 mm width ensure cost-effective protection for control and bus technology (e.g., LON® network, PROFIBUS network, binary signals).

#### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

#### Electrical Data

Nominal operating voltage	24 VDC
Maximum continuous operating voltage	23 VAC / 33 VDC
Nominal current	0.5 A
Nominal discharge current $I_{SN}$ (8/20 $\mu$ s), line	5 kA
Nominal discharge current $I_{SN}$ (8/20 $\mu$ s), total	10 kA
Voltage protection level, line/line (cat. C2 at $I_{N}$ )	$\leq 65$ V
Voltage protection level, line/PG (cat. C2 at $I_{N}$ )	$\leq 110$ V
Voltage protection level, line/line (cat. C3 at $I_{N}$ )	$\leq 90$ V
Voltage protection level, line/PG (cat. C3 at $I_{N}$ )	$\leq 45$ V
Response time	$\leq 1$ ns
Limit frequency	6 MHz
Impedance	1.8 $\Omega$
Capacitance (line/line)	$\leq 0.5$ nF
Capacitance (line/PG)	$\leq 1$ nF

#### Safety and Protection

Protection class	IP00
Protection class with end and intermediate plate	IP20

#### Connection Data

Connection points (number)	5
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

#### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

#### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

#### Material Data

Weight	38.8 g
--------	--------

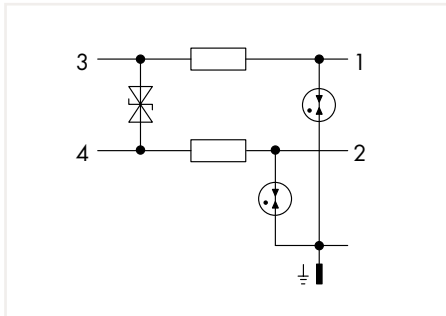
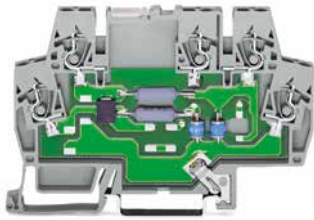
#### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +80 °C
Surrounding air temperature (storage)	-40 ... +80 °C

#### Standards and Specifications

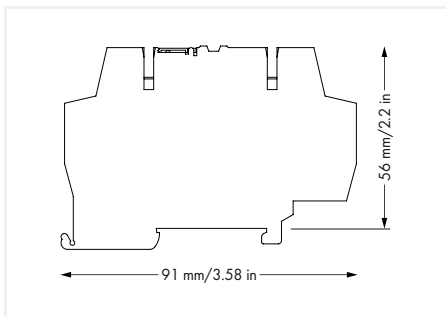
Standards/specifications	IEC 61643-21
--------------------------	--------------

## Rail-Mount Terminal Block; with Overvoltage Protection; for DIN-35 Rail 792 Series



Surge Protection Module for Signal Technology;  
Nominal voltage: 24 VDC; for 2 signal paths with common surge arrester; for symmetric interfaces; 2-stage; 6 mm wide

Nominal Voltage	Item No.	Pack. Unit
24 VDC	792-801	1



### Short description:

Surge protection devices for IT systems and devices in the voltage range up to 60 V (except custom solutions, e.g., telephone systems with ringing voltage)

Overvoltage protection is also possible for DIN-35 rail-mount terminal blocks. Multi-stage surge arresters in rail-mount terminal blocks (792-80x Series) of just 6 mm width ensure cost-effective protection for control and bus technology (e.g., LON® network, PROFIBUS network, binary signals).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	24 VDC
Maximum continuous operating voltage	23 VAC / 33 VDC
Nominal current	0.5 A
Nominal discharge current $I_{SN}$ (8/20 $\mu$ s), line	5 kA
Nominal discharge current $I_{SN}$ (8/20 $\mu$ s), total	10 kA
Voltage protection level, line/line (cat. C2 at $I_N$ )	$\leq 50$ V
Voltage protection level, line/PG (cat. C2 at $I_N$ )	$\leq 750$ V
Voltage protection level, line/line (cat. C3 at $I_N$ )	$\leq 45$ V
Voltage protection level, line/PG (cat. C3 at $I_N$ )	$\leq 650$ V
Response time	$\leq 100$ ns
Limit frequency	6 MHz
Impedance	1.8 $\Omega$
Capacitance (line/line)	$\leq 1$ nF
Capacitance (line/PG)	$\leq 5$ pF

### Safety and Protection

Protection class	IP00
Protection class with end and intermediate plate	IP20

### Connection Data

Connection points (number)	5
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	38.7 g
--------	--------

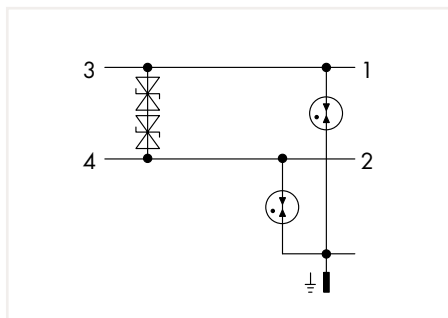
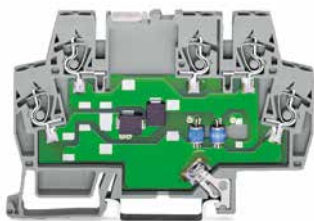
### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +80 °C
Surrounding air temperature (storage)	-40 ... +80 °C

### Standards and Specifications

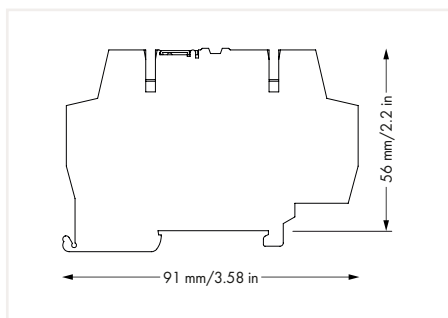
Standards/specifications	IEC 61643-21
--------------------------	--------------

## Rail-Mount Terminal Block; with Overvoltage Protection; for DIN-35 Rail 792 Series



Surge Protection Module for Signal Technology;  
Nominal voltage: 24 VDC; for 2 signal paths with common surge arrester; for supply lines; 1-stage; 6 mm wide

Nominal Voltage	Item No.	Pack. Unit
24 VDC	792-802	1



### Short description:

Surge protection devices for IT systems and devices in the voltage range up to 60 V (except custom solutions, e.g., telephone systems with ringing voltage)

Overvoltage protection is also possible for DIN-35 rail-mount terminal blocks. Multi-stage surge arresters in rail-mount terminal blocks (792-80x Series) of just 6 mm width ensure cost-effective protection for control and bus technology (e.g., LON® network, PROFIBUS network, binary signals).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	24 VDC
Maximum continuous operating voltage	23 VAC / 33 VDC
Nominal current	10 A
Nominal discharge current $I_{SN}$ (8/20 $\mu$ s), line	300 A
Nominal discharge current $I_{SN}$ (8/20 $\mu$ s), total	5 kA
Voltage protection level, line/line (cat. C2 at $I_N$ )	$\leq 50$ V
Voltage protection level, line/PG (cat. C2 at $I_N$ )	$\leq 750$ V
Voltage protection level, line/line (cat. C3 at $I_N$ )	$\leq 45$ V
Voltage protection level, line/PG (cat. C3 at $I_N$ )	$\leq 650$ V
Response time (line/line)	$\leq 1$ ns
Response time (line/PG)	$\leq 100$ ns
Limit frequency	7 MHz
Capacitance (line/line)	$\leq 1$ nF
Capacitance (line/PG)	$\leq 12$ pF

### Safety and Protection

Protection class	IP00
Protection class with end and intermediate plate	IP20

### Connection Data

Connection points (number)	5
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	38 g
--------	------

### Environmental Requirements

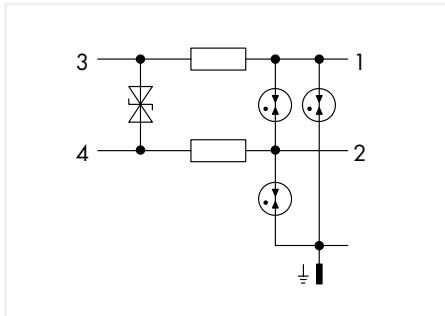
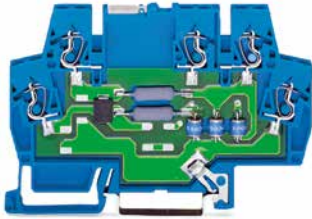
Surrounding air temperature (operation)	-40 ... +80 °C
Surrounding air temperature (storage)	-40 ... +80 °C

### Standards and Specifications

Standards/specifications	IEC 61643-21
--------------------------	--------------

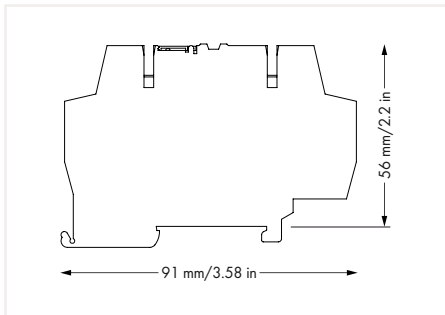
## Rail-Mount Terminal Block; with Overvoltage Protection; for DIN-35 Rail

### 792 Series



Surge Protection Module for Signal Technology; Nominal voltage: 24 VDC; for 2 signal paths with common surge arrester; for symmetric interfaces; 2-stage; protects intrinsically safe circuits; 6 mm wide

Nominal Voltage	Item No.	Pack. Unit
24 VDC	792-803	1



#### Short description:

Surge protection devices for IT systems and devices in the voltage range up to 60 V (except custom solutions, e.g., telephone systems with ringing voltage)

Overvoltage protection is also possible for DIN-35 rail-mount terminal blocks. Multi-stage surge arresters in rail-mount terminal blocks (792-80x Series) of just 6 mm width ensure cost-effective protection for control and bus technology (e.g., LON® network, PROFIBUS network, binary signals).

#### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

#### Electrical Data

Nominal operating voltage	24 VDC
Maximum continuous operating voltage	23 VAC / 33 VDC
Input voltage (max.) per EN 50020 U <sub>i</sub>	30 V
Nominal current	0.5 A
Input current (max.) per EN 50020 I <sub>i</sub>	0.5 A
Nominal discharge current I <sub>SN</sub> (8/20 μs), line	5 kA
Nominal discharge current I <sub>SN</sub> (8/20 μs), total	10 kA
Voltage protection level, line/line (cat. C2 at I <sub>N</sub> )	≤ 1.5 kV
Voltage protection level, line/PG (cat. C2 at I <sub>N</sub> )	≤ 50 V
Voltage protection level, line/line (cat. C3 at I <sub>N</sub> )	≤ 45 V
Voltage protection level, line/PG (cat. C3 at I <sub>N</sub> )	≤ 1.4 kV
Response time (line/line)	≤ 1 ns
Response time (line/PG)	≤ 100 ns
Limit frequency	6 MHz
Impedance	1.8 Ω
Capacitance (line/line)	≤ 1 nF
Capacitance (line/PG)	≤ 6 pF

#### Safety and Protection

Protection class	IP00
Protection class with end and intermediate plate	IP20

#### Connection Data

Connection points (number)	5
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

#### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

#### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

#### Material Data

Color	Blue
Weight	38.3 g

#### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +80 °C
Surrounding air temperature (storage)	-40 ... +80 °C

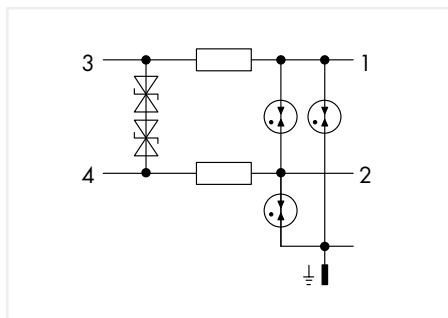
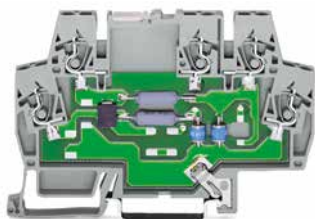
#### Standards and Specifications

Standards/specifications	IEC 61643-21
--------------------------	--------------



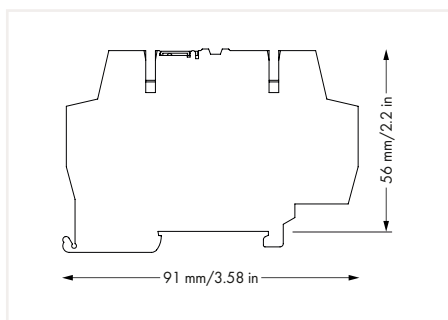
# Rail-Mount Terminal Block; with Overvoltage Protection; for DIN-35 Rail

## 792 Series



Surge Protection Module for Signal Technology;  
Nominal voltage: 48 VDC; for 2 signal paths with common  
surge arrester; for symmetric interfaces; 2-stage;  
6 mm wide

Nominal Voltage	Item No.	Pack. Unit
48 VDC	792-804	1



### Short description:

Surge protection devices for IT systems and devices in the voltage range up to 60 V (except custom solutions, e.g., telephone systems with ringing voltage)

Overvoltage protection is also possible for DIN-35 rail-mount terminal blocks. Multi-stage surge arresters in rail-mount terminal blocks (792-80x Series) of just 6 mm width ensure cost-effective protection for control and bus technology (e.g., LON® network, PROFIBUS network, binary signals).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Note:

The coordination characteristics of the surge arrester provide information about its discharge capacity and protection capability.

### Electrical Data

Nominal operating voltage	48 VDC
Maximum continuous operating voltage	38.5 VAC / 55 VDC
Nominal current	1.7 A
Nominal discharge current $I_{SN}$ (8/20 $\mu$ s), line	5 kA
Nominal discharge current $I_{SN}$ (8/20 $\mu$ s), total	10 kA
Voltage protection level, line/line (cat. C2 at $I_N$ )	$\leq 100$ V
Voltage protection level, line/PG (cat. C2 at $I_N$ )	$\leq 750$ V
Voltage protection level, line/line (cat. C3 at $I_N$ )	$\leq 70$ V
Voltage protection level, line/PG (cat. C3 at $I_N$ )	$\leq 650$ V
Response time (line/line)	$\leq 1$ ns
Response time (line/PG)	$\leq 100$ ns
Limit frequency	10 MHz
Impedance	0.4 $\Omega$
Capacitance (line/line)	$\leq 10$ pF
Capacitance (line/PG)	$\leq 0.6$ pF

### Safety and Protection

Protection class	IP00
Protection class with end and intermediate plate	IP20

### Connection Data

Connection points (number)	5
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	39.4 g
--------	--------

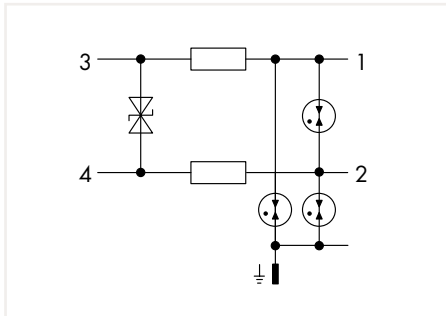
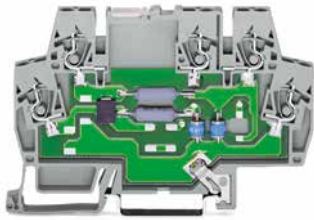
### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +80 °C
Surrounding air temperature (storage)	-40 ... +80 °C

### Standards and Specifications

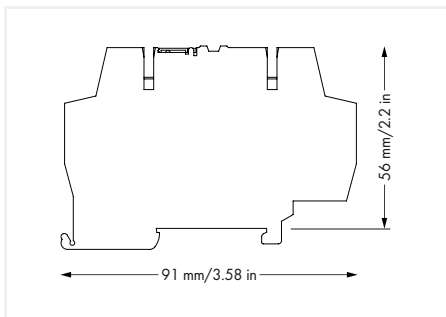
Standards/specifications	IEC 61643-21
--------------------------	--------------

## Rail-Mount Terminal Block; with Overvoltage Protection; for DIN-35 Rail 792 Series



Surge Protection Module for Signal Technology;  
Nominal voltage: 5 VDC; for 2 signal paths with common surge arrester; for symmetric interfaces; 2-stage; for interfaces with high data rates; 6 mm wide

Nominal Voltage	Item No.	Pack. Unit
5 VDC	792-805	1



### Short description:

Surge protection devices for IT systems and devices in the voltage range up to 60 V (except custom solutions, e.g., telephone systems with ringing voltage)

Overvoltage protection is also possible for DIN-35 rail-mount terminal blocks. Multi-stage surge arresters in rail-mount terminal blocks (792-80x Series) of just 6 mm width ensure cost-effective protection for control and bus technology (e.g., LON® network, PROFIBUS network, binary signals).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	5 VDC
Maximum continuous operating voltage	4.2 VAC / 6 VDC
Nominal current	0.1 A
Nominal discharge current $I_{SN}$ (8/20 $\mu$ s), line	5 kA
Nominal discharge current $I_{SN}$ (8/20 $\mu$ s), total	10 kA
Voltage protection level, line/line (cat. C2 at $I_N$ )	$\leq 27$ V
Voltage protection level, line/PG (cat. C2 at $I_N$ )	$\leq 50$ V
Voltage protection level, line/line (cat. C3 at $I_N$ )	$\leq 14$ V
Voltage protection level, line/PG (cat. C3 at $I_N$ )	$\leq 14$ V
Response time (line/line)	$\leq 1$ ns
Limit frequency	250 MHz
Impedance	1 $\Omega$
Capacitance (line/line)	$\leq 19$ pF
Capacitance (line/PG)	$\leq 16$ pF

### Safety and Protection

Protection class	IP00
Protection class with end and intermediate plate	IP20

### Connection Data

Connection points (number)	5
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

### Physical Data

Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	56 mm / 2.205 inch
Depth	91 mm / 3.583 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	38 g
--------	------

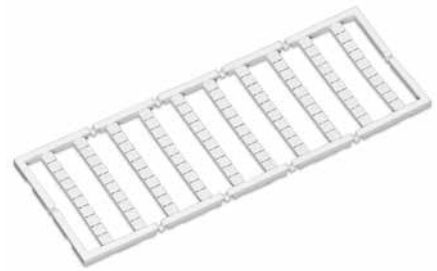
### Environmental Requirements

Surrounding air temperature (operation)	-40 ... +80 °C
Surrounding air temperature (storage)	-40 ... +80 °C

### Standards and Specifications

Standards/specifications	IEC 61643-21
--------------------------	--------------

## Accessories



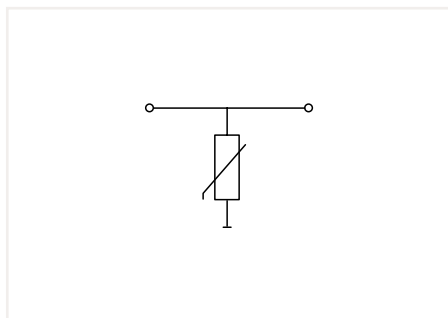
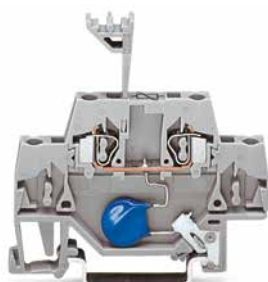
End and intermediate plate; 1 mm thick		
	Item No.	Pack. Unit
	859-525	100

Push-in type jumper bar; light gray; insulated; 18 A		
Description	Item No.	Pack. Unit
2-way	859-402	200
3-way	859-403	200
4-way	859-404	200
5-way	859-405	200
6-way	859-406	100
7-way	859-407	100
8-way	859-408	100
9-way	859-409	100
10-way	859-410	100
Item no. suffixes for colored push-in type jumper bars		
yellow	.../000-029	
red	.../000-005	
Blue	.../000-006	

Mini-WSB marker card; Marker width: 5 mm; 10 strips with 10 markers/card		
Marking	Item No.	Pack. Unit
plain	248-501	50
1 ... 10 (10 x)	248-502	5
11 ... 20 (10 x)	248-503	5
21 ... 30 (10 x)	248-504	5
31 ... 40 (10 x)	248-505	5
41 ... 50 (10 x)	248-506	5
1 ... 50 (2 x)	248-566	5
K1 ... K10	248-450	50
K11 ... K20	248-451	50
K100	248-452	50
U1 ... U10	248-453	50
U11 ... U20	248-454	50
U100	248-455	50

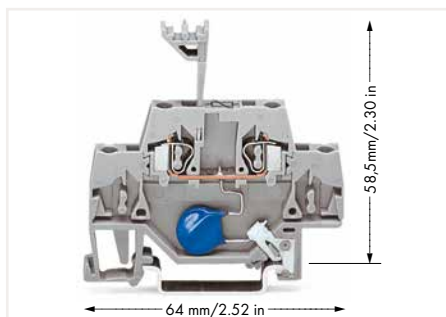


## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Varistor; with direct connection to DIN-rail; 24 VDC

U <sub>BN</sub>	Item No.	Pack. Unit
24 VDC	280-502/281-609	50



### Short description:

Terminal blocks with surge arresters and direct connection to the DIN-35 rail; these single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	24 VDC
Maximum continuous operating voltage	31 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	60 A
Discharge current (max.)	0.25 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 77 VDC
Capacitance	$\leq$ 1.25 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	5 mm / 0.197 inch
Height from upper-edge of DIN-rail	58,5 mm / 2.303 inch
Depth	64 mm / 2.52 inch

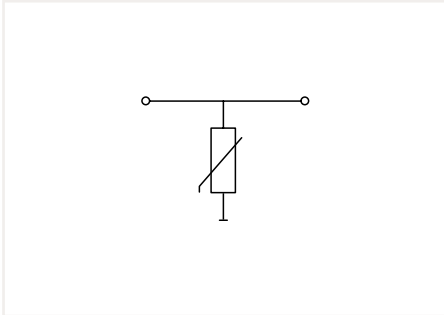
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

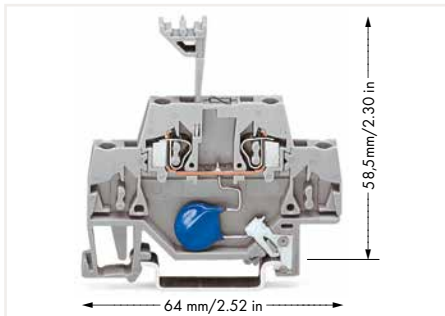
Weight	8.4 g
--------	-------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Varistor; with direct connection to DIN-rail; 48 VDC

$U_{BN}$	Item No.	Pack. Unit
48 VDC	280-502/281-610	50



### Short description:

Terminal blocks with surge arresters and direct connection to the DIN-35 rail; these single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	48 VDC
Maximum continuous operating voltage	65 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	300 A
Discharge current (max.)	1.2 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 135 VDC
Capacitance	$\leq$ 0.5 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	5 mm / 0.197 inch
Height from upper-edge of DIN-rail	58,5 mm / 2.303 inch
Depth	64 mm / 2.52 inch

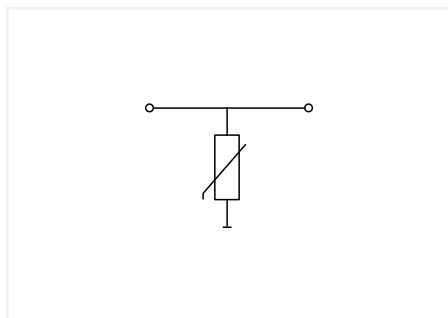
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

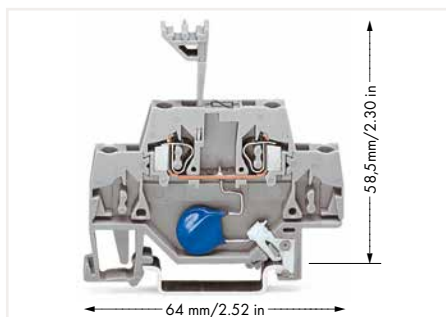
Weight	8.5 g
--------	-------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Varistor; with direct connection to DIN-rail; 60 VDC

$U_{BN}$	Item No.	Pack. Unit
60 VDC	280-502/281-611	50



### Short description:

Terminal blocks with surge arresters and direct connection to the DIN-35 rail; these single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	60 VDC
Maximum continuous operating voltage	85 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	300 A
Discharge current (max.)	1.2 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 165 VDC
Capacitance	$\leq$ 0.48 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	5 mm / 0.197 inch
Height from upper-edge of DIN-rail	58,5 mm / 2.303 inch
Depth	64 mm / 2.52 inch

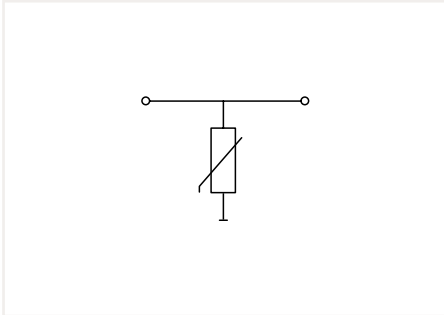
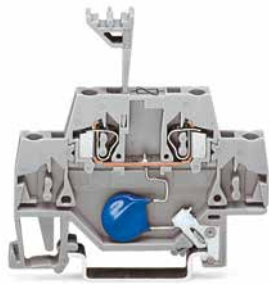
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

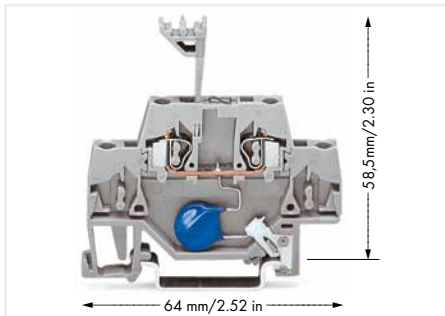
Weight	8.5 g
--------	-------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Varistor; with direct connection to DIN-rail; 110 VDC

$U_{BN}$	Item No.	Pack. Unit
110 VDC	280-502/281-612	50



### Short description:

Terminal blocks with surge arresters and direct connection to the DIN-35 rail; these single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	110 VDC
Maximum continuous operating voltage	150 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	300 A
Discharge current (max.)	1.2 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 300 VDC
Capacitance	$\leq$ 0.22 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	5 mm / 0.197 inch
Height from upper-edge of DIN-rail	58,5 mm / 2.303 inch
Depth	64 mm / 2.52 inch

### Mechanical Data

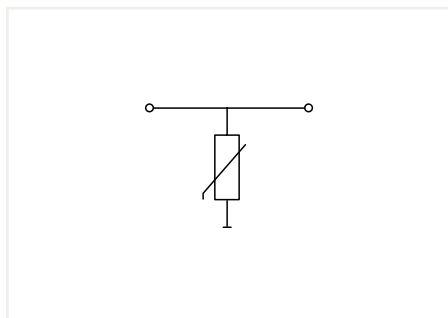
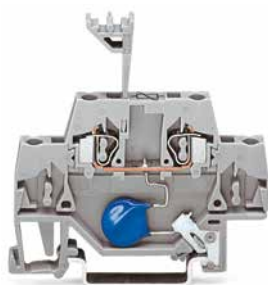
Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	8.7 g
--------	-------

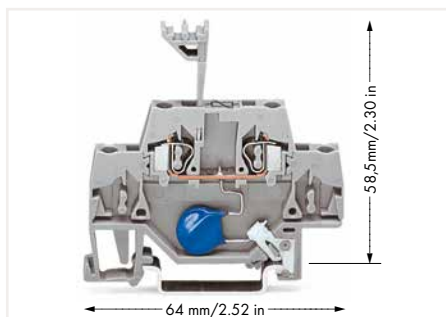


## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Varistor; with direct connection to DIN-rail; 24 VAC

$U_{BN}$	Item No.	Pack. Unit
24 VAC	280-502/281-613	50



### Short description:

Terminal blocks with surge arresters and direct connection to the DIN-35 rail; these single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	24 VAC
Maximum continuous operating voltage	30 VAC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	60 A
Discharge current (max.)	0.25 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 93 VAC
Capacitance	$\leq$ 1.05 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	5 mm / 0.197 inch
Height from upper-edge of DIN-rail	58,5 mm / 2.303 inch
Depth	64 mm / 2.52 inch

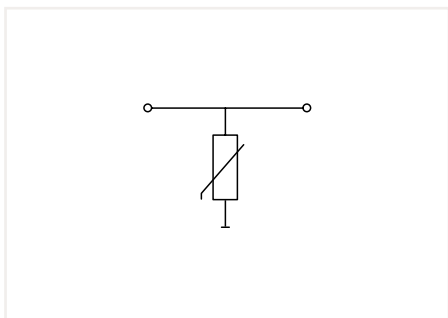
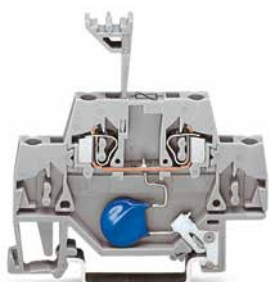
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

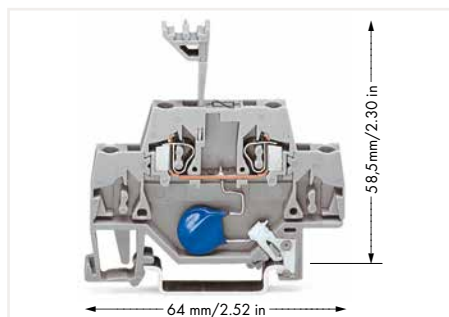
Weight	8.4 g
--------	-------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Varistor; with direct connection to DIN-rail; 115 VAC

$U_{BN}$	Item No.	Pack. Unit
115 VAC	280-502/281-614	50



### Short description:

Terminal blocks with surge arresters and direct connection to the DIN-35 rail; these single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	115 VAC
Maximum continuous operating voltage	140 VAC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	300 A
Discharge current (max.)	1.2 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 360 VAC
Capacitance	$\leq$ 0.18 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	5 mm / 0.197 inch
Height from upper-edge of DIN-rail	58,5 mm / 2.303 inch
Depth	64 mm / 2.52 inch

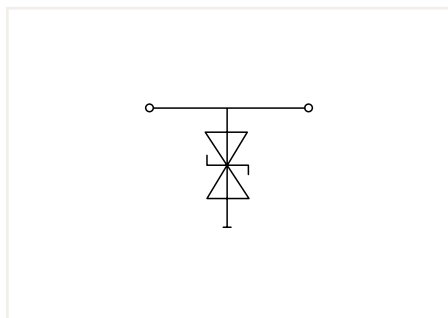
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

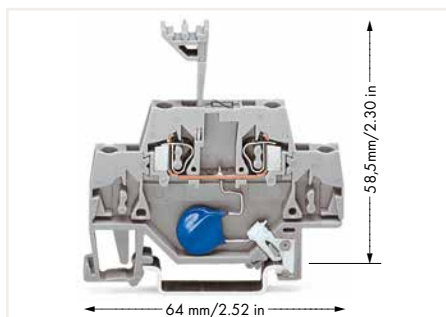
Weight	8.6 g
--------	-------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Suppressor Diode ; with direct connection to DIN-rail; 24 VDC

$U_{BN}$	Item No.	Pack. Unit
24 VDC	280-502/281-602	50



### Short description:

Terminal blocks with surge arresters and direct connection to the DIN-35 rail; these single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	24 VDC
Maximum continuous operating voltage	30.8 VDC
Rated continuous current	20 A
Nominal discharge current (10/1000 $\mu$ s), line	12 A
Voltage protection level (10/1000 $\mu$ s)	$\leq$ 50 VDC
Capacitance	$\leq$ 1 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	5 mm / 0.197 inch
Height from upper-edge of DIN-rail	58,5 mm / 2.303 inch
Depth	64 mm / 2.52 inch

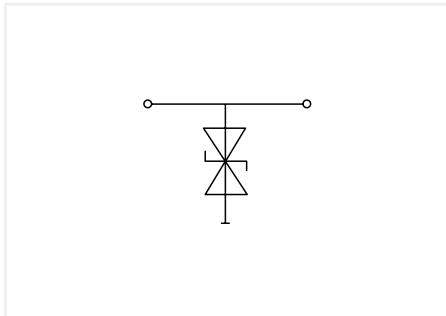
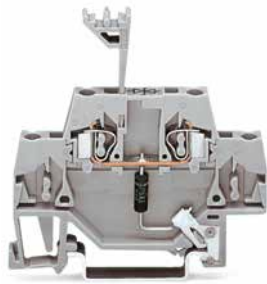
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

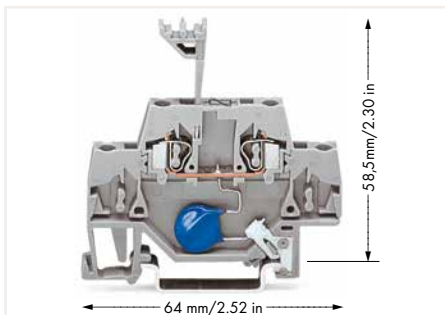
Weight	8.3 g
--------	-------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Suppressor Diode ; with direct connection to DIN-rail; 48 VDC

$U_{BN}$	Item No.	Pack. Unit
48 VDC	280-502/281-603	50



### Short description:

Terminal blocks with surge arresters and direct connection to the DIN-35 rail; these single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	48 VDC
Maximum continuous operating voltage	58 VDC
Rated continuous current	20 A
Nominal discharge current (10/1000 $\mu$ s), line	6.5 A
Voltage protection level (10/1000 $\mu$ s)	$\leq$ 92 VDC
Capacitance	$\leq$ 0.63 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	5 mm / 0.197 inch
Height from upper-edge of DIN-rail	58,5 mm / 2.303 inch
Depth	64 mm / 2.52 inch

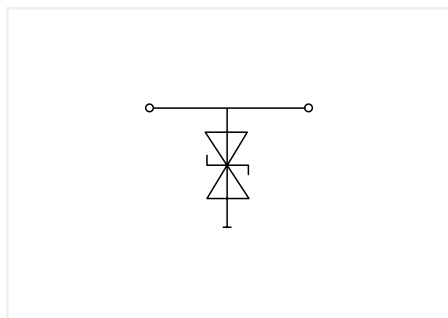
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

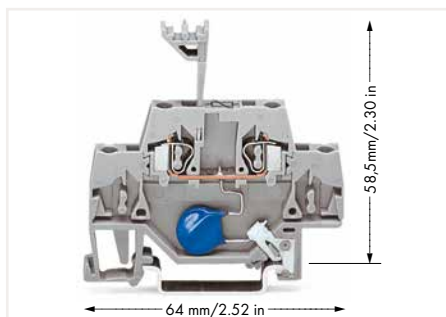
Weight	8.2 g
--------	-------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Suppressor Diode ; with direct connection to DIN-rail; 60 VDC

$U_{BN}$	Item No.	Pack. Unit
60 VDC	280-502/281-604	50



### Short description:

Terminal blocks with surge arresters and direct connection to the DIN-35 rail; these single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	60 VDC
Maximum continuous operating voltage	77 VDC
Rated continuous current	20 A
Nominal discharge current (10/1000 $\mu$ s), line	4.8 A
Voltage protection level (10/1000 $\mu$ s)	$\leq$ 125 VDC
Capacitance	$\leq$ 0.55 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	5 mm / 0.197 inch
Height from upper-edge of DIN-rail	58,5 mm / 2.303 inch
Depth	64 mm / 2.52 inch

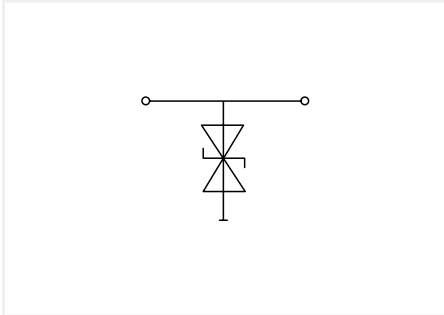
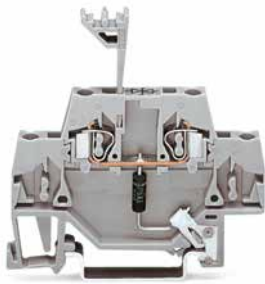
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

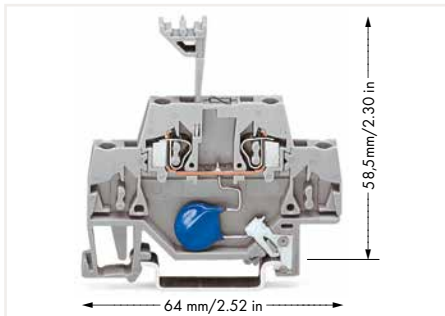
Weight	8.5 g
--------	-------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Suppressor Diode ; with direct connection to DIN-rail; 110 VDC

U <sub>BN</sub>	Item No.	Pack. Unit
110 VDC	280-502/281-605	50



### Short description:

Terminal blocks with surge arresters and direct connection to the DIN-35 rail; these single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	110 VDC
Maximum continuous operating voltage	136 VDC
Rated continuous current	20 A
Nominal discharge current (10/1000 $\mu$ s), line	2.7 A
Voltage protection level (10/1000 $\mu$ s)	$\leq$ 219 VDC
Capacitance	$\leq$ 0.4 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	5 mm / 0.197 inch
Height from upper-edge of DIN-rail	58,5 mm / 2.303 inch
Depth	64 mm / 2.52 inch

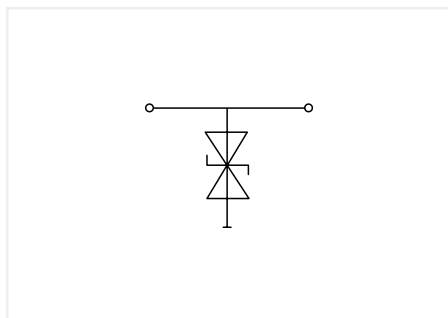
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

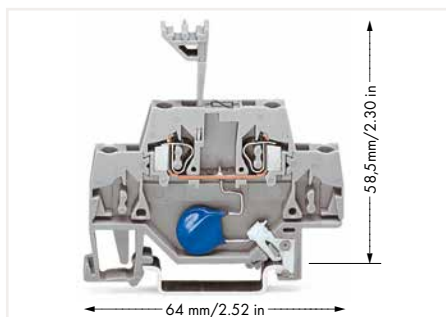
Weight	8.1 g
--------	-------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Suppressor Diode ; with direct connection to DIN-rail; 24 VAC

U <sub>BN</sub>	Item No.	Pack. Unit
24 VAC	280-502/281-606	50



### Short description:

Terminal blocks with surge arresters and direct connection to the DIN-35 rail; these single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	24 VAC
Maximum continuous operating voltage	28 VAC
Rated continuous current	20 A
Nominal discharge current (10/1000 $\mu$ s), line	9.3 A
Voltage protection level (10/1000 $\mu$ s)	$\leq$ 65 VAC
Capacitance	$\leq$ 0.8 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	5 mm / 0.197 inch
Height from upper-edge of DIN-rail	58,5 mm / 2.303 inch
Depth	64 mm / 2.52 inch

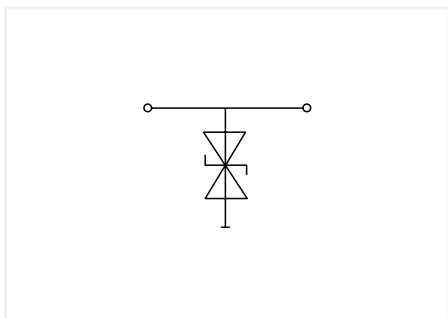
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

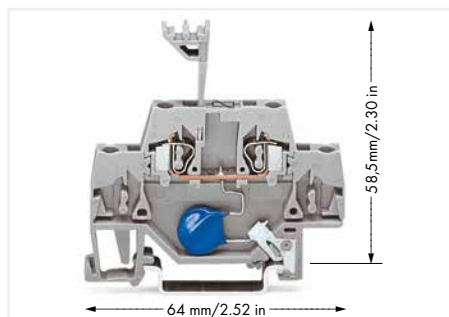
Weight	8.2 g
--------	-------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Suppressor Diode ; with direct connection to DIN-rail; 115 VAC

U <sub>BN</sub>	Item No.	Pack. Unit
115 VAC	280-502/281-607	50



### Short description:

Terminal blocks with surge arresters and direct connection to the DIN-35 rail; these single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	115 VAC
Maximum continuous operating voltage	133 VAC
Rated continuous current	20 A
Nominal discharge current (10/1000 $\mu$ s), line	1.7 A
Voltage protection level (10/1000 $\mu$ s)	$\leq$ 384 VAC
Capacitance	$\leq$ 0.36 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	5 mm / 0.197 inch
Height from upper-edge of DIN-rail	58,5 mm / 2.303 inch
Depth	64 mm / 2.52 inch

### Mechanical Data

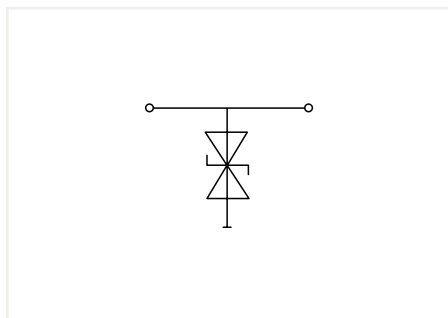
Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	8.1 g
--------	-------

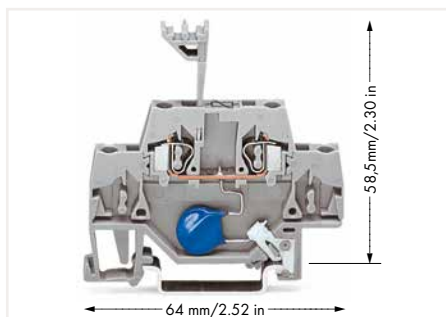


## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Suppressor Diode ; with direct connection to DIN-rail; 230 VAC

$U_{BN}$	Item No.	Pack. Unit
230 VAC	280-502/281-608	50



### Short description:

Terminal blocks with surge arresters and direct connection to the DIN-35 rail; these single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	230 VAC
Maximum continuous operating voltage	253 VAC
Rated continuous current	20 A
Nominal discharge current (10/1000 $\mu$ s), line	1.1 A
Voltage protection level (10/1000 $\mu$ s)	$\leq$ 548 VAC
Capacitance	$\leq$ 0.36 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	5 mm / 0.197 inch
Height from upper-edge of DIN-rail	58,5 mm / 2.303 inch
Depth	64 mm / 2.52 inch

### Mechanical Data

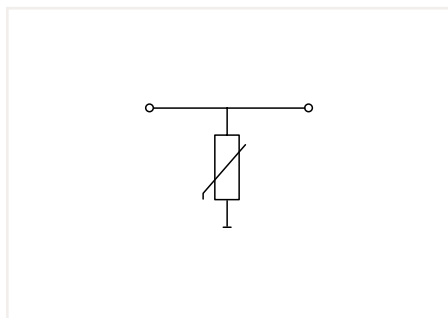
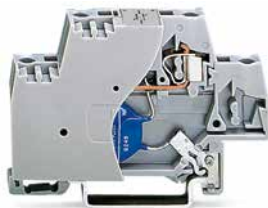
Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	8.3 g
--------	-------

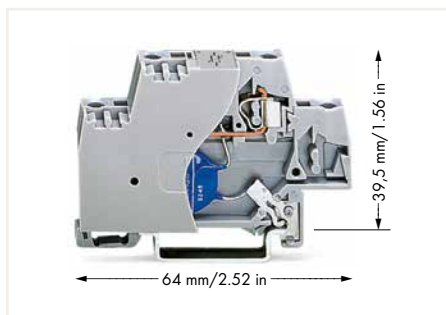


## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Varistor and End Plate; with direct connection to DIN-rail; 24 VDC

$U_{BN}$	Item No.	Pack. Unit
24 VDC	280-502/281-582	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	24 VDC
Maximum continuous operating voltage	31 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	300 A
Discharge current (max.)	1 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 77 VDC
Capacitance	$\leq$ 4.6 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

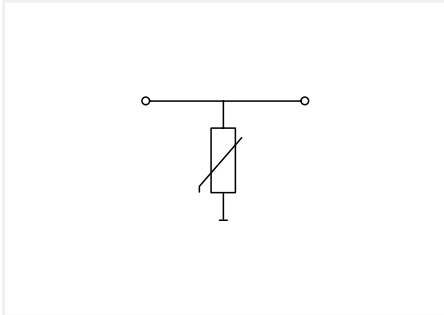
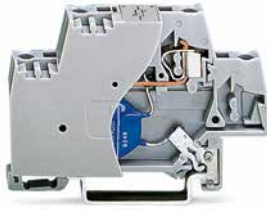
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

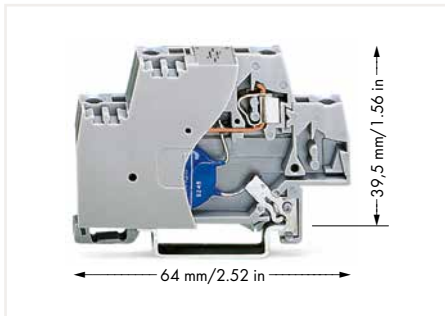
Weight	12.8 g
--------	--------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Varistor and End Plate; with direct connection to DIN-rail; 48 VDC

$U_{BN}$	Item No.	Pack. Unit
48 VDC	280-502/281-583	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	48 VDC
Maximum continuous operating voltage	56 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	300 A
Discharge current (max.)	1 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 135 VDC
Capacitance	$\leq$ 2.8 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

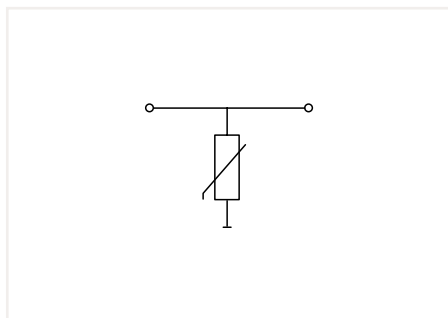
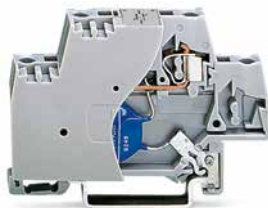
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

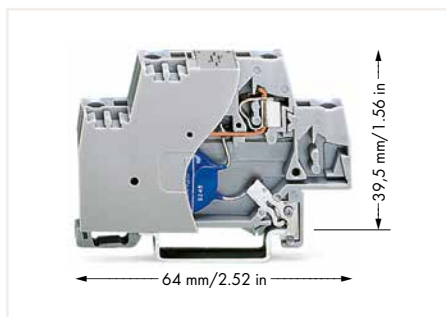
Weight	13.4 g
--------	--------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Varistor and End Plate; with direct connection to DIN-rail; 60 VDC

$U_{BN}$	Item No.	Pack. Unit
60 VDC	280-502/281-584	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	60 VDC
Maximum continuous operating voltage	85 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	1 kA
Discharge current (max.)	4.5 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 165 VDC
Capacitance	$\leq$ 1.7 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

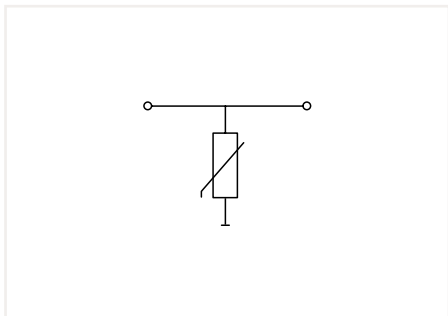
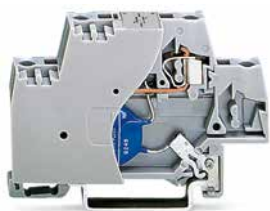
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

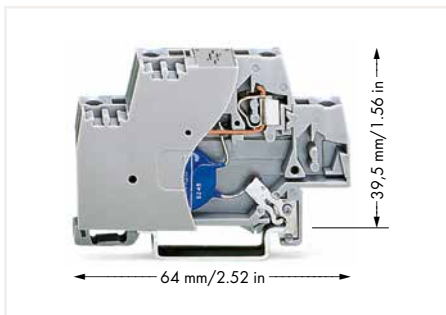
Weight	12.7 g
--------	--------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Varistor and End Plate; with direct connection to DIN-rail; 110 VDC

$U_{BN}$	Item No.	Pack. Unit
110 VDC	280-502/281-585	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	110 VDC
Maximum continuous operating voltage	150 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	1 kA
Discharge current (max.)	4.5 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 300 VDC
Capacitance	$\leq$ 0.8 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

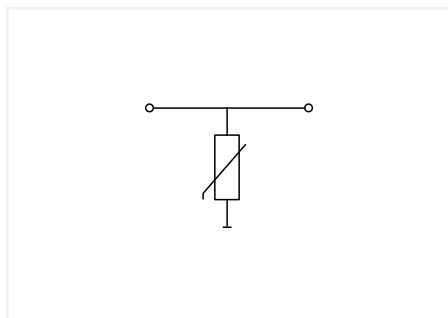
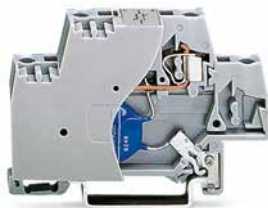
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

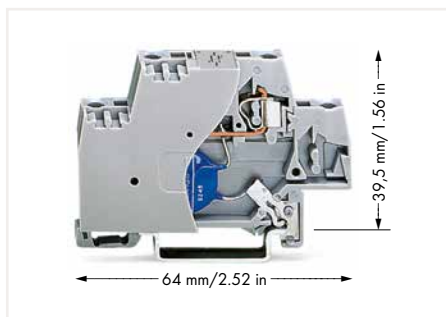
Weight	12.5 g
--------	--------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Varistor and End Plate; with direct connection to DIN-rail; 24 VAC

$U_{BN}$	Item No.	Pack. Unit
24 VAC	280-502/281-586	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	24 VAC
Maximum continuous operating voltage	30 VAC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	300 A
Discharge current (max.)	1 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 93 VAC
Capacitance	$\leq$ 3.5 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

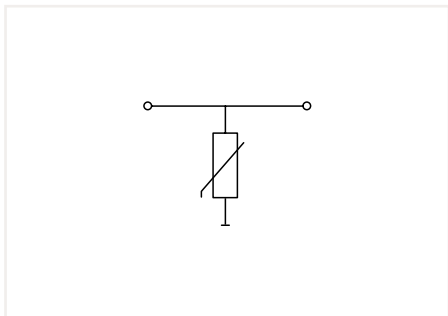
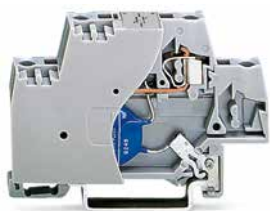
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

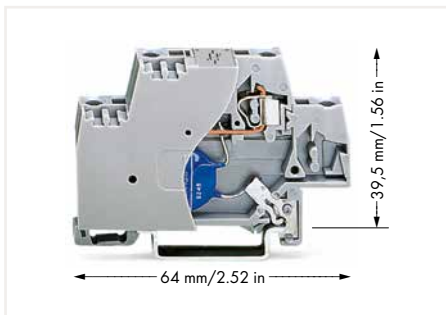
Weight	13.1 g
--------	--------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Varistor and End Plate; with direct connection to DIN-rail; 115 VAC

$U_{BN}$	Item No.	Pack. Unit
115 VAC	280-502/281-587	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	115 VAC
Maximum continuous operating voltage	150 VAC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	1 kA
Discharge current (max.)	4.5 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 395 VAC
Capacitance	$\leq$ 0.57 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

### Mechanical Data

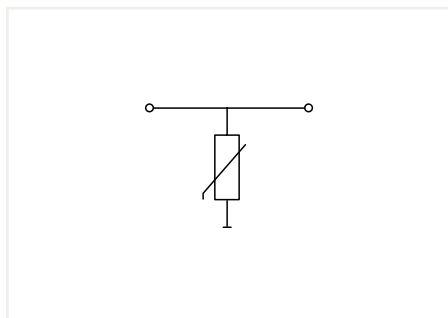
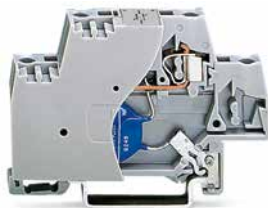
Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	12.6 g
--------	--------

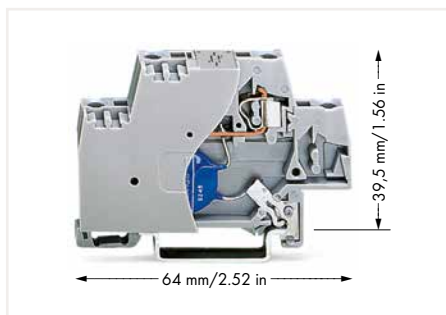


## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Varistor and End Plate; with direct connection to DIN-rail; 230 VAC

U <sub>BN</sub>	Item No.	Pack. Unit
230 VAC	280-502/281-588	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	230 VAC
Maximum continuous operating voltage	275 VAC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	1 kA
Discharge current (max.)	4.5 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 710 VAC
Capacitance	$\leq$ 0.32 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

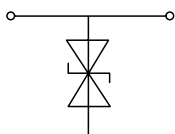
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

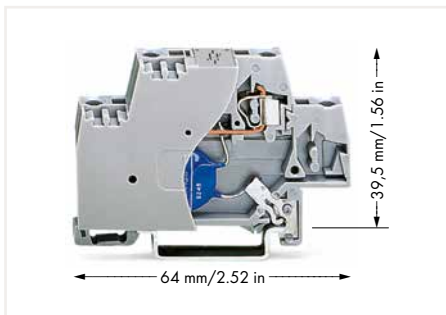
Weight	13.1 g
--------	--------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Suppressor Diode and End Plate;  
with direct connection to DIN-rail; 24 VDC

U <sub>BN</sub>	Item No.	Pack. Unit
24 VDC	280-502/281-589	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	24 VDC
Maximum continuous operating voltage	28 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	169 A
Voltage protection level (8/20 $\mu$ s)	$\leq$ 59 VDC
Capacitance	$\leq$ 2.7 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

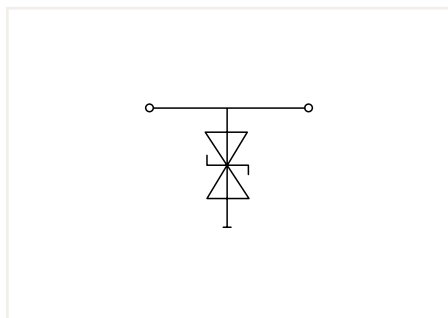
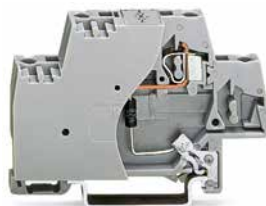
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

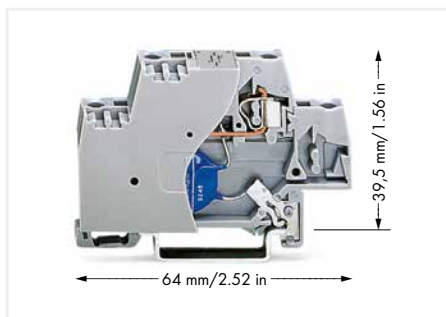
Weight	11.9 g
--------	--------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Suppressor Diode and End Plate;  
with direct connection to DIN-rail; 48 VDC

U <sub>BN</sub>	Item No.	Pack. Unit
48 VDC	280-502/281-590	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	48 VDC
Maximum continuous operating voltage	53 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	90 A
Voltage protection level (8/20 $\mu$ s)	$\leq$ 111 VDC
Capacitance	$\leq$ 1.7 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

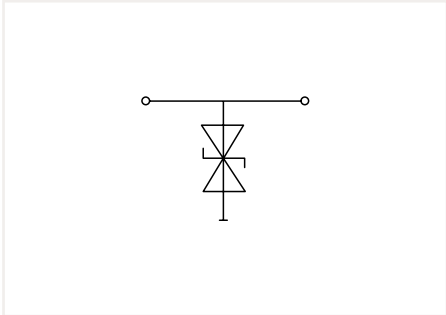
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

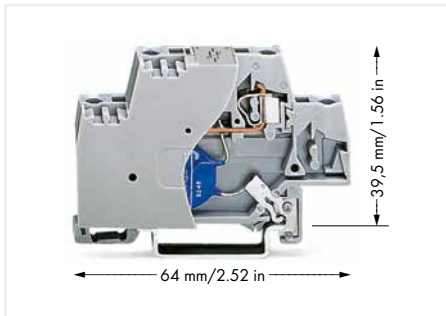
Weight	12 g
--------	------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Suppressor Diode and End Plate;  
with direct connection to DIN-rail; 60 VDC

U <sub>BN</sub>	Item No.	Pack. Unit
60 VDC	280-502/281-591	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	60 VDC
Maximum continuous operating voltage	70 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	69 A
Voltage protection level (8/20 $\mu$ s)	$\leq$ 146 VDC
Capacitance	$\leq$ 1.35 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

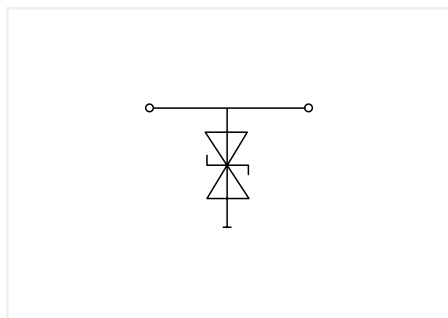
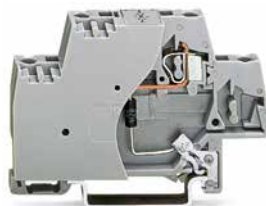
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

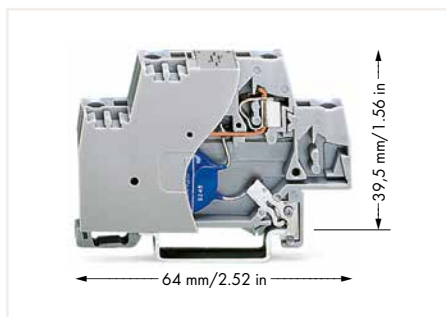
Weight	12.1 g
--------	--------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Suppressor Diode and End Plate;  
with direct connection to DIN-rail; 110 VDC

U <sub>BN</sub>	Item No.	Pack. Unit
110 VDC	280-502/281-592	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	110 VDC
Maximum continuous operating voltage	128 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 μs), line	38 A
Voltage protection level (8/20 μs)	≤ 265 VDC
Capacitance	≤ 0.85 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

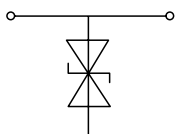
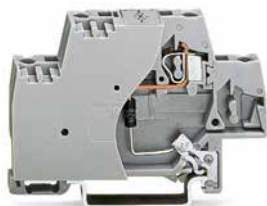
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

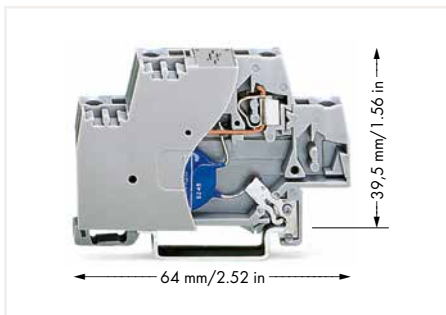
Weight	12.2 g
--------	--------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Suppressor Diode and End Plate;  
with direct connection to DIN-rail; 24 VAC

U <sub>BN</sub>	Item No.	Pack. Unit
24 VAC	280-502/281-593	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	24 VAC
Maximum continuous operating voltage	26 VAC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	143 A
Voltage protection level (8/20 $\mu$ s)	$\leq$ 70 VAC
Capacitance	$\leq$ 2.4 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

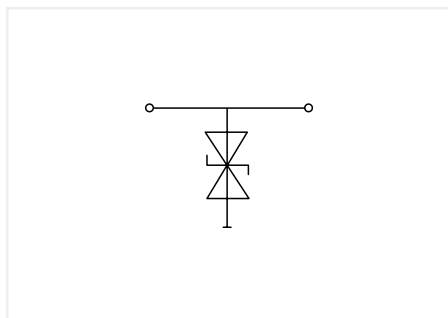
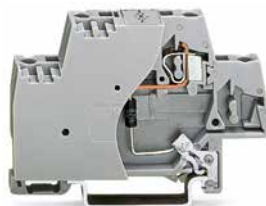
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

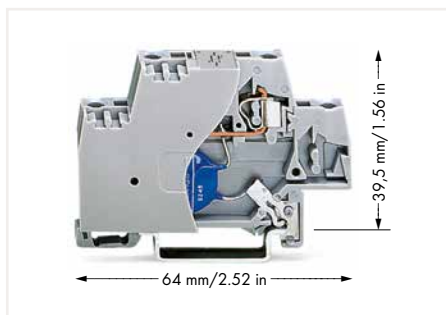
Weight	12.1 g
--------	--------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Suppressor Diode and End Plate;  
with direct connection to DIN-rail; 115 VAC

U <sub>BN</sub>	Item No.	Pack. Unit
115 VAC	280-502/281-594	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	115 VAC
Maximum continuous operating voltage	133 VAC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	26 A
Voltage protection level (8/20 $\mu$ s)	$\leq$ 388 VAC
Capacitance	$\leq$ 0.63 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

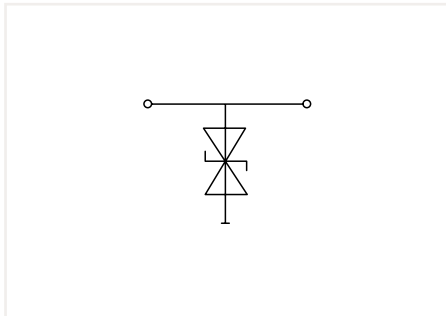
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

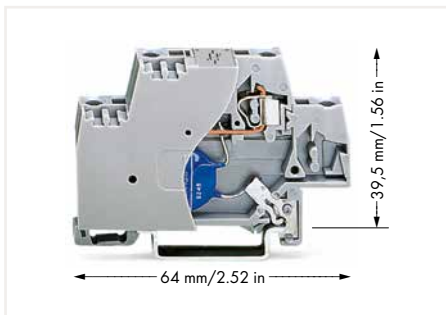
Weight	12 g
--------	------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Suppressor Diode and End Plate;  
with direct connection to DIN-rail; 230 VAC

U <sub>BN</sub>	Item No.	Pack. Unit
230 VAC	280-502/281-595	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	230 VAC
Maximum continuous operating voltage	253 VAC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	14 A
Voltage protection level (8/20 $\mu$ s)	$\leq$ 706 VAC
Capacitance	$\leq$ 0.4 nF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

### Mechanical Data

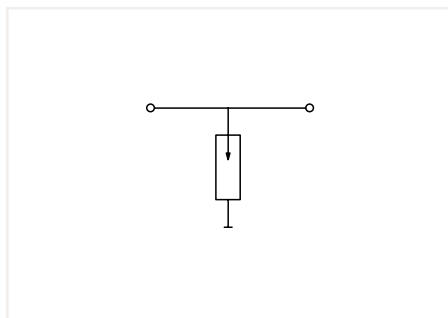
Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	12.1 g
--------	--------

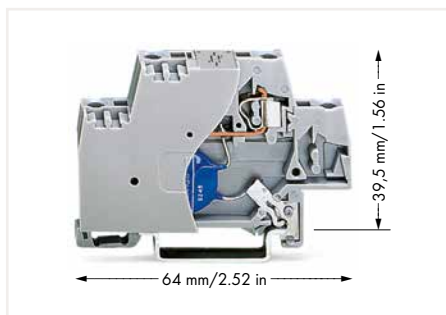


## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Gas-Filled Surge Arrester and End Plate; with direct connection to DIN-rail; 24 VAC/DC

U <sub>BN</sub>	Item No.	Pack. Unit
24 VAC/DC	280-503/281-579	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	24 VAC/DC
Maximum continuous operating voltage	70 VAC / 90 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	5 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 600 VAC
Capacitance	$\leq$ 2 pF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

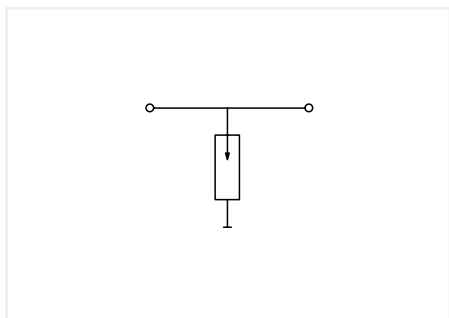
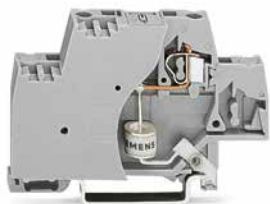
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

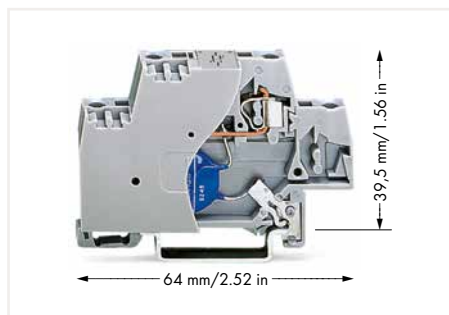
Weight	13 g
--------	------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Gas-Filled Surge Arrester and End Plate; with direct connection to DIN-rail; 115 VAC/DC

U <sub>BN</sub>	Item No.	Pack. Unit
115 VAC/DC	280-503/281-580	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	115 VAC/DC
Maximum continuous operating voltage	180 VAC / 230 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 μs), line	5 kA
Voltage protection level (8/20 μs)	≤ 650 VAC
Capacitance	≤ 2 pF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

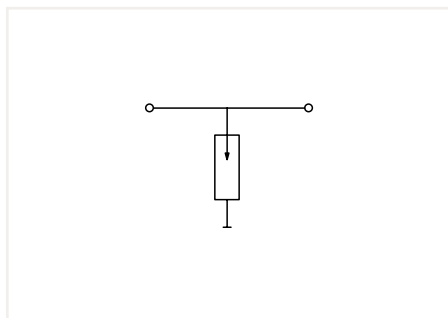
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

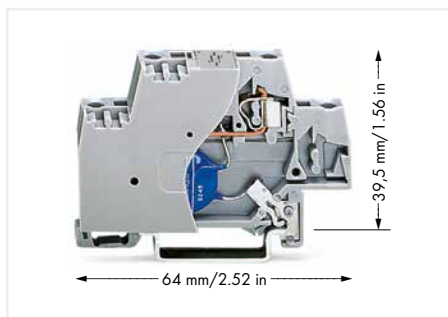
Weight	12.3 g
--------	--------

## Rail-Mount Terminal Block; with Surge Arrester; with Direct Connection to the DIN-35 Rail 280 Series



Terminal Block with Gas-Filled Surge Arrester and End Plate; with direct connection to DIN-rail; 230 VAC/DC

$U_{BN}$	Item No.	Pack. Unit
230 VAC/DC	280-503/281-581	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	230 VAC/DC
Maximum continuous operating voltage	450 VAC / 600 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	5 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 1100 VAC
Capacitance	$\leq$ 2 pF

### Connection Data

Connection points (number)	2
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

### Mechanical Data

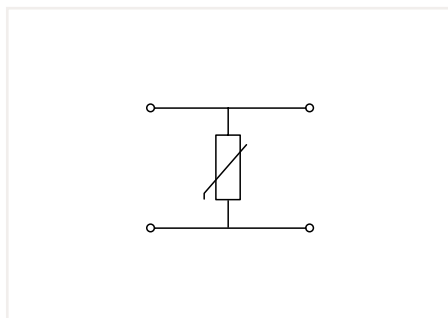
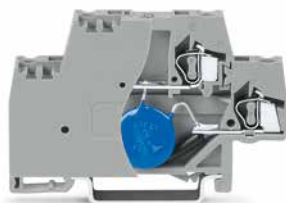
Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	12.7 g
--------	--------

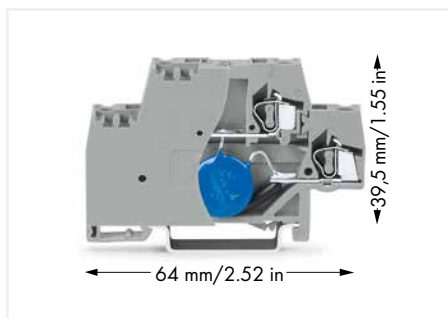


## Double-Deck Terminal Block; with Surge Arrester 280 Series



Terminal Block with Varistor and End Plate; 24 VDC

$U_{BN}$	Item No.	Pack. Unit
24 VDC	280-504/281-582	25



### Electrical Data

Nominal operating voltage	24 VDC
Maximum continuous operating voltage	31 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	300 A
Discharge current (max.)	1 kA
Voltage protection level (8/20 $\mu$ s)	$\leq 77$ VDC
Capacitance	$\leq 4.6$ nF

### Connection Data

Connection points (number)	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	15.5 g
--------	--------

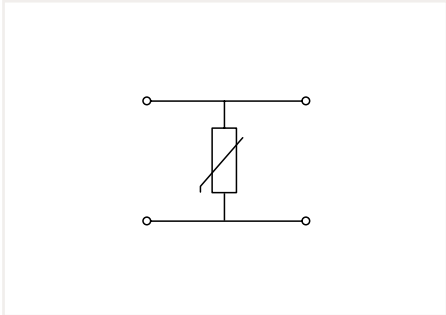
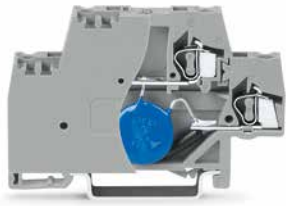
#### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

#### Features:

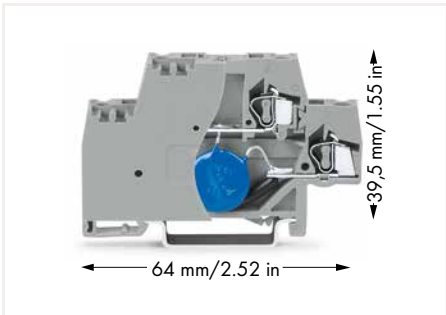
- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

## Double-Deck Terminal Block; with Surge Arrester 280 Series



Terminal Block with Varistor and End Plate; 48 VDC

$U_{BN}$	Item No.	Pack. Unit
48 VDC	280-504/281-583	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	48 VDC
Maximum continuous operating voltage	56 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	300 A
Discharge current (max.)	1 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 135 VDC
Capacitance	$\leq$ 2.8 nF

### Connection Data

Connection points (number)	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

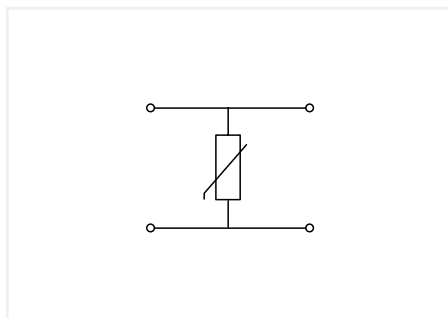
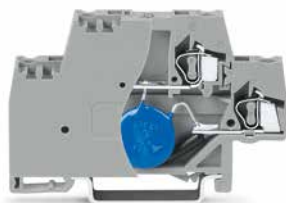
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

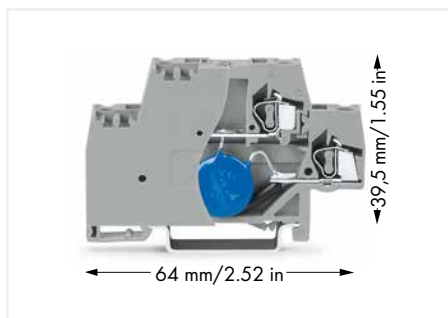
Weight	16 g
--------	------

## Double-Deck Terminal Block; with Surge Arrester 280 Series



Terminal Block with Varistor and End Plate; 60 VDC

$U_{BN}$	Item No.	Pack. Unit
60 VDC	280-504/281-584	25



### Electrical Data

Nominal operating voltage	60 VDC
Maximum continuous operating voltage	85 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	1 kA
Discharge current (max.)	4.5 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 165 VDC
Capacitance	$\leq$ 1.7 nF

### Connection Data

Connection points (number)	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	15.2 g
--------	--------

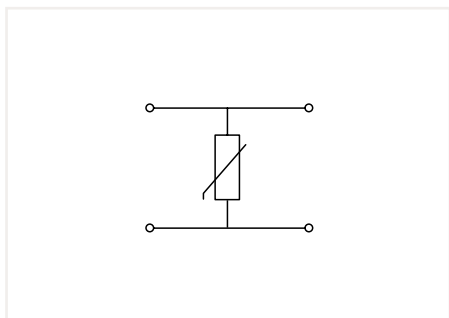
#### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

#### Features:

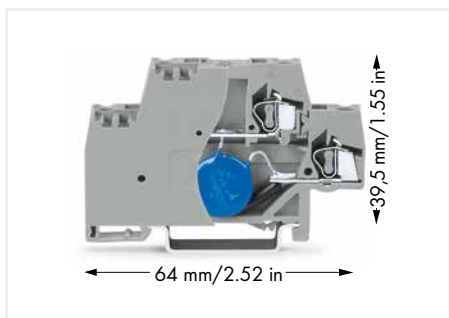
- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

## Double-Deck Terminal Block; with Surge Arrester 280 Series



Terminal Block with Varistor and End Plate; 110 VDC

$U_{BN}$	Item No.	Pack. Unit
110 VDC	280-504/281-585	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	110 VDC
Maximum continuous operating voltage	150 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	1 kA
Discharge current (max.)	4.5 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 300 VDC
Capacitance	$\leq$ 0.8 nF

### Connection Data

Connection points (number)	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

### Mechanical Data

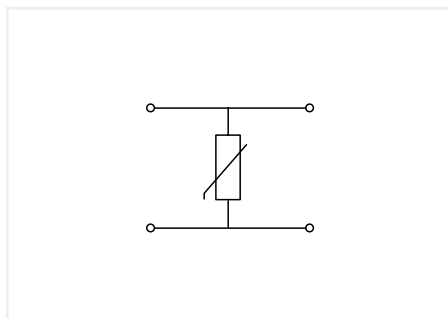
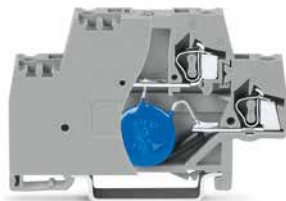
Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	15.2 g
--------	--------

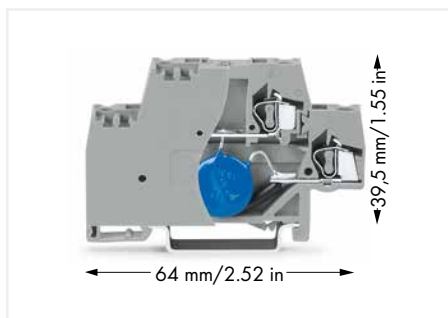


## Double-Deck Terminal Block; with Surge Arrester 280 Series



Terminal Block with Varistor and End Plate; 24 VAC

$U_{BN}$	Item No.	Pack. Unit
24 VAC	280-504/281-586	25



### Electrical Data

Nominal operating voltage	24 VAC
Maximum continuous operating voltage	30 VAC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	300 A
Discharge current (max.)	1 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 93 VAC
Capacitance	$\leq$ 3.5 nF

### Connection Data

Connection points (number)	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	15.5 g
--------	--------

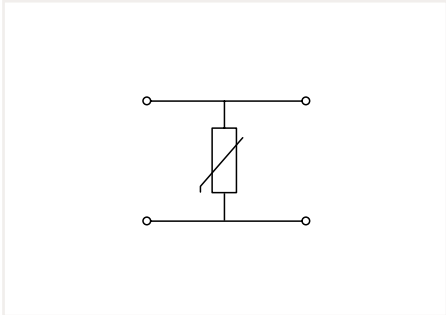
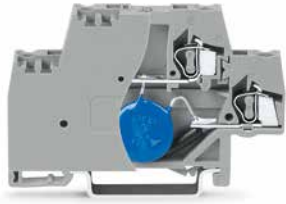
#### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

#### Features:

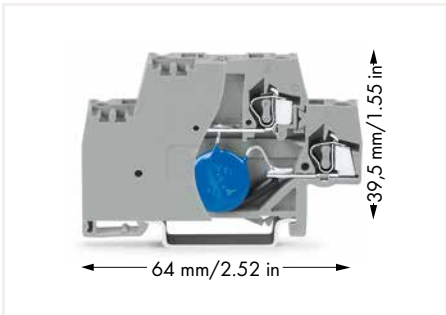
- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

## Double-Deck Terminal Block; with Surge Arrester 280 Series



Terminal Block with Varistor and End Plate; 115 VAC

$U_{BN}$	Item No.	Pack. Unit
115 VAC	280-504/281-587	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	115 VAC
Maximum continuous operating voltage	150 VAC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	1 kA
Discharge current (max.)	4.5 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 395 VAC
Capacitance	$\leq$ 0.57 nF

### Connection Data

Connection points (number)	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

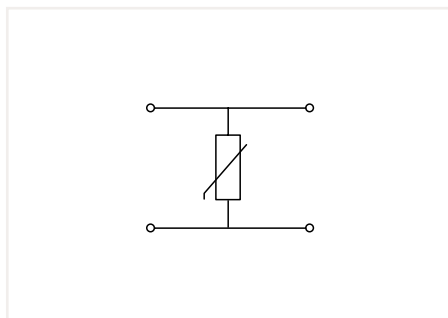
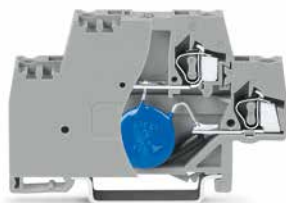
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

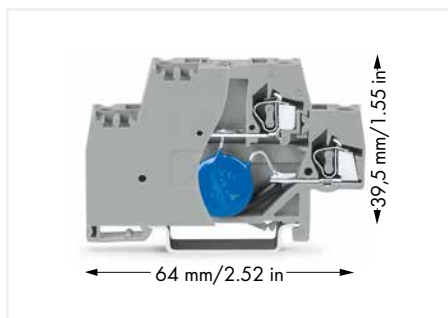
Weight	15.9 g
--------	--------

## Double-Deck Terminal Block; with Surge Arrester 280 Series



Terminal Block with Varistor and End Plate; 230 VAC

$U_{BN}$	Item No.	Pack. Unit
230 VAC	280-504/281-588	25



### Electrical Data

Nominal operating voltage	230 VAC
Maximum continuous operating voltage	275 VAC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	1 kA
Discharge current (max.)	4.5 kA
Voltage protection level (8/20 $\mu$ s)	$\leq$ 710 VAC
Capacitance	$\leq$ 0.32 nF

### Connection Data

Connection points (number)	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	15.8 g
--------	--------

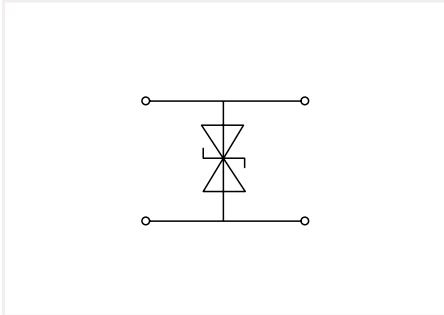
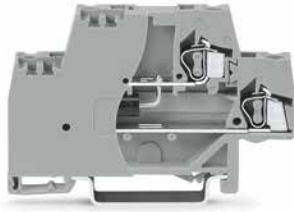
#### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

#### Features:

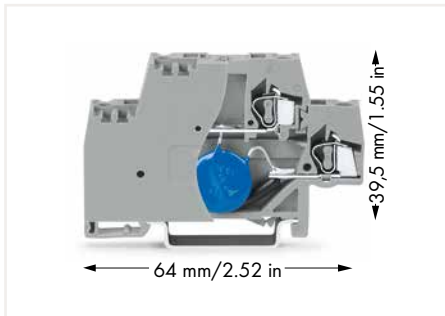
- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

## Double-Deck Terminal Block; with Surge Arrester 280 Series



Terminal Block with Suppressor Diode and End Plate;  
24 VDC

U <sub>BN</sub>	Item No.	Pack. Unit
24 VDC	280-944/281-589	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	24 VDC
Maximum continuous operating voltage	28 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	169 A
Voltage protection level (8/20 $\mu$ s)	$\leq$ 59 VDC
Capacitance	$\leq$ 2.7 nF

### Connection Data

Connection points (number)	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

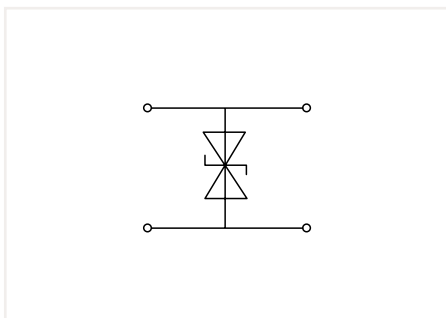
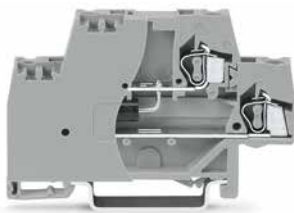
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

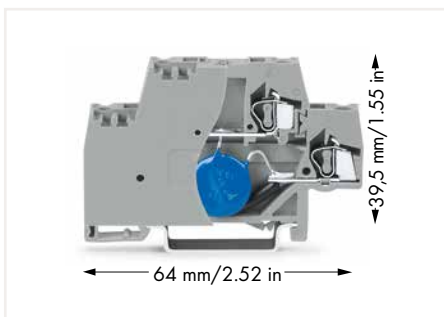
Weight	13.6 g
--------	--------

## Double-Deck Terminal Block; with Surge Arrester 280 Series



Terminal Block with Suppressor Diode and End Plate;  
48 VDC

U <sub>BN</sub>	Item No.	Pack. Unit
48 VDC	280-944/281-590	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	48 VDC
Maximum continuous operating voltage	53 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	90 A
Voltage protection level (8/20 $\mu$ s)	$\leq$ 111 VDC
Capacitance	$\leq$ 1.7 nF

### Connection Data

Connection points (number)	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39.5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

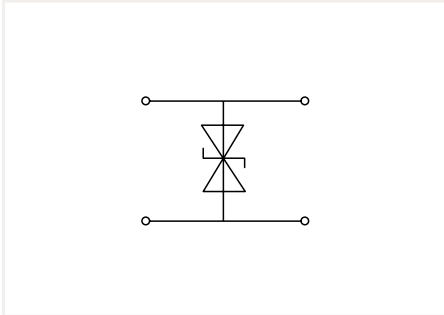
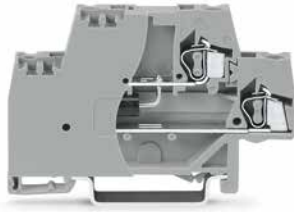
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

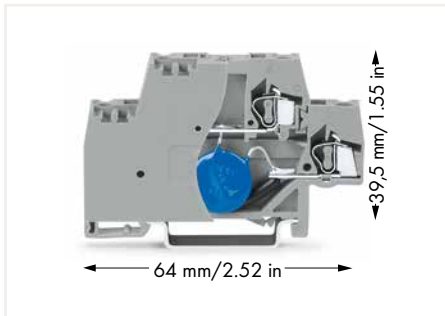
Weight	14 g
--------	------

## Double-Deck Terminal Block; with Surge Arrester 280 Series



Terminal Block with Suppressor Diode and End Plate;  
60 VDC

$U_{BN}$	Item No.	Pack. Unit
60 VDC	280-944/281-591	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	60 VDC
Maximum continuous operating voltage	70 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	69 A
Voltage protection level (8/20 $\mu$ s)	$\leq$ 146 VDC
Capacitance	$\leq$ 1.35 nF

### Connection Data

Connection points (number)	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

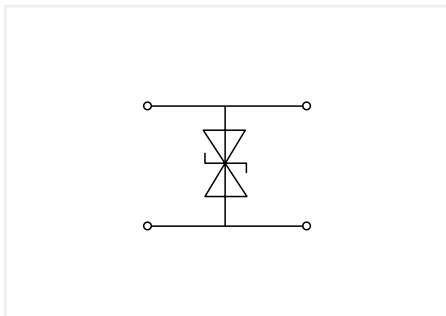
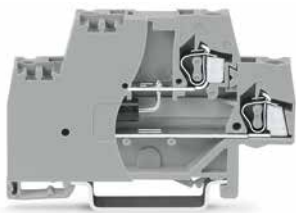
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

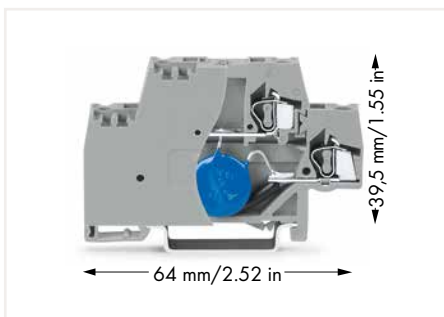
Weight	14.2 g
--------	--------

## Double-Deck Terminal Block; with Surge Arrester 280 Series



Terminal Block with Suppressor Diode and End Plate;  
110 VDC

U <sub>BN</sub>	Item No.	Pack. Unit
110 VDC	280-944/281-592	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	110 VDC
Maximum continuous operating voltage	128 VDC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	38 A
Voltage protection level (8/20 $\mu$ s)	$\leq$ 265 VDC
Capacitance	$\leq$ 0.85 nF

### Connection Data

Connection points (number)	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39.5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

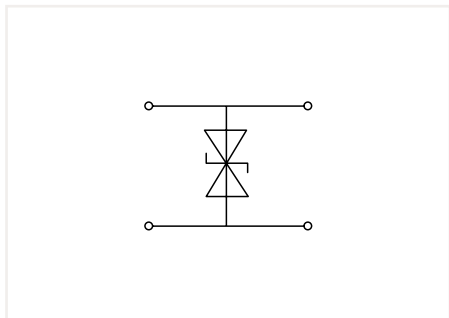
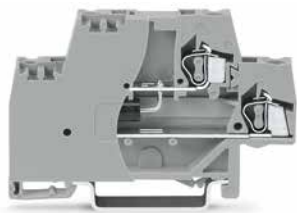
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

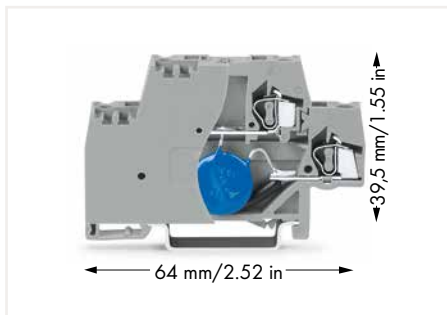
Weight	14.2 g
--------	--------

## Double-Deck Terminal Block; with Surge Arrester 280 Series



Terminal Block with Suppressor Diode and End Plate;  
24 VAC

U <sub>BN</sub>	Item No.	Pack. Unit
24 VAC	280-944/281-593	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	24 VAC
Maximum continuous operating voltage	26 VAC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	143 A
Voltage protection level (8/20 $\mu$ s)	$\leq$ 70 VAC
Capacitance	$\leq$ 2.4 nF

### Connection Data

Connection points (number)	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

### Mechanical Data

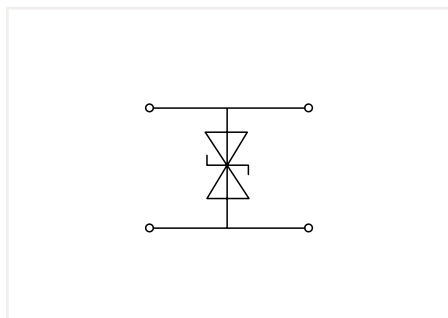
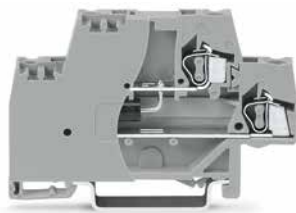
Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	14.2 g
--------	--------

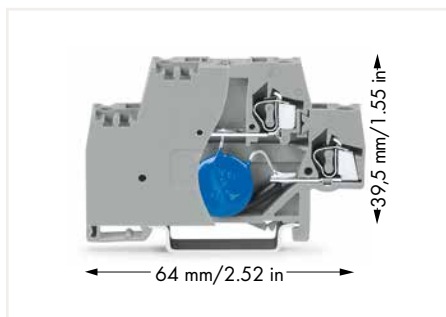


## Double-Deck Terminal Block; with Surge Arrester 280 Series



Terminal Block with Suppressor Diode and End Plate;  
115 VAC

U <sub>BN</sub>	Item No.	Pack. Unit
115 VAC	280-944/281-594	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	115 VAC
Maximum continuous operating voltage	133 VAC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	26 A
Voltage protection level (8/20 $\mu$ s)	$\leq$ 388 VAC
Capacitance	$\leq$ 0.63 nF

### Connection Data

Connection points (number)	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39.5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

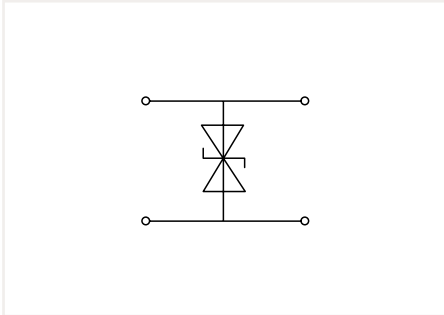
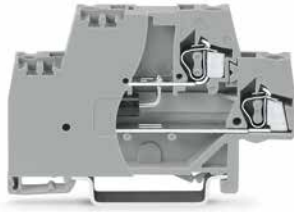
### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

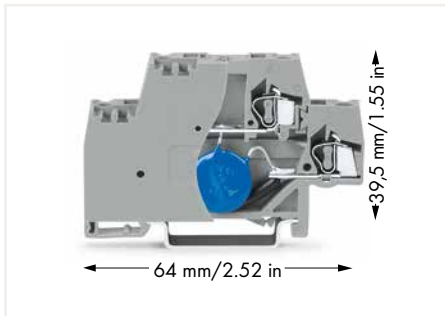
Weight	14 g
--------	------

## Double-Deck Terminal Block; with Surge Arrester 280 Series



Terminal Block with Suppressor Diode and End Plate;  
230 VAC

U <sub>BN</sub>	Item No.	Pack. Unit
230 VAC	280-944/281-595	25



### Short description:

These single-stage surge arresters are equipped either with 280 Series gas-filled surge arresters (coarse), varistors (medium) or suppressor diodes (fine).

### Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

### Electrical Data

Nominal operating voltage	230 VAC
Maximum continuous operating voltage	253 VAC
Rated continuous current	20 A
Nominal discharge current (8/20 $\mu$ s), line	14 A
Voltage protection level (8/20 $\mu$ s)	$\leq$ 706 VAC
Capacitance	$\leq$ 0.4 nF

### Connection Data

Connection points (number)	4
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

### Physical Data

Width	10 mm / 0.394 inch
Height from upper-edge of DIN-rail	39,5 mm / 1.555 inch
Depth	64 mm / 2.52 inch

### Mechanical Data

Mounting type	DIN-35 rail
---------------	-------------

### Material Data

Weight	14.1 g
--------	--------

## Accessories



End and intermediate plate; 2.5 mm thick			Insulation stop; 5 pcs/strip				Comb-style jumper bar; insulated; $I_N = I_N$ of terminal block		
Color	Item No.	Pack. Unit	Color	Diameter	Item No.	Pack. Unit		Item No.	Pack. Unit
orange	280-341	100	white	0.08 ... 0.2 mm <sup>2</sup>	280-470	200	2-way	280-482	200
gray	280-340	100	light gray	0.25 ... 0.5 mm <sup>2</sup>	280-471	200	3-way	280-483	200
			black	0.75 ... 1 mm <sup>2</sup>	280-472	200	10-way	280-490	50

## Accessories














Alternate comb-style jumper bar; insulated; $I_N = I_N$ of terminal block		
	Item No.	Pack. Unit
2-way	280-492	200



# WAGO Accessories and WAGO Tools

## WAGO Accessories and WAGO Tools

			Page
	Shield Clamping Saddles	790 Series	788
	Spring-Equipped Shield Clamping Saddles	790 Series	791
	Busbar Carriers	790 Series	794
	Marking Systems		804
	DIN-Rails, Collective Jumper Carriers and Rail-Mount Terminal Block Covers		810
	End Stops for DIN-35 and DIN-15 Rails		812
	Operating tools		818
	Stripping Tools		820
	Crimping Tools for Ferrules		824
	Cable Cutter		624
	Test and Measurement Devices		830

# Shield Connection System

## 790 Series

### Installation



Carrier with grounding foot\* (790-113), 45 mm long, busbar 90° to the rail

\*for all shield clamping saddle sizes



Carrier with grounding foot\* (790-114), 45 mm long, busbar parallel to the rail

\*for all shield clamping saddle sizes

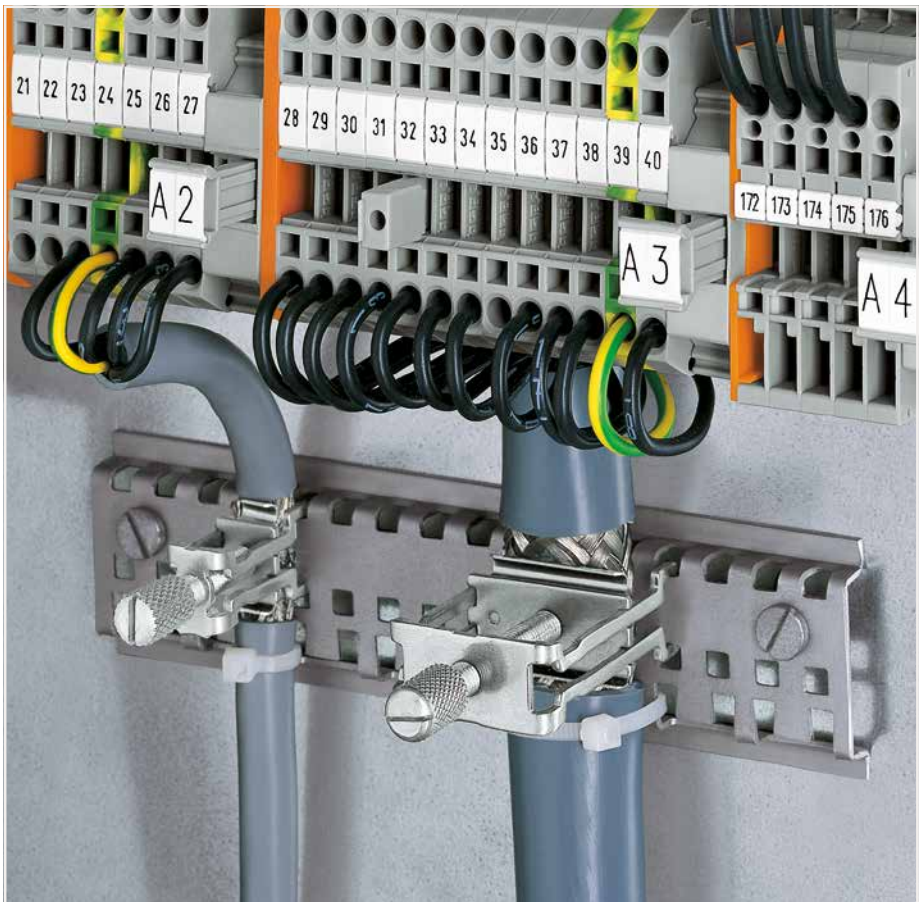


Carrier with grounding foot\* (790-115), 125 mm long, busbar parallel to the rail

\*for all shield clamping saddle sizes



Securing a spacer sleeve to a specialty slotted DIN-rail.



Securing an additional shield clamping saddle.



Tightening/removing a shield clamping saddle.



After connection, tighten the knurled screw to complete the installation.  
Recommended tightening torque: 0.5 Nm



To remove the clamping saddle, unscrew until ratcheted mechanism is released, then slightly tip saddle and remove the clamping saddle.

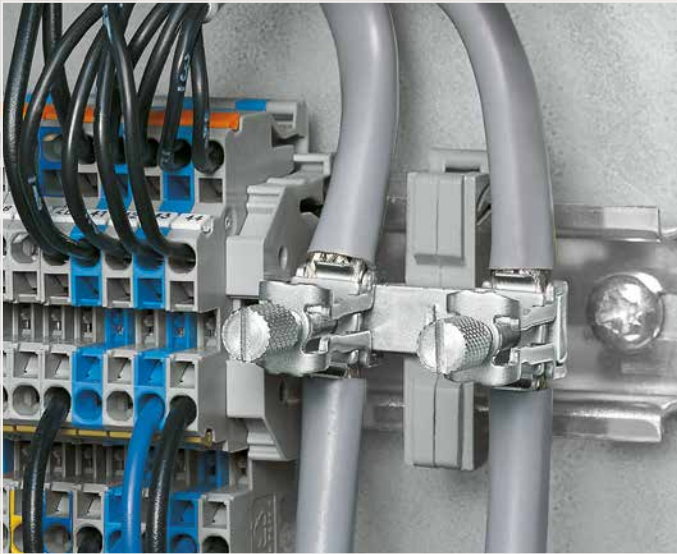
11



# Shield Connection System

## 790 Series

### Installation



Carrier with grounding foot – busbar parallel to the rail



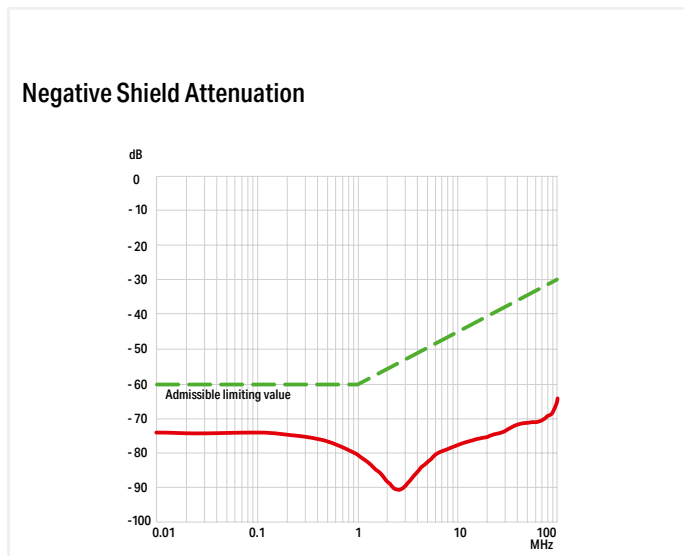
Insulated mounting carriers for a common shield reference potential, independent of housing potential



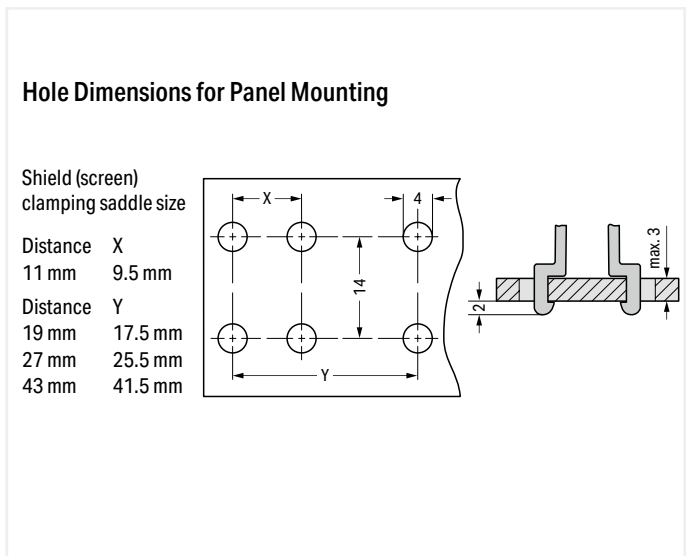
U-shaped (10 x 3) mm copper busbar



Snap shield clamping saddles into any metal plate (max. thickness: 3 mm).



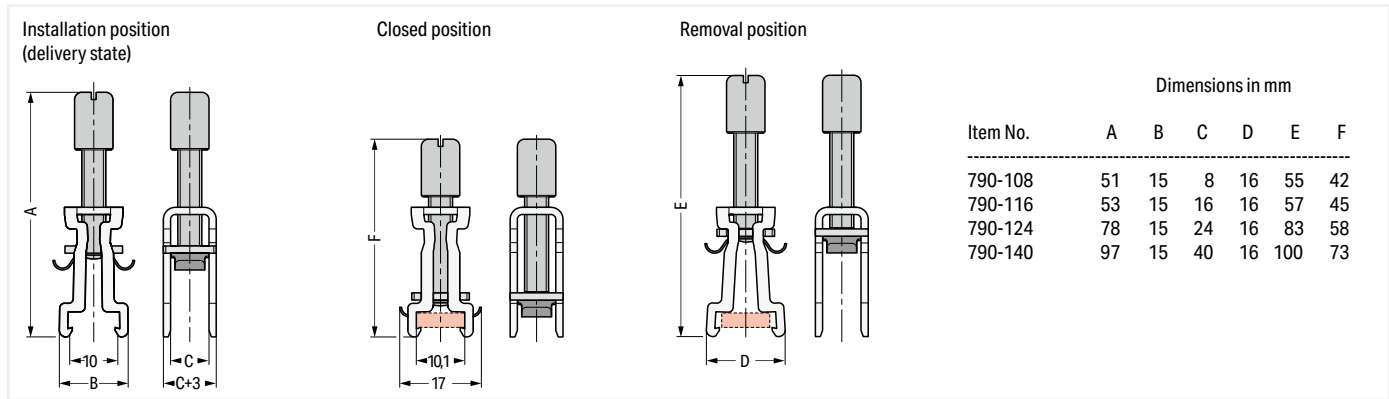
The shield connection system is highly effective because the clamping unit can be brought very close to the unshielded part of the cable.



Additionally, the spring material is part of the clamping saddle, providing a good electrical connection (the system also acts as a partial strain relief). The spring element integrated in the shield clamping saddle compensates for deformation and settling that results from a connected shield.



# Shield Clamping Saddles 790 Series



Item No.	Dimensions in mm					
	A	B	C	D	E	F
790-108	51	15	8	16	55	42
790-116	53	15	16	16	57	45
790-124	78	15	24	16	83	58
790-140	97	15	40	16	100	73

Shield clamping saddle; 11 mm wide; Connectable shield diameter: 3 ... 8 mm  
Note: Cannot be used for connecting ground conductors!

Item No.	Pack. Unit
790-108	50 (10)

Shield clamping saddle; 19 mm wide; Connectable shield diameter: 7 ... 16 mm  
Note: Cannot be used for connecting ground conductors!

Item No.	Pack. Unit
790-116	50 (10)

Shield clamping saddle; 27 mm wide; Connectable shield diameter: 6 ... 24 mm  
Note: Cannot be used for connecting ground conductors!

Item No.	Pack. Unit
790-124	50 (10)

## Accessories; for Shield Clamping Saddles

Carrier with grounding saddle; Busbar parallel to the rail; 15 mm long; Copper (10 x 3) mm; for shield clamping saddles (790-108)

790-110	25
---------	----

Carrier with grounding foot; Busbar parallel to the rail; 25 mm long; Copper (10 x 3) mm; for shield clamping saddles (790-108; 790-116) and shield clamps (791-111; 791-117)

790-112	25
---------	----

Carrier with grounding foot; Busbar 90° to the DIN-rail; 45 mm long; Copper (10 x 3) mm; for shield clamping saddles (790 Series)

790-113	25
---------	----

Carrier with grounding foot; Busbar parallel to the DIN-rail; 45 mm long; Copper (10 x 3) mm; for shield clamping saddles (790 Series) and shield clamps (791 Series)

790-114	25
---------	----

Carrier with two grounding feet; Busbar parallel to the DIN-rail; 125 mm long; Copper (10 x 3) mm

790-115	25
---------	----

DIN-rail; specialty slotted; 1000 mm long; tin-plated

790-145	
---------	--

Spacer sleeve; steel; for DIN-rail; specialty slotted; for M5-size screw;

790-144	200 (100)
---------	-----------

Insulated mounting foot; for busbar with M4 x 8 mm screw

790-100	50 (25)
---------	---------

Insulated mounting foot; for busbar with (3.5 x 9) mm sheet metal screw

790-101	50 (25)
---------	---------

Busbar; tin-plated; 1000 mm long; copper (10 x 3) mm

210-133	1
---------	---

Busbar; tin-plated; 30 mm long; copper (10 x 3) mm

790-133	20
---------	----

Busbar; tin-plated; 50 mm long; copper (10 x 3) mm

790-134	20
---------	----

U-shaped busbar; Copper (10 x 3) mm; for 5 I/O; for 750 Series I/O Modules

790-190	25 (5)
---------	--------

U-shaped busbar; Copper (10 x 3) mm; for 8 I/O; for 750 Series I/O Modules

790-191	25
---------	----

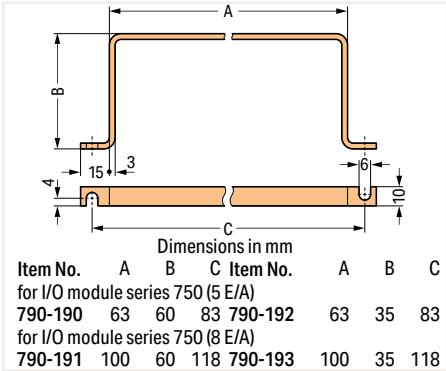
U-shaped busbar; Copper (10 x 3) mm; for 5 I/O; for 750 Series I/O Modules

790-192	25
---------	----

U-shaped busbar; Copper (10 x 3) mm; for 8 I/O; for 750 Series I/O Modules

790-193	25
---------	----

11



Shield clamping saddle; 43 mm wide; Connectable shield diameter: 22 ... 40 mm  
 Note: Cannot be used for connecting ground conductors!

Item No.	Pack. Unit
790-140	50 (10)



Carrier with grounding foot\* (790-114), 45 mm long, busbar parallel to the rail



Carrier with grounding foot\* (790-115), 125 mm long, busbar parallel to the rail

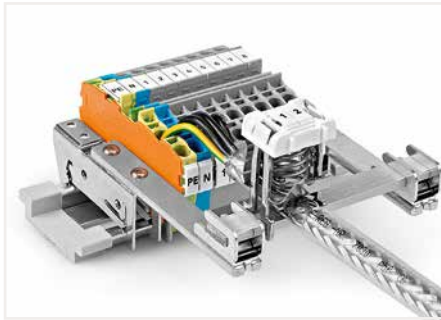
\*for all shield clamping saddle sizes

\*for all shield clamping saddle sizes

# Spring-Equipped Shield Clamping Saddles 790 Series Installation



Shield clamping saddles are available in three different sizes for shield diameters ranging from 3 to 20 mm.



Application example



Compress the clamping saddle until fully engaged.



Mounting a clamping saddle on a specialty slotted DIN-rail (790-145).  
When releasing the saddle, do not place your finger under the clamping spring!



Removing the shield clamping saddle.



Shield clamping saddle contacts shield conductor and specialty slotted DIN-rail (790-145).



Labeling using a marking strip.



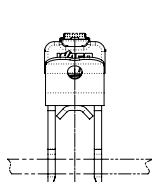
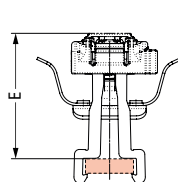
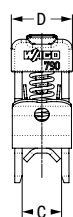
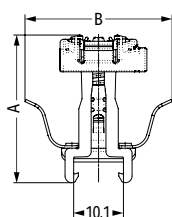
Labelling using WMB markers.

# Spring-Equipped Shield Clamping Saddles 790 Series



Delivery position

Mounting position



Dimensions in mm

Item No.	A	B	C	D	E*
790-208	30	29.9	8	12.4	25.8
790-216	34.6	28.3	16	21.8	30.2
790-220	45.6	28.3	24	30	41.2

\*Height with WMB marker

Shield clamping saddle; 12.4 mm wide; Connectable shield diameter: 3 ... 8 mm  
Note: Cannot be used for connecting ground conductors and strain relief!

Item No.	Pack. Unit
790-208	50

Shield clamping saddle; 21.8 mm wide; Connectable shield diameter: 6 ... 16 mm  
Note: Cannot be used for connecting ground conductors and strain relief!

Item No.	Pack. Unit
790-216	25

Shield clamping saddle; 30 mm wide; Connectable shield diameter: 6 ... 20 mm  
Note: Cannot be used for connecting ground conductors and strain relief!

Item No.	Pack. Unit
790-220	25

Accessories; for Shield Clamping Saddles

Carrier with grounding foot; Busbar parallel to the rail; 15 mm long; Copper (10 x 3) mm; for shield clamping saddles (790-108)

790-110	25
---------	----



Carrier with grounding foot; Busbar parallel to the rail; 25 mm long; Copper (10 x 3) mm; for shield clamping saddles (790-108; 790-116) and shield clamps (791-111; 791-117)

790-112	25
---------	----



Carrier with grounding foot; Busbar 90° to the DIN-rail; 45 mm long; Copper (10 x 3) mm; for shield clamping saddles (790 Series)

790-113	25
---------	----



Carrier with grounding foot; Busbar parallel to the DIN-rail; 45 mm long; Copper (10 x 3) mm; for shield clamping saddles (790 Series) and shield clamps (791 Series)

790-114	25
---------	----



Carrier with two grounding feet; Busbar parallel to the DIN-rail; 125 mm long; Copper (10 x 3) mm

790-115	25
---------	----



DIN-rail; specialty slotted; 1000 mm long; tin-plated

790-145
---------



Spacer sleeve; steel; for DIN-rail; specialty slotted; for M5-size screw;

790-144	200 (100)
---------	-----------



Busbar; tin-plated; 1000 mm long; copper (10 x 3) mm

210-133	1
---------	---



Busbar; tin-plated; 30 mm long; copper (10 x 3) mm

790-133	20
---------	----



Busbar; tin-plated; 50 mm long; copper (10 x 3) mm

790-134	20
---------	----

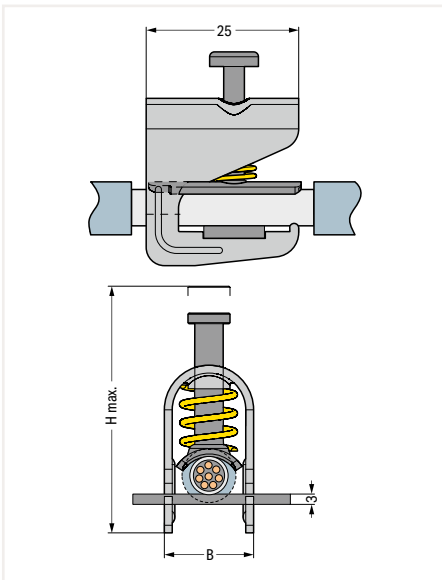


# Shield Clamp and Shield Termination 791 and 709 Series



Insert the shield termination into the female plug using the operating tool.

Dimensions in mm



Shield clamp; Connectable shield diameter: 1.5 ... 6.5 mm; Height (max.): 40 mm; 10 mm wide  
Note: Cannot be used for connecting ground conductors!

Item No.	Pack. Unit
791-107	50

Shield clamp; Connectable shield diameter: 5 ... 11 mm; Height (max.): 47 mm; 17 mm wide  
Note: Cannot be used for connecting ground conductors!

791-111	50
---------	----

Shield clamp; Connectable shield diameter: 10 ... 17 mm; Height (max.): 63 mm; 23 mm wide  
Note: Cannot be used for connecting ground conductors!

791-117	50
---------	----

Shield clamp; Connectable shield diameter: 16 ... 24 mm; Height (max.): 78 mm; 30 mm wide  
Note: Cannot be used for connecting ground conductors!

791-124	50
---------	----

Shield termination; includes cable ties for 5 ... 10 mm shield diameter; 60 mm long

Item No.	Pack. Unit
709-350	100 (25)

Shield termination; includes cable ties for 5 ... 10 mm shield diameter; 150 mm long

709-352	100 (25)
---------	----------



Fit the shield termination to the shield cable.



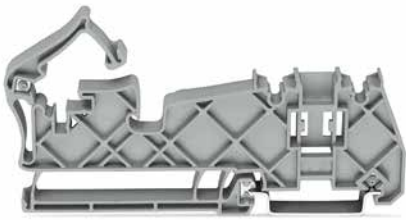
Secure both shield cable and shield termination to the strain relief plate using cable ties.



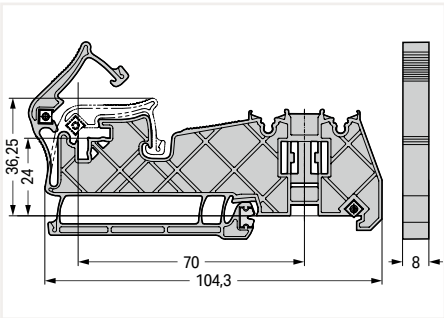
Shield termination connected to an X-COM® female plug



# Busbar Carriers 790 Series

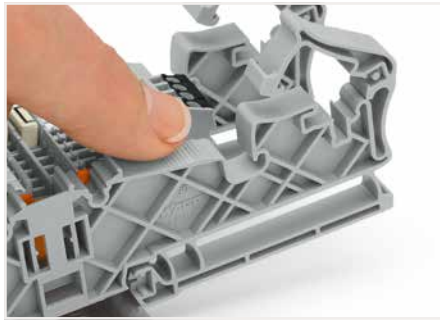


Dimensions in mm



Busbar carrier; for (10 x 3) mm copper busbars; no contact to DIN-rail; insulated

Item No.	Pack. Unit
790-400	20



Snapping the busbar carrier onto DIN-35 rail.



Vertical mounting position of the busbar



Place the busbar in the carrier holder.



Horizontal mounting position of the busbar



Snap the mounting bracket into position.



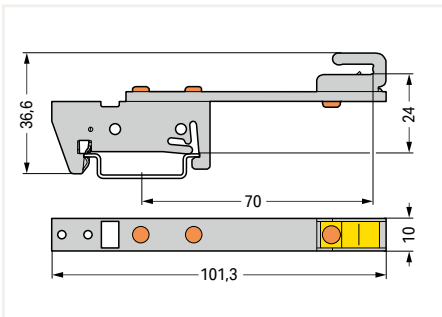
Release the mounting bracket by pushing the operating tool down ① and then forward ②.

# Busbar Carriers

## 790 Series



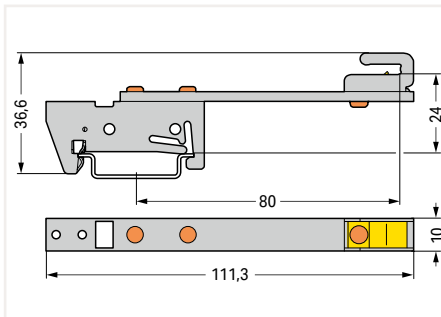
Dimensions in mm



Busbar carrier; for (10 x 3) mm copper busbars; single side; straight; 70 mm between center of DIN-rail and busbar carrier

Item No.	Pack. Unit
790-300	10

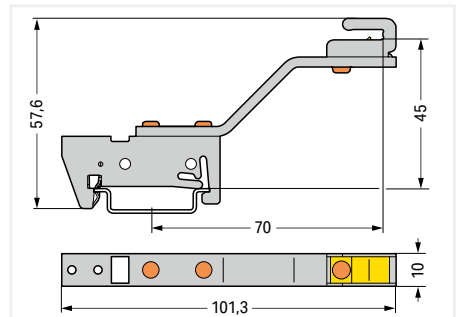
Dimensions in mm



Busbar carrier; for (10 x 3) mm copper busbars; single side; straight; 80 mm between center of DIN-rail and busbar carrier

Item No.	Pack. Unit
790-302	10

Dimensions in mm

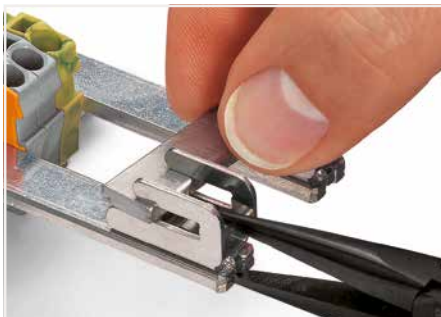


Busbar carrier; for (10 x 3) mm copper busbars; single side; angled; 70 mm between center of DIN-rail and busbar carrier

Item No.	Pack. Unit
790-301	10



Remove the busbar carrier using an operating tool (type 3, 5.5 x 0.8 mm blade).



To remove the busbar, compress the spring using pliers.

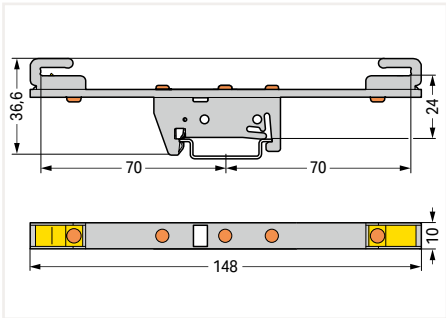


Place the busbar in the busbar carrier.

# Busbar Carriers 790 Series



Dimensions in mm

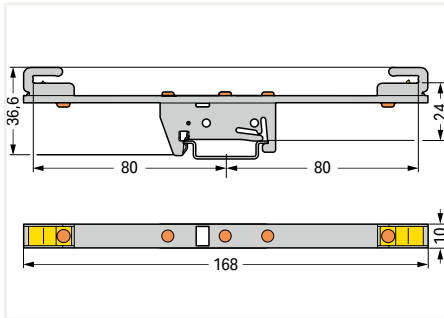


Busbar carrier; for (10 x 3) mm copper busbars; both sides; straight; 70 mm between center of DIN-rail and busbar carrier

Item No.	Pack. Unit
790-310	10



Dimensions in mm

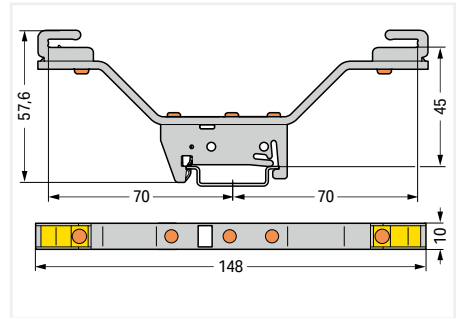


Busbar carrier; for (10 x 3) mm copper busbars; both sides; straight; 80 mm between center of DIN-rail and busbar carrier

Item No.	Pack. Unit
790-312	10

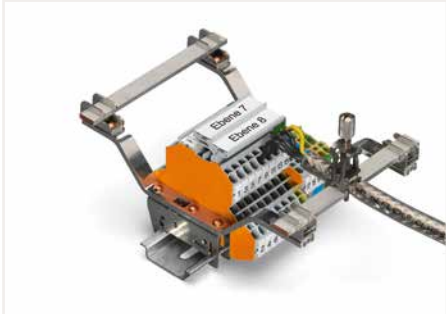


Dimensions in mm



Busbar carrier; for (10 x 3) mm copper busbars; both sides; angled; 70 mm between center of DIN-rail and busbar carrier

Item No.	Pack. Unit
790-311	10



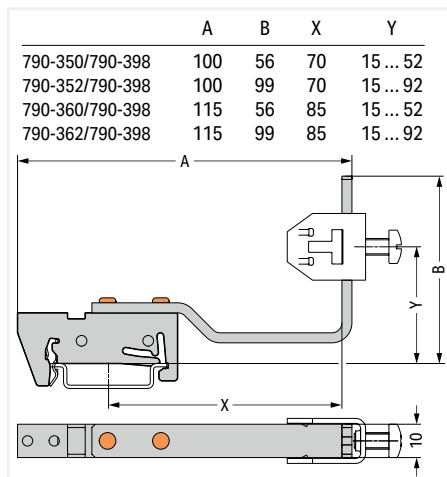
Application example



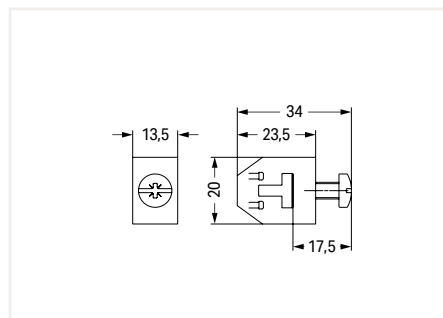
# Busbar Carrier with a T-Connector (Flexible) and T-Connector 790 Series



Dimensions in mm



Dimensions in mm



Horizontal mounting position of the busbar



Vertical mounting position of the busbar

Busbar carrier with a T-connector; flexible; for (10 x 3) mm copper busbars; 70 mm between center of DIN-rail and busbar carrier; 56 mm high

Item No.	Pack. Unit
790-350/790-398	12

T-connector; connects two (10 x 3) mm copper busbars

Item No.	Pack. Unit
790-398	

Busbar carrier with a T-connector; flexible; for (10 x 3) mm copper busbars; 70 mm between center of DIN-rail and busbar carrier; 99 mm high

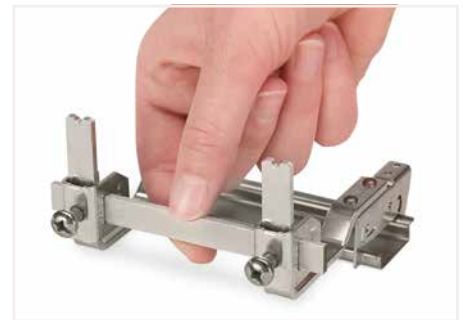
790-352/790-398	12
-----------------	----

Busbar carrier with a T-connector; flexible; for (10 x 3) mm copper busbars; 85 mm between center of DIN-rail and busbar carrier; 56 mm high

790-360/790-398	12
-----------------	----

Busbar carrier with a T-connector; flexible; for (10 x 3) mm copper busbars; 85 mm between center of DIN-rail and busbar carrier; 99 mm high

790-362/790-398	12
-----------------	----



The height of the busbar can be adjusted.

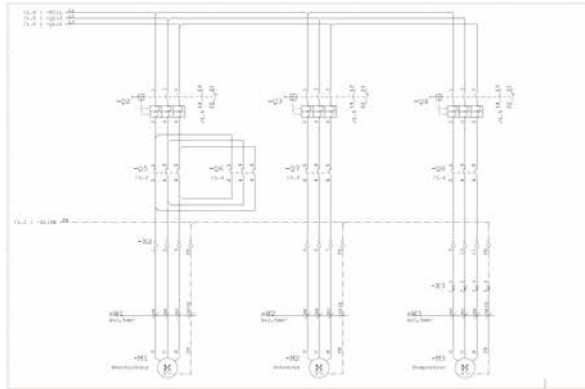


Secure the busbar by tightening the screws at the required position.



# Smart Data Supports Workflow from Control Cabinet Planning to Installation

**Electrical Planning**  
Directly import data from a CAE circuit diagram into the Smart Designer engineering software or output marking data on Smart Printer



**Technical and Commercial Item Data**  
Classified by ETIM and eCl@ss – also in Advanced Format

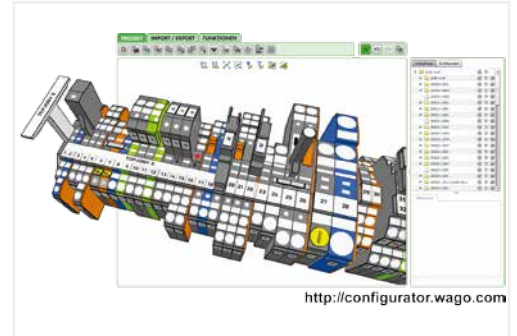


**Mechanical Planning**  
CAD export into all standard CAD formats and in different granularities



### Smart Designer

- Free online configuration and ordering software for all electrical interconnect and automation components
- No installation required
- Available worldwide – 24 hours a day
- Item data is always updated
- Auto-audit feature checks product compatibility via programmed database
- Design in full 3-D



### Smart Script

- XML-based software for all WAGO labeling materials
- Data import from CAE systems
- Font size check
- Material selection wizard



Configuration made easy – <http://configurator.wago.com>

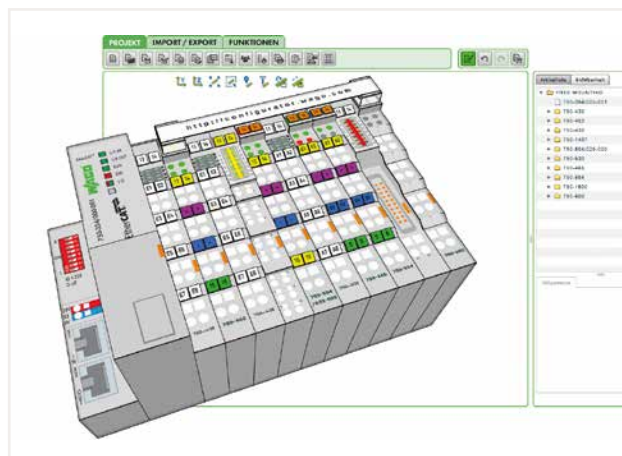
# Smart Printer

## The Fastest Marking System



### Smart Script

### Smart Designer

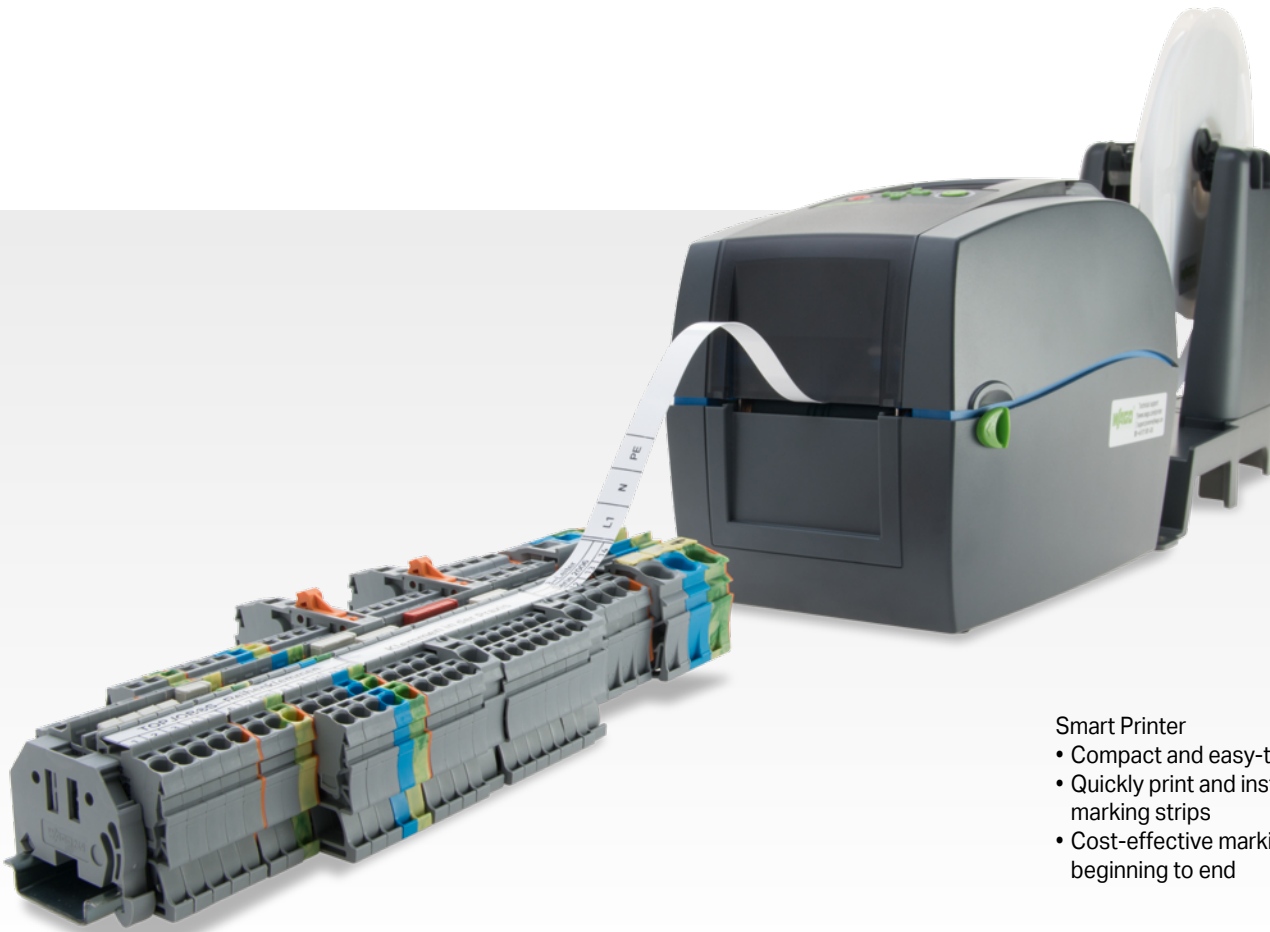


Smart Script  
Import from CAE systems or create customized marking.

Smart Designer  
After designing, print labeling materials directly from the project via Smart Printer

11

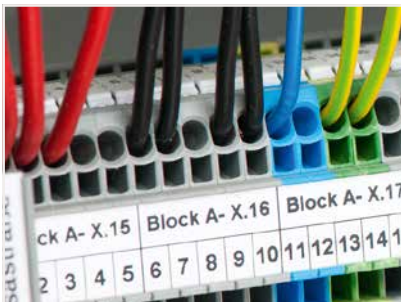
[www.wago.com/printer](http://www.wago.com/printer)



#### Smart Printer

- Compact and easy-to-use
- Quickly print and install marking strips
- Cost-effective marking from beginning to end

## Terminal Block Marking



Multi-line marking strips for clear, detailed control cabinet labels

- WMB Inline markers on a reel are suitable for various terminal block sizes – just one marker size for all standard applications
- Same profile across all TOPJOB® S Rail-Mount Terminal Blocks ensures quick labeling

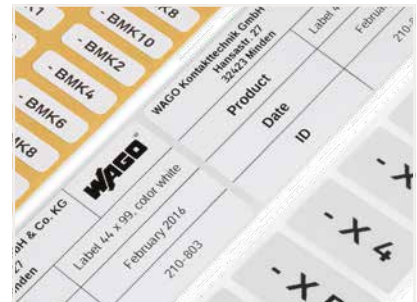
## Cable and Conductor Marking



Different versions available:

- Marking sleeves, self-laminating labels, conductor markers for thread-on mounting or shrink tubes
- Large variety of marking surface sizes

## Device Marking



Broad selection of label types (e.g., printable fabric), push-button markers and type plates optimizes marking for devices and control cabinets

- Labels and markers are available in a variety of colors and sizes



# Thermal Transfer Printer Smart Printer



Open the printer.



Printer – open



Accessories for unwinding material



Insert the ink ribbon.



Prepare the marking material.



11



Insert and secure the appropriate roller into the printer.



Printer has several interfaces:  
USB, ETHERNET, serial COM port



Fast, cost-effective and easy to use –  
printing WMB Inline markers via Smart Printer

## Thermal Transfer Printer and Cutter Smart Printer



Smart Printer; WMB Inline markers; Marking strips; Conductor markers and labels; Resolution: 300 dpi

Item No.	Pack. Unit
258-5000	1

### Smart Printer

includes:

- Power supply and cable
- USB cable
- 1 x marking strip reel (2009-110)
- 1 x WMB Inline marker reel (2009-115)
- 2 x roller (258-5006 + 258-5007)
- 1 x reel holder
- 1 x ink ribbon (258-5005)

### Technical Data

Printing method	Thermal transfer
Print head	Glass layer, spring-mounted
Print speed (max.)	127 mm/s (WAGO recommends 50.8 mm/s)
Print width (max.)	47 mm
Print length (max.)	762 mm
Print resolution	300 dpi (12 pixels/mm)
See-through/reflective sensor	Yes, centrally mounted
Operating display	Color TFT LCD with navigation button
Memory	8 MB Flash, 16 MB SDRAM
Interfaces	USB, RS-232, ETHERNET 10/100 Mbps, USB Host
Operating voltage	100 ... 240 VAC, 50 ... 60 Hz (automatic adjustment)
Dimensions (mm) W x H x D	135 x 175 x 245
Weight	2000 g (without printing material)
Operating temperature	5 ... 40 °C (41 ... 104 °F)
Storage temperature	-20 ... 50 °C (-4 ... 122 °F)
Safety approvals	CE (EMC)
Ink ribbon (see also Full Line Catalog, Volume 6, Marking)	External roll diameter: 40 mm; Internal core diameter: 12.7 mm (0.5 inch); Max. length: 110 m; Max. width: 58 mm



Cutter for Smart Printer; for marking strips only; not suitable for WMB Inline markers

Item No.	Pack. Unit
258-5030	1

### Hardware requirements:

- Printer model: Smart Printer
- From manufacturing month/year: 0814 – August 2014
- Firmware version: 1.UW7i
- Printer driver: Version 7.4.2

### Software requirements:

- Smart Script: Version 3.88.9.0 or higher
- WAGO printer settings: Version 2.4.0.0 or higher

### Approved print material to be cut:

- Marking strips: 2009-110, 709-177, 709-178, 757-901/000-005
- Self-adhesive marking strips: 210-702, 210-870 ... -877
- Cable tie markers: 211-835 ... -836, 211-836/000-002
- Self-laminating labels: 211-855 ... -857
- Conductor markers for thread-on mounting: 211-861 ... -863
- Type labels: 210-801 ... -804, 210-812
- Continuous labels: 210-831 ... -834
- Label for circuit identification: 210-813

### Dimensions of printing materials:

- Width (max.): 46 mm
- Thickness (max.): 250 µm

### Technical Data

Width	60 mm
Height	107 mm
Depth	131 mm
Weight	1050 g



# Marking Systems

## Description and Installation



Separating a strip from the WMB or WMB marker card.



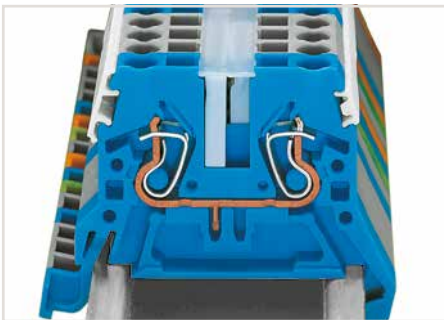
Stretching a WMB marker strip.



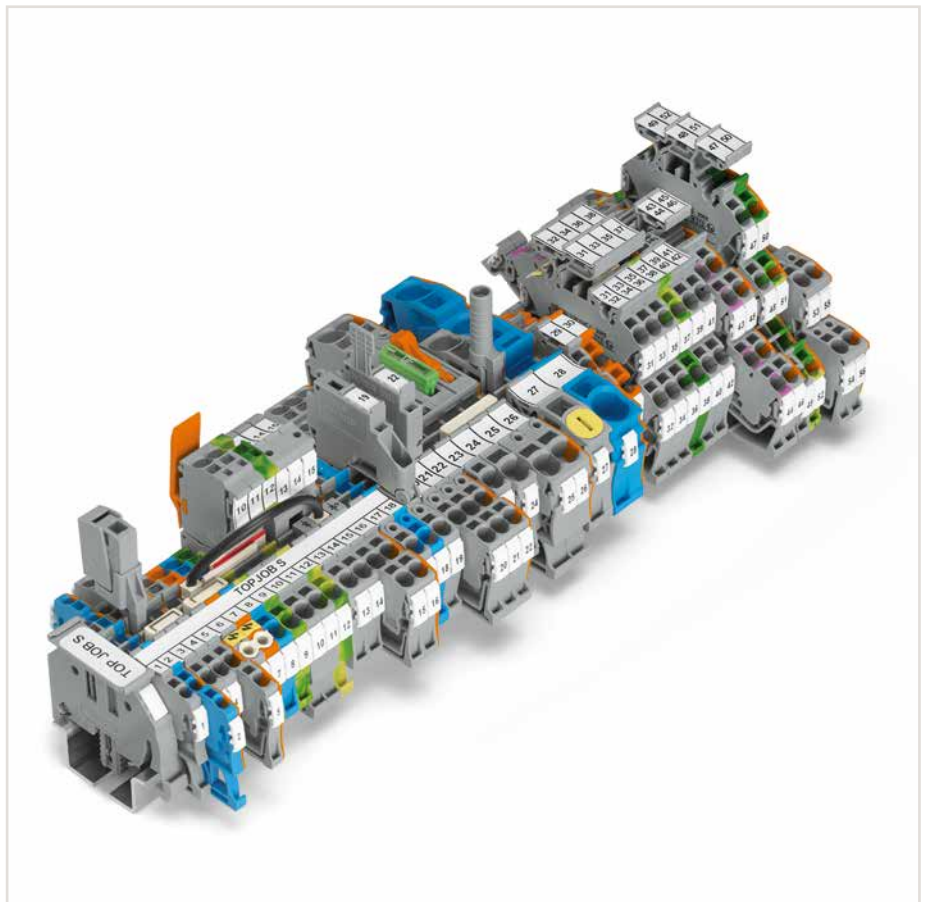
Separating an individual marker from the strip – for larger terminal blocks.



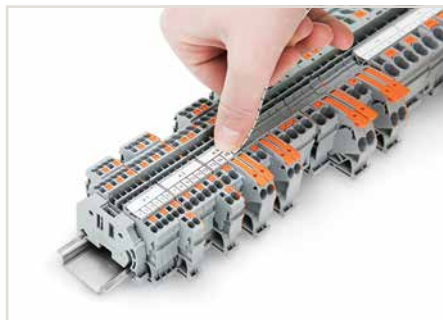
Marking via Mini-WSB Quick Marking System.



WMB markers in Mini-WSB marker slots  
Translucent marking strip  
Mini-WSB markers



Printing a marking strip (2009-110) via Smart Printer.

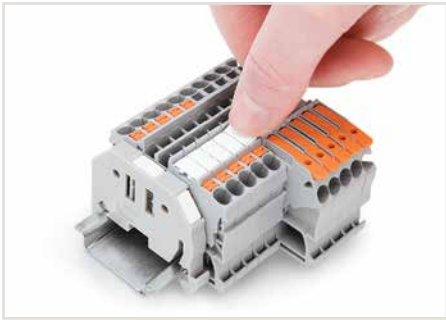


Snapping a marking strip into the marker slot.



Marking strip – multi-line printing

11



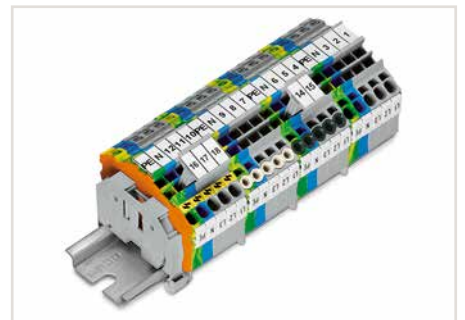
Snapping a marking strip into the marker slot.



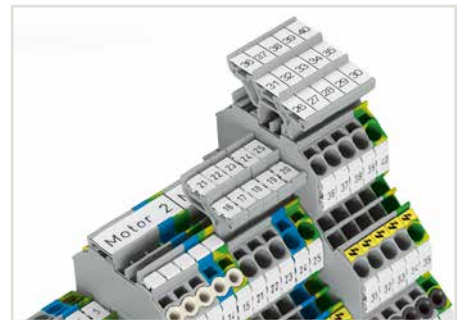
Snapping a WMB marker strip into the marker slot of the double marker carrier.



WMB "decade" marking



Group marker carriers for WAGO Rail-Mount Terminal Blocks TOPJOB® S- can be snapped into jumper slots.



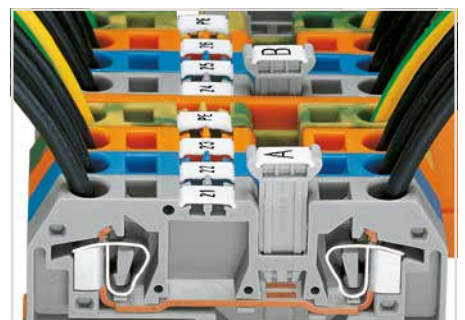
Double- and triple-deck marker carriers can be retrofitted into the jumper contact slot of double- and triple-deck terminal blocks.



Height-adjustable group marker carrier (249-116) for marking strips (2009-110)



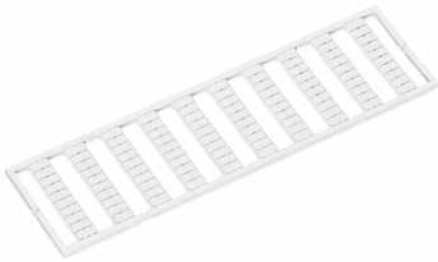
Height-adjustable group marker carrier



Additional group marking

# Marking System

## Terminal Block Width: 3.5 mm, 4 ... 4.2 mm and from 5 mm



Use		
Marker width	Can be snapped onto the following terminal block series	
	for continuous marking	that will be separated
3.5 mm	2000, 2020	-
4 ... 4.2 mm	279, 2001	-
5 ... 5.2 mm	270, 280, 780, 869, 870, 880, 2002, 2003, 2022	Terminal blocks with spacing > 5 ... 5.2 mm
5 ... 17.5 mm	270, 280, 780, 869, 870, 880	281 ... 285, 781 ... 785, 2002, 2004, 2005, 2006, 2007, 2010, 2016, 2022

WMB marker card; plain; 10 strips with 10 markers/card					
Color	5 mm Item No.	5 ... 5.2 mm Item No.	4 ... 4.2 mm Item No.	3.5 mm Item No.	Pack. Unit
○ white	793-501	793-5501	793-4501	793-3501	5
● yellow	793-501/000-002	793-5501/000-002	793-4501/000-002		5
● red	793-501/000-005	793-5501/000-005	793-4501/000-005		5
● blue	793-501/000-006	793-5501/000-006	793-4501/000-006		5
○ gray	793-501/000-007	793-5501/000-007	793-4501/000-007		5
● orange	793-501/000-012	793-5501/000-012	793-4501/000-012		5
● light green	793-501/000-017	793-5501/000-017	793-4501/000-017		5
● green	793-501/000-023	793-5501/000-023	793-4501/000-023		5
● violet	793-501/000-024	793-5501/000-024	793-4501/000-024		5



Use		
Marker width	Can be snapped onto the following terminal block series	
	for continuous marking	that will be separated
3.5 mm	2000, 2020	-
4 ... 4.2 mm	279, 2001	-
5 ... 5.2 mm	270, 280, 780, 869, 870, 880, 2002, 2003, 2022	Terminal blocks with spacing > 5 ... 5.2 mm

WMB Inline; plain; 2,300 WMB markers (3.5 mm)/reel		
Color	3.5 mm Item No.	Pack. Unit
○ white	2009-113	1

WMB Inline; plain; 2,000 WMB markers (4 mm)/reel; stretchable 4 ... 4.2 mm		
Color	4 ... 4.2 mm Item No.	Pack. Unit
○ white	2009-114	1

WMB Inline; plain; 1,500 WMB markers (5 mm)/reel; stretchable 5 ... 5.2 mm		
Color	5 ... 5.2 mm Item No.	Pack. Unit
○ white	2009-115	1

Use		
	Can be snapped onto the following terminal block series	
	2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2010, 2016, 2020, 2022	

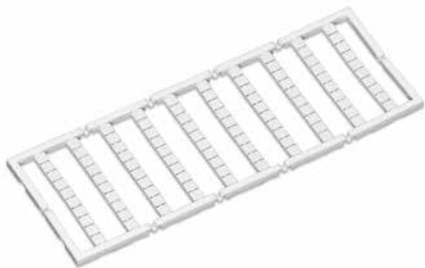
Marking strip; plain; 11 mm wide; 50 m reel		
Color	3.5 mm Item No.	Pack. Unit
○ white	2009-110	1



11

# Mini-WSB Quick Marking System

## Terminal Block Width: 5 mm



Use		
Marker width	Can be snapped onto the following terminal block series	
5 mm	for continuous marking	that will be separated
	264, 270, 869, 880, 769, 870, 218, 233 ... 236, 243, 250, 252 ... 257, 735 ... 742, 745, 746, 804, 805, 806, 816, 831, 750, 753, 2002, 2003, 2022	745, 746, 2004, 2006, 2007, 2010, 2016

Mini-WSB marker card; plain; 10 strips with 10 markers/card		
Color	Item No.	Pack. Unit
<input type="radio"/> white	248-501	5
<input type="radio"/> yellow	248-501/000-002	5
<input type="radio"/> red	248-501/000-005	5
<input type="radio"/> blue	248-501/000-006	5
<input type="radio"/> gray	248-501/000-007	5
<input type="radio"/> orange	248-501/000-012	5
<input type="radio"/> light green	248-501/000-017	5
<input type="radio"/> green	248-501/000-023	5
<input type="radio"/> violet	248-501/000-024	5



Mini-WSB marker card; with marking; not stretchable; horizontal marking; snap-on type		
Marking	Item No.	Pack. Unit
<input type="radio"/> 1, , 2, , 3, , 4, , 5, ; to 46, , 47, , 48, , 49, , 50, ; (each 1x)	264-900	5
<input type="radio"/> U, , V, , W, , N, , GND, ; (10x)	264-901	5
<input type="radio"/> L1, , L2, , L3, , N, , GND, ; (10x)	264-902	5
<input type="radio"/> 1, , 1, , 1, , 1, , 1, ; (10x)	264-903	5
<input type="radio"/> 2, , 2, , 2, , 2, ; (10x)	264-904	5
<input type="radio"/> 3, , 3, , 3, , 3, ; (10x)	264-905	5

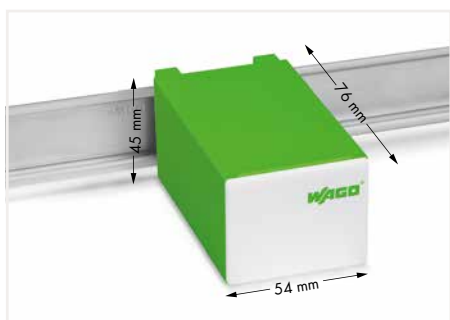


Use		
Marker width	Can be snapped onto the following terminal block series	
5 mm	for continuous marking	that will be separated
	264, 270, 869, 880, 769, 870, 218, 233 ... 236, 243, 250, 252 ... 257, 735 ... 742, 745, 746, 804, 805, 806, 816, 831, 750, 753, 2002, 2003, 2022	745, 746, 2004, 2005, 2006, 2007, 2010, 2016

Mini-WSB Inline; plain; 1,700 markers (5 mm)/reel; stretchable 5 ... 5.2 mm		
Color	3.5 mm Item No.	Pack. Unit
<input type="radio"/> white	2009-145	1



## Control Cabinet Outlet and Switch Cabinet Drawer 709 Series



Technical Data	
Ratings per	DIN VDE 0620-1
Voltage type	AC
Rated voltage	250 V
Rated surge voltage	2 kV
Rated current	16 A

Connection Data	
Connection technology	Push-in CAGE CLAMP®
Actuation type	Type 2 (3.5 x 0.5) mm blade
Actuation direction	Operation parallel to conductor entry
Connectable conductor materials	Copper
Solid conductor	0.2 ... 2.5 mm / 24 ... 14 AWG
Stranded conductor	0.2 ... 2.5 mm / 24 ... 14 AWG
Fine-stranded conductor	0.2 ... 2.5 mm / 24 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Number of poles	3

Mechanical Data	
Mounting type	DIN-35 rail
Protection type	IP20
Potential marking	L GND N

Material Data	
Material group	I
Insulation material	Polyamide 66 (PA 66)
Flammability class per UL94	V0
Clamping spring material	Chrome nickel spring steel (CrNi)
Contact material	Copper alloy
Contact plating	Sn

Environmental Requirements	
Continuous operating temperature from	-35 °C
Continuous operating temperature up to	85 °C

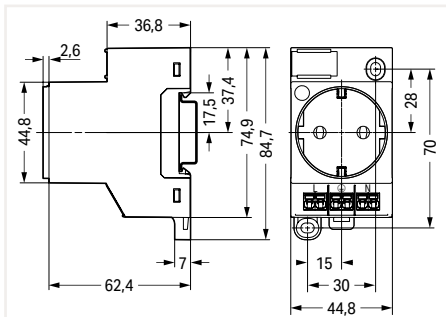
- ❶ The outlets are available in three colors to identify different circuits:
- 709-581 gray (standard)
  - 709-582 yellow (permanently energized)
  - 709-583 red (UPS)

Approvals and corresponding ratings, visit [www.wago.com](http://www.wago.com)

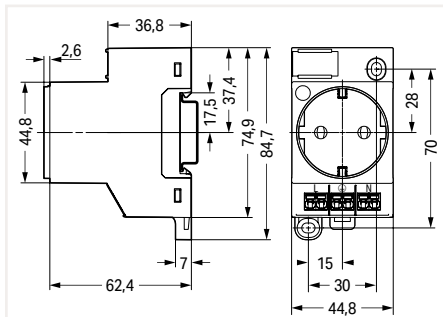
# Control Cabinet Outlet and Switch Cabinet Drawer 709 Series



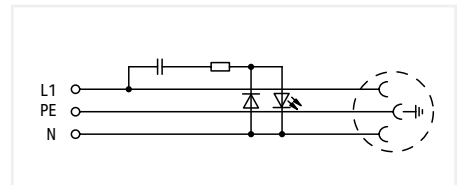
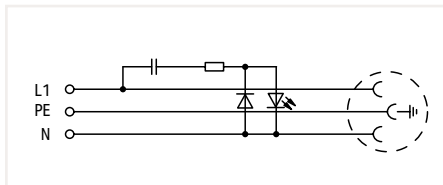
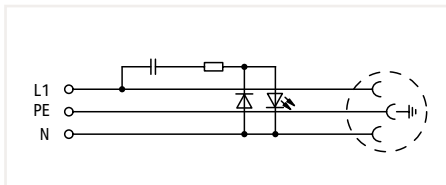
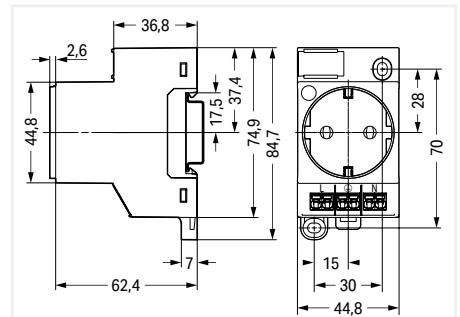
Dimensions in mm



Dimensions in mm



Dimensions in mm



Control cabinet outlet; for DIN-35 rail and screw mounting; for plug Type F, CEE 7/4 (SCHUKO®); used in Germany, the Netherlands, Austria; with status LED; with Push-in CAGE CLAMP® double connection

Color	Item No.	Pack. Unit
○ light gray	709-581	1

Control cabinet outlet; for DIN-35 rail and screw mounting; for plug Type F, CEE 7/4 (SCHUKO®); used in Germany, the Netherlands, Austria; with status LED; with Push-in CAGE CLAMP® double connection

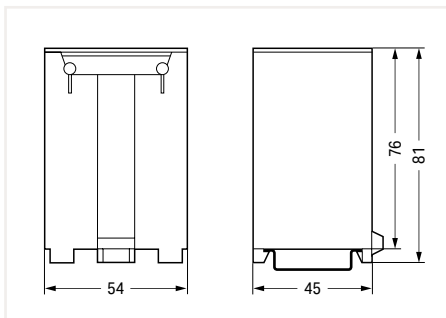
Color	Item No.	Pack. Unit
● yellow	709-582	1

Control cabinet outlet; for DIN-35 rail and screw mounting; for plug Type F, CEE 7/4 (SCHUKO®); used in Germany, the Netherlands, Austria; with status LED; with Push-in CAGE CLAMP® double connection

Color	Item No.	Pack. Unit
● red	709-583	1



Dimensions in mm



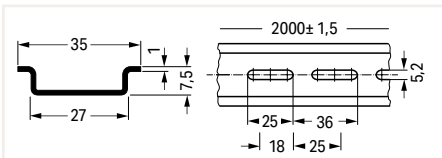
Switchgear cabinet drawer; DIN-35 rail-mount drawer

Item No.	Pack. Unit
709-591	1

# DIN-Rail; Rail End Cap; Angled Support Bracket and Collective Jumper Carrier



Dimensions in mm



Steel DIN-rail; I<sub>N</sub> 76 A (based on 1 m length); 35 x 7.5 mm; 1 mm thick; 2 m long; per EN 60715

	Item No.	Pack. Unit
unslotted	210-113	10 (1)

Hole width: 25 mm; Hole spacing: 36 mm

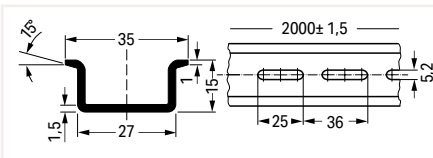
slotted	210-112	10 (1)
---------	---------	--------

Hole width: 18 mm; Hole spacing: 25 mm

slotted	210-115	1
---------	---------	---



Dimensions in mm

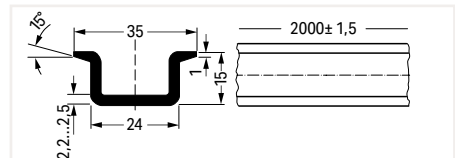


Steel DIN-rail; I<sub>N</sub> 125 A (based on 1 m length); 35 x 15 mm; 1.5 mm thick; 2 m long; similar to EN 60715

	Item No.	Pack. Unit
unslotted	210-114	10 (1)
slotted	210-197	10 (1)



Dimensions in mm

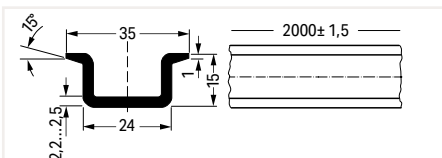


Steel DIN-rail; I<sub>N</sub> 125 A (based on 1 m length); 35 x 15 mm; 2.3 mm thick; 2 m long; per EN 60715

	Item No.	Pack. Unit
unslotted	210-118	10 (1)



Dimensions in mm

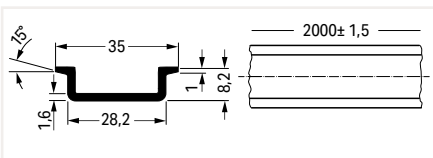


Copper DIN-rail; I<sub>N</sub> 309 A (based on 1 m length); 35 x 15 mm; 2.3 mm thick; 2 m long; per EN 60715

	Item No.	Pack. Unit
unslotted	210-198	10 (1)



Dimensions in mm



Aluminum DIN-rail; I<sub>N</sub> 76 A (based on 1 m length); 35 x 8.2 mm; 1.6 mm thick; 2 m long; similar to EN 60715

	Item No.	Pack. Unit
unslotted	210-196	20 (1)



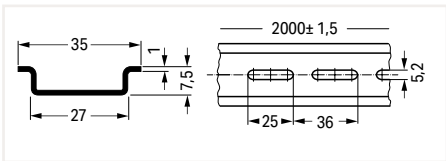
Rail end cap; for DIN-35 rail (7.5 mm high)

Color	Item No.	Pack. Unit
○ gray	209-109	50 (25)

11



Dimensions in mm

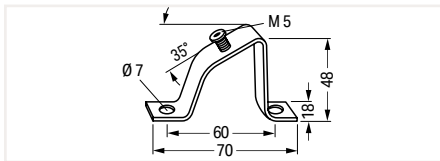


Steel DIN-rail; I<sub>n</sub> 76 A (based on 1 m length); 35 x 7.5 mm; 1 mm thick; 2 m long; per EN 60715

	Item No.	Pack. Unit
unslotted	210-505	1
slotted	210-504	1



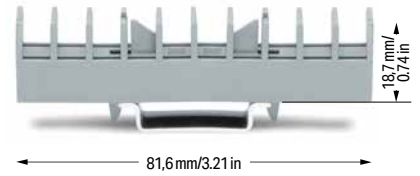
Dimensions in mm



Angled support bracket; without screw

	Item No.	Pack. Unit
	210-148	10

Screw M5 x 8		
	210-149	100 (20)

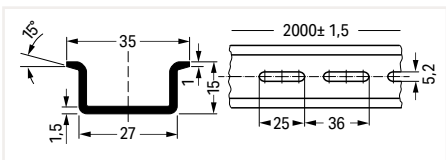


Collective jumper carrier; for DIN-35 rail; compatible with jumpers for transverse switching terminal block (282-811) and longitudinal switching disconnect terminal block (282-821)  
The collective carrier can be snapped onto DIN-35 rails. It stores jumpers during maintenance.

Color	Item No.	Pack. Unit
○ gray	282-369	25



Dimensions in mm



Steel DIN-rail; I<sub>n</sub> 125 A (based on 1 m length); 35 x 15 mm; 1.5 mm thick; 2 m long; per EN 60715

	Item No.	Pack. Unit
unslotted	210-506	1
slotted	210-508	1

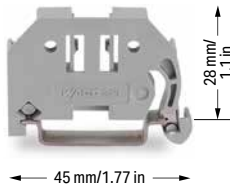


Collective carrier for adjacent jumpers; for DIN-35 rail; for adjacent jumpers (279 to 284 Series); for banana plugs (215 Series)  
The collective carrier can be snapped onto DIN-35 rails. It stores adjacent jumpers and banana plugs during maintenance.

Color	Item No.	Pack. Unit
○ gray	209-100	50 (25)



## Screwless End Stop; for DIN-35 Rail 249 Series

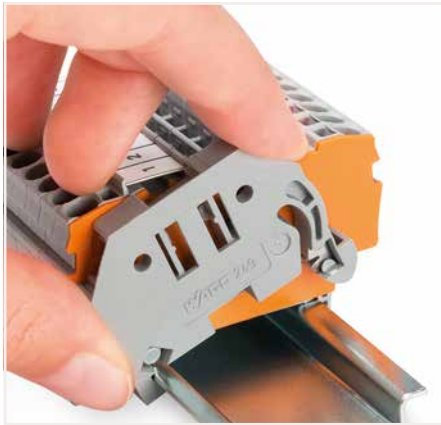


Screwless end stop; for DIN-35 rail; 6 mm wide

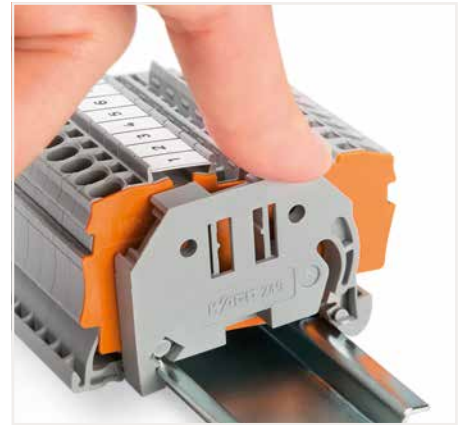
Color	Item No.	Pack. Unit
○ gray	249-116	100 (25)

Screwless end stop; for DIN-35 rail; 10 mm wide

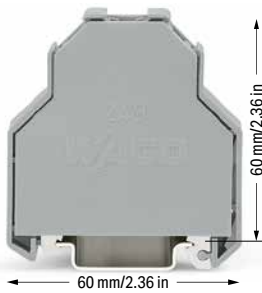
○ gray	249-117	50 (25)
--------	---------	---------



Simply snap on – that's it!



Simply snap on – that's it!



Screwless end stop; for DIN-35 rail; 14 mm wide

Color	Item No.	Pack. Unit
○ gray	249-197	10



Simply snap on – that's it!



Removing an end stop from the DIN-rail.

Snap on – that's it! Assembling the WAGO Screwless End Stop is as simple and quick as snapping a rail-mount terminal block onto the rail.

### Tool free!

A tool-free design allows rail-mount terminal blocks to be safely and economically secured against any movement on all DIN-35 rails per DIN EN 60715 (35 x 7.5 mm; 35 x 15 mm).

### Screwless!

The "secret" to a perfect fit lies in the two small clamping plates which keep the end stop in position, even if the rails are mounted vertically.

### Simply snap on – that's it!

In addition, costs are significantly reduced when using large numbers of end stops.

Additional benefit: Three marker slots for all WAGO Rail-Mount Terminal Block Marking Systems and one snap-in hole for WAGO's adjustable height group marker carriers offer individual marking options.

# Mounting Foot



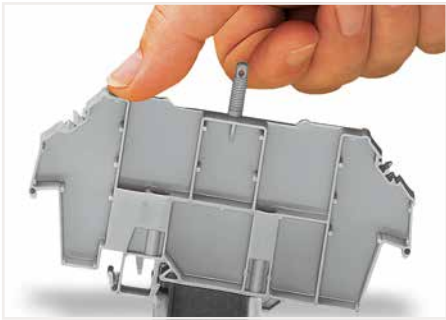
Mounting foot; for isolated DIN-35 rail mounting

Color	Item No.	Pack. Unit
○ gray	209-106	25

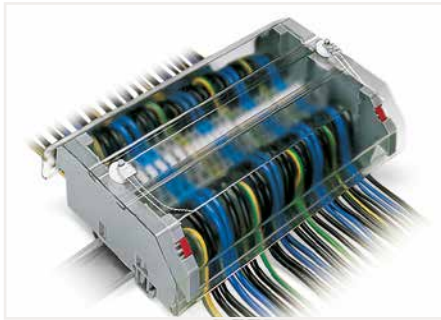


**Double-deck terminal blocks:**  
A double-deck marker carrier (2000-121) can be retrofitted to double-deck terminal blocks without a marker carrier.

# Sealable, Transparent Covers for Rail-Mount Terminal Blocks 709 Series Description and Installation



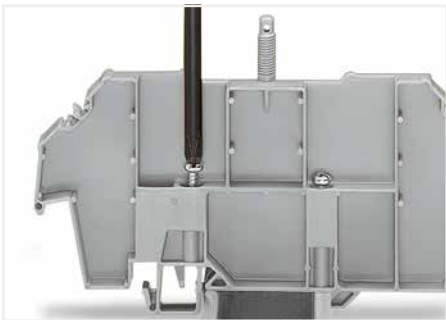
Snapping a cover carrier onto the DIN-rail.



Application example:  
Cover (type 1) without safety warning



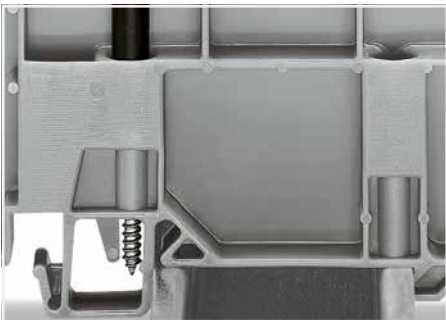
Application example:  
Cover (type 1) with safety warning



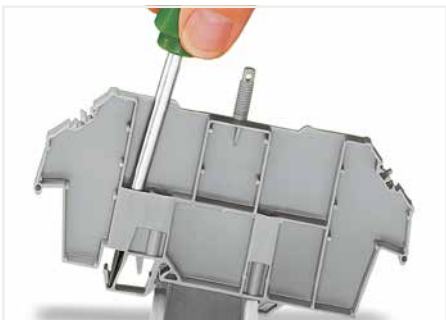
Tightening both securing screw (left) and mounting screw (right).



Application example:  
Cover (type 2) with safety warning



Securing screw – prevents lifting off from the rail.  
Mounting screw – prevents the cover carrier from being moved on the rail.



Removing a cover carrier from the DIN-rail.



Inserting a marking strip into the cover.



Cover with lead seals:  
Using covers without lead seals,  
the thread dome-head can be broken off.

11

# Sealable, Transparent Cover; for Rail-Mount Terminal Blocks 709 Series



Cover, Type 1; for cover carrier (type 1); 1 m long		
Color	Item No.	Pack. Unit
transparent	709-153	10

Cover, Type 2; for cover carrier (type 2); 1 m long		
Color	Item No.	Pack. Unit
transparent	709-154	10

**Accessories**

Marking card; with 6 marking strips; for group marking or safety instructions

plain	709-183	1
-------	---------	---

**Spare mounting/securing screw; for cover**

	209-196	200 (25)
--	---------	----------

**Spare knurled nut; for cover**

	210-549	100 (25)
--	---------	----------



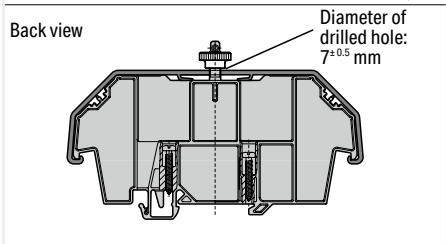
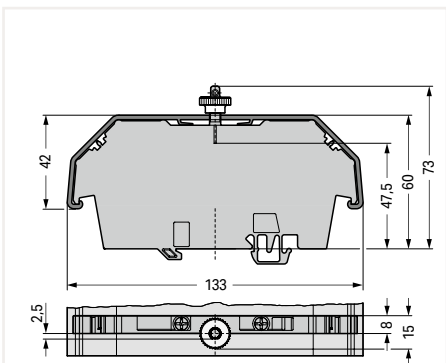
Cover carrier; Type 1; incl. mounting/securing screws and knurled nut; for rail-mount terminal blocks (279 to 282, 880 Series); for "Mini" rail-mount terminal blocks (264 Series); for sensor/actuator terminal blocks (270 Series)

Color	Item No.	Pack. Unit
○ gray	709-167	10

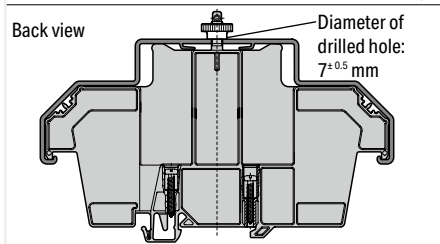
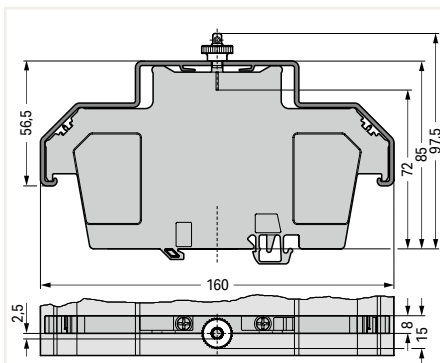
Cover carrier; Type 2; incl. mounting/securing screws and knurled nut; for rail-mount terminal blocks (283 to 285 Series); for double- and triple-deck terminal blocks (279 to 281 Series); for TOPJOB® rail-mount terminal blocks (780 to 785 and 775 Series); for sensor/actuator terminal blocks (280 Series); for disconnect/test terminal blocks for transformer circuits (282 Series)

Color	Item No.	Pack. Unit
○ gray	709-168	10

Dimensions in mm




Dimensions in mm




# Sealable, Transparent Cover; for Rail-Mount Terminal Blocks 709 Series




Cover; Type 3; for cover carrier (type 3); 1 m long		
Color	Item No.	Pack. Unit
transparent	709-156	10

Accessories			
Marking card; with 6 marking strips; for group marking or safety instructions			
	plain	709-183	1

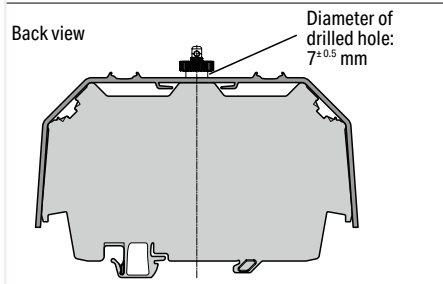
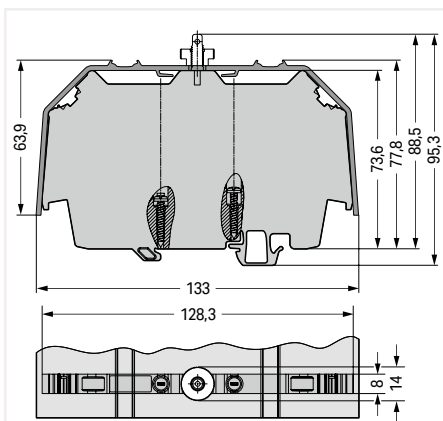
Spare mounting/securing screw; for cover			
		209-196	200 (25)

Spare knurled nut; for cover			
		210-549	100 (25)



Cover carrier; Type 3; for rail-mount terminal blocks (2000 to 2016 Series, 2102 to 2116 Series, 2200 to 2216 Series); for transformer terminal blocks (2007 Series)		
Color	Item No.	Pack. Unit
 gray	709-169	10

Dimensions in mm

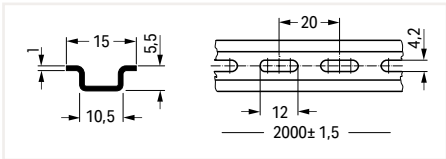


11

## DIN-Rail and End Stop; for DIN-15 Rail



Dimensions in mm

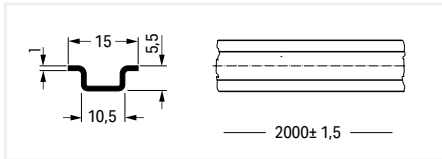


Steel DIN-rail; I<sub>n</sub> 57 A (based on 1 m length); 15 x 5.5 mm; 1 mm thick; 2 m long; per EN 60715

	Item No.	Pack. Unit
slotted	210-111	10 (1)



Dimensions in mm



Aluminum DIN-rail; I<sub>n</sub> 57 A (based on 1 m length); 15 x 5.5 mm; 1 mm thick; 2 m long; similar to EN 60715

	Item No.	Pack. Unit
unslotted	210-296	10 (1)

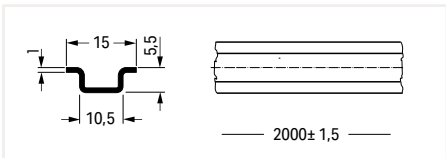


Screwless end stop; for DIN-15 rail; 6 mm wide; for WMB markers

Color	Item No.	Pack. Unit
○ gray	249-101	25



Dimensions in mm



Steel DIN-rail; I<sub>n</sub> 57 A (based on 1 m length); 15 x 5.5 mm; 1 mm thick; 2 m long; per EN 60715

	Item No.	Pack. Unit
unslotted	210-295	1



## Operating Tool



Operating tool with a partially insulated shaft; Type 1; (2.5 x 0.4) mm blade

Item No.	Pack. Unit
210-719	50 (1)



Operating tool; Blades: 3.5 mm and 2.5 mm; for installation terminal blocks (TOPJOB® S)

Item No.	Pack. Unit
2009-309	1



Operating tool with a partially insulated shaft; Type 1; (2.5 x 0.4) mm blade; short

Item No.	Pack. Unit
210-647	50 (1)

Operating tool with a partially insulated shaft; Type 2; (3.5 x 0.5) mm blade

Item No.	Pack. Unit
210-720	50 (1)

Operating tool; Blades: 3.5 mm and 5.5 mm; for installation terminal blocks (TOPJOB® S)

Item No.	Pack. Unit
2009-310	1

Operating tool with a partially insulated shaft; (2.5 x 0.4) mm blade; short; angled

Item No.	Pack. Unit
210-648	50 (1)

Operating tool with a partially insulated shaft; Type 3; (5.5 x 0.8) mm blade

Item No.	Pack. Unit
210-721	25 (1)

Operating tool with a partially insulated shaft; (3.5 x 0.5) mm blade; short

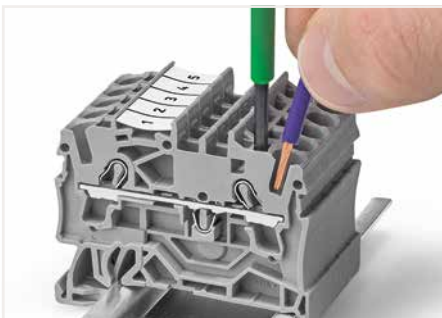
Item No.	Pack. Unit
210-657	50 (1)

Set of operating tools with a partially insulated shaft; Type 1; (2.5 x 0.4) mm blade; Type 2; (3.5 x 0.5) mm blade; Type 3; (5.5 x 0.8) mm blade

Item No.	Pack. Unit
210-722	1

Operating tool with a partially insulated shaft; (3.5 x 0.5) mm blade; short; angled

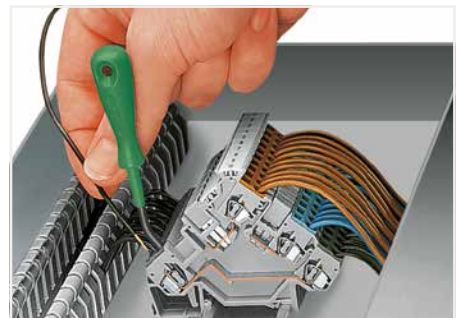
Item No.	Pack. Unit
210-658	50 (1)



The blade of this operating tool with a partially insulated shaft is ideal for operating front-entry terminal blocks.



Open the clamping unit using an operating tool.



This operating tool with blade dimensions per DIN 5264 is ideal for front-entry sensor/actuator terminal blocks (280 Series).



Set of operating tools in a box (210-722)

## Operating Tool



Operating tool; insulated; for 279 Series

	Item No.	Pack. Unit
1-way	209-129	1
2-way	279-432	1
3-way	279-433	1
10-way	279-440	1



Operating pliers; for side-entry rail-mount terminal blocks (281, 282, 283 and 284 Series)

	Item No.	Pack. Unit
	210-141	1



T-wrench with a partially insulated shaft

	Item No.	Pack. Unit
	285-172	1

Operating tool; insulated; for 264 Series (1- and 2-way only), 280, 281 Series (up to 3-way only)

1-way	209-130	1
2-way	280-432	1
3-way	280-433	1
4-way	280-434	1
5-way	280-435	1
6-way	280-436	1
7-way	280-437	1
8-way	280-438	1
9-way	280-439	1
10-way	280-440	1

Operating pliers; for side-entry rail-mount terminal blocks (279 and 280 Series)

	210-143	1
--	---------	---

T-wrench with a partially insulated shaft and anti-rotation protection

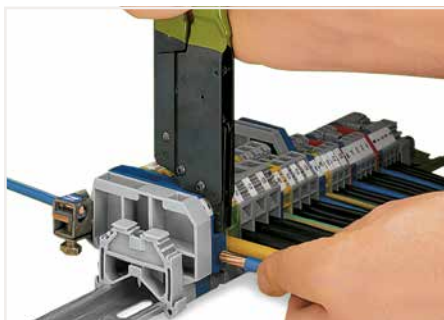
	285-173	1
--	---------	---

Operating tool; insulated; for 281 Series

5-way	281-440	1
-------	---------	---



Commoning front-entry disconnect terminal blocks via comb-style jumper bar using a 10-pole operating tool.



When operating the handles beyond the locked position, the ratchet allows the tool to open and be removed from the terminal block. The operating pliers are placed into the upper operating slot of the rail-mount terminal block and the clamp is hooked into the lateral operating slot. The contact is fully opened by pressing the handles together until they engage. This will allow both hands to be used for wiring the terminal blocks.



T-wrench with a partially insulated shaft and anti-rotation protection (285-173)



# Cable Stripper

Never use this tool on or near live electrical circuits!



Cable knife; for  $\varnothing$  8 ... 28 mm / 0.31 ... 1.10 inch; with a unique, changeable cable bracket system; including cable bracket

Item No.	Pack. Unit
206-1403	1

Cable knife set; for  $\varnothing$  4 ... 70 mm / 0.16 ... 2.75 inch; including all cable brackets in a Sortimo® Box

Item No.	Pack. Unit
206-1400	1

**Accessories; item-specific**

Cable bracket; for $\varnothing$ 4 ... 16 mm / 0.16 ... 0.63 inch	
206-1411	1

Cable bracket; for $\varnothing$ 8 ... 28 mm / 0.31 ... 1.10 inch	
206-1412	1

Cable bracket; for $\varnothing$ 27 ... 35 mm / 1.06 ... 1.38 inch	
206-1413	1

Cable bracket; for $\varnothing$ 35 ... 50 mm / 1.38 ... 1.97 inch	
206-1414	1

Cable bracket; for $\varnothing$ 50 ... 70 mm / 1.97 ... 2.75 inch	
206-1415	1

**Accessories**

Spare inside blade	
206-1418	1

Spare hook blade	
206-1419	1



# Cable Stripper



In-socket cable stripper; for Ø 8 ... 13 mm / 5/16 ... 1/2 inch		
	Item No.	Pack. Unit
	206-1441	1



Universal cable stripper; for Ø 8 ... 13 mm / 5/16 ... 1/2 inch		
	Item No.	Pack. Unit
	206-1442	1



Data cable stripper; for Ø 4.5 ... 10 mm / 3/16 ... 3/8 inch		
	Item No.	Pack. Unit
	206-1451	1



- Product features:
- Extra long design and improved force transmission simplifies stripping in deep device connection sockets
  - Special four-blade design for an even more precise round cut
  - No cutting depth adjustment required
  - TiN-coated blades, TÜV/GS tested
  - Ø 8 ... 13 mm / 5/16 ... 1/2 inch
  - Strips all standard round cables, including NYM 3 x 1.5 mm<sup>2</sup> ... 5 x 2.5 mm<sup>2</sup>



- Product features:
- Secure grip achieved with soft padding for non-slip grips
  - Technically improved functionality
  - New locking mechanism prevents the unwanted opening of the tool
  - Absolutely straightforward, quick and easy longitudinal cuts – with innovative internal cable duct
  - Redesigned blade layout and intake to stop cable waste from jamming the tool
  - Durable and ergonomically designed pocket clip
  - Ø 8 ... 13 mm / 5/16 ... 1/2 inch



- Product features:
- Strip outer insulation and foil sheathing with one tool
  - Ideal for stripping PVC-insulated data cables with thin insulation (e.g., Cat 5, Cat 6, Cat 7, twisted-pair cables)
  - TiN-coated blades
  - Ø 4.5 ... 10 mm / 3/16 ... 3/8 inch



# Cable Stripper



Never use this tool on or near live electrical circuits!

The stripping pliers for sensor cables have a blade geometry specially designed for sensor cables with a smaller cross section and a working range from Ø 3.2 mm (for stranded cables and round cables with Ø 3.2 mm ... 4.4 mm / 0.13 ... 0.17 inch).

The stripping pliers for control cables are designed for stronger cables from Ø 4.4 mm (for stranded cables and round cables with Ø 4.4 mm ... 7 mm / 0.17 ... 0.27 inch).

These stripping pliers quickly and safely strip cables for connecting, e.g., sensor/actuator distribution boxes, bus couplers and pluggable connectors.

Suitable for:

- Halogen-free PUR sensor/actuator cables
- Highly flexible TPE-U cables
- Control cables
- PUR cables
- PUR/PVC cables
- PVC cables
- Multi-core cables
- Shielded and unshielded cables

Stripping pliers; for sensor cables		
Item No.	Pack. Unit	
206-1481	1	

Stripping pliers; for control cables		
Item No.	Pack. Unit	
206-1482	1	

Accessories; item-specific		
Replacement blade set; for Ø 3.2 ... 4.4 mm / 0.13 ... 0.17 inch		
206-1491	1	

Accessories; item-specific		
Replacement blade set; for Ø 4.4 ... 7 mm / 0.17 ... 0.27 inch		
206-1492	1	



# Wire Stripper



Wire stripper "Quickstrip Vario"; 0.03 ... 16 mm<sup>2</sup> / 34 ... 6 AWG

	Item No.	Pack. Unit
	206-1125	1

**Accessories**

Blade set; Standard; 0.03 ... 16 mm<sup>2</sup> / 34 ... 6 AWG

206-1126	1
----------	---

Blade set; V-blade; 0.14 ... 4 mm<sup>2</sup> / 24 ... 12 AWG

206-1127	1
----------	---

Blade set; Oval blade; 10 ... 16 mm<sup>2</sup> / 8 ... 6 AWG

206-1128	1
----------	---

Spare stripping stop

206-1129	1
----------	---

Spare cut protector

206-1131	1
----------	---

Spare clamping jaws

206-1132	1
----------	---



Cutting a conductor.



Partially stripping a conductor.

**Wire Stripper:**

- Automatically adjust to conductor size
- Stripping blades cause no damage to conductor strands
- Gripping pressure of jaws adjusts automatically to conductor insulation diameter
- Clamping jaws and stripping blades automatically open once the stripping process is completed – no splaying of the conductor strands
- Exact strip length may be set by sliding black setting stop
- Stripping blades can be replaced
- Self-sharpening, fully protected cutter (replaceable)
- Entire body made of glass-fiber-reinforced polyamide
- Cutting capacity of the wire cutter of fine-stranded conductors up to 16 mm<sup>2</sup> (6 AWG)

## Crimping Tool; Cable Cutter



Crimping Tool "Variocrimp 4"; for insulated and uninsulated ferrules; Crimping range: 0.25 ... 4 mm<sup>2</sup> (24 ... 12 AWG)

	Item No.	Pack. Unit
	206-1204	1



Crimping Tool "Variocrimp 16"; for insulated and uninsulated ferrules; Crimping range: 6 mm<sup>2</sup> (10 AWG), 10 mm<sup>2</sup> (8 AWG) and 16 mm<sup>2</sup> (6 AWG)

	Item No.	Pack. Unit
	206-1216	1



Cable cutter; for copper and aluminum cables up to 35 mm<sup>2</sup> (2 AWG)

	Item No.	Pack. Unit
	206-118	1

Spring clamp; large

	206-1205	1
--	----------	---

Spring clamp; small

	206-1206	1
--	----------	---

Spring clamp; small

	206-1206	1
--	----------	---

PUR spring set

	206-1207	1
--	----------	---



Insert the ferruled conductor into the crimping station.



Squeeze handles until ratchet mechanism is released.

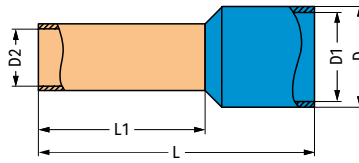


Cutting a cable.

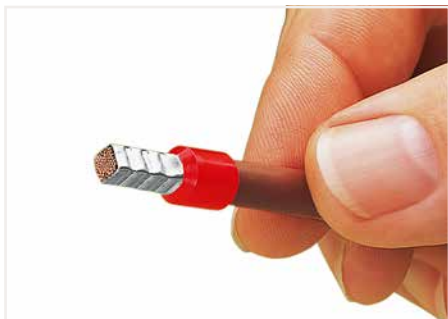


Only for "Variocrimp 16":  
Adjust conductor cross section with crimping tool in open position.

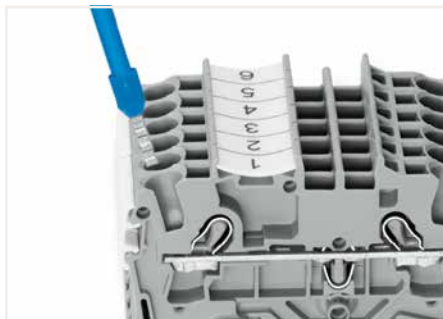
## Insulated ferrule; for Rail-Mount Terminal Block TOPJOB® S



Ferrule; insulated; electro-tin-plated; electrolytic copper; gastight crimped; per DIN 46288 (Part 4/09.09)									
Conductor Cross Section	Color	Strip Length	L	L 1	D	D 1	D 2	Item No.	Pack. Unit
0.5 mm <sup>2</sup> / 20 AWG	○ white	12 mm / 0.47 inch	16	10	3,1	2,6	1	216-241	1000
0.75 mm <sup>2</sup> / 18 AWG	○ gray	12 mm / 0.47 inch	16	10	3,3	2,8	1,2	216-242	1000
0.75 mm <sup>2</sup> / 18 AWG	○ gray	14 mm / 0.55 inch	18	12	3,3	2,8	1,2	216-262	1000
1 mm <sup>2</sup> / 18 AWG	● red	12 mm / 0.47 inch	16	10	3,5	3	1,4	216-243	1000
1 mm <sup>2</sup> / 18 AWG	● red	14 mm / 0.55 inch	18	12	3,5	3	1,4	216-263	1000
1.5 mm <sup>2</sup> / 16 AWG	● black	12 mm / 0.47 inch	16	10	4	3,5	1,7	216-244	1000
1.5 mm <sup>2</sup> / 16 AWG	● black	14 mm / 0.55 inch	18	12	4	3,5	1,7	216-264	1000
1.5 mm <sup>2</sup> / 16 AWG	● black	20 mm / 0.79 inch	24	18	4	3,5	1,7	216-284	500
2.5 mm <sup>2</sup> / 14 AWG	● blue	12 mm / 0.47 inch	17	10	4,7	4,2	2,2	216-246	1000
2.5 mm <sup>2</sup> / 14 AWG	● blue	14 mm / 0.55 inch	19	12	4,7	4,2	2,2	216-266	1000
2.5 mm <sup>2</sup> / 14 AWG	● blue	20 mm / 0.79 inch	25	18	4,7	4,2	2,2	216-286	500
4 mm <sup>2</sup> / 12 AWG	○ gray	14 mm / 0.55 inch	20	12	5,4	4,8	2,8	216-267	500
4 mm <sup>2</sup> / 12 AWG	○ gray	20 mm / 0.79 inch	26	18	5,4	4,8	2,8	216-287	100
6 mm <sup>2</sup> / 10 AWG	● yellow	14 mm / 0.55 inch	20	12	6,9	6,3	3,5	216-208	100
6 mm <sup>2</sup> / 10 AWG	● yellow	20 mm / 0.79 inch	26	18	6,9	6,3	3,5	216-288	100
10 mm <sup>2</sup> / 8 AWG	● red	20 mm / 0.79 inch	28	18	8,4	7,6	4,5	216-289	100
16 mm <sup>2</sup> / 6 AWG	● blue	23 mm / 0.91 inch	28	18	9,6	8,8	5,8	216-210	100



A perfect gas-tight crimp – both electrically and mechanically reliable



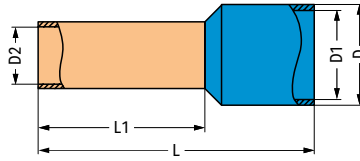
Fine-stranded conductors with ferrules from at least two sizes below the rated cross section up to the rated cross section can also be simply pushed in – without tools.

**Application notes:**

- The built-in crimping pressure control of "Variocrimp 4" automatically adjusts the crimping force to the conductor cross section. Select the wire gauge on "Variocrimp 16" before crimping.
- Only one crimping station is needed to handle the specified conductor range.
- Uniform, compact crimping on all four sides for high conductor retention.
- No need to center the ferrules into the terminal blocks.
- Crimping can be performed from either side (for left- or right-handed users).
- Built-in ratchet mechanism ensures gas-tight crimp connection.
- Crimping tools open automatically after crimping operation is complete.
- Ergonomically designed handles.

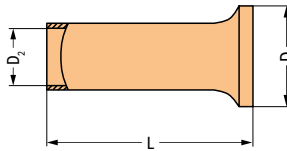


## Insulated and Uninsulated Ferrules; for Chassis-Mount Terminal Strip



Ferrule; insulated; electro-tin-plated; electrolytic copper; gastight crimped; per DIN 46288 (Part 4/09.09)

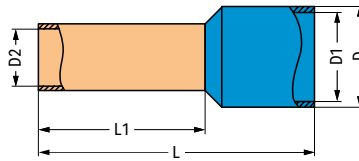
Conductor Cross Section	Color	Strip Length	L	L 1	D	D 1	D 2	Item No.	Pack. Unit
0.5 mm <sup>2</sup> / 20 AWG	○ white	12 mm / 0.47 inch	16	10	3,1	2,6	1	216-241	1000
0.75 mm <sup>2</sup> / 18 AWG	○ gray	12 mm / 0.47 inch	16	10	3,3	2,8	1,2	216-242	1000
1 mm <sup>2</sup> / 18 AWG	● red	12 mm / 0.47 inch	16	10	3,5	3	1,4	216-243	1000
1.5 mm <sup>2</sup> / 16 AWG	● black	12 mm / 0.47 inch	16	10	4	3,5	1,7	216-244	1000



Ferrule; un-insulated; electro-tin-plated; electrolytic copper; gastight crimped; per DIN 46288 (Part 4/09.09)

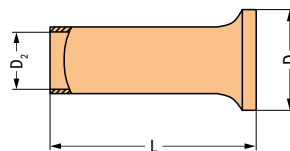
Conductor Cross Section	Strip Length	L	D	D 2	Item No.	Pack. Unit
0.5 mm <sup>2</sup> / 20 AWG	10 mm / 0.39 inch	10	2,1	1	216-141	5000 (1000)
0.75 mm <sup>2</sup> / 18 AWG	10 mm / 0.39 inch	10	2,3	1,2	216-142	5000 (1000)
1 mm <sup>2</sup> / 18 AWG	10 mm / 0.39 inch	10	2,5	1,4	216-143	5000 (1000)
1.5 mm <sup>2</sup> / 16 AWG	10 mm / 0.39 inch	10	2,8	1,7	216-144	5000 (1000)

# Insulated and Uninsulated Ferrules



Ferrule; insulated; electro-tin-plated; electrolytic copper; gastight crimped; per DIN 46288 (Part 4/09.09)

Conductor Cross Section	Color	Strip Length	L	L 1	D	D 1	D 2	Item No.	Pack. Unit
0.25 mm <sup>2</sup> / 24 AWG	yellow	7 mm / 0.28 inch	10	6	2,3	1,8	0,85	216-321	1000
0.25 mm <sup>2</sup> / 24 AWG	yellow	9 mm / 0.35 inch	12	8	2,3	1,8	0,85	216-301	1000
0.34 mm <sup>2</sup> / 22 AWG	green	7 mm / 0.28 inch	10	6	2,5	2	0,85	216-322	1000
0.34 mm <sup>2</sup> / 22 AWG	green	9 mm / 0.35 inch	12	8	2,5	2	0,85	216-302	1000
0.5 mm <sup>2</sup> / 20 AWG	white	7 mm / 0.28 inch	12	6	3,1	2,6	1	216-221	1000
0.5 mm <sup>2</sup> / 20 AWG	white	9 mm / 0.35 inch	14	8	3,1	2,6	1	216-201	1000
0.75 mm <sup>2</sup> / 18 AWG	gray	8 mm / 0.31 inch	12	6	3,3	2,8	1,2	216-222	1000
0.75 mm <sup>2</sup> / 18 AWG	gray	10 mm / 0.39 inch	14	8	3,3	2,8	1,2	216-202	1000
1 mm <sup>2</sup> / 18 AWG	red	8 mm / 0.31 inch	12	6	3,5	3	1,4	216-223	1000
1 mm <sup>2</sup> / 18 AWG	red	10 mm / 0.39 inch	14	8	3,5	3	1,4	216-203	1000
1.5 mm <sup>2</sup> / 16 AWG	black	8 mm / 0.31 inch	12	6	4	3,5	1,7	216-224	1000
1.5 mm <sup>2</sup> / 16 AWG	black	10 mm / 0.39 inch	14	8	4	3,5	1,7	216-204	1000
2.08 mm <sup>2</sup> / 14 AWG	yellow	10 mm / 0.39 inch	15	8	4,8	4,2	2,05	216-205	1000
2.5 mm <sup>2</sup> / 14 AWG	blue	10 mm / 0.39 inch	15	8	4,7	4,2	2,2	216-206	1000
4 mm <sup>2</sup> / 12 AWG	gray	12 mm / 0.47 inch	18	10	5,4	4,8	2,8	216-207	500
6 mm <sup>2</sup> / 10 AWG	yellow	14 mm / 0.55 inch	20	12	6,9	6,3	3,5	216-208	100
10 mm <sup>2</sup> / 8 AWG	red	16 mm / 0.63 inch	22	12	8,4	7,6	4,6	216-209	100
16 mm <sup>2</sup> / 6 AWG	blue	23 mm / 0.91 inch	28	18	9,6	8,8	5,8	216-210	100



Ferrule; uninsulated; electro-tin-plated; electrolytic copper; gastight crimped; per DIN 46288 (Part 4/09.09)

Conductor Cross Section	Strip Length	L	D	D 2	Item No.	Pack. Unit
0.25 mm <sup>2</sup> / 24 AWG	5 mm / 0.2 inch	5	1,7	0,75	216-151	1000
0.25 mm <sup>2</sup> / 24 AWG	7 mm / 0.28 inch	7	1,7	0,75	216-131	1000
0.34 mm <sup>2</sup> / 22 AWG	5 mm / 0.2 inch	5	1,8	0,85	216-152	1000
0.34 mm <sup>2</sup> / 22 AWG	7 mm / 0.28 inch	7	1,8	0,85	216-132	1000
0.5 mm <sup>2</sup> / 20 AWG	6 mm / 0.24 inch	6	2,1	1	216-121	1000
0.5 mm <sup>2</sup> / 20 AWG	8 mm / 0.31 inch	8	2,1	1	216-101	1000
0.75 mm <sup>2</sup> / 18 AWG	6 mm / 0.24 inch	6	2,3	1,2	216-122	1000
0.75 mm <sup>2</sup> / 18 AWG	8 mm / 0.31 inch	8	2,3	1,2	216-102	1000
1 mm <sup>2</sup> / 18 AWG	6 mm / 0.24 inch	6	2,5	1,4	216-123	1000
1 mm <sup>2</sup> / 18 AWG	8 mm / 0.31 inch	8	2,5	1,4	216-103	1000
1.5 mm <sup>2</sup> / 16 AWG	6 mm / 0.24 inch	6	2,8	1,7	216-124	1000
1.5 mm <sup>2</sup> / 16 AWG	8 mm / 0.31 inch	8	2,8	1,7	216-104	1000
2.5 mm <sup>2</sup> / 14 AWG	10 mm / 0.39 inch	10	3,4	2,2	216-106	1000
4 mm <sup>2</sup> / 12 AWG	10 mm / 0.39 inch	10	4	2,8	216-107	1000
6 mm <sup>2</sup> / 10 AWG	12 mm / 0.47 inch	12	4,7	3,5	216-108	500
10 mm <sup>2</sup> / 8 AWG	12 mm / 0.47 inch	12	5,8	4,5	216-109	500
16 mm <sup>2</sup> / 6 AWG	15 mm / 0.59 inch	15	7,5	5,8	216-110	500

11



## Crimping Tool



Crimping Tool 25; for insulated and uninsulated ferrules; crimping range: 10 mm<sup>2</sup> (8 AWG), 16 mm<sup>2</sup> (6 AWG) and 25 mm<sup>2</sup> (4 AWG)

Item No.	Pack. Unit
206-1225	1



Crimping Tool 50; for insulated and uninsulated ferrules; crimping range: 35 mm<sup>2</sup> (2 AWG) and 50 mm<sup>2</sup> (1/0 AWG)

Item No.	Pack. Unit
206-1250	1



Insert the ferruled conductor into the crimping station.



Squeeze handles until ratchet mechanism is released.

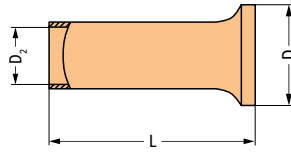
### Application notes:

- Improved crimping for higher conductor retention
- Crimping can be performed from either side (for left- or right-handed users).
- Built-in ratchet mechanism ensures gas-tight crimp connection.
- Crimping tools open automatically after crimping operation is complete.
- Ergonomically designed handles.

### What is a "gas-tight" connection?

In a gas-tight connection, the conductor and the ferrule are compressed, eliminating all spaces. Under normal atmospheric conditions, neither a liquid nor gaseous medium can penetrate the crimped connection. Oxidation between crimped single conductors is prevented, virtually eliminating the possibility of any increase in the crimped connection's resistance. In some exceptional cases, minute, isolated spaces may be present. However, these instances can be considered as closed off due to the twisted conductor. Inadequate crimping can allow the conductor to be pulled out of the connection. Hollow spaces also remain, permitting oxidation formation and an increase in contact resistance. Elevated resistance is detrimental for both signal transmission (signal flow is damped) and power transmission, resulting in power loss and contact heating (risk of fire). Crimping tools with built-in ratchets are recommended (e.g., WAGO Crimping Tools). These tools open automatically after the crimping operation is complete. Space-saving crimping from all four sides is ideal for spring clamp termination. Ferruled conductor cross sections specified for WAGO products are based on this crimping method.

# Uninsulated Ferrule



Ferrule; uninsulated; electro-tin-plated; electrolytic copper; gastight crimped; per DIN 46288 (Part 4/09.09)						
Conductor Cross Section	Strip Length	L	D	D 2	Item No.	Pack. Unit
25 mm <sup>2</sup> / 4 AWG	25 mm / 0.98 inch	25	9,5	7,3	216-413	50
35 mm <sup>2</sup> / 2 AWG	25 mm / 0.98 inch	25	11	8,3	216-414	50
35 mm <sup>2</sup> / 2 AWG	30 mm / 1.18 inch	30	11	8,3	216-424	50
50 mm <sup>2</sup> / 1/0 AWG	30 mm / 1.18 inch	30	13	10,3	216-425	50
50 mm <sup>2</sup> / 1/0 AWG	35 mm / 1.38 inch	35	13	10,3	216-435	50

## Test and Measurement Devices 206 Series



Multi-Tester; digital multimeter with non-contact voltage tester

Item No.	Pack. Unit
206-810	1



Clamp-Multi-Tester

Item No.	Pack. Unit
206-816	1



Testboy; with integrated flashlight, non-contact voltage tester

Item No.	Pack. Unit
206-804	1



Multi-Tester features:

- Contact-less voltage test AC > 100 V (optical and acoustical)
- Resistance measurement up to 20 MΩ
- Acoustical continuity test
- Diode test
- Data hold function
- Auto power-off function
- LED torch lamp function
- CAT IV 600 V
- TÜV/GS tested and approved
- IEC/EN 61010-1 (DIN VDE 0411)



Voltage testing in control cabinet

Clamp-Multi-Tester features:

- DC and AC current up to 600 A
- True RMS and min./max. value measurement
- DC and AC voltage up to 600 V
- Manual or automatic measurement range selection
- Resistance up to 60 MΩ
- Capacitance measurement, acoustical continuity test
- Diode test, data hold function
- Large LCD with backlight
- LED measuring point lighting
- CAT III 600 V overvoltage protection
- IEC/EN 61010-1 (DIN VDE 0411)
- Includes batteries, measurement leads and carrying bag



A device that will reliably detect AC voltage in cables, sockets, fuses, switches, outlets and other installations.

Testboy can detect the following:

- Live conductors
- Cable breaks
- Blown fuses (in cartridges or holders)
- Defective switches
- Defective lamps in strings of lights



Current measurement in a control cabinet

# Test and Measurement Devices

## 206 Series



Profi-LCD+; 2-pole voltage tester with LCD display; removable 4 mm Ø test probes

	Item No.	Pack. Unit
	206-707	1



Profi-LED+; 2-pole voltage tester with LED display; removable 4 mm Ø test probes

	Item No.	Pack. Unit
	206-706	1



Spare test probes; 4 mm Ø (2 pieces)

	Item No.	Pack. Unit
	206-808	25



**Additional Profi-LCD+ features:**

- Automatic measurement range selection
- Single-pole phase testing AC > 100 V
- Two-pole sequence testing (R and L)
- Continuity testing
- RDC/RCD testing (30 mA) via buttons
- One-hand operation for SCHUKO® and CEE sockets
- LED torch lamp function
- Automatic backlight
- Auto power-off function
- CAT IV 1000 V
- TÜV/GS tested and approved
- IEC/EN 61243-3 (DIN VDE 0682-401)



**Additional Profi-LED+ features:**

- Automatic measurement range selection
- Single-pole phase testing AC > 100 V
- Two-pole sequence testing (R and L)
- Continuity testing
- RDC/RCD testing (30 mA) via buttons
- One-hand operation for SCHUKO® and CEE sockets
- LED torch lamp function
- CAT IV 1000 V
- TÜV/GS tested and approved
- IEC/EN 61243-3 (DIN VDE 0682-401)



**Profi-LED+:**

- Improved socket contact via 4 mm Ø test probes
- Removable test probes for small test ports (suitable for all WAGO Terminal Blocks)

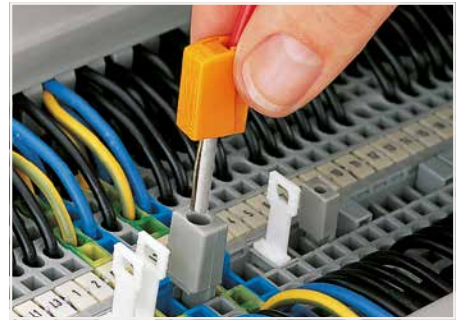


# Banana Plug (Only for Safety Extra-Low Voltage) 215 Series

Technical Data	
0.08 ... 2.5 mm <sup>2</sup>	28 ... 14 AWG
max. 42 V	
Test current: 20 A	
Measuring range category: CAT I	
9 ... 11 mm / 0.35 ... 0.43 inch	



Conductor termination: Press button fully, insert stripped conductor into square entry and release.



Testing via banana plug. Picture shows a test plug adapter (209-170).

Banana plug; for 4 mm socket diameter; color mixed; 10 x orange, white, black, blue, yellow

Item No.	Pack. Unit
215-111	50

Banana plug; single

Banana plug; for 4 mm socket diameter

orange	215-211	50
--------	---------	----



Banana plug; for 4 mm socket diameter

red	215-212	50
-----	---------	----



Banana plug; for 4 mm socket diameter

black	215-311	50
-------	---------	----



Banana plug; for 4 mm socket diameter

green	215-411	50
-------	---------	----



Banana plug; for 4 mm socket diameter

yellow	215-511	50
--------	---------	----



Banana plug; for 4 mm socket diameter

white	215-611	50
-------	---------	----



Banana plug; for 4 mm socket diameter

blue	215-711	50
------	---------	----



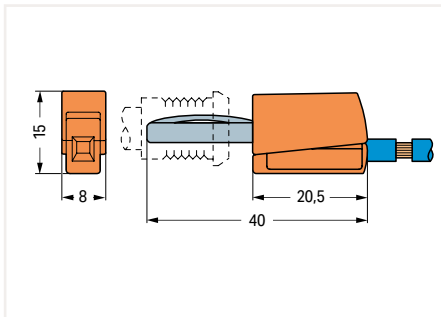
Banana plug; for 4 mm socket diameter

gray	215-811	50
------	---------	----



Banana plug; for 4 mm socket diameter

green-yellow	215-911	50
--------------	---------	----



Dimensions in mm

11

# Test Plug 210 Series

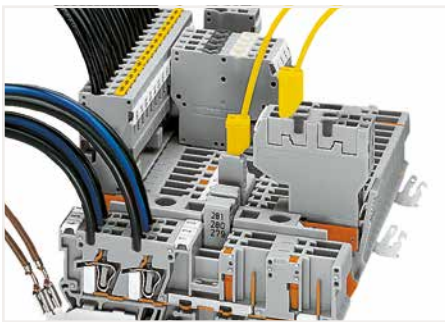


Test plug; with 500 mm cable; 2 mm Ø; max. 42 V		
Color	Item No.	Pack. Unit
● red	210-136	50

Test plug; with 500 mm cable; 2.3 mm Ø; max. 42 V		
Color	Item No.	Pack. Unit
● yellow	210-137	50



Testing via 2 mm Ø test plug.

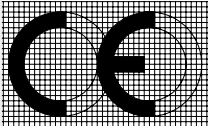


Testing via 2 or 2.3 mm Ø test plugs.



# Technical Section

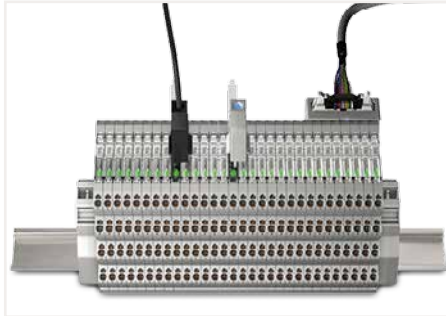
## Technical Section

	Page
Technical Information	836
Installation Notes	854
 CE Marking and EC Directives	858
General Technical Information for Electrical Equipment Used in Hazardous Areas	859
Electromagnetic Compatibility and Mechanical Strength (Industrial and Residential Areas)	860
Electromagnetic Compatibility and Mechanical Strength (Marine Applications)	861
Specifications and Test Results	862
Electrical Engineering Laboratory: Product Safety for Our Customers	866
WAGO Seminars	868

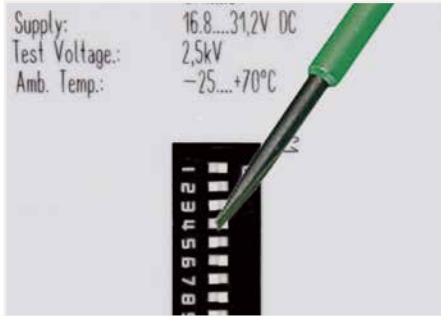


# Signal Conditioners

## 857 Series



## Configuration Options



Configuration via DIP switch



Industry's most compact – "True" 6.0 mm (0.23 inch) width maximizes panel space.

Housed in a 6 mm-wide package, the Signal Conditioners feature eight Push-in CAGE CLAMP® connections and a common profile. These features play a key role in forming the basis for a successful overall solution. Additional benefits include: "safe isolation," extended operating temperature range and calibrated, configurable signals. Combined with excellent technical specifications, these features lead to a line of advanced signal conditioning solutions that maximize panel space while reducing signal wiring and downtime.

**Directly Connect:**  
Simple, push-in termination of solid and ferruled conductors – no operating tool needed.

### PUSH-IN CAGE CLAMP®

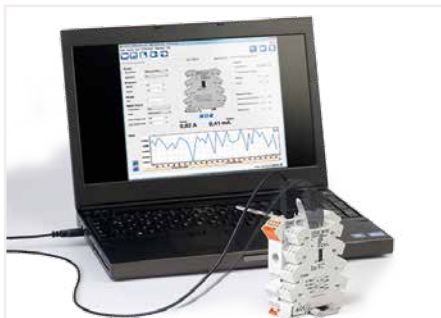
**Highest Safety:**  
All devices provide "safe isolation" with 2.5 kV test voltage according to DIN EN 61010-1.



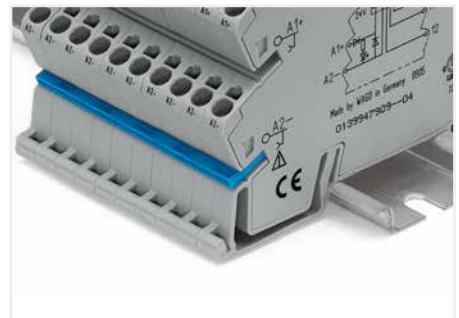
Configuration via JUMPFLEX®-ToGo Smartphone App



For extreme applications – Extended temperature range of -25 °C to +70 °C to support more applications.



Configuration via PC software



Commoning, not discrete wiring – Same outline allows use of a single in-line, push-in jumper.

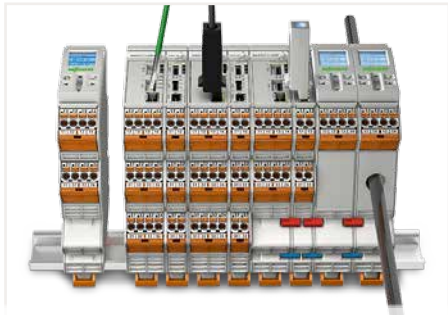


Configuration via push/slide switch

# Signal Conditioners

## 2857 Series

## Configuration Options



Configuration via DIP switch

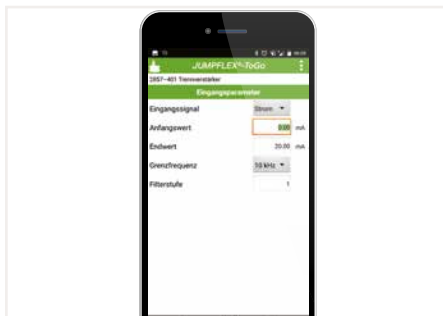
Commoning, not discrete wiring – Same outline allows use of a single in-line, push-in jumper.

The success of the 857 Series Signal Conditioners shaped the design of the new 2857 Series. Just like the 857 Series, usability and absolute reliability are at the core of the 2857 Series. However, the 2857 Series takes flexibility to new levels by providing several convenient configuration options. In addition to DIP switches, PC configuration software and a smartphone configuration app, there is also a touch panel display. Every aspect has been engineered for maximum flexibility – exactly what you'd expect from WAGO.

**Directly Connect:**  
Simple, push-in termination of solid and ferruled conductors –no operating tool needed.

### PUSH-IN CAGE CLAMP®

**Highest Safety:**  
All devices provide "safe isolation" with 4 kV test voltage according to DIN EN 61010-1.



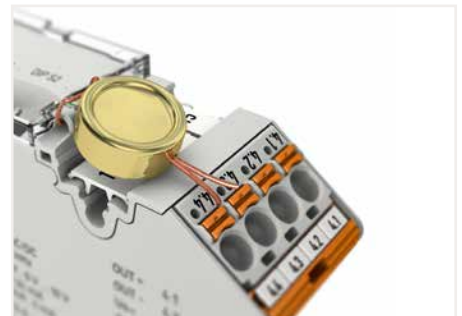
Configuration via JUMPFLEX®-ToGo Smartphone App



For extreme applications – Extended temperature range of -40 °C to +70 °C to support more applications.



Configuration via PC software



Lock-out seal option



Configuration via touch panel – an innovative display



Pluggable connection technology

# Isolation Amplifiers with a Power Supply

## Pre-Configured Isolation Amplifiers

Pre-configured isolation amplifiers convert, amplify, filter and electrically isolate analog standard signals (e.g., 0 ... 10 V into 0 ... 20 mA).

## Configurable Isolation Amplifiers

For signal conditioners, and particularly two-wire signal conditioners, the measured signal is often in the 4 ... 20 mA range as a current value. For the analog input card of a PLC, however, input voltages in the ranges of 0 ... 10 V or 0 ... 5 V are required.

Configurable isolation amplifiers support various standard signals at the input and output; the devices also convert, amplify, filter and electrically isolate analog standard signals. DIP switches accessible from the side can be used to configure the input and output signals. Measurement range configuration via DIP switch is calibrated.

## Universal Isolation Amplifiers

In addition to the configurable isolation amplifiers, the universal isolation amplifiers can also be configured via PC configuration software or smartphone app. The configuration software also offers additional options, such as special input and output signal combinations with intermediate values or inversion of the analog output. An error message can be signaled via digital switching output.

## Bipolar Isolation Amplifiers

Bipolar measurement signals often require processing, e.g., when motor currents are measured in both directions of rotation. Bipolar signals are also processed for recording distances or for better resolution of measurement signals.

## Repeater Power Supplies

Repeater power supplies energize transmitters.

Two-wire transmitters regulate their own current consumption proportional to the measured value; the 4 ... 20 mA connection provides auxiliary power for the transmitter and the magnitude of the current is the same as the output measured value.

Three-wire transmitters usually have an active current output for the measured value and additional connections for the supply voltage (auxiliary power).

## Signal Splitters

Signal splitters divide a standard signal into two signals. The measured signal can be supplied to different downstream devices without interference.

Example: A signal conditioner supplies 4 ... 20 mA input current. 20 mA.

Output 1 is configured to 4 ... 20 mA and transmits the measured value to a controller.

Output 2 is configured to 0 ... 20 mA and regulates a controller.

## Isolation Amplifiers without a Power Supply

### Passive Isolators

Passive isolators draw their power from the input signal (4 ... 20 mA) and require no additional wiring or auxiliary power.

### Loop-Powered Isolation Amplifiers

Loop-powered isolation amplifiers draw their power from the output signal (4 ... 20 mA) and require no additional wiring or auxiliary power.

# Relay Modules



## Relay Modules

Conveniently Interface Electronics and Peripheral Devices

In modern automation systems, electromechanical relays safely connect process peripherals with electronic control, alarm and monitoring systems. For example, relays perform the following tasks:

Electrical isolation with high isolation levels between input and output circuits

Adjust different signal levels

Signal amplification and/or signal multiplication if varying potentials coexist

The comprehensive design of modern relays provides applications with the following benefits:

Immunity to electromagnetic interference and transient voltages

High, short-term overload capacity on both input and output sides

Minimal switching loss

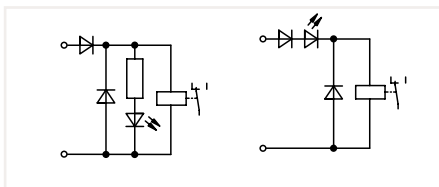
A single module that switches both direct and alternating currents

WAGO offers a complete range of relay modules that perform these tasks for a wide range of applications. Depending on the task and application requirements, there is a choice of relay modules with differently rated voltages, contacts, contact materials, housings and designs. In addition to standard switching relays, other relay models are available including bistable, timer, latching and safety relays with force-guided contacts.

## Definitions of Several Important Technical Terms

### Coil-Side

The relays can be used within the stated temperature range with nominal voltage plus tolerance at 100% continuous rating. According to the type and application, the relays are triggered with a DC or AC signal. The DC versions (residual ripple  $\leq 6\%$ ) are, unless otherwise stated, equipped with LED function indicators, a recovery diode and a reverse voltage protection diode. The functional details are shown in the wiring diagram.



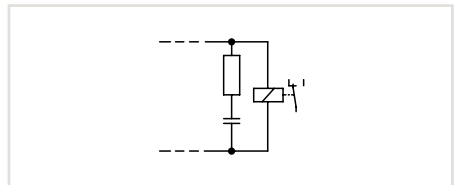
Possible input circuits of relay modules

AC versions of select relays equipped with series connected rectifiers (refer to the wiring diagrams) can be triggered with AC and DC at the stated nominal voltage.

The free-wheel function is in this case actuated by the rectifier. The only input circuit on purely AC relays is the status display.

To guarantee safe operation, residual voltages (due to the cable capacitance of long connection lines or leakage currents of semi-conductor switches and their protective circuits) must be lower than the release voltage of the relays. For DC relays, the release voltage is specified with  $\leq 5\%$  of the nominal voltage; for AC relays, it is  $15\%$  of the nominal voltage (per EN 61810).

The relay may not reset if a high residual voltage exists. Depending on the reason for the residual voltage, changing the cable routing or a parallel connection of an RC element of  $R = 100 \dots 220 \Omega$  and  $C = 220 \dots 470 \text{ nF}$  could remedy this situation.



Optionally, modules specially developed for this application are available, e.g., sockets with a miniature switching relay and integrated base load module (857-358/006-000).

# Relay Modules

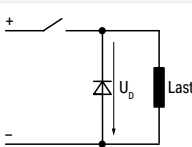
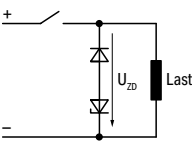
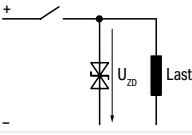
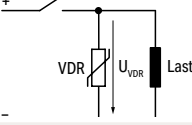
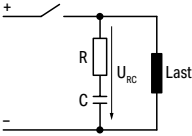
## Contact Materials

For contact reliability, the contact resistance over the entire operating life of the relay should remain relatively low and constant. A variety of contact materials can be selected depending on the load type, switching current, switching voltage and the desired number of switching cycles. The accompanying table shows the materials, their properties and applications when used with WAGO relay modules.

Contact Material	Properties and Applications	Application Range
AgNi 0,15 + Au	Excellent corrosion resistance, low and constant contact resistances at extremely low switching power, for dry circuits	$\mu\text{V} \dots 30 \text{ V}$ $\mu\text{A} \dots 0,2 \text{ A}$
AgNi 0,15	Good mechanical stability, low welding tendency and low contact resistance, universal use at moderate loads	$\geq 12 \text{ V}$ $5 \text{ mA} \dots 10 \text{ A}$
AgSnO <sub>2</sub>	Low welding tendency, extremely high burn-off resistance at high switching power, suitable for circuits with high switch on/off loads, DC circuits	$\geq 5 \text{ V} / 100 \text{ mA}$ $\geq 10 \text{ V} / 10 \text{ mA}$ $\geq 24 \text{ V} / 1 \text{ mA}$

## Contact Protective Circuit

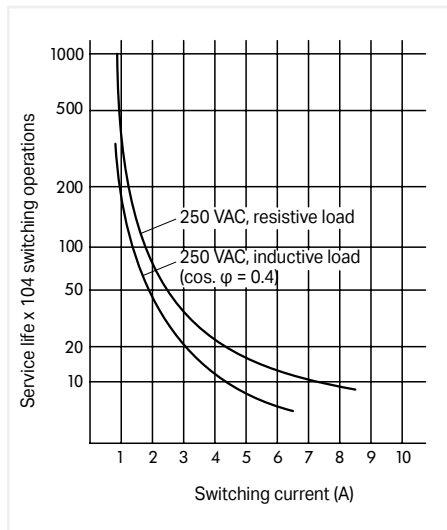
When switching off inductive loads, such as contactors and solenoid valves, transients occur with peak voltages up to several thousand volts. These transients often exceed the permissible EMC standard limits and must therefore be limited by external circuits. They also cause an electric arc at the switching contact, which can destroy the contact or can significantly diminish the relay's service life and reliability. The following protective circuits, which are outlined in the table, are connected directly to the source in parallel to the load and have proven to be successful.

Load Circuit	Additional Fall Delay	Defined Induction Voltage Limitation	Bipolar-Effective Attenuation	
<b>Diode</b> 	Large	Yes ( $U_D$ )	No	Advantages: <ul style="list-style-type: none"> <li>• Easy implementation</li> <li>• Cost-effective, reliable</li> <li>• Uncritical dimensioning</li> <li>• Small induction voltages</li> </ul> Disadvantages: <ul style="list-style-type: none"> <li>• Attenuation only via load resistor</li> </ul>
<b>Diode/Zener Diode Series Circuit</b> 	Medium to small	Yes ( $U_{ZD}$ )	No	Advantages: <ul style="list-style-type: none"> <li>• Uncritical dimensioning</li> </ul> Disadvantages: <ul style="list-style-type: none"> <li>• Attenuation only above <math>U_{ZD}</math></li> </ul>
<b>Suppressor Diode</b> 	Medium to small	Yes ( $U_{ZD}$ )	Yes	Advantages: <ul style="list-style-type: none"> <li>• High energy absorption</li> <li>• Uncritical dimensioning</li> <li>• Suitable for AC voltage</li> </ul> Disadvantages: <ul style="list-style-type: none"> <li>• Attenuation only above <math>U_{VDR}</math></li> </ul>
<b>Varistor</b> 	Medium to small	Yes ( $U_{VDR}$ )	Yes	Advantages: <ul style="list-style-type: none"> <li>• High energy absorption</li> <li>• Uncritical dimensioning</li> <li>• Suitable for AC voltage</li> </ul> Disadvantages: <ul style="list-style-type: none"> <li>• Attenuation only above <math>U_{VDR}</math></li> </ul>
<b>R/C Combination</b> 	Medium to small	No	Yes	Advantages: <ul style="list-style-type: none"> <li>• RF attenuation via power storage</li> <li>• Suitable for AC voltage</li> <li>• Level-independent attenuation</li> </ul> Disadvantages: <ul style="list-style-type: none"> <li>• Accurate dimensioning required</li> <li>• High inrush current</li> </ul>

# Relay Modules

## Service Life

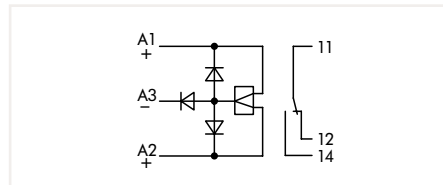
A distinction must be made between the mechanical life, which indicates the number of switching cycles without contact load, and the electrical service life at maximum load, which indicates the number of switching cycles with maximum switching power and resistive load. Reduced power increases the service life compared to the value of the maximum load. The following figure shows the typical curve between switching current and service life of a relay.



More details upon request

## Description of Select Relays

### Bistable Switching Relays



Bistable switching relays have three coil contacts. According to the wiring scheme, the relay is switched into "working condition" (contacts 11 ... 14 closed) by the common connection A3 and the connection A2 and into "rest position" (contacts 11 ... 14 opened) by the connection A1. After removing the control signal, the relay returns to its respective position and can only be switched over by a control signal circuit. The bistable switching relays are only available for direct voltage with positive or negative triggering.

### Current Pulse Switching Relays

One current pulse is needed to change the relay from the rest position to the working position and vice versa. During the triggering process, one of two status indicators displays the actual contact position. The current pulse switching relay is available for direct and alternating voltage.

### Safety Relays

Force-guided safety relays have become increasingly recommended and specified for self-regulated systems as they provide protection for personnel, machines and installations. Relays with force-guided contacts are an essential safety component for these circuits, particularly when defects occur. For these applications, WAGO offers specialty relay modules with force-guided contacts as based on EN 61810-3.



# Optocouplers

## Optocouplers – The Modern and Powerful Alternative

As a link between process peripherals and electronic control, alarm and monitoring systems, optocoupler modules boast the following advantages over electromechanical relays:

- Longer service life – no mechanical wear
- High switching frequency because of fast switching times
- Vibration resistance
- No contact bouncing
- "Noiseless" switching
- Low control power

WAGO provides a full range of optocouplers for all interfaces between control and load circuits in applications where the following advantages are needed:

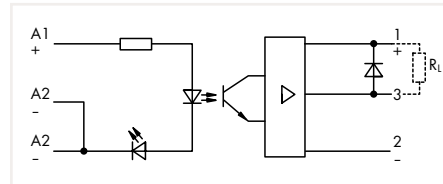
- Electrically isolate input and output circuits
- Adjust different signal levels
- Signal amplification



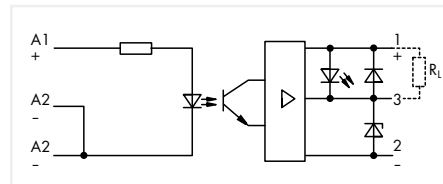
## Input circuit

According to the type, triggering the optocoupler modules is performed via DC voltage (residual ripple  $RR < 6\%$ ) or AC voltage (50 ... 60 Hz).

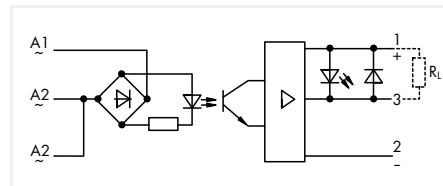
In the DC type, a reverse voltage protection diode is always provided; in the AC type optocoupler element, a rectifier is included. The optocoupler modules are equipped with a LED function indication at either the input side or at the load side, as shown in the wiring diagram.



DC triggering with LED function indication in the triggering circuit



DC triggering with LED function indication in the load circuit



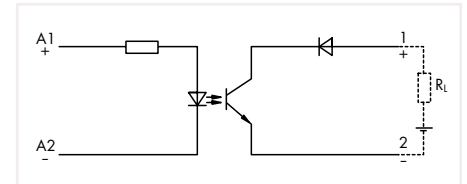
AC triggering with LED function indication in the load circuit

Due to the low threshold voltages, it must be ensured that interference and residual voltages (caused by the cable capacitance of long connection lines or leakage currents of semi-conductor switches and their protective circuits) do not cause any malfunctions.

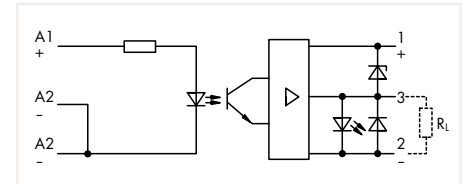
## Output Circuit

Depending on the application, an optocoupler module for DC or AC voltage consumers can be selected on the load side. In the case of DC outputs, they can be:

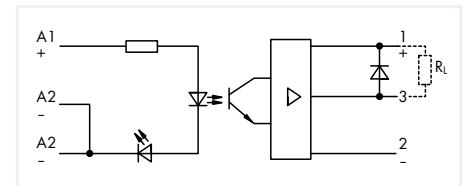
- 2-wire output
- 3-wire high-side switching output
- 3-wire low-side switching output



2-wire output



3-wire high-side switching output

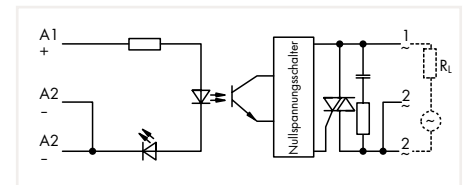


3-wire low-side switching output

In addition to these different functional outputs, the output voltage range and the maximum switching current must be observed.

To ensure proper operation, the specified polarity must be observed.

In order to protect the output transistors, inductive loads must always be equipped with a protective circuit, e.g., a recovery diode. For other types of protective measures, the cut-off voltage peaks must be lower than the indicated cut-off voltage of the output transistors. For the AC outputs a Triac is used as the switching element.



In order to avoid high inrush currents, the AC output is equipped with a zero-voltage switch which turns on the load at the zero-voltage point. In the current zero-crossing, the Triac will cut off the load. Besides observing the maximum switching voltage and maximum switching current for inductive loads, ensure the provision of a protection circuit to cut-off peaks to a value below the reverse voltage.



## Relay Modules and Optocouplers Housings and Designs

Modern equipment design requires multiple components that can meet diverse challenges:

User- and maintenance-friendly, limited budgets, safety and availability, simplicity in design and usage.

WAGO offers relay and optocoupler modules in various designs to overcome any of the restraints posed by space requirements.

### Sockets with a Miniature Switching Relay or a Solid-State Relay, 788 Series



Socket with a pluggable miniature switching relay

WAGO 788 Series Relay Sockets are an excellent platform for industrial and process automation switching relay applications. Featuring plug-and-play, miniature switching relays (1 or 2 changeover contacts), the 788 Series relays are ultra-compact, fitting where other relays won't. A compact design (W x H x D: 15 x 53 x 86 mm) is just one of the 788 Series' unique and highly beneficial features. A robust, easy-to-use lever lifts/ejects relays, simplifying replacement – even if relay modules are side-by-side. For flexibility and the reduction of part numbers, the 788 Series can be ordered as: a fully equipped relay module, a relay and LED for switching status indication, or as individual components.

### Relay and Optocoupler Modules, 857 Series



Relay module with plugged miniature switching relay

WAGO's 857 Series Relay and Optocoupler Modules are supplied in 6 mm-wide housing and share a common profile. The modules feature a single, flexible in-line jumper system, eliminating discrete wiring. The pluggable relays can simply be replaced from the top.



Relay and optocoupler modules

## Relay Modules and Optocouplers Housings and Designs

Pluggable Function Modules for Carrier Terminal Blocks,  
286 Series



Pluggable function modules for carrier terminal blocks

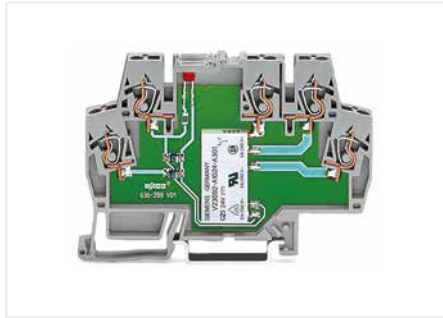
Pluggable modules for carrier terminal blocks maximize flexibility while simplifying maintenance. The carrier terminal block is mounted on the DIN-rail and wired just like a standard terminal block. For ease of maintenance, the modules are replaced in one step without altering the wiring. This intelligent design also saves space and reduces wiring costs.



Pluggable relay modules for carrier terminal blocks

A comprehensive range of function modules is available to complement these relay and optocoupler modules. The modules seamlessly integrate any required function into control cabinets via pluggable modules.

Rail-Mount Terminal Blocks with Relay and Optocoupler,  
859 Series



Relay module

With a wide range of relays and optocouplers, the 859 Series will suit any industrial interface application. The compact, 6 mm-wide housing is ideal for space-restricted control panels. Simple commoning at the control and load side streamlines looping through of common input and output potentials.

Relay Modules in a DIN-Rail Mount Enclosure,  
789 Series



Relay module in a DIN-rail-mount enclosure

WAGO 789 Series Switching Relays serve a wide variety of applications, from basic lighting control – homes, hotels and commercial structures – to comprehensive industrial control cabinets.

Just 17.5 mm wide, the compact DIN-rail-mount enclosure is ideal for distribution boards and meter cabinets. The relay modules with manual operation allow simple emergency operation to be implemented.

Sockets with an Industrial Relay,  
858 Series



Socket with an industrial relay

A robust design and vibration-proof CAGE CLAMP® Spring Pressure Connection Technology ensure continuous and uninterrupted operation for any system. The right choice for applications requiring up to four changeover contacts. Dual conductor entries enable customized potential distribution.

## Interface Modules

### Safe and Maintenance-Free Connections

Interface modules connect electronics to electrical systems at the control level and perform:

- signal transmission between control and field level (system, machine), as well as
- signal distribution between control and field level and vice versa. Here, the control signals from pre-assembled, plug-in connections are applied to terminal block connections.

WAGO offers a wide range of interface modules for commonly used connector types. Using these interface modules, the following benefits are provided for system wiring:

- Simple and time-saving planning and calculation
- Quick wiring, commissioning and troubleshooting thanks to clearly laid-out wiring and highly legible pole markings – decrease wiring errors
- Safe and maintenance-free connection of signal lines using CAGE CLAMP® terminal strips
- Space-saving, high-density wiring

The interface modules can be delivered as standard, in a universal DIN-rail mounting carrier for the following connectors:

### D-Subminiature Connector per DIN 41652

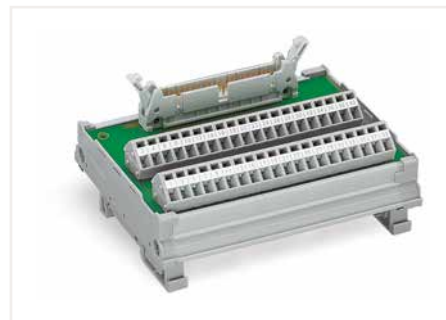
Interface modules for male and female connectors are available with 9, 15, 25, 37 or 50 contacts. Compared with the standard solder connection, the mating connector with IDC connection offers additional advantages.



Interface module with D-subminiature connector per DIN 41652

### Pluggable Connector per DIN 41651

Interface modules with 10-, 14-, 16-, 20-, 26-, 34-, 40-, 50- and 64-pole pluggable connectors are available for ribbon cable connectors.



Interface module with pluggable connector per DIN 41651

### RJ-45 Interface Modules

The RJ-45 interface modules are switchgear cabinet components for passive and structured network cabling. A range of DIN-rail-mount RJ-45 interface modules in different variants are available for the various applications:

- with shield clamping saddles
- as crossover
- with additional power contacts



RJ-45 Interface Modules



## Power Supplies Serie 787

### Pro Power Supplies



Slimline, 1- and 3-phase, switched-mode power supplies feature a wide input voltage range, stabilized, adjustable 12, 24 or 48 VDC output voltage, output power up to 960 W and high efficiency. An integrated PowerBoost (up to 100% output power for 4 seconds or alternatively 150% for 8 s) allows reliable starting of heavy loads with high inrush currents, eliminating expensive oversizing of the power supply. The TopBoost function, which provides a much higher output current of up to 60 A for 50 ms, permits use of standard circuit breakers for protection on the secondary side. This enables safe tripping within the time limits required by the EN 60204 standard.



Select devices utilize the LineMonitor feature for current and voltage monitoring, fault memory and parameterization options via LCD display, on-unit function keys, or free monitoring software and available RS-232 interface from a PC and PLC. This allows the power supply to replace additional devices, such as phase failure and phase sequence monitoring devices or operational hour meters. Power supplies without LineMonitor offer a DC OK contact for output voltage monitoring and a stand-by mode to switch off the device output via remote input, while minimizing power consumption. Foolproof, pluggable CAGE CLAMP® connectors permit efficient pre-wiring.

### Classic Power Supplies



Single-phase, two-phase and three-phase, primary switch mode, industrial power supplies provide a wide input voltage range and robust metal housings. The Classic Power Supplies have a stabilized, adjustable output voltage and provide short-circuit and overload protection. The devices achieve high efficiency and the integrated LED status indicator conveniently provides operational status at a glance. Foolproof, pluggable CAGE CLAMP® connectors permit efficient pre-wiring.

The Classic Power Supplies are available in four nominal output voltages: 12, 24 or 48 VDC, as well as 30.5 VDC for AS-Interface networks.

Depending on the voltage, outputs of up to 960 W are available.

Classic Power Supplies with outputs of up to 120 W comply with the EN 60335-1 standard, making them suitable for use in devices and machines subject to EN 60335-2 (so-called household appliance standard).

Classic Power Supplies with outputs of 120 W and higher are provided with a TopBoost, enabling the use of conventional circuit breakers for secondary-side protection.

Virtually all devices of the Classic Power family are provided with DNV GL approval for use in shipbuilding or onshore/offshore applications.

### Eco Power Supplies



Single-phase and three-phase, switched-mode power supplies in sturdy metal housing offer a wide input voltage range, without manual switching. The stabilized, front-panel adjustable 24 VDC output voltage is protected against open and short circuits, and constant current operation is provided in the overload range up to 180%. LEDs quickly provide operational status at a glance.

CAGE CLAMP® provides fast, vibration-proof and maintenance-free terminations, allowing DIN-rail mounting in several positions as well as screw mounting without a DIN-rail. These devices also have conformity with EN 60335-1, allowing use in appliance building. Individual devices with ATEX, IEC Ex and ANSI/ISA 12.12.01 approval are available for use in Zone 2 hazardous areas.

### Compact Power Supplies



Single-phase, DIN-rail-mount power supplies are used in meter boards, junction boxes, small and system distribution boxes or flat control panels in buildings and industrial applications. Devices with nominal output voltages of 5, 12, 18 or 24 VDC are protected from overloads and short circuits, are provided with an integrated status LED and offer outputs of up to 150 W.

Some devices come with a pluggable female connector with integrated Push-in connection technology, ensuring particularly rapid and convenient wiring.

This family also includes devices that comply with EN 60335-1 and are suitable for use in appliance building. Devices with DNV GL approval are also available for use in shipbuilding and onshore/offshore applications.

### Electronic Circuit Breakers (ECBs)



Configurable protection via 2-, 4- or 8-channel ECBs, for shutting down faulty 12, 24 or 48 VDC current paths. Offering adjustable trip times, ECBs respond to short circuits/overloads quicker than traditional circuit breakers or fuses, or when unintended start-ups must be prevented in the event of a ground fault (see EN 60204). This is particularly advantageous when using long cables between a power supply and load where loop resistance may be very high. Due to their faster and more precise tripping characteristics, as well as the possibility to set at six times the nominal current, ECBs have clear benefits. The devices also come with integrated current and voltage monitoring, the possibility to charge high capacitive loads, a slim design, pluggable connection technology, as well as marking and sealing options. ECBs with active current limitation are also available as an option. These advanced features enable ECBs to reliably prevent voltage drops in the event of a short circuit.

A group message notifies whether channels have tripped. A remote reset is also possible. Furthermore, the digital signals provided enable the simple polling and switching of each individual channel. Voltage and current values can also be transferred.

### Uninterruptible Power Supplies (UPS)



Uninterruptible power supplies (UPS) reliably compensate for long power outages. They consist of a charger and controller, as well as a connected battery of varying capacities. In battery operation, 24 VDC can be provided for several hours depending on the load current and battery capacity. The charger and controller are supplied with 24 VDC from an external power supply – capacity must be matched to the load. Parameterization and diagnostics are simplified by an optionally integrated LCD with keypad, or free software using an RS-232 interface (for connection to a PC or PLC). The battery modules come with battery control technology. They have an integrated microcontroller with temperature sensor, allowing for temperature-controlled charging via charger and controller, which extends the battery's service life. The remaining battery life is determined, according to which the charger and controller can generate a signal for battery replacement.

## Power Supplies

### 787 Series

#### Redundancy Modules



Redundancy modules have two integrated power diodes for parallel connection of power supplies, while improving power supply availability or increasing the total current for the 12, 24 or 48 VDC loads. An optional signal contact reports the failure of one or both input voltages, which is also displayed via LED.

#### Capacitive Buffer Modules



Maintenance-free capacitive buffer modules ensure smooth operation and protect data during shorter 24 VDC power interruptions. Depending on the output current and buffer capacity, buffer times up to several seconds can be achieved. While control units are particularly sensitive to short power interruptions, an integrated signal contact reports buffer operation, offering the control unit sufficient time for preventive measures (e.g., saving valuable production data or program parameters).

#### DC/DC Converters



Available in a 6 mm wide housing or DIN-rail-mount enclosure, DC/DC converters are ideal for applications where it is not necessary to use a separate power supply with special voltage due to low power requirements (e.g., when supplying sensors, actuators or DALI bus devices).

## DIN-Rail-Mount Modules – Power Supplies



Standard transformer power supplies with bridge rectifier, smoothing capacitors and stabilized output voltage via longitudinal voltage regulator are ideal for supplying small loads with nominal output voltages of 24, 12,  $\pm 12$  and  $\pm 15$  VDC. Their low residual ripple makes them particularly well suited for applications using analog technology. The DIN-rail-mount modules feature CAGE CLAMP® technology for fast, vibration-proof and maintenance-free connections.

## DIN-Rail-Mount Modules – Constant Voltage Sources



Constant voltage sources provide stabilized 24 VDC voltage via integrated longitudinal voltage regulator. The DIN-rail-mount modules feature CAGE CLAMP® technology for fast, vibration-proof and maintenance-free connections.

## Communication Cables



The communication cables connect the RS-232 interface of the following devices to a PC or PLC RS-232 interface: power supplies with integrated LineMonitor (787-85x), ECBs (787-86x), UPS charger and controller (787-87x), power supply with integrated UPS charger and controller (787-1675). When combined with free software, users can easily set device parameters and perform diagnostics.



# Overvoltage Protection

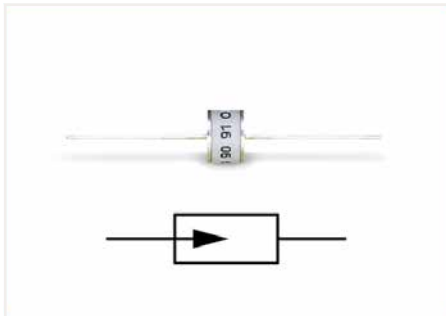
## Overvoltage protection for increased safety and longer on-line operation

On-the-line overvoltages cause most operating failures for measuring, control, data and power lines. Failure of electronic and semiconductor components due to surges can cause operating interruptions. The overvoltage (also called transients) can be generated by switching electrical equipment on or off or by lightning discharges. Depending on the application, protective measures for systems and devices can be broken down into:

- Coarse protection
- Medium protection
- Fine protection

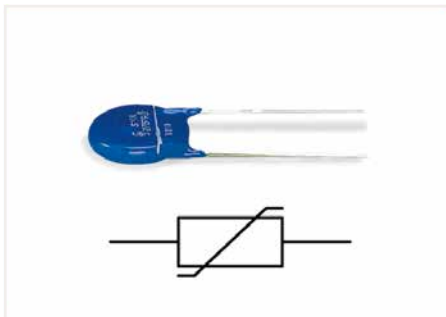
The boundaries between these levels of protection may not be sharply defined. To implement the appropriate protection measures, various components are used for discharging transient overvoltage, depending on the protection type. The following components have proven performance in these applications:

### Gas-filled surge arrester



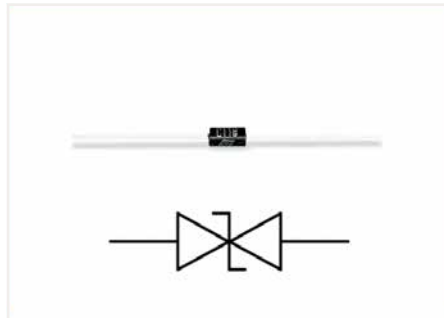
The gas filled surge arrester is comprised of two electrodes in a ceramic or glass tube filled with a pressurized inert gas. Once the ignition voltage is reached, resistance drops due to ionization and current begins to flow. The resistance of the device drops from high to low as it conducts. The voltage across the device after the arc is struck is typically 10 ... 30 V. Therefore, the current will continue to flow until the voltage drops below this level. As this is not a guaranteed occurrence in typical power situations, a fuse must precede the device to ensure disconnection from the supply. This is always the case if the nominal voltage of the protected network is greater than 12 VDC and the nominal voltage of the power supply and the protected circuit is greater than 100 mA.

### Varistor



A varistor is a voltage-dependent resistor, in which the resistance becomes low after their "nominal voltage" is exceeded and for the voltage range above it, and can thus cut off any overvoltages through high discharge currents. Varistors can age with continued surge conduction, resulting in lower impedance even in the lower voltage range. However, this normally only occurs when a varistor frequently discharges transients. In this case, they must be replaced and specific time intervals.

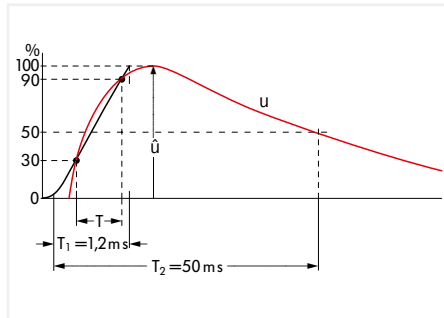
### Suppressor Diode



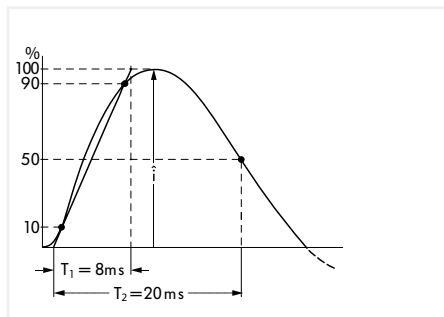
Suppressor diodes have electrical characteristics similar to Zener diodes, but are rated for surge currents. Once the rated breakdown voltage is exceeded (in the non-conductive direction), the diode becomes a conductor. The suppressor diode differs from a Zener in its higher current carrying capability and faster response time (in the picosecond range).

### Test Impulse

Surge arresters are subject to standardized test pulses in order to classify capabilities; the effectiveness of protection measures with reference to dissipation capacity and voltage arresting. The form and level of the test pulses are defined by IEC 60060-1 and EN 62475:2010. Preference is given to voltage pulses of 1.2/50 and current pulses of 8/20.



Voltage pulses 1.2/50 per IEC 60060-1



Current pulses 8/20 per EN 62475:2010

### Application Recommendations

The advantages of gas-filled surge arresters lie in their high current carrying capacity, making them ideal for coarse protection. One disadvantage, particularly in the medium protection range, is the relatively long response time, as well as the power follow current. Varistors have a considerably shorter response time; however they also have lower leakage currents. This makes them more suitable for medium protection as they offer limited applications for coarse protection. If the connection lines of electronic equipment are already "fine" protected, general coarse and medium protection measures are sufficient. If this is not the case, suppressor diodes with a very short response time may be employed as fine protection. WAGO offers a complete range of modular terminal blocks with integrated surge arresters for coarse, medium and fine protection. Depending on the application, one can choose the appropriate type from the previously mentioned surge arresters. These are electrically connected in the modular terminal blocks between the connection point and mounting rail. Snapping the terminal block onto the grounded (earthed) mounting rail automatically ensures the required overvoltage protection.



Double-deck terminal block, with varistor direct connection to DIN-35 rail

Frequently, only one surge arrester is fitted for cost reasons. However, due to the fact that one surge arrester alone cannot optimally ensure several protection functions, combinations are recommended. Care must be taken to ensure that the single-stage protection devices are decoupled sufficiently by inductors or resistors.

# Overvoltage Protection

Interference suppression modules are a special category here.

In addition to overvoltage protection, a high frequency interference filter can be added to the circuitry. This filter cannot only protect the equipment from high frequency energy transmitted by connecting wires, but also prevents a transmission of disturbances to the supply lines. The main component of a filter is an LC network, which produces a mismatch between the filter impedance and the impedance of the disturbance path. This reflects any disturbance back to its source.

## Definition of Several Important Technical Terms

### Nominal Operating Voltage ( $U_{BN}$ )

The nominal operating voltage corresponds to the voltage which may be permanently connected to the appropriate connection terminals of the overvoltage protection module. Alternating voltages are quoted as effective values.

### Max. Operating Voltage ( $U_{Bmax}$ )

The maximum operating voltage corresponds to the voltage which may be permanently connected to the appropriate connection terminals without the operating properties changing or activating the individual module's protection elements.

### Nominal Current ( $I_N$ )

The nominal current corresponds to the current which may permanently flow through the connection terminals of the overvoltage protection device.

### Nominal Discharge Current ( $I_{SN}$ )

The nominal discharge current is the maximum value of a current having the 8/20  $\mu$ s waveform, which can flow through the surge arrester five times within a time period of 30 seconds (VDE) without destroying it.

### Max. Surge Current ( $I_{Smax}$ )

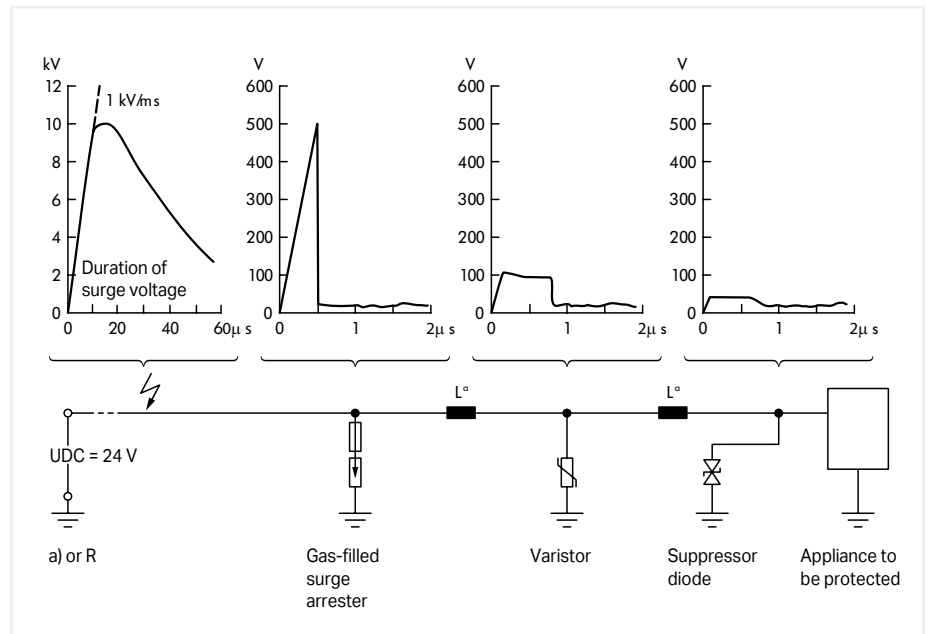
The maximum surge current  $I_{Smax}$  defines the maximum value of a current having the 8/20  $\mu$ s waveform, which can flow through the surge arrester once without destroying it.

### Protection Level ( $U_p$ )

The protection level is the value of the residual voltage occurring on the "protected" side of the surge arrester when applying the rated discharge current.

### Response Time ( $t_{resp}$ )

The response time is primarily based on the physical properties of the surge arresters and is dependent upon the wave front duration of the surge voltage. WAGO's data refers to a voltage rise 1kV/ $\mu$ s.



Function diagram of a multi-stage surge voltage protection module

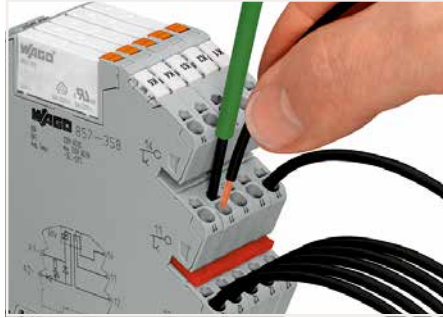
## Installation Notes

### Relay and Optocoupler Modules, 859 Series



Inserting a conductor via screwdriver.

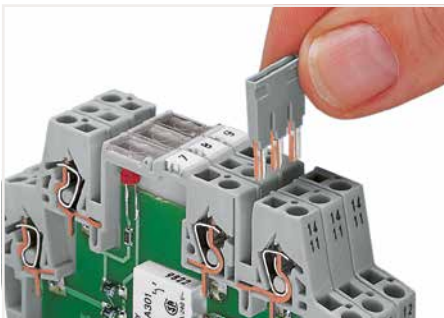
### Relay and Optocoupler Modules, 857 Series



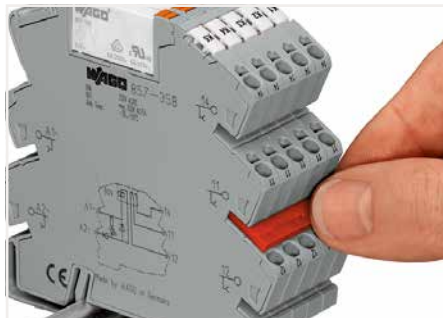
Inserting a conductor via screwdriver.



Removing a relay via ejector.



Easy commoning using adjacent jumpers.



Easy commoning using adjacent jumpers.



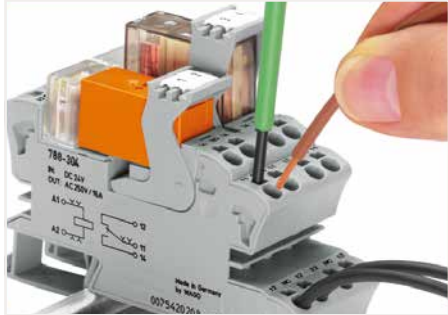
Marking via Mini-WSB Quick Marking System.



Marking via WMB Multi Marking System.

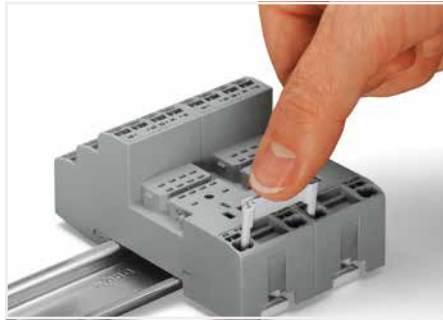
# Installation Notes

## Sockets with a Miniature Switching Relay, 788 Series

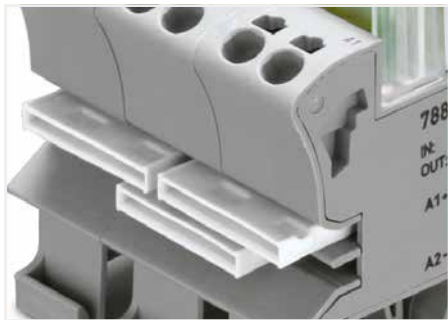


Inserting a conductor via screwdriver.

## Sockets with an Industrial Relay, 858 Series



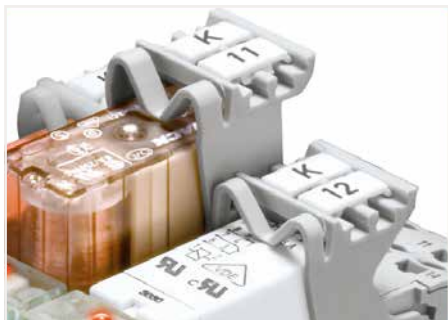
Easy commoning using adjacent jumpers.



Easy commoning using adjacent jumpers.



Removing a conductor via screwdriver.



Marking using WMB Multi markers and group marker carriers.

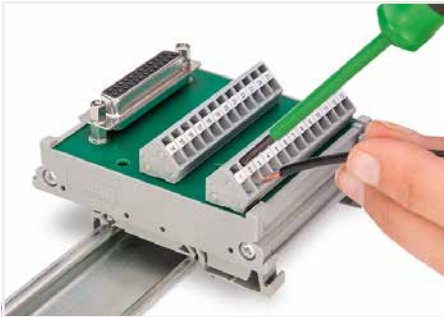


Marking using WMB Multi markers and group marker carriers.

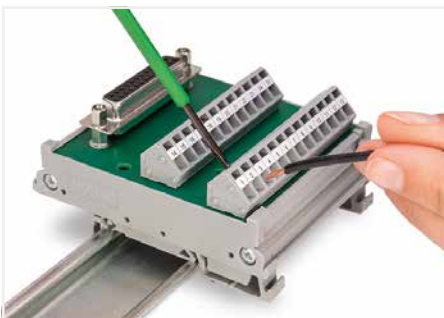


# Installation Notes

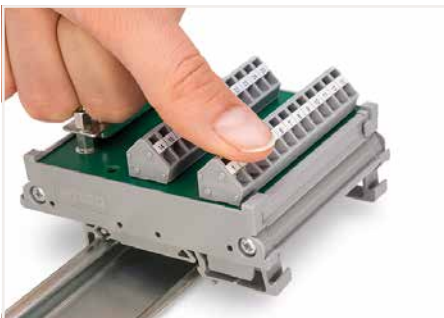
## DIN-Rail-Mounted Interface Modules, 289 Series



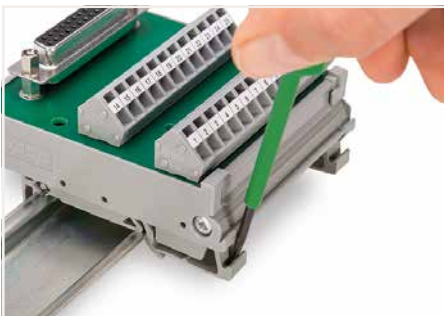
"Front-entry" conductor termination



"Side-entry" conductor termination

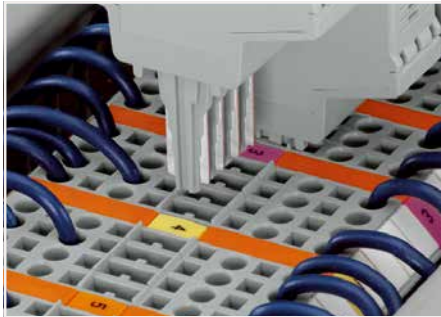


Snapping a module onto DIN-rail.



Removing a module from the DIN-rail.

## Pluggable Function Modules for Carrier Terminal Blocks, 286 Series



Coding ensures correct polarity.



Pluggable electronic modules on 2- or 4-conductor carrier terminal blocks

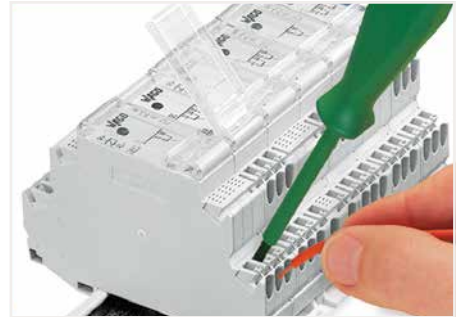


Marking via WMB Multi Marking System.



Function testing via touch-proof test slots.

## Relay Modules in a DIN-Rail Mount Enclosure, 789 Series



Inserting a conductor via screwdriver.



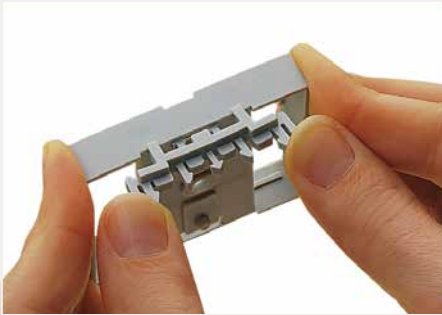
Easy commoning via adjacent jumpers.



Marking via Mini-WSB Quick Marking System.

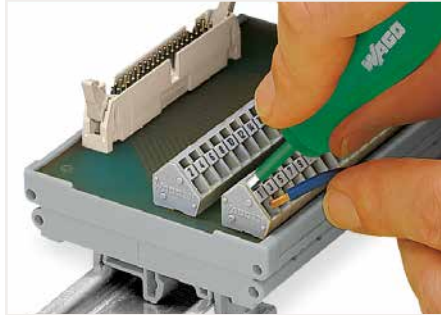
## Installation Notes

### Interface Modules, 289 Series

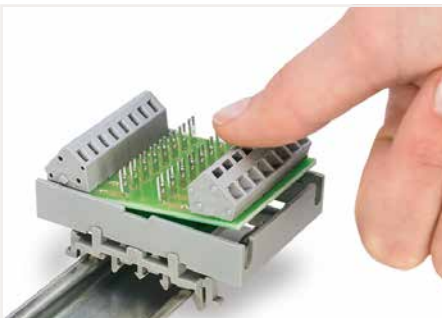


Mounting carrier, gray, snap-fit mounting of universal mounting feet

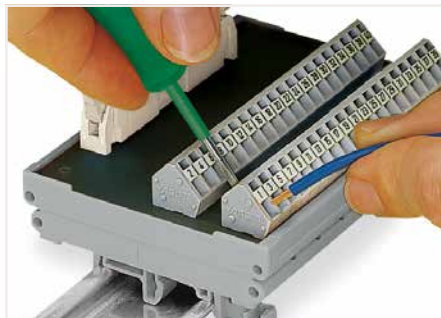
### Interface Modules, 289 Series



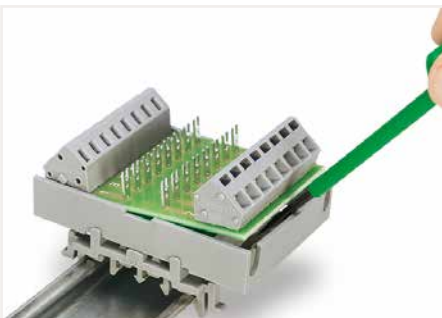
"Front-entry" conductor termination



Fitting an individual module to the mounting carrier.



"Side-entry" conductor termination

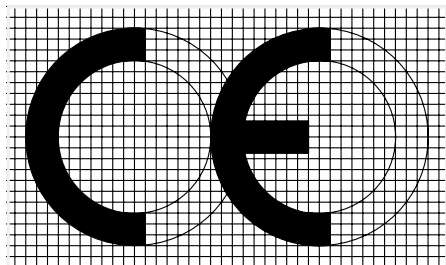


Removing an individual module from the mounting carrier.

## CE Marking and EC Directives

### CE Conformity Marking:

The CE conformity marking consists of the characters "CE" with the following script:



Communauté Européenne  
(European Community)

The CE conformity marking must be applied to all electrical equipment; should on-unit marking not be possible, mark the smallest packing unit. With this marking, manufacturers attest conformity of their products to relevant directives.

In addition to the CE marking, manufacturers provide an EC "Declaration of Conformity" for their products. This declaration of conformity must be retained and submitted to a national surveillance authority upon request.

EC directives are legally binding specifications for the European Union. Their goal is aligning legal and administrative specifications in the various EU member countries, in order to prevent trading hindrances arising from different national specifications.

In order to launch a product on the market, it must comply with the relevant directives. Several directives may apply for one single product, for example, EMC and low voltage directives.

### Low Voltage Directive (LVD)

The safety of electrical equipment is guaranteed by the Low Voltage Directive. The LVD covers all electrical equipment operating with a voltage between 50 and 1000 VAC and between 75 and 1500 VDC. Products falling within the scope of the LVD that are designed in such a way that they can be used in other electrical devices and whose safety, for the most part, is dependent on how these components were built into the end product and what features the end product has are defined as basic components in accordance with the LVD. The LVD doesn't apply to basic components.

### EMC Directive

The EMC Directive implies that a product must meet the limits of the radiated electromagnetic disturbance and also requires that a product must be immune to electromagnetic interference. Electromagnetic passive components or components with no direct function, like resistors, diodes, capacitors, switching relays or cables (in the form of passive printed circuit boards) are not considered as apparatus within the meaning of the EMC Directive.

### Machinery Directive

The Machinery Directive does not apply to WAGO products.

### Explosive Atmospheres Directive (ATEX)

Directive for devices and protective systems intended for use in hazardous locations.

### Radio Equipment Directive

A device or relevant component thereof, capable of communication by emitting and/or receiving radio waves utilizing the spectrum allocated to terrestrial/space radio communication, falls within the scope of the Radio Equipment Directive. As such, these devices and components are tested and labeled accordingly. This label implicitly includes both Low Voltage and EMC Directives, since the Radio Equipment Directive also encompasses the safety targets for both of these directives.

## General Technical Information for Electrical Equipment Used in Hazardous Areas

### Hazardous Areas

Hazardous environments are areas in which the atmosphere may become explosive. An explosive atmosphere is a mixture of flammable substances

in the form of gases, vapors or mixtures with air under atmospheric conditions in critically mixed ratios such that excessive high temperature, arcs or sparks may cause an explosion.

DIN EN 1127-1 and all other related standards that are commonly known divide up hazardous areas according to the likelihood of the occurrence of an explosive atmosphere into the following zones:

- ❶ Hazardous areas due to explosive gases, vapors and mists

#### Zone 0

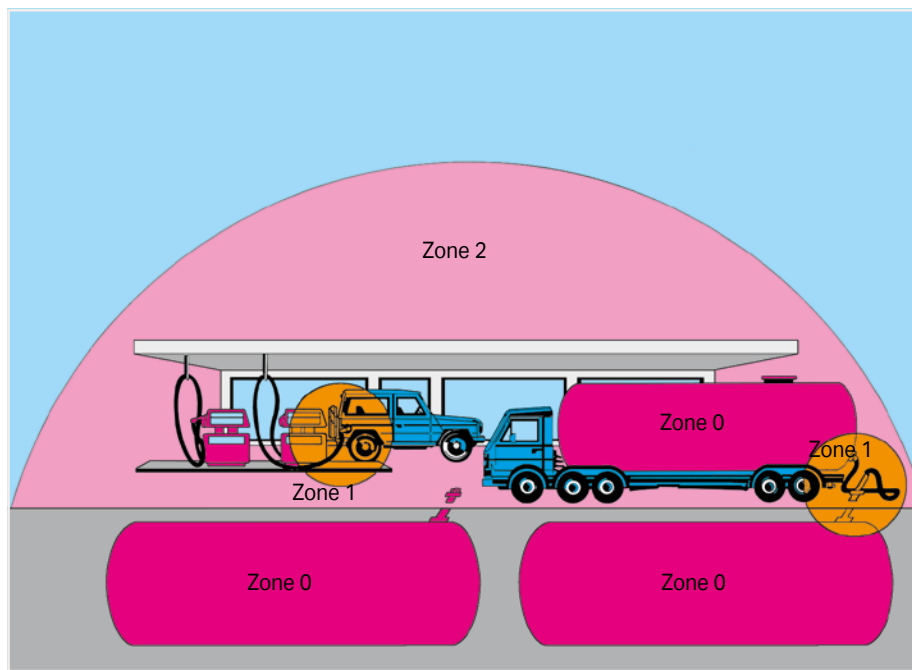
Areas in which an explosive atmosphere is present continuously, for long periods or frequently.

#### Zone 1

Areas in which an explosive atmosphere is likely to occur occasionally during normal operation.

#### Zone 2

Areas in which an explosive atmosphere is likely to occur rarely or only for a short period during normal operation.



- ❷ Hazardous areas due to explosive dust/air mixtures

#### Zone 20

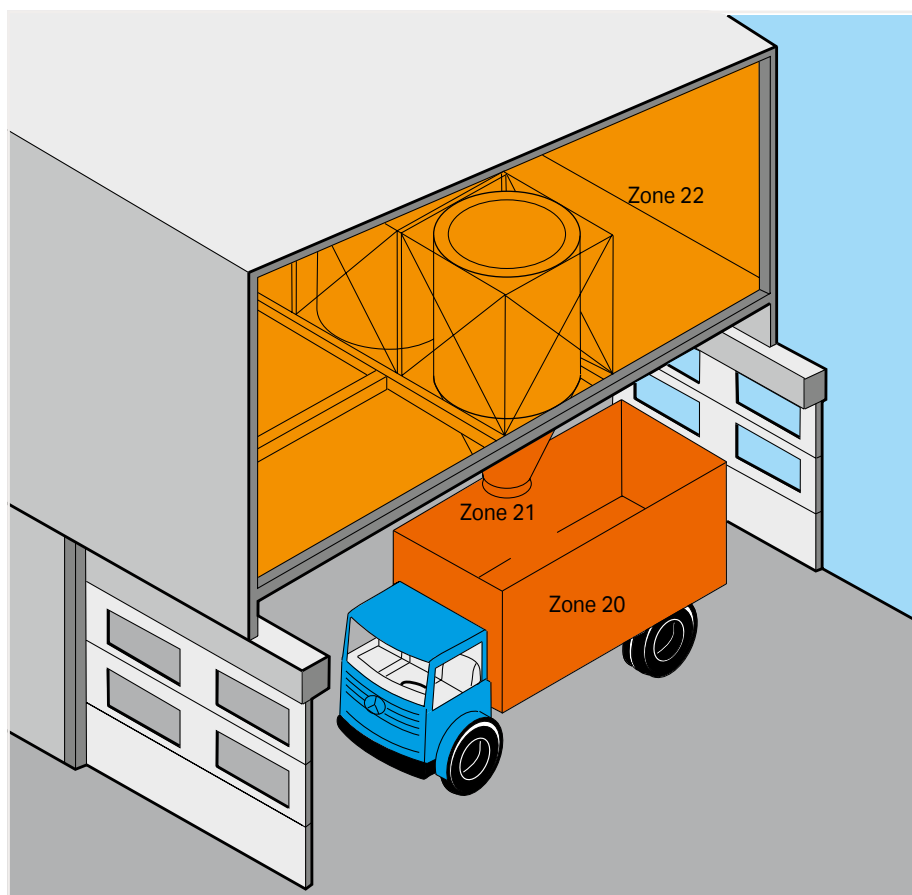
Areas in which an explosive atmosphere due to dust/air mixtures is present continuously, for long periods or frequently and in which dust deposits of known or excessive thickness may form. Dust deposits alone do not constitute a Zone 20.

#### Zone 21

Areas in which the occurrence of an explosive atmosphere due to dust/air mixtures is to be expected occasionally and in which deposits or layers of combustible dust can generally be present.

#### Zone 22

Areas in which an explosive atmosphere due to dust/air mixtures is not likely to occur during normal operation and, if it occurs, will only exist for a short period, or in which accumulations or layers of combustible dust are present.





## Electromagnetic Compatibility and Mechanical Strength (Industrial and Residential Areas)

### Immunity to Interference for Industrial Areas per EN 61000-6-2

Test Specification		Test Values	Evaluation Criteria *)
EN 61000-4-2	ESD	4 kV/8 kV (contact/air)	B
EN 61000-4-3	Electromagnetic fields	10 V/m: 80 MHz ... 1 GHz	A
		3V/m: 1.4 ... 2.0 GHz	A
		1V/m: 2.0 ... 2.7 GHz	A
EN 61000-4-4	Burst	1 kV/2 kV (data/supply)	B
EN 61000-4-5	Surge	Data: - / 1 kV (line : line – line : ground)	B
		DC supply: 0.5 kV / 0.5 kV (line : line – line : ground)	B
		AC supply: 1 kV / 2 kV (line : line – line : ground)	B
EN 61000-4-6	RF disturbances	10 V/m, 80 % AM (0.15 ... 80 MHz)	A
EN 61000-4-8	Magnetic field	30 A/m, 50/60Hz	A

\*) Criteria A: The device must work in accordance with the regulations during and after the test.  
Criteria B: The device must work in accordance with the regulations after the test.

### Emission of Interference for Residential Areas per EN 61000-6-3

Test Specification		Limit Values Quasi Peak	Frequency Range	Distance
EN 55016-2-1	AC supply, conducted	66 ... 56 dB(μV)	150 ... 500 kHz	
		56 dB(μV)	500 kHz ... 5 MHz	
		60 dB(μV)	5 ... 30 MHz	
EN 55016-2-1	DC supply/data line conducted	79 dB(μV)	150 ... 500 kHz	
		73 dB(μV)	500 kHz ... 30 MHz	
EN 55016-2-3	radiated	30 dB(μV/m)	30 ... 230 MHz	10 m
		37 dB(μV/m)	230 MHz ... 1 GHz	10 m
EN 55022	Telecommunications/ Mains connection, conducted	84 ... 74 dB(μV)	150 ... 500 kHz	
		74 dB(μV)	500 kHz ... 30 MHz	

### Emission of Interference for Industrial Areas per EN 61000-6-4

Test Specification		Limit Values Quasi Peak	Frequency Range	Distance
EN 55016-2-1	AC supply, conducted	79 dB(μV)	150 ... 500 kHz	
		73 dB(μV)	500 kHz ... 30 MHz	
EN 55016-2-3	radiated	40 dB(μV/m)	30 ... 230 MHz	10 m
		47 dB(μV/m)	230 MHz ... 1 GHz	10 m
EN 55022	Telecommunications/ Mains connection, conducted	97 ... 87 dB(μV)	150 ... 500 kHz	
		87 dB(μV)	500 kHz ... 30 MHz	

### Mechanical Strength per EN 61131-2

Test Specification		Frequency Range	Limit Values
IEC 60068-2-6	Vibration	5 Hz ≤ f < 9 Hz	1.75 mm amplitude (permanently)
			3.5 mm amplitude (short term)
		9 Hz ≤ f < 150 Hz	0.5 g (permanent)
			1 g (short term)
Note on vibration test: a) Frequency change: max. 1 octave/minute b) Vibration direction: 3 axes			
IEC 60068-2-27	Shock		15 g
		Note on shock test: a) Type of shock: half sine b) Shock duration: 11 ms c) Shock direction: 3x in positive and 3x in negative direction for each of the three mutually perpendicular axes of the test specimen	

## Electromagnetic Compatibility and Mechanical Strength (marine applications)

### Immunity to Interference in the Shipping Industry per Germanischer Lloyd

Test Specification		Test Values	Evaluation Criteria *)
IEC 61000-4-2	ESD	6 kV / 8 kV (contact – air)	B
IEC 61000-4-3	Electromagnetic fields	10 V/m 80 MHz ... 2 GHz	A
IEC 61000-4-4	Burst	1 kV / 2 kV (data – supply)	A
IEC 61000-4-5	Surge	0.5 kV / 1 kV (line : line – line : ground)	A
IEC 61000-4-6	RF disturbances	10 V, 80 % AM (0.15 ... 80 MHz)	A
Type Test	AF disturbances (harmonics)	3 V, 2 W	A
Type Test	High voltage	755 VDC	-
		1500 VAC	-

\*) Criteria A: The device must work in accordance with the regulations during and after the test.

Criteria B: The device must work in accordance with the regulations after the test.

### Immunity to Interference in the Shipping Industry per Germanischer Lloyd

Test Specification		Limit Values Quasi Peak	Frequency Range	Distance
Type Test	EMC 1, conducted (allows for ship bridge control applications)	96 ... 50 dB(μV)	10 ... 150 kHz	
		60 ... 50 dB(μV)	150 ... 350 kHz	
		50 dB(μV)	350 kHz ... 30 MHz	
Type Test	EMC 1, radiated (allows for ship bridge control applications)	80 ... 52 dB(μV/m)	150 ... 300 kHz	3 m
		52 ... 34 dB(μV/m)	300 kHz ... 30 MHz	3 m
		54 dB(μV/m)	30 MHz ... 2 GHz	3 m
		except for:	24 dB(μV/m)	156 ... 165 MHz
Type Test	EMC 2, conducted (allows for machine room applications)	120 ... 69 dB(μV)	10 ... 150 kHz	
		79 dB(μV)	150 ... 500 kHz	
		73 dB(μV)	500 kHz ... 30 MHz	
Type Test	EMC 2, radiated (allows for machine room applications)	80 ... 50 dB(μV/m)	150 kHz ... 30 MHz	3 m
		60 ... 54 dB(μV/m)	30 ... 100 MHz	3 m
		54 dB(μV/m)	100 MHz ... 2 GHz	3 m
		except for:	24 dB(μV/m)	156 ... 165 MHz

### Mechanical Strength per Germanischer Lloyd

Test Specification		Frequency Range	Limit Values
IEC 60068-2-6	Vibration (category A, C)	$2 \text{ Hz} \leq f < 13.2 \text{ Hz}$	±1.0 mm amplitude (permanent)
		$13.2 \text{ Hz} \leq f < 100 \text{ Hz}$	0.7 g (permanent)
		Note on vibration test: a) Frequency change: max. 1 octave/minute b) Vibration direction: 3 axes	
IEC 60068-2-6	Vibration (category A-D)	$2 \text{ Hz} \leq f < 25 \text{ Hz}$	±1.6 mm amplitude (permanent)
		$25 \text{ Hz} \leq f < 100 \text{ Hz}$	4 g (permanent)
		Note on vibration test: a) Frequency change: max. 1 octave/minute b) Vibration direction: 3 axes	

## Specifications and Test Results

The following standards apply to the design and application of the electrical components contained in this catalog:

DIN VDE 0100 Construction of high current installations with nominal voltages up to 1000 V	IEC 60529 EN 60529 VDE 0470-1 Degrees of protection provided by enclosures (IP code)	IEC 60998-2-2 EN 60998-2-2 VDE 0613-2-2 Connecting devices for low-voltage circuits for household and similar purposes – Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units
EN 50110-1 VDE 0105-1 Operation of electrical installations	IEC 60603-1 EN 60603-1 Connectors for frequencies below 3 MHz for use with printed boards – Part 1: Generic specification: General requirements and guide for the preparation of detail specifications, with assessed quality	IEC 60947-1 EN 60947-1 VDE 0660-100 Low-voltage switchgear and controlgear – Part 1: General rules
IEC 61140 EN 61140 VDE 0140-1 Protection against electric shock – Common aspects for installation and equipment	IEC 61984 EN 61984 VDE 0627 Connectors – Safety requirements and tests	IEC 60947-5-6 EN 60947-5-6 VDE 0660-212 Low-voltage switchgear and controlgear – Part 5-6: Control circuit devices and switching elements, DC interface for proximity sensors and switching amplifiers (NAMUR)
IEC 60664-1 EN 60664-1 VDE 0110-1 Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests	IEC 60999-1 EN 60999-1 VDE 0609-1 Connecting devices – Electrical copper conductors; Safety requirements for screw-type and screwless-type clamping units – Part 1: General requirements and particular requirements for clamping units for conductors 0.2 mm <sup>2</sup> up to 35 mm <sup>2</sup>	IEC 60439-1 EN 60439-1 VDE 0660-500 Low-voltage switchgear and controlgear assemblies – Part 1: Type-tested and partially type-tested assemblies
IEC 60204-1 EN 60204-1 VDE 0113-1 Safety of machinery – Electrical equipment of machines – Part 1: General requirements	IEC 60617-2 EN 60617-2 Graphical symbols for diagrams – Part 2: Symbol elements, qualifying symbols and other symbols having general application	IEC 60555-1 EN 60555 Part 1 VDE 0838-1 Disturbances in supply systems caused by household appliances and similar electrical equipment; Part 1: definitions
EN 50178 VDE 0160 Electronic equipment for use in power installations	IEC 61558-1 EN 61558-1 VDE 0570-1 Safety of power transformers, power supplies, reactors and similar products – Part 1: General requirements and tests	IEC 60715 EN 60715 Dimensions of low-voltage switchgear and controlgear – Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations
IEC 62305-1 EN 62305-1 VDE 0185-305-1 Protection against lightning – Part 1: General principles	IEC 60669-2-1 EN 60669-2-1 VDE 0632-2-1 Switches for household and similar fixed electrical installations – Part 2-1: Particular requirements – Electronic switches	IEC 60950-1 EN 60950-1 VDE 0805-1 Information technology equipment – Safety Part 1: General requirements
IEC 60060-1 HD 588.1 S1 VDE 0432-1 High voltage test techniques – Part 1: General specifications and test requirements	IEC 60947-7-1 EN 60947-7-1 VDE 0611-1 Low-voltage switchgear and controlgear – Part 7-1: Ancillary equipment – Terminal blocks for copper conductors	IEC 60127-6 EN 60127-6 VDE 0820-6 Miniature fuses – Part 6: Fuse-holders for miniature fuse-links
IEC 60085 EN 60085 VDE 0301-1 Electrical insulation – Thermal evaluation and designation		

EN 50155 VDE 0115-200 Railway applications – Electronic equipment used on rolling stock	<b>Interfaces – Fieldbuses</b>	IEC 60079-14 EN 60079-14 VDE 0165-1 Explosive atmospheres – Part 14: Electrical installations design, selection and erection
EN 50090-2-2 VDE 0829-2-2 Home and Building Electronic Systems (HBES) – Part 2-2: System overview – General technical requirements; German version	DIN 66259-1 Electrical characteristics for unbalanced double-current interchange circuits	IEC 60079-15 EN 60079-15 VDE 0170-16 Electrical apparatus for explosive gas atmospheres – Part 15: Construction, test and marking of type of protection "n" electrical apparatus
IEC 60099-1 EN 60099-1 VDE 0675-1 Surge arresters – Part 1: Non-linear resistor type gapped surge arresters for a.c. systems	EN 50325-1 Industrial communications subsystem based ISO 11898 (CAN) for controller-device interfaces – Part 1: General requirements	IEC 61241-0 EN 61241-0 VDE 0170-15-0 Electrical apparatus for use in the presence of combustible dust – Part 0: General requirements
IEC 61643-1 EN 61643-11 VDE 0675-6-11 Low-voltage surge protective devices – Part 11: Surge protective devices connected to low-voltage power systems – Requirements and tests	IEC 61784-1 EN 61784-1 Industrial communication networks – Profiles – Part 1: Fieldbus profiles	IEC 61241-1 EN 61241-1 VDE 0170-15-1 Electrical apparatus for use in the presence of combustible dust – Part 1: Protection by enclosures "tD"
IEC 61643-21 EN 61643-21 VDE 0845-3-1 Low voltage surge protective devices – Part 21: Surge protective devices connected to telecommunications and signalling networks; Performance requirements and testing methods	IEC 61158-2 EN 61158-2 Industrial communication networks – Fieldbus specifications – Part 2: Physical layer specification and service definition	IEC 61241-11 EN 61241-11 VDE 0170-15-11 Electrical apparatus for use in the presence of combustible dust – Part 11: Protection by intrinsic safety "tD"
IEC 61508-1 EN 61508-1 VDE 0803-1 Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 1: General requirements	IEC 61158-6-x EN 61158-6-x DIN EN 61158-6-x Industrial communication networks – Fieldbus specifications – Part 6-x	IEC 60079-0 EN 60079-0 VDE 0170-1 Electrical apparatus for explosive gas atmospheres – Part 0: General requirements
IEC 62061 EN 62061 VDE 0113-50 Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems	Explosion Protection	IEC 60079-7 EN 60079-7 VDE 0170-6 Explosive atmospheres – Part 7: Equipment protection by increased safety "e"
	IEC 60079-11 EN 60079-11 VDE 0170-7 Explosive atmospheres – Part 11: Equipment protection by intrinsic safety "i"	

## Specifications and Test Results (continued)

### Environmental Testing

IEC 60068-2-6  
EN 60068-2-6  
VDE 0468-2-6  
Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)

IEC 60068-2-27  
EN 60068-2-27  
Basic environmental testing procedures – Part 2: Tests  
– Test Ea and guidance: Shock

IEC 60068-2-42  
EN 60068-2-42  
Environmental testing – Part 2-42: Tests – Test Kc: Sulphur dioxide test for contacts and connections

IEC 60068-2-43  
EN 60068-2-43  
Environmental testing – Part 2-43: Tests – Test Kd: Hydrogen sulphide test for contacts and connections

### EMC Requirements

IEC 61000-6-1  
EN 61000-6-1  
VDE 0839-6-1  
Electromagnetic compatibility (EMC) – Part 6-1: Generic standards  
– Immunity for residential, commercial and light-industrial environments

IEC 61000-6-2  
EN 61000-6-2  
VDE 0839-6-2  
Electromagnetic compatibility (EMC) – Part 6-2: Generic standards  
– Immunity for industrial environments

IEC 61000-6-3  
EN 61000-6-3  
VDE 0839-6-3  
Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments

IEC 61000-6-4  
EN 61000-6-4  
VDE 0839-6-4  
Electromagnetic compatibility (EMC) – Part 6-4: Generic standards  
– Emission standard for industrial environments

IEC 61000-3-2  
EN 61000-3-2  
VDE 0838-2  
Electromagnetic compatibility (EMC) – Part 3-2: Limits  
– Limits for harmonic current emissions (equipment input current  $\leq 16$  A per phase)

IEC/CISPR 11  
EN 55011  
VDE 0875-11  
Industrial scientific and medical (ISM) radio-frequency equipment  
– Electromagnetic disturbance characteristics  
– Limits and methods of measurement

IEC/CISPR 22  
EN 55022  
VDE 0878-22  
Information technology equipment  
– Radio disturbance characteristics  
– Limits and methods of measurement

IEC/CISPR 24  
EN 55024  
VDE 0878-24  
Information technology equipment  
– Immunity characteristics  
– Limits and methods of measurement

IEC 61326-3-1  
EN 61326-3-1  
VDE 0843-20-3-1  
Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 3-1: Immunity requirements for safety-related systems and for equipment intended to perform safety-related functions (functional safety) – General industrial applications

**PLC**

IEC 61131-1  
EN 61131-1  
Programmable controllers – Part 1: General information

IEC 61131-2  
EN 61131-2  
VDE 0411-500  
Programmable controllers – Part 2: Equipment requirements and tests

IEC 61131-3  
EN 61131-3  
Programmable controllers – Part 3: Programming languages

**Relay**

IEC 61810-1  
EN 61810-1  
VDE 0435-201  
Electromechanical elementary relays – Part 1: General requirements

IEC 61810-2  
EN 61810-2  
VDE 0435-120  
Electromechanical elementary relays – Part 2: Reliability

IEC 61810-5  
EN 50205  
VDE 0435-2022  
Electromechanical non-specified time all-or-nothing relays – Part 5: Insulation coordination

IEC 60255-5  
EN 60255-5  
VDE 0435-130  
Electrical relays – Part 5: Insulation coordination for measuring relays and protection equipment – Requirements and tests

**UL Directives**

UL 1059; ANSI 1059  
Terminal blocks

UL 486E  
Equipment wiring terminals for use with aluminum and/or copper conductors

UL 508  
Industrial control equipment

ANSI/ISA12.12.01  
Nonincendive electrical equipment for use in Class I and Class II, Division 2 and Class III, Divisions 1 and 2 hazardous (classified) locations

**Ship Classifications**

ABS (American Bureau of Shipping)  
Steel Vessels  
Part 4: Vessel Systems and Machinery

BV (Bureau Veritas)  
Rules for the classification of steel ships and offshore units

DNV (Det Norsk Veritas)  
Det Norsk Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norsk Veritas' Offshore Standards: 2007

GL (Germanischer Lloyd)  
Rules for Classification and Construction  
VI Additional Rules and Guidelines  
7 Guidelines for the Performance of Type Test  
2 Test Requirements for Electrical/Electronic Devices and Systems

LR (Lloyds Register)  
Type Approval System  
Test Specification Number1

RINA (Registro Italiano Navale)  
Rules for the classification of ships  
Part C – Machinery, systems and fire protection Ch.3, Sect.6, Table1

BSH (Federal Maritime and Hydrographic Agency)  
Certificate on measurement of safe distance to the standard magnetic and steering magnetic compass in accordance with ISO R 695 and DIN EN 60945 Section 11.2

KR (Korean Register of Shipping)  
List of approved Manufacturers And Type Approval Equipment; Pt.6, Ch.1, Sec.3 of the Rules for Classification, Steel Ships

NKK (Nippon Kaiji Kyokai)  
Guidance for the approval and type approval of materials and equipment for marine use

PRS (Polski Rejestr Statkow)  
Publication No.11/P  
Environmental Tests on Marine Equipment

## Electrical Engineering Laboratory Product Safety for Our Customers

To use terminal blocks globally, they must satisfy certain standards and obtain test certificates. These requirements apply to every manufacturer. WAGO also conducts its own tests to increase standards and offer greater reliability with its products. Products undergo a full range of mechanical, electrical and climatic testing, and we'll share a few of those processes with you.

### Pull-Out Test (per EN 60947-7-1, EN 60998-2-2)

During the pull-out force test, a conductor is pulled on until it is removed from the clamping unit. The design of the terminals means that extraction only occurs after the standard pull-out force has been exceeded many times over.

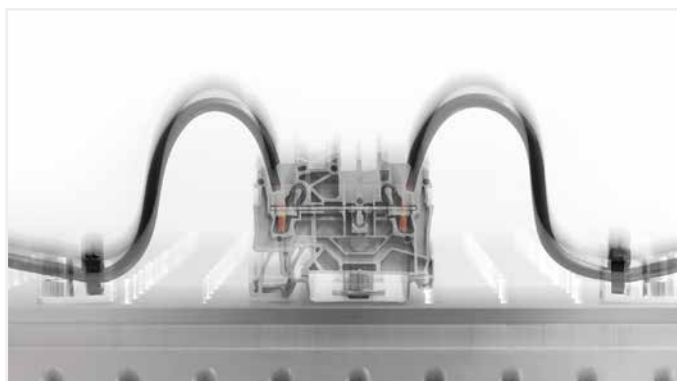
### WAGO Test Lab

This means that WAGO's products can be used safely and reliably both in Europe and anywhere globally for a wide variety of applications. We heavily emphasize the importance of global acceptance during development. As a result, we can present documentation that verifies our high levels of product safety and reliability while ensuring the fulfillment and accuracy of technical data, which are the highest priorities for our customers and users worldwide. On December 22, 2009, our test lab was accredited by the German Accreditation Association (Deutsche Gesellschaft für Akkreditierung GmbH) in accordance with DIN EN ISO/IEC 17025.



### Vibration Test (per IEC/EN 60068-2-6)

Depending on the application, such as railway (per EN 61373) or marine (per GL, LR, DNV), there are various testing requirements to determine if the long-term effects of vibrations degrade electrical connections. The test specimen is subjected to different loads on three axes in an electrodynamic vibration system. The amplitude, the acceleration, and particularly the frequency of the vibration vary during the test. The test values are increased many times over the standard values to meet special customer requirements.



### Shock Test (per IEC/EN 60068-2-27)

The shock test is very similar to the vibration test except that, instead of continuous vibrations, single shocks are applied to the test specimen. Shock tests are usually performed, for example, at an acceleration of 20g over a period of 11 ms. Tests for special requirements often call for much higher values and are also conducted in our laboratory. Single-deck TOPJOB® S Rail-Mount Terminal Blocks, for example, pass shock tests up to 500g.



### Voltage Drop Test under Bending Stress (per EN 60947-7-1, EN 60999-1)

The voltage drop test under bending stress simulates mechanical stress on the clamping unit. In everyday use, this stress can occur during installation, for example, when an electrician shoves connected conductors to the side in order to access a specific component. The quality of the clamping unit when moving a connected conductor can be validated by the constantly stable measured value of the voltage drop.







## Deutsche Akkreditierungsstelle GmbH

**Beliehene gemäß § 8 Absatz 1 AkkStelleG i.V.m. § 1 Absatz 1 AkkStelleGBV**  
Unterzeichnerin der Multilateralen Abkommen  
von EA, ILAC und IAF zur gegenseitigen Anerkennung

# Akkreditierung



Die Deutsche Akkreditierungsstelle GmbH bestätigt hiermit, dass das Prüflaboratorium

**WAGO Kontakttechnik GmbH & Co. KG**  
**Hansastraße 27, 32423 Minden**

die Kompetenz nach DIN EN ISO/IEC 17025:2005 besitzt, Prüfungen in folgenden Bereichen durchzuführen:

**Elektrische und mechanische Prüfungen an Klemmen und Steckverbinder  
sowie Umweltsimulation**

Die Akkreditierungsurkunde gilt nur in Verbindung mit dem Bescheid vom 18.12.2014 mit der Akkreditierungsnummer D-PL-19704-01 und ist gültig bis 17.12.2019. Sie besteht aus diesem Deckblatt, der Rückseite des Deckblatts und der folgenden Anlage mit insgesamt 5 Seiten.

Registrierungsnummer der Urkunde: **D-PL-19704-01-00**

Frankfurt am Main, 18.12.2014

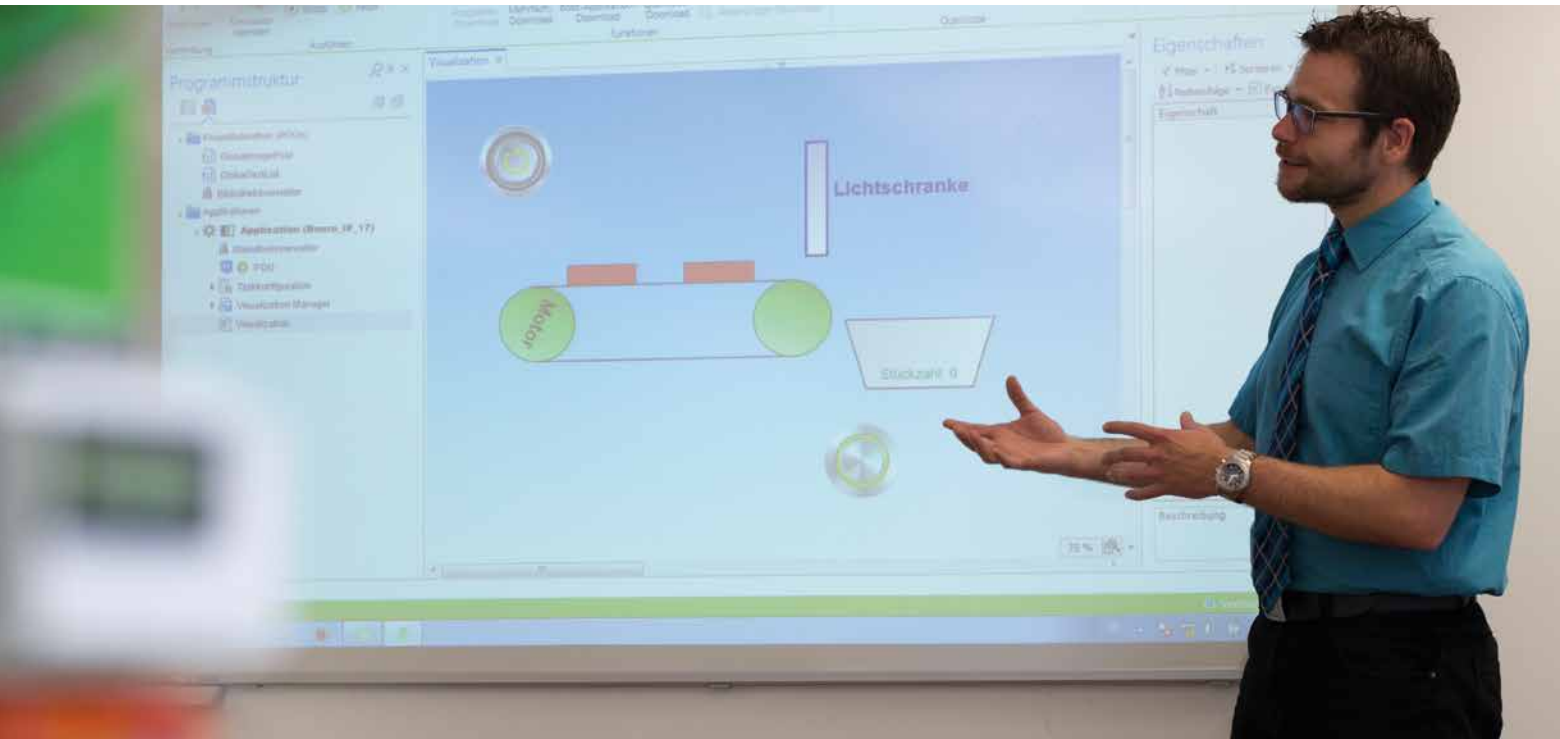
  
Im Auftrag Dipl.-Ing. (FH) Ralf Egner  
Abteilungsleiter

Siehe Hinweise auf der Rückseite



## WAGO-Seminars

### Learn Today – Benefit Tomorrow



## Setting the Bar with Your Goals

### Product-Related and Customer-Specific Seminars



#### Small Groups

The small class sizes of WAGO training seminars ensures that no question goes unanswered and no one is overlooked.



#### Teamwork

Learning as a group is very effective. Ideas can be discussed and exchanged while experiences can be shared – all for the benefit of the participants.



#### Practical Topics

Experience has shown that practice makes perfect. This is why the focus of every WAGO training seminar is on practical, hands-on learning.

## WAGO-Seminars

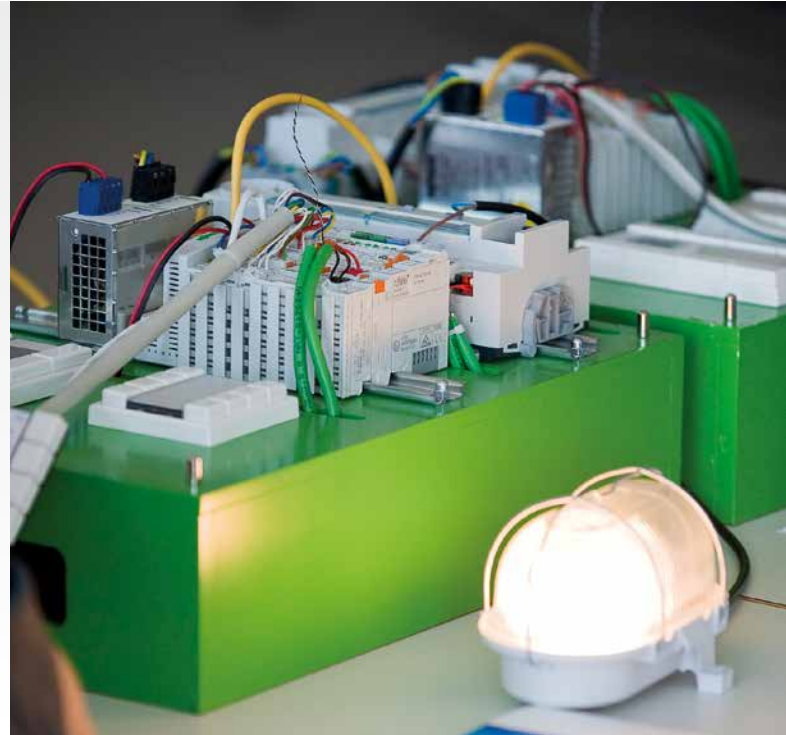
Experience the Benefits of First-Hand Knowledge and Expertise – Straight from the Source

Our instructors are specialists who know all the ins and outs of WAGO's products. This ensures that the time devoted to each WAGO training seminar is an effective investment in expanding your own expertise.

Request your registration form by email:

[training@wago.com](mailto:training@wago.com)

Contact your local  
WAGO office.



### Product-Related Seminars

We regularly offer product-related seminars on the following topics:

- Building and industrial automation
- Programming of automation components
- Fieldbus systems

Current Seminars at:  
[www.wago.com](http://www.wago.com)

### Customer-Specific Training Seminars

In addition to these "open" seminars, we also offer seminars specially tailored to your organization and its particular needs.

Upon request, we can also conduct these courses at your location.

Special  
Corporate Seminars



# Indexes and Adresses

## Indexes and Addresses

	Page
Product Index	872
Item Number Index	873
WAGO Worldwide	878

# Product Index

Item	Page	Item	Page	Item	Page				
<b>A</b>									
AND gate module, pluggable	706	<b>L</b>							
<b>B</b>									
Bipolar isolation amplifier	248	Latching relay module, in DIN-rail mounted enclosure	125	<b>T</b>					
Bistable relay		Lead-acid (AGM) battery modules	480	Technical information	836				
- Pluggable	144	<b>M</b>							
- Rail mounted	132	Manual operation module	688	Temperature signal conditioners	298				
Bluetooth® adapter	329	Marker cards		Terminal block assemblies	356				
Busbar carrier	794	- (Miniature WSB cards) for WAGO Miniature		Terminal blocks (carrier terminal blocks)	717				
<b>C</b>									
Cable cutter	824	- Quick marking system	807	Test and measurement devices	830				
Cable length calculator	386	- (WMB cards) for WAGO Multimarking system	806	Testboy	830				
Cable stripper	820	Marking systems	804	Threshold value switches	292				
CAGE CLAMP® connection	2	Milivolt signal conditioner	282	Timing relay modules	22				
Capacitive buffer modules	486	Miniature switching relays	50	Tools	818				
Carrier rail adapters	568	Modules for building custom circuits	681	Training courses and seminars	870				
Carrier rails	810	Mounting carrier for DIN-rail mounting PCBs	724	<b>U</b>					
Carrier terminal blocks	717	Mounting carriers and feet for DIN-rail mounting PCBs	725	Uninterruptible power supplies (UPS)	474				
CE marking	856	Mounting carriers with miniature switching relay	128	USB communication cable	330				
Classic switched mode power supplies	414	<b>O</b>							
Compact switched-mode power supplies	456	Operating tools	818	<b>V</b>					
Component modules	670	Optocoupler modules		Voltage taps	374				
Configuration app	327	- Pluggable	222	Voltage testers	830				
Configuration display	328	- Rail-mounted terminal blocks	188	<b>W</b>					
Configuration software	326	- Rail mounted	152	WAGO worldwide	878				
Connection modules for sensors and actuators	604	Overvoltage protection		Wall mounting adapters	562				
Constant voltage sources, Rail mounted	552	- Double-deck terminal with		Wire strippers	823				
Covers	815	surge suppression device	768	WMB Inline	806				
Crimping tools	824	- Rail-mounted terminal blocks		WMB Multi marking system	806				
Current flow monitoring modules, pluggable	518	with overvoltage protection	736	<b>P</b>					
Current and voltage signal conditioner	272	- Rail-mounted terminal blocks		Passive isolators	270				
Current sensors with bus connection	341	with surge suppression device	728	Potential distribution modules	682				
Current transformer		<b>R</b>							
- Plug-in current transformer CAGE CLAMP®		Rail-mounted modules, for building custom circuits	681	Potentiometer position signal conditioner	320				
connector	344	Rail end cap for DIN 35 rail	810	Power measurement modules	384				
- Plug-in current transformers with <i>picomax</i> ®		Redundancy module	490	Power supplies, rail mounted	556				
pluggable connector	348	Relay modules		Pro switched mode power supplies	394				
- Split-core current transformers	350	- in DIN-rail mounted enclosure	110	Push-in CAGE CLAMP® connection	2				
<b>D</b>									
DC/DC converters, rail mounted	530	- Pluggable	90	<b>S</b>					
<b>E</b>									
EC Directives	858	- with miniature switching relay	12	Shield clamping saddles	788				
Eco switched-mode power supplies	436	Relay sockets, DIN-rail mounted	56	Shield connecting system	786				
Empty housings		Repeater power supplies	262	Signal duplicators	264				
- for carrier terminal blocks	716	Resistor modules, rail mounted	678	Socket					
- for rail mounted terminal blocks	718	RJ-45 interface module	596	- for industrial relay	76				
- Modular empty housings	712	Rogowski coils	354	- for miniature switching relay	56				
- Rail-mounted enclosures	722	RS-232 communication cable	560	- for miniature switching relays and optocouplers	28				
End stops for DIN 35 rails	812	<b>F</b>							
Electronic circuit breakers	496	Ferrules	825	- for solid state relays	184				
<b>F</b>									
Frequency signal conditioner	322	Function modules	656	Solid state relays	152				
Fuse modules, pluggable for carrier terminal blocks	704	Shield clamping saddles	788	Subsidiaries and representatives					
<b>G</b>									
Gate modules, pluggable	706	Shield connecting system	786	Germany and overseas	878				
<b>I</b>									
IEC/EN regulations/specifications	862	Signal duplicators	264	Supply and through modules	332				
Industrial relays	64	Socket		Switching modules					
Interface adapter	331	- for industrial relay	76	- in DIN-rail mounted enclosure	662				
Interface configuration app	327	- for miniature switching relay	56	- Pluggable	658				
Interface configuration software	326	- for miniature switching relays and optocouplers	28	- with manual operation	668				
Interface modules		- for solid state relays	184	System wiring	610				
- D-Sub/HD D-Sub connectors	568	Solid state relays	152	<b>T</b>					
- for connectors acc. to DIN 41612	590	Subsidiaries and representatives		Technical information	836				
- for pluggable connectors acc. to DIN 41651	586	Germany and overseas	878	Temperature signal conditioners	298				
- for RJ-45 connectors	596	Supply and through modules	332	Terminal block assemblies	356				
- for system wiring	470	Switching modules		Terminal blocks (carrier terminal blocks)	717				
Isolation amplifier	248	- in DIN-rail mounted enclosure	662	Test and measurement devices	830				

# Item Number Index

Item No.	Page	Item No.	Page	Item No.	Page	Item No.	Page
<b>206 Series</b>		<b>210 Series</b>		<b>216 Series</b>		<b>280 Series</b>	
206-118	824	210-110	127	216-243	825	280-340	782
206-706	831	210-111	817	216-244	825	280-341	782
206-707	831	210-112	811	216-246	825	280-432	819
206-804	830	210-113	811	216-262	825	280-433	819
206-808	831	210-114	811	216-263	825	280-434	819
206-810	830	210-115	811	216-264	825	280-435	819
206-816	830	210-118	811	216-266	825	280-436	819
206-1125	823	210-133	788	216-267	825	280-437	819
206-1126	823	210-136	833	216-284	825	280-438	819
206-1127	823	210-137	833	216-286	825	280-439	819
206-1128	823	210-141	819	216-287	825	280-440	819
206-1129	823	210-143	819	216-288	825	280-470	782
206-1131	823	210-148	811	216-289	825	280-471	782
206-1132	823	210-149	811	216-301	827	280-472	782
206-1204	824	210-196	810	216-302	827	280-482	782
206-1205	824	210-197	811	216-321	827	280-483	782
206-1206	824	210-198	810	216-322	827	280-490	782
206-1207	824	210-295	817	216-413	829	280-492	783
206-1216	824	210-296	817	216-414	829	280-502/281-582	750
206-1225	828	210-492	717	216-424	829	280-502/281-583	751
206-1250	828	210-504	811	216-425	829	280-502/281-584	752
206-1400	820	210-505	811	216-435	829	280-502/281-585	753
206-1403	820	210-506	810	216-542	62	280-502/281-586	754
206-1411	820	210-508	810			280-502/281-587	755
206-1412	820	210-533	724	<b>248 Series</b>		280-502/281-588	756
206-1413	820	210-549	815	248-450	89	280-502/281-589	757
206-1414	820	210-647	818	248-451	89	280-502/281-590	758
206-1415	820	210-648	818	248-452	89	280-502/281-591	759
206-1418	820	210-657	818	248-453	89	280-502/281-592	760
206-1419	820	210-658	818	248-454	89	280-502/281-593	761
206-1441	821	210-719	818	248-454	89	280-502/281-594	762
206-1442	821	210-720	818	248-455	89	280-502/281-595	763
206-1451	821	210-721	818	248-501	807	280-502/281-602	742
206-1481	822	210-722	818	248-501/000-002	807	280-502/281-603	743
206-1482	822	210-813	803	248-501/000-005	807	280-502/281-604	744
206-1491	822			248-501/000-006	807	280-502/281-605	745
206-1492	822			248-501/000-007	807	280-502/281-606	746
				248-501/000-012	807	280-502/281-607	747
<b>209 Series</b>		<b>215 Series</b>				280-502/281-608	748
209-100	810	215-111	832			280-502/281-609	736
209-106	813	215-211	832	248-501/000-024	807	280-502/281-610	737
209-109	810	215-212	832	248-502	89	280-502/281-611	738
209-119	725	215-311	832	248-503	89	280-502/281-612	739
209-120	725	215-411	832	248-504	89	280-502/281-613	740
209-129	819	215-511	832	248-505	89	280-502/281-614	741
209-130	819	215-611	832	248-506	89	280-503/281-579	764
209-145	63	215-711	832	248-566	89	280-503/281-580	765
209-170	832	215-811	832			280-503/281-581	766
209-188	725	215-911	832	<b>249 Series</b>		280-504/281-582	768
209-196	815	<b>216 Series</b>		249-101	817	280-504/281-583	769
209-501	717	216-101	827	249-116	812	280-504/281-584	770
209-552	146	216-102	827	249-117	812	280-504/281-585	771
209-601	146	216-103	827	249-197	812	280-504/281-586	772
209-682	146	216-104	827	249-606	146	280-504/281-587	773
209-685	146	216-106	827	249-607	146	280-504/281-588	774
209-686	146	216-107	827	249-608	146	280-601	719
209-690	146	216-108	827	249-622	146	280-606	718
209-691	146	216-109	827	249-623	146	280-608	671
209-692	146	216-110	827	249-651	146	280-609	671
209-693	146	216-121	827	249-653	146	280-610	718
209-701	146	216-122	827	249-654	146	280-616	718
209-701/000-002	146	216-123	827	249-656	146	280-616	718
209-701/000-005	146	216-124	827			280-618	671
209-701/000-006	146	216-131	827			280-619	671
209-701/000-007	146	216-132	827			280-621	719
209-701/000-012	146	216-141	826	<b>258 Series</b>		280-628	671
209-701/000-017	146	216-142	826	258-5000	803	280-629	671
209-701/000-023	146	216-143	826	258-5005	803	280-638	671
209-701/000-024	146	216-144	826	258-5030	803	280-639	671
209-702	146	216-151	827			280-681	719
209-782	146	216-152	827	<b>264 Series</b>		280-686	718
209-783	146	216-201	827	264-900	807	280-762	671
209-784	146	216-202	827	264-901	807	280-763	671
209-787	146	216-203	827	264-902	807	280-764	671
209-789	146	216-204	827	264-903	807	280-765	671
209-951	146	216-205	827	264-904	807	280-801	718
209-952	146	216-206	827	264-905	807	280-802	718
209-953	146	216-207	827			280-803	719
209-954	146	216-208	825	<b>279 Series</b>		280-804	718
209-955	146	216-209	827	279-432	819	280-833	719
209-957	146	216-210	825	279-433	819	280-901	719
209-994	146	216-221	827	279-440	819	280-916	718
209-995	146	216-222	827			280-944/281-589	775
209-996	146	216-223	827			280-944/281-590	776
209-997	146	216-224	827	<b>280 Series</b>		280-944/281-591	777
		216-241	825	280-101	719	280-944/281-592	778
		216-242	825			280-944/281-593	779

# Item Number Index

Item No.	Page	Item No.	Page	Item No.	Page	Item No.	Page
<b>280 Series</b>		<b>288 Series</b>		<b>289 Series</b>		<b>706 Series</b>	
280-944/281-594	780	288-620	724	289-522	592	706-100/1602-200	335
280-944/281-595	781	288-621	724	289-523	593	706-100/1602-200	654
<b>281 Series</b>		288-622	724	289-531	595	706-753/300-100	648
281-440	819	288-626	724	289-540	575	706-753/300-200	648
281-482	29	288-627	724	289-541	575	706-753/300-300	648
<b>282 Series</b>		288-800	553	289-542	575	706-753/301-100	651
282-369	811	288-801	554	289-543	575	706-753/301-200	651
282-811	811	288-808	557	289-544	575	706-753/301-300	651
282-821	811	288-810	556	289-545	569	706-2300/100-100	636
<b>285 Series</b>		288-812	558	289-546	569	706-2300/100-200	636
285-141	381	288-815	559	289-547	569	706-2300/100-300	636
285-144	381	288-825	682	289-548	569	706-2300/101-100	637
285-150	381	288-837	683	289-549	569	706-2300/101-200	637
285-154	381	288-867	684	289-550	585	706-2300/101-300	637
285-172	819	288-870/000-030	687	289-551	585	706-2300/200-100	638
285-173	819	288-870/000-040	686	289-552	585	706-2300/200-200	638
285-181	382	<b>289 Series</b>		289-553	585	706-2300/200-300	638
285-184	382	289-101	672	289-554	585	706-2300/201-100	639
285-194	382	289-102	681	289-555	577	706-2300/201-200	639
285-195	382	289-103	673	289-556	577	706-2300/201-300	639
285-1161	383	289-105	674	289-557	577	706-2300/300-100	640
285-1164	383	289-106	675	289-558	577	706-2300/300-200	640
285-1184	383	289-111	678	289-559	577	706-2300/300-300	640
285-1185	383	289-113	678	289-575	579	706-2300/301-100	641
<b>286 Series</b>		289-114	679	289-576	579	706-2300/301-200	641
286-110	716	289-121	676	289-577	579	706-2300/301-300	641
286-111	716	289-128	680	289-578	579	706-2300/400-100	642
286-112	716	289-128/001-000	680	289-585	571	706-2300/400-200	642
286-113	716	289-128/002-000	680	289-586	571	706-2300/400-300	642
286-304	138	289-128/003-000	680	289-587	571	706-2300/404-100	643
286-312	140	289-128/005-000	680	289-588	571	706-2300/404-200	643
286-320	142	289-128/006-000	680	289-611	588	706-2300/404-300	643
286-328	143	289-131	681	289-612	588	706-2300/406-100	644
286-364	136	289-151	677	289-613	588	706-2300/406-200	644
286-368	137	289-172	598	289-614	589	706-2300/406-300	644
286-380	144	289-174	596	289-615	589	706-2300/500-100	645
286-381	145	289-174/790-108	596	289-616	589	706-2300/500-200	645
286-507	139	289-175	597	289-617	589	706-2300/500-300	645
286-508	139	289-175/790-108	597	289-618	589	706-2300/502-100	646
286-516	141	289-176	602	289-619	589	706-2300/502-200	646
286-662	702	289-177	603	289-620	572	706-2300/502-300	646
286-665	703	289-178	600	289-621	572	706-3057/300-100	634
286-721	227	289-179	601	289-623	580	706-3057/300-200	634
286-723	228	289-195	599	289-624	580	706-3057/300-300	634
286-752	229	289-401	586	289-650	581	706-7753/301-200	611
286-752/002-000	226	289-402	586	289-652	581	706-7753/302-100	635
286-790	230	289-403	586	289-664	604	706-7753/302-200	635
286-791	231	289-404	586	289-665	605	706-7753/304-100	649
286-792	233	289-405	586	289-667	606	706-7753/304-200	649
286-794	232	289-406	586	289-671	607	706-7753/304-300	649
286-803	670	289-407	586	289-707	582	706-7753/306-100	650
286-805	670	289-408	586	289-708	582	706-7753/306-200	650
286-807	670	289-409	586	289-710	573	706-7753/306-300	650
286-809	670	289-422	590	289-713	582		
286-826	706	289-427	591	289-714	573	<b>709 Series</b>	
286-890	704	289-430	594	289-720	570	709-153	815
286-891	705	289-431	594	289-721	570	709-154	815
286-895	658	289-440	574	289-725	578	709-156	816
286-896	659	289-441	574	289-726	578	709-167	815
<b>288 Series</b>		289-442	574	289-907	552	709-168	815
288-001	725	289-443	574	289-965	364	709-169	816
288-002	725	289-444	574	289-966	365	709-177	552
288-003	725	289-445	568	<b>704 Series</b>		709-178	552
288-304	130	289-446	568	704-2003	614	709-183	815
288-312	131	289-447	568	704-2004	617	709-196	724
288-364	128	289-448	568	704-2024	618	709-350	792
288-364	128	289-449	568	704-2044	619	709-352	792
288-368	129	289-450	584	704-2054	620	709-581	809
288-380	132	289-451	584	704-5003	615	709-581	809
288-413	134	289-452	584	704-5004	623	709-582	809
288-414	134	289-453	584	704-5013	616	709-583	809
288-418	134	289-454	584	704-5014	623	709-591	809
288-437	133	289-455	576	704-5024	621	<b>735 Series</b>	
288-504	130	289-456	576	704-5034	624	735-500	338
288-512	131	289-457	576	704-5044	622	<b>745 Series</b>	
288-546	128	289-458	576	704-5054	625	745-382	683
288-564	128	289-459	576	704-5064	627	745-682	684
288-567	128	289-501	587	704-5074	626	<b>750 Series</b>	
288-600	724	289-502	587	704-8012	628	750-493	384
288-601	724	289-504	587	704-8013	629	750-493/000-001	384
288-602	724	289-505	587	<b>706 Series</b>		750-494	384
		289-506	587	706-100/1300-200	655		
		289-507	587	706-100/1301-200	652		
		289-508	587	706-100/1303-200	653		
		289-509	587				
		289-510	587				



## Item Number Index

Item No.	Page	Item No.	Page	Item No.	Page	Item No.	Page
<b>750 Series</b>		<b>787 Series</b>		<b>787 Series</b>		<b>788 Series</b>	
750-494/000-001	384	787-976	541	787-2805	536	788-506	34
750-494/000-005	384	787-980	551	787-2810	538	788-507	34
750-494/025-000	384	787-1001	467	787-2852	336	788-508	34
750-494/025-001	384	787-1002	471	787-2861/100-000	496	788-512	36
750-495	384	787-1011	468	787-2861/108-020	501	788-515	36
750-495/000-001	384	787-1012	472	787-2861/200-000	497	788-516	36
750-495/000-002	384	787-1014	530	787-2861/400-000	498	788-541	46
750-495/040-000	384	787-1014/072-000	531	787-2861/600-000	499	788-543	46
750-495/040-001	384	787-1015/072-000	532	787-2861/800-000	500	788-544	46
750-495/040-002	384	787-1017	470	787-6716	542	788-546	47
750-841	330	787-1020	466	787-6716/9000-1000	547	788-548	47
750-872/0020-0000	330	787-1021	469	787-6716/9100-000	548	788-549	47
750-921	329	787-1022	473	787-6716/9300-000	547	788-607	35
750-923	330	787-1102	456	787-6716/9310-030	545	788-608	35
750-923/000-001	330	787-1112	457	787-6716/9310-050	545	788-615	37
750-975	372	787-1122	458	787-6716/9310-100	545	788-616	37
750-977/000-011	366	787-1200	459	787-6716/9400-000	548	788-700	179
750-977/000-012	366	787-1202	460	787-6716/9500-000	547	788-701	180
750-977/000-021	367	787-1211	461	787-6716/9510-015	545	788-710	178
750-977/000-022	367	787-1212	462	787-6716/9510-030	545	788-720	182
750-978/000-011	368	787-1216	463	787-6716/9510-050	545	788-721	183
750-978/000-012	368	787-1226	464	787-6716/9600-000	547	788-730	181
750-978/000-021	369	787-1601	414	787-6716/9700-000	547	788-906	42
750-978/000-022	369	787-1602	418	787-6716/9800-000	547		
750-979/000-011	370	787-1606	419				
750-979/000-012	370	787-1611	415	<b>788 Series</b>		<b>789 Series</b>	
750-979/000-021	371	787-1616	420	788-100	56	789-112	126
750-979/000-022	371	787-1616/000-1000	421	788-101	58	789-120	722
		787-1621	416	788-102	57	789-122	722
<b>759 Series</b>		787-1622	422	788-103	59	789-124	722
759-923	330	787-1623	426	788-108	60	789-126	722
		787-1628	430	788-109	61	789-127	722
		787-1631	417	788-113	62	789-128	722
		787-1632	423	788-114	62	789-129	722
<b>786 Series</b>		787-1632/000-070	423	788-115	62	789-130	722
786-101	716	787-1633	427	788-116	62	789-131	722
786-102	716	787-1634	424	788-117	62	789-132	722
786-103	716	787-1635	428	788-118	62	789-133	722
		787-1635/000-070	428	788-120	62	789-134	722
		787-1638	431	788-121	62	789-304	110
<b>787 Series</b>		787-1640	432	788-122	62	789-312	112
787-712	436	787-1642	433	788-123	62	789-323	120
787-722	437	787-1644	434	788-124	62	789-324	121
787-732	438	787-1650	533	788-125	62	789-325	122
787-734	439	787-1662	504	788-148	54	789-326	123
787-736	440	787-1662/000-054	506	788-150	50	789-329	124
787-738	450	787-1662/000-250	507	788-152	51	789-508	111
787-740	451	787-1662/004-1000	503	788-154	50	789-520	113
787-742	452	787-1662/006-1000	502	788-155	52	789-536	115
787-783	490	787-1662/106-000	505	788-156	51	789-552	114
787-785	491	787-1664	514	788-157	53	789-570	125
787-818	398	787-1664/000-004	516	788-158	50	789-571	125
787-819	394	787-1664/000-054	517	788-160	51	789-620	358
787-821	395	787-1664/000-080	513	788-162	50	789-621	360
787-822	399	787-1664/000-100	508	788-164	51	789-622	362
787-831	396	787-1664/000-200	518	788-166	50	789-800	662
787-832	400	787-1664/000-250	519	788-168	51	789-801	663
787-833	402	787-1664/004-1000	510	788-170	50	789-802	664
787-834	401	787-1664/006-1000	509	788-172	51	789-803	665
787-835	403	787-1664/006-1054	512	788-174	50	789-804	666
787-840	404	787-1664/106-000	515	788-175	52	789-810	669
787-842	405	787-1664/212-1000	511	788-176	51	789-811	668
787-844	406	787-1668	523	788-177	53	789-1341	116
787-844/000-002	406	787-1668/000-004	524	788-178	50	789-1346	118
787-845	412	787-1668/000-054	525	788-179	52	789-1544	117
787-847	413	787-1668/000-080	529	788-180	51	789-1549	119
787-850	408	787-1668/000-200	527	788-181	53		
787-852	409	787-1668/000-250	528	788-303	30	<b>790 Series</b>	
787-854	410	787-1668/006-1000	520	788-304	30	790-100	788
787-870	476	787-1668/006-1054	521	788-305	30	790-101	788
787-871	481	787-1668/106-000	522	788-306	30	790-108	788
787-872	482	787-1668/106-054	526	788-307	30	790-110	788
787-873	483	787-1671	484	788-311	32	790-112	788
787-875	477	787-1675	474	788-312	32	790-113	788
787-876	480	787-1685	494	788-313	32	790-114	788
787-880	486	787-1701	442	788-314	32	790-115	788
787-881	487	787-1702	443	788-315	32	790-116	788
787-885	492	787-1711	444	788-341	44	790-124	788
787-886	493	787-1712	445	788-346	45	790-133	788
787-890	560	787-1721	446	788-353	38	790-134	788
787-892	561	787-1722	447	788-354	38	790-140	788
787-895	562	787-1732	448	788-356	39	790-144	788
787-896	563	787-2742	454	788-357	40	790-145	788
787-897	564	787-2744	455	788-384	41	790-190	788
787-914	550	787-2801	534	788-390	48	790-191	788
787-915	478	787-2802	535	788-404	31	790-192	788
787-916	488	787-2803	537	788-412	33	790-193	788
787-974	540						



## Item Number Index

Item No.	Page	Item No.	Page	Item No.	Page	Item No.	Page
<b>790 Series</b>		<b>855 Series</b>		<b>857 Series</b>		<b>858 Series</b>	
790-208	791	855-301/050-103	345	857-107	176	858-100	76
790-216	791	855-301/060-101	345	857-108	176	858-110	77
790-220	791	855-301/075-201	345	857-150	26	858-150	74
790-300	794	855-301/100-201	345	857-151	27	858-151	74
790-301	794	855-301/150-501	345	857-152	26	858-152	75
790-302	794	855-301/200-501	345	857-153	27	858-153	75
790-310	795	855-301/250-501	345	857-154	26	858-154	74
790-311	795	855-301/400-1001	345	857-155	26	858-164	74
790-312	795	855-301/600-1001	345	857-157	27	858-303	64
790-350/790-398	796	855-305/050-103	345	857-161	170	858-304	64
790-352/790-398	796	855-305/060-101	345	857-162	173	858-305	64
790-360/790-398	796	855-305/075-201	345	857-164	172	858-307	64
790-362/790-398	796	855-305/100-201	345	857-165	174	858-308	64
790-398	796	855-305/150-501	345	857-167	171	858-314	65
790-400	793	855-305/200-501	345	857-168	175	858-324	72
		855-305/250-501	345	857-303	12	858-325	72
		855-305/300-501	345	857-304	12	858-327	72
		855-305/400-1001	345	857-305	12	858-328	72
		855-305/600-1001	345	857-314	13	858-354	68
<b>791 Series</b>		855-401/250-501	345	857-354	14	858-355	69
791-107	792	855-401/400-501	345	857-357	12	858-390	70
791-111	792	855-401/600-501	345	857-358	12	858-391	70
791-117	792	855-405/250-501	345	857-358/006-000	16	858-392	70
791-124	792	855-405/400-501	345	857-359	18	858-402	77
<b>792 Series</b>		855-405/750-501	345	857-364	15	858-504	66
792-800	728	855-501/1000-1001	346	857-367	15	858-507	66
792-801	729	855-501/150-000	381	857-368	15	858-508	66
792-802	730	855-501/400-1001	346	857-368/006-000	17	858-514	67
792-803	731	855-501/600-1001	346	857-369	19	858-517	67
792-804	732	855-501/800-1001	346	857-400	250	858-518	67
792-805	733	855-505/1000-1001	346	857-401	252	858-528	73
		855-505/400-1001	346	857-402	254		
		855-505/600-1001	346	857-409	256		
<b>793 Series</b>		855-505/800-1001	346	857-411	258	<b>859 Series</b>	
793-501	806	855-601/1500-501	346	857-412	259	859-110	720
793-501/000-002	806	855-605/1500-501	346	857-413	260	859-302	78
793-501/000-005	806	855-801/1000-1001	347	857-414	260	859-303	78
793-501/000-006	806	855-801/2000-1001	347	857-415	261	859-304	78
793-501/000-007	806	855-805/2000-1001	347	857-416	261	859-305	78
793-501/000-012	806	855-951/250-000	382	857-420	262	859-307	78
793-501/000-017	806	855-1005/2500-1001	347	857-423	264	859-308	78
793-501/000-023	806	855-1700/032-000	349	857-424	266	859-312	79
793-501/000-024	806	855-1851/350-000	383	857-450	268	859-314	79
793-502	29	855-2701/035-001	348	857-451	270	859-317	83
793-503	29	855-2701/064-001	348	857-452	271	859-318	79
793-504	29	855-3001/060-003	351	857-500	322	859-353	80
793-505	29	855-3001/100-003	351	857-531	296	859-354	80
793-506	29	855-3001/200-001	351	857-550	274	859-355	80
793-566	29	855-3001/250-001	351	857-551	276	859-357	80
793-3501	806	855-4001/100-001	351	857-552	278	859-358	80
793-4501	806	855-4001/150-001	351	857-560	280	859-359	81
793-4501/000-002	806	855-4001/200-001	351	857-569	284	859-360	81
793-4501/000-005	806	855-4005/150-101	351	857-604	24	859-367	86
793-4501/000-006	806	855-4101/200-001	351	857-624	168	859-368	87
793-4501/000-007	806	855-4101/250-001	351	857-634	169	859-384	83
793-4501/000-012	806	855-4101/400-001	351	857-640	22	859-386	83
793-4501/000-017	806	855-4105/250-101	351	857-642	23	859-390	82
793-4501/000-023	806	855-4105/400-101	351	857-704	152	859-391	84
793-4501/000-024	806	855-5001/1000-000	352	857-707	153	859-392	83
793-5501	806	855-5001/250-001	352	857-708	154	859-397	85
793-5501/000-002	806	855-5001/400-000	352	857-714	156	859-398	85
793-5501/000-005	806	855-5001/600-000	352	857-717	157	859-399	85
793-5501/000-006	806	855-5005/1000-000	352	857-718	158	859-402	29
793-5501/000-007	806	855-5005/400-001	352	857-724	160	859-403	29
793-5501/000-012	806	855-5005/600-000	352	857-727	161	859-404	29
793-5501/000-017	806	855-5101/1000-000	352	857-728	162	859-405	29
793-5501/000-023	806	855-5105/1000-000	352	857-734	163	859-406	29
793-5501/000-024	806	855-8000	380	857-800	298	859-407	29
<b>830 Series</b>		855-8001	374	857-801	300	859-408	29
830-800/000-302	688	855-8002	375	857-808	302	859-409	29
830-800/000-302/000-006	688	855-8003	376	857-809	320	859-410	29
830-800/000-303	689	855-8004	377	857-810	304	859-500	88
830-800/000-305	690	855-8006	378	857-811	306	859-501	721
830-800/000-306	691	855-8008	379	857-812	308	859-525	88
830-800/000-307	692	855-8015	380	857-815	310	859-702	205
830-800/000-308	693	855-9150/2000-1251	355	857-818	316	859-706	212
830-800/000-312	694	855-9150/2000-1751	355	857-819	282	859-708	206
830-800/000-312/000-006	694	855-9150/2000-701	355	857-820	318	859-712	203
830-800/000-313	695	855-9450/2000-1251	355	857-979	332	859-720	198
830-800/000-314	696	855-9450/2000-1751	355	857-980	331	859-730	194
830-800/000-315	697	855-9450/2000-701	355	857-981	630	859-732	217
830-800/000-316	698	855-9900	344	857-982	631	859-734	218
830-800/000-317	699	855-9910	344	857-986	632	859-737	199
830-800/000-318	700	855-9927	348	857-1330	20	859-738	200
830-800/000-319	701			857-1430	164	859-739	201
				857-1432	166	859-740	195
				857-1494	165	859-744	202
<b>855 Series</b>		<b>857 Series</b>					
855-1001/2500-1001	347	857-104	28				

## Item Number Index

Item No.	Page	Item No.	Page	Item No.	Page	Item No.	Page
<b>859 Series</b>		<b>2857 Series</b>					
859-750	207	2857-102	713				
859-752	208	2857-103	713				
859-753	214	2857-121	713				
859-755	215	2857-122	713				
859-756	209	2857-123	713				
859-758	210	2857-124	713				
859-759	216	2857-191/3140-000	714				
859-761	196	2857-192/3140-000	714				
859-762	197	2857-193/3140-000	715				
859-772	204	2857-194/3140-000	715				
859-791	188	2857-401	248				
859-793	193	2857-533	292				
859-794	189	2857-534	294				
859-795	190	2857-535	312				
859-796	191	2857-535/000-001	314				
859-797	213	2857-550	272				
859-798	192	2857-570/024-000	290				
859-902	219	2857-570/024-001	286				
		2857-570/024-005	288				
<b>2000 Series</b>		2857-900	328				
2000-121	813	2857-570/024-001	286				
		2857-570/024-005	288				
		2857-900	328				
<b>2002 Series</b>							
2002-1661	108						
2002-1691	108						
2002-1692	108						
2002-1761	108						
2002-1791	108						
2002-1792	108						
2002-1861	108						
2002-1891	108						
2002-1892	108						
2002-1961	109						
2002-1991	109						
2002-1992	109						
<b>2007 Series</b>							
2007-8873	356						
2007-8874	357						
2007-8875	356						
2007-8877	357						
<b>2009 Series</b>							
2009-110	806						
2009-113	806						
2009-114	806						
2009-115	806						
2009-145	807						
2009-309	818						
2009-310	818						
<b>2042 Series</b>							
2042-1008	660						
2042-1108	661						
2042-3004	90						
2042-3014	96						
2042-3024	102						
2042-3034	94						
2042-3044	97						
2042-3054	91						
2042-3064	98						
2042-3074	103						
2042-3084	104						
2042-3809	92						
2042-3819	99						
2042-3829	105						
2042-3839	95						
2042-3849	100						
2042-3859	93						
2042-3869	101						
2042-3879	106						
2042-3889	107						
2042-7204	222						
2042-7304	224						
2042-7504	223						
2042-7604	225						
<b>2092 Series</b>							
2092-1601/002-000	686						
2092-1602/002-000	686						
2092-1610	686						
<b>2857 Series</b>							
2857-101	713						

# WAGO Worldwide

## Companies and Representatives

**Algeria**  
please contact WAGO France

**Argentina**  
Bruno Schillig S.A.  
Arenales 4030, B1604CFD  
Florida, PBA  
Phone +54 11 4730 1100  
Fax +54 11 4761 7244  
wago@schillig.com.ar

**Armenia**  
ROOT ITSP LLC  
33 Halabyan str.  
0038, Yerevan  
info@root.am

**Australia**  
WAGO Pty. Ltd.  
2-4 Overseas Drive  
Noble Park Victoria 3174  
Phone +61 03 8791 6300  
Fax +61 03 9701 0177  
sales.anz@wago.com

**NHP ELECTRICAL ENGINEERING PRODUCTS PTY LTD**  
43-67 River Street  
Richmond, Victoria, 3121  
P.O. Box 199  
Phone +61 3 9429 2999  
Fax +61 3 9429 1075  
export@wago.com

**Austria**  
WAGO Kontakttechnik Ges.m.b.H.  
Europaring F15 602  
Campus 21  
2345 Brunn am Gebirge  
Phone +43 1 6150780  
Fax +43 1 6150775  
wago-at@wago.com

**Azerbaijan**  
AZ Technics LTD  
Zulfi V. Alizade  
Y.Safarov str.33, AZ1025,  
Baku  
Phone +994 50 210 24 49  
Fax +994 12 496 83 34  
info@AZtechnics.az

**Bangladesh**  
please contact WAGO India

**Belarus**  
DemsEnergO LLC  
Smolyachkova Str. 16, Office 2  
220005 Minsk  
Phone: +375 17 2102189  
Fax: +375 17 2102189  
dems@dems.by

**ATAVA Techno Ltd.**  
Ul. Denisovskaya 47, Office 1  
220006 Minsk  
Phone: +375173881018  
atava@atava.by

**Belgium**  
WAGO BeLux nv  
Excelsiorlaan 11  
1930 Zaventem  
Phone +32 2 717 9090  
Fax +32 2 717 9099  
info-be@wago.com

**Bolivia**  
ISOTEK S.R.L.  
Zona Casco Viejo  
Calle Isso #578, B/San Roque  
Santa Cruz  
Phone +591 721 000 27  
info@isotek.bo

**Bosnia & Herzegovina**  
please contact WAGO Bulgaria

**AM-ELEKTRIK doo**  
Dzemala Blijedica 160F  
71000 Sarajevo  
Phone +38762 59 99 54  
Fax +38733 92 23 89  
info@amelektrik.com  
www.am-elektrik.com

**Brazil**  
WAGO Eletroeletrônicos Ltda  
Rua Tripoli, 640, Lotamento Multivias II  
Jardim Ermida I  
Jundiaí - SP  
CEP 13212-217  
Phone +55 (11) 2923 7200  
info.br@wago.com

**Bulgaria**  
WAGO Kontakttechnik GmbH & Co. KG  
Representative Office Sofia  
Business Center Serdika  
2E Akad. Ivan Geshov Blvd.  
Building 1, Floor 4, Office 417  
1330 Sofia  
Phone +359 2 489 46 09/10  
Fax +359 2 928 28 50  
info-BG@wago.com

**Canada**  
WAGO Canada, Inc.  
1550 Yorkton Court - Unit 1  
Burlington, ON L7P 5B7  
Phone +1-888-9246-221  
info.ca@wago.com

**Chile**  
Desimat Chile  
Av Puerto Vespuccio 9670  
Pudahuel Santiago  
Phone +56 2 747 0152  
Fax +56 2 747 0153  
ventaschile@desimat.cl

**China**  
WAGO Electronic (Tianjin) Co., Ltd.  
No.5, Quan Hui Road  
Wuqing Development Area  
Tianjin 301700  
Phone +86 22 5967 7688  
Fax +86 22 5961 7668  
info-cn@wago.com

**Colombia**  
T.H.L. Ltda.  
Cra. 49 B # 91-33  
Bogotá  
Phone +57 1 621 85 50  
Fax +57 1 621 60 28  
ventas-thl2@thl.com.co

**Croatia**  
M.B.A. d.o.o.  
Frana Supila 5  
51211 Matulji  
Phone +385 51 275-736  
Fax +385 51 275-066  
mba@ri.htnet.hr

**MICROSTAR d.o.o.**  
Siget 18 b  
10020 Zagreb  
Phone +385 1 3647 849  
Fax +385 1 3636 662  
wago@microstar.hr

**Czech Republic**  
WAGO Elektro spol. sr. o.  
Rozvodova 1116/36  
143 00 Praha 4 - Modřany  
Phone +420 261 090 143  
Fax +420 261 090 144  
info.cz@wago.com  
wago-cz@wago.com

**Denmark**  
WAGO Denmark A/S  
Lejrvej 17  
3500 Værløse  
Phone +45 44 357 777  
info.dk@wago.com

**Ecuador**  
ECUAINSETEC CIA LTDA  
Yugoslavia N34-110 y Azuay  
Quito  
Phone +593 2 24 50 475  
Fax +593 2 22 51 242  
g.castro@ecuainsetec.com.ec

**Egypt**  
KENANA Automation / System Integrator  
(Water & Waste Water)  
2 Building 10, Block 31  
Ibrahim Shehata Street  
Nasr City  
Cairo, Egypt  
Phone +2 01 02899 3434  
Fax +2 02 357 3353  
mohamed.bahgat@kenanaeg.com

**IBN Engineering / Distributor**  
(Automation Products)  
Phone +2 02 3721 4350  
Fax +2 02 3722 1709  
nasrelwly@ibnengineering.com

**Barkouky Electric / System Integrator (Building Management)**  
Phone +2 02 2269 1192  
Fax +2 02 2269 1193  
ahmed@barkouky.com.eg

**Misc (Interconnection & Interface Products)**  
Phone +202 226 80994/7  
Fax +202 226 79469  
sales@miscgypt.com

**Estonia**  
Eltarko OÜ  
Treali tee 2 door 6  
Peetri küla  
Rae vald  
75312 Harjumaa  
Phone +372 651 7731  
Fax +372 651 7786  
andres@eltarko.ee

**Finland**  
WAGO Finland Oy  
Perintötie 2 C  
01510 Vantaa  
Phone +358 9 7744 060  
Fax +358 9 7744 0660  
tilaus@wago.fi

**France**  
WAGO Contact SAS  
Paris Nord 2  
83 Rue des Chardonnerets  
93290 - Tremblay en France  
B.P. 95947 - ROISSY CDG CEDEX  
Phone +33 1 4817 2590  
Fax +33 1 4863 2520  
info-fr@wago.com

**Germany**  
WAGO Kontakttechnik GmbH & Co. KG  
Hansastraße 27  
32423 Minden  
Phone +49 571 887-0  
Fax +49 571 887-169  
info@wago.com

**WAGO Kontakttechnik GmbH & Co. KG**  
Waldstraße 1  
99706 Sondershausen  
Phone +49 3632 659-0  
Fax +49 3632 659-100  
info@wago.com

**Great Britain**  
WAGO Limited  
Triton Park, Swift Valley Industrial Estate  
RUGBY  
Warwickshire, CV21 1SG  
Phone +44 1788 568 008  
Fax +44 1788 568 050  
uksales@wago.com

**Greece**  
PANAGIOTIS SP. DIMOULAS  
DIMOULAS AUTOMATIONS  
Kritis Str. 26  
10439 Athens  
Phone +30 210 883 3337  
Fax +30 210 883 4436  
wago.info@dimoulas.com.gr

**Honduras**  
CILASAS S.A. de C.V.  
Barrio Los Andes  
7 Calle entre 14 y 15 Ave. N.O.  
P.O. Box. 1061  
San Pedro Sula  
Phone +504 2557 1146/7  
Fax +504 2557 1149  
ventas@iecilasa.com

**Hong Kong**  
National Concord Eng., Ltd.  
Unit A-B, 5/F,  
Southeast Industrial Building  
611-619 Castle Peak Road  
Tsuen Wan, NT.  
Phone +852 2429 2611  
Fax +852 2429 2164  
sales@nce.com.hk

**Hungary**  
WAGO Hungária KFT  
Ipári Park, Gyár u. 2  
2040 Budapest  
Phone +36 23 502-170  
Fax +36 23 502-166  
info.hu@wago.com

**Iceland**  
S. Gudjonsson ehf.  
Smidjuvegur 3  
200 Kopavogur  
Phone +354 520-4500  
Fax +354 520-4501  
export@wago.com

**India**  
WAGO Private Limited  
C-27, Sector-58, Phase-III  
Noida-201 301  
Gautam Budh Nagar (U.P)  
Phone +91 120 438 8700  
Fax +91 120 438 8799  
info.india@wago.com

**Indonesia**  
please contact WAGO Singapore

**Iraq**  
please contact WAGO Middle East

**Ireland**  
Drives & Controls  
Unit F4, Riverview Business Park  
Nangor Road  
Dublin 12  
Phone +353 1 4604474  
Fax +353 1 4604507  
info@drivesandcontrols.ie

**Israel**  
Comtel Israel Electronic Solutions Ltd.  
Bet Hapaamon  
20 Hataas Street  
P.O. Box 66  
44425 Kefar-Saba  
Phone +972 9 76 77 240  
Fax +972 9 76 77 243  
sales@comPhoneco.il

**Italy**  
WAGO Elettronica SRL a Socio Unico  
Via Parini 1  
40033 Casalecchio di Reno (BO)  
Phone +39 051 6132112  
Fax +39 051 6272174  
info-ita@wago.com

**Japan**  
WAGO Co. of JAPAN Ltd.  
Kinsicho Prime Tower  
1-5-7, Kameido, Koto-ku  
Tokyo 136-0071  
Phone +81 3 5627 2050  
Fax +81 3 5627 2055  
info-jp@wago.com

**Jordan**  
Oxgen for Engineering Systems Co. L.L.C  
PO Box: 2154 Amman  
11953 Jordan  
Phone +962 79 9 860 869  
Fax +962 655 211 89  
info@oxgn-grp.com

**Kazakhstan**  
Axima LLP  
V. Zyskulov avenue  
050061 Almaty  
Phone +7 727 356 52 91/92/93  
Fax +7 727 327 14 92/93  
trade1@axima.kz  
or@axima.kz

**TOO Technik-Trade**  
ul. i. A. Protosanova, 81  
070004 Ust-Kamenogorsk  
Phone +7 7232 254 064  
Fax +7 7232 253 251  
info@technik.kz

**Nova Solut LLC (System Integrator)**  
050042, The Republic Of Kazakhstan,  
Almaty city, Toktabayeva 23, #10  
Phone +7 777 206 04 76  
director@novasolut.kz  
tech@novasolut.kz

**Korea**  
WAGO Korea Co., Ltd.  
Room 205 AnyangMegaValley,  
268, Hagui-ro, Dongan-gu, Anyang-si,  
Gyeonggi-do, 14056, South Korea  
Phone +82 31 421 9500  
info.korea@wago.com

**Kosovo**  
please contact WAGO Bulgaria

**Latvia**  
INSTABALT LATVIA VIA  
Vestienas iela 6  
Rīga, LV-1035  
Phone +371 6790 1188  
Fax +371 6790 1180  
info@instabalt.lv

**Lebanon**  
Gemayel Trading & Contracting  
Rue 55, Antonins Project-Bloc L  
P.O. BOX 70-1096  
Antelias, Lebanon  
Phone +961 3 22 30 29  
Fax +961 4 52 10 29  
info@gtclb.com

**Lithuania**  
INSTABALT LIT UAB  
Savonorių 187  
Vilnius, 2053  
Phone +370 52 322 295  
Fax +370 52 322 247  
info@instabalt.lt

**Luxembourg**  
please contact WAGO Belgium

**Malaysia**

WAGO Representative Office Malaysia  
No 806, Block A4, Leisure Commerce Square,  
No 9, Jalan PJS 8/9, 46150 Petaling Jaya,  
Selangor Darul Ehsan, Malaysia  
Phone +60 3 7877 1776  
Fax +60 3 7877 2776  
kian.guan.tan@wago.com

HPH Materials (M) Sdn Bhd  
No. 4, Jalan Nilam 1/6  
Suban Hi-Tech Industrial Park  
40000 Shah Alam  
Selangor, D.E. Malaysia  
Phone +60 3 5638 2213  
Fax +60 3 5638 8213  
info@hphmaterials.com

**Macedonia**

please contact WAGO Bulgaria

Kompjuner Inzenering  
Vladimir Komarov 1A-3/9  
1000 Skopje  
Phone +389 2 521 12 00

**Maledives**

please contact WAGO India

**Mexico**

WAGO SA de CV  
Carretera estatal 431 Km. 2+200  
Lote 99 Módulo 6  
Parque Industrial Tecnológico Innovsciön  
Querétaro  
El Marqués, Qro. 76246  
Phone +52 442 221 5946  
Fax +52 442 221 5063  
info.mx@wago.com

**Moldova**

Smart Delight SRL  
Bulgara Str. 9/6  
2001 Chisinau  
Moldau  
Phone +373 (373) 69 10 22 01  
alexandras@starnet.md

**Morocco**

Automatisme & Connection Maroc  
23, Rue Bourred  
2ème étage, appt4  
Roche Noire  
20300 Casablanca  
Phone +212 522 24 21 72/73  
Fax +212 522 24 21 75  
info-fr@wago.com

**Nepal**

please contact WAGO India

**Netherlands**

WAGO Nederland B.V.  
Laan van de Ram 19  
7234 BW APELDOORN  
Phone +31 55 36 83 500  
Fax +31 55 36 83 599  
info-nl@wago.com

**New Zealand**

please contact WAGO Australia

NHP NZ  
7 Lockhart Place  
Mt Wellington  
Phone +64 9 2761967  
Fax +64 9 2761992  
export@wago.com

**Nigeria**

GIL Automations Ltd.  
Daily Times Complex  
2 Lateef Jakande Rd., Agidingbi  
100271 Ikeja, Lagos State  
Phone +234 17132672335  
sales@gilautomation.com

**Norway**

WAGO Norge AS  
Jerkoveien 20  
1067 Oslo  
Phone +47 22 30 94 50  
Fax +47 22 30 94 51  
info.no@wago.com

**Oman**

please contact WAGO Middle East

**Pakistan**

FuziLogix Automation & Control  
Suit No. 14, 5th Floor, Shan Arcade  
New Garden Town, Lahore  
Phone +92 42 594 1503 - 4  
Fax +92 42 585 1431  
info@fuzilogix.com

**Pakistan**

S.A. Hamid & Co.  
7 Brandreth Road  
Lahore, 54000  
Phone +92 42 376 500 99  
Fax +92 42 376 513 91  
sales@sahamid.com

**Paraguay**

AESA  
Av. Madame Lynch  
c/Antolin Irala  
2309 Asunción  
Phone +59 521674524  
info@aesa.com.py

**Peru**

Manufacturas Eléctricas S.A.  
Av O.R. Benavides 1215  
15000 Lima  
Phone +511 6196200  
Fax +511 6196247  
ventas@manelsa.com.pe

**Philippines**

please contact WAGO Singapore

**Poland**

WAGO ELWAG sp. z o. o.  
ul. Piękna 58 a  
50-506 Wrocław  
Phone +48 71 3602970  
Fax +48 71 3602999  
wago.elwag@wago.com

**Portugal**

MORGADO & CA. LDA - SEDE  
Estrada Exterior da  
Circunvalação 3558/3560  
Apartado 1057  
4435 Rio Tinto  
Phone +351 22 9770600  
Fax +351 22 9770699  
geral@morgadocl.pt

**Quatar**

GEBD - Gulf European Business  
Development - Company W.L.L.)  
PO Box: 20 000  
Doha, Quatar  
Phone +974 5591 5682  
info@gebd.com

**Romania**

WAGO Kontakttechnik GmbH & Co. KG  
Representative Office Romania  
Sos. Pipera-Tunari nr. 1/1  
building 1, 2nd floor  
077190 Voluntari, Ilfov  
Phone +40-(0)31 421 85 68  
info-RO@wago.com

**VDR & Servicii srl**

Str. Valeriu Braniște, nr. 60, ap.1,  
sector 3  
Phone +40 21 322 5074/76  
Fax +40 21 322 5075  
office@componente-automatizari.ro

**Russia**

OOO WAGO Contact Rus  
Ilmskaya stret 5, bldg. 2  
127576 Moscow  
Phone +7 495 223-4747  
info.ru@wago.com  
www.wago.ru

**OOO Prosoft**

ul. Profsoznaya, 108  
117437 Moscow  
Phone +7 495 2340636  
Fax +7 495 2340640  
info@prosoft.ru

**Saudi Arabia**

Saudi Electronic Trading  
P.O. Box 60712  
Riyadh 11555  
Phone +966 11 2063 377  
Fax +966 11 4633 297  
info@setra.com.sa

**Serbia**

please contact WAGO Bulgaria

Mehatronik Sistem d.o.o.  
Bul. Oslobođenja 30  
32000 Cacak  
Phone +381 (0)32 310 088  
Fax +381 (0)32 371 571  
Mobil +381 (0)64 877 22 02  
office@mehatronik.com

Sigma Controls Engineering doo  
Jovana Skerlica 22  
18000 Nis  
Mobil +381 (0)63 403 104  
wago@sce.rs  
www.sce.rs

**Singapore**

WAGO Electronic Pte Ltd  
138 Joo Seng Road #06-01  
Singapore 368361  
Phone +65 62866776  
Fax +65 62842425  
info-sing@wago.com  
www.wago.sg

**Slovakia**

Proelektro spol. s r.o.  
Na barine 22  
841 03 Bratislava - Lamač  
Phone +421 2 4569 2503  
info@wago.sk

**Slovenia**

IC elektronika d.o.o.  
Vodovodna cesta 100  
1000 Ljubljana  
Phone +386 1568 01 26  
Fax +386 1568 91 07  
info@ic-elect.si

**South Africa**

Shorrock Automation CC  
Nellmapius drive  
5 Regency Drive, Route 21 Corp. Park  
0051 Centurion  
Phone +27 12 4500300  
Fax +27 12 4500322  
sales@shorrock.co.za

**Spain**

DICOMAT S.L.  
Avda. de la Industria, 36  
Apartado Correos, 1.178  
28108-Alcobendas (Madrid)  
Phone +34 91 662 1362  
Fax +34 91 661 0089  
info@dicomat-asetyc.com

**Sri Lanka**

please contact WAGO India

**Sweden**

WAGO Sverige AB  
Box 11127, 161 11 BROMMA  
Besöksadress: Adolfsbergsv. 31  
Phone +46 858410680  
info.se@wago.com

**Switzerland**

WAGO CONTACT SA  
Rte. de l'Industrie 19  
Case Postale 168  
1564 Domdidier  
Phone +41/26 676 75 00  
Fax +41/26 676 75 01  
info.switzerland@wago.com

**Syria**

Zahabi Co.  
8/5 Shouhadaa St., P.O. Box 8262  
Aleppo  
Phone +963 21 21 22 235 / 6  
Fax +963 21 21 22 23 7  
info.uae@wago.com

**Taiwan R.O.C.**

WAGO Contact, Ltd.  
5F., No.168, Jiankang Rd  
Zhonghe City  
Taipei County 23585, Taiwan  
Phone +886 2 2225 0123  
Fax +886 2 2225 1511  
info.taiwan@wago.com

**Thailand**

WAGO Representative Office Thailand  
4th Floor, KS Building  
213/6-8 Rachada-Phisek Road  
Dingdaeng, Bangkok 10400  
Phone +66 2 6935611  
Fax +66 2 6935612  
warongkon.khankham@wago.com

US Power Distribution Co., Ltd.  
4th Floor, KS Building  
213/6-8 Rachada-Phisek Road  
Dingdaeng, Bangkok 10400  
Phone +66 2 2763040  
Fax +66 2 2763049  
uspwer2014@gmail.com

Itthirit Technology Co., Ltd.  
Vision Business Park 2 Floor 4  
Soi Raminthra 55/8, Watcharapon Road  
Tharaeng, Bangkok District  
Bangkok Thailand 10220  
Phone +66 2 347 0780  
Fax +66 2 347 0772  
sales@itthirittechnology.com

**Tunisia**

please contact WAGO France

**Turkey**

WAGO Elektronik Sanayi ve Ticaret Ltd. Şti.  
Yükarı Dudullu Mahallesi Bayraktar Bulvarı  
Cad. Hattat Sok. No. 10  
34775 Ümraniye - İstanbul  
Phone +90 216 472 1133  
Fax +90 216 472 9910  
info.tr@wago.com

**Ukraine**

NPP Logicon  
Predslavinskaya street, 39, Office 303  
03150 Kiev  
Phone +380 44 5228019  
Fax +380 44 2611803  
info@logicon.ua

**Micropribor Ltd.**

4, Krzhizhanovskiy Str.  
03142 Kiev  
Phone +380 44 392 93 86  
Fax +380 44 392 93 87  
sales@micropribor.kiev.ua

**United Arab Emirates (UAE)**

WAGO Middle East (FZC)  
SAIF Zone, Q4-282  
P.O. Box 120665  
Sharjah, UAE  
Phone +971 6 5579920  
Fax +971 6 5579921  
info.uae@wago.com

**Uruguay**

Fivisa Electricidad  
Avda. Uruguay 1274  
11100 Montevideo  
Phone +59 829 020 808  
Fax +59 829 021 230  
info@fivisa.com.uy

**USA**

WAGO CORPORATION  
N120 W19129 Freistadt Road  
Germantown, WI 53022  
Phone +1 262 255 6222  
Fax +1 262 255 3232  
Toll-Free: 1-800 DIN Rail (346-7245)  
info.us@wago.com

**Venezuela**

PETROBORNAS, C.A.  
C.C. PLAZA AEROPUERTO - PISO 1 - LOCAL  
P1-B-03  
(8015) UNARE - PUERTO ORDAZ -  
ESTADO BOLIVAR  
REPÚBLICA BOLIVARIANA DE  
VENEZUELA  
Phone +58 286 951 3382  
Fax +58 286 951 3382  
info@petrobornas.com

**Vietnam**

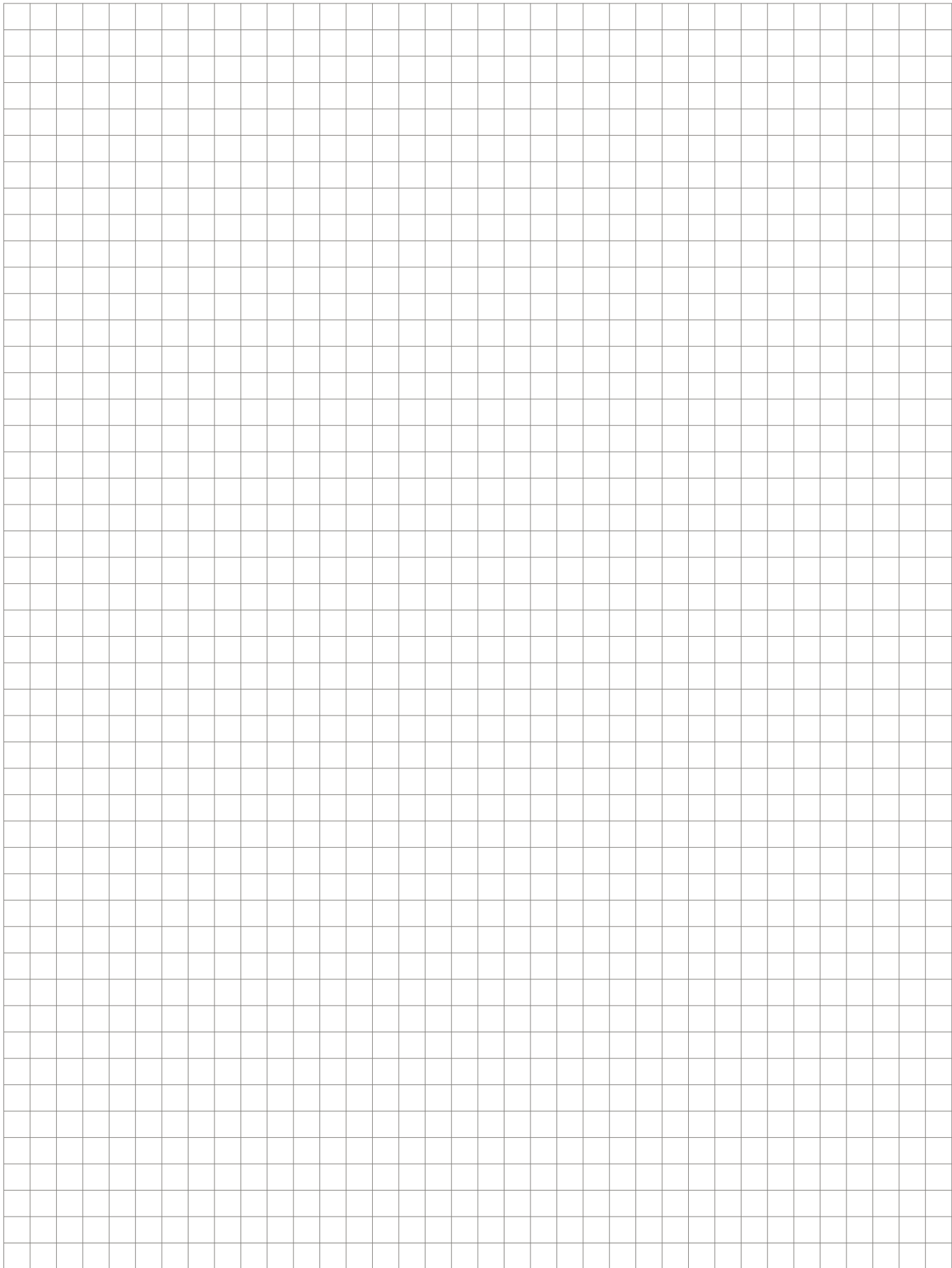
please contact WAGO Germany (Minden)

Version: 02/2019

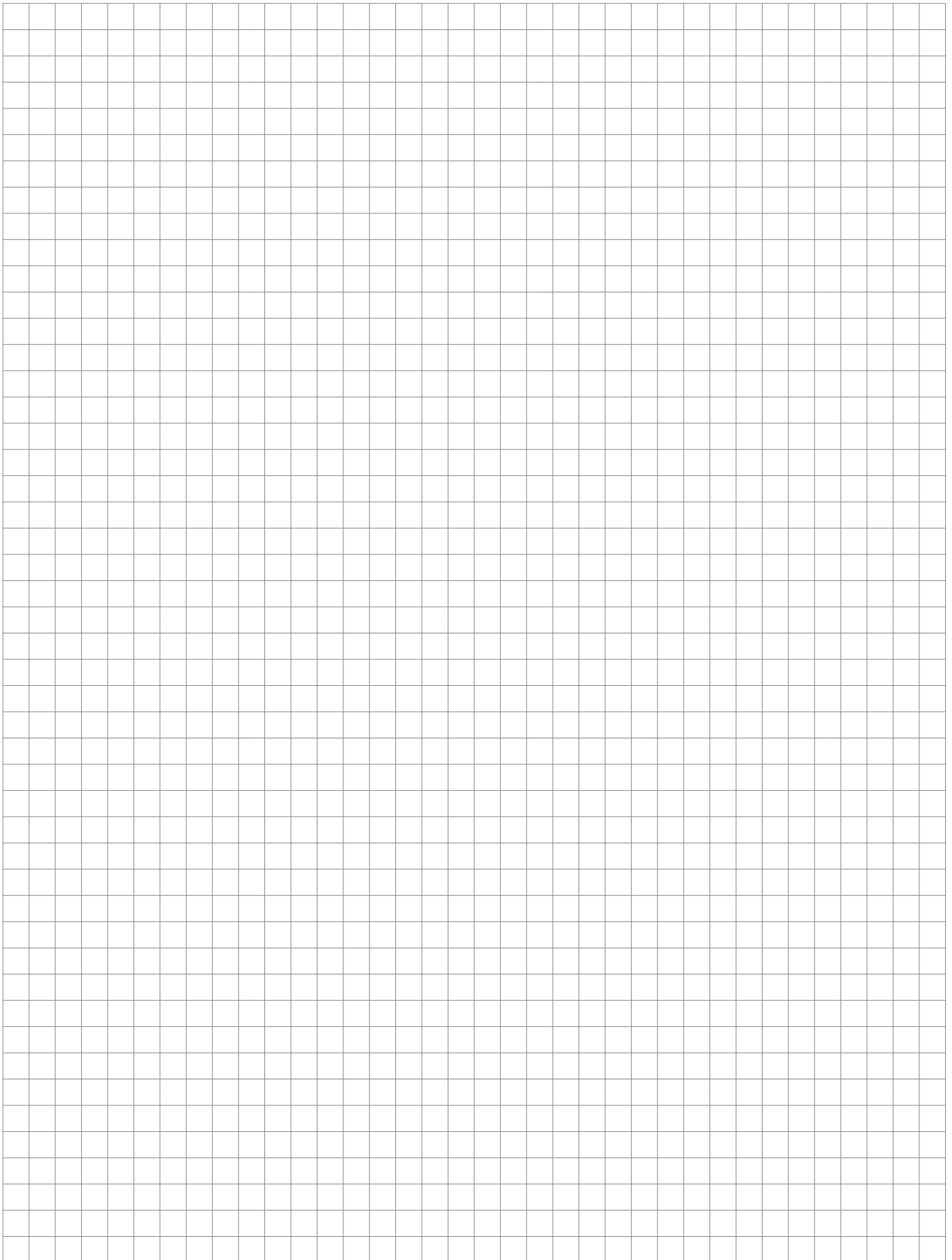
Current addresses at www.wago.com



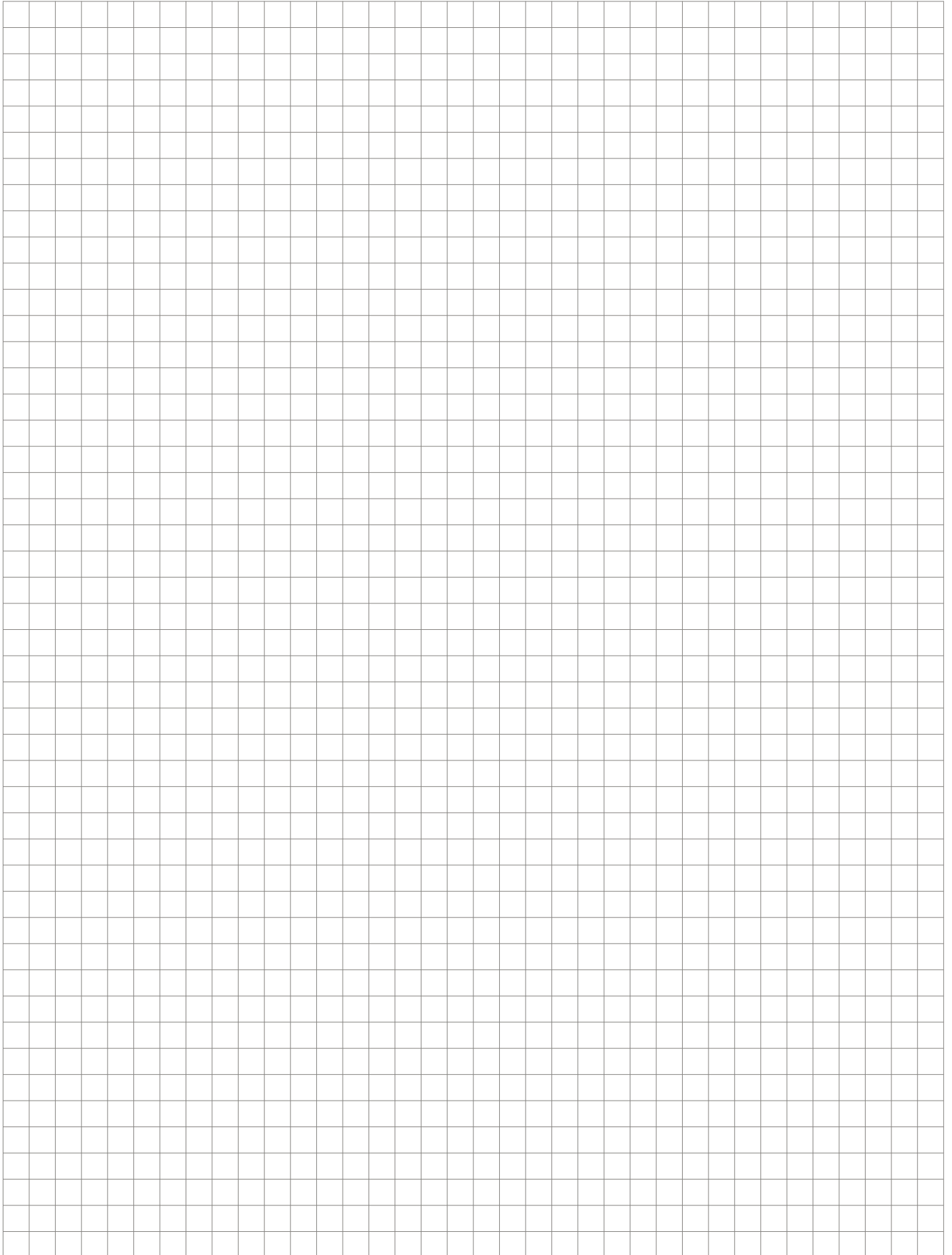
# Notes



# Notes



# Notes



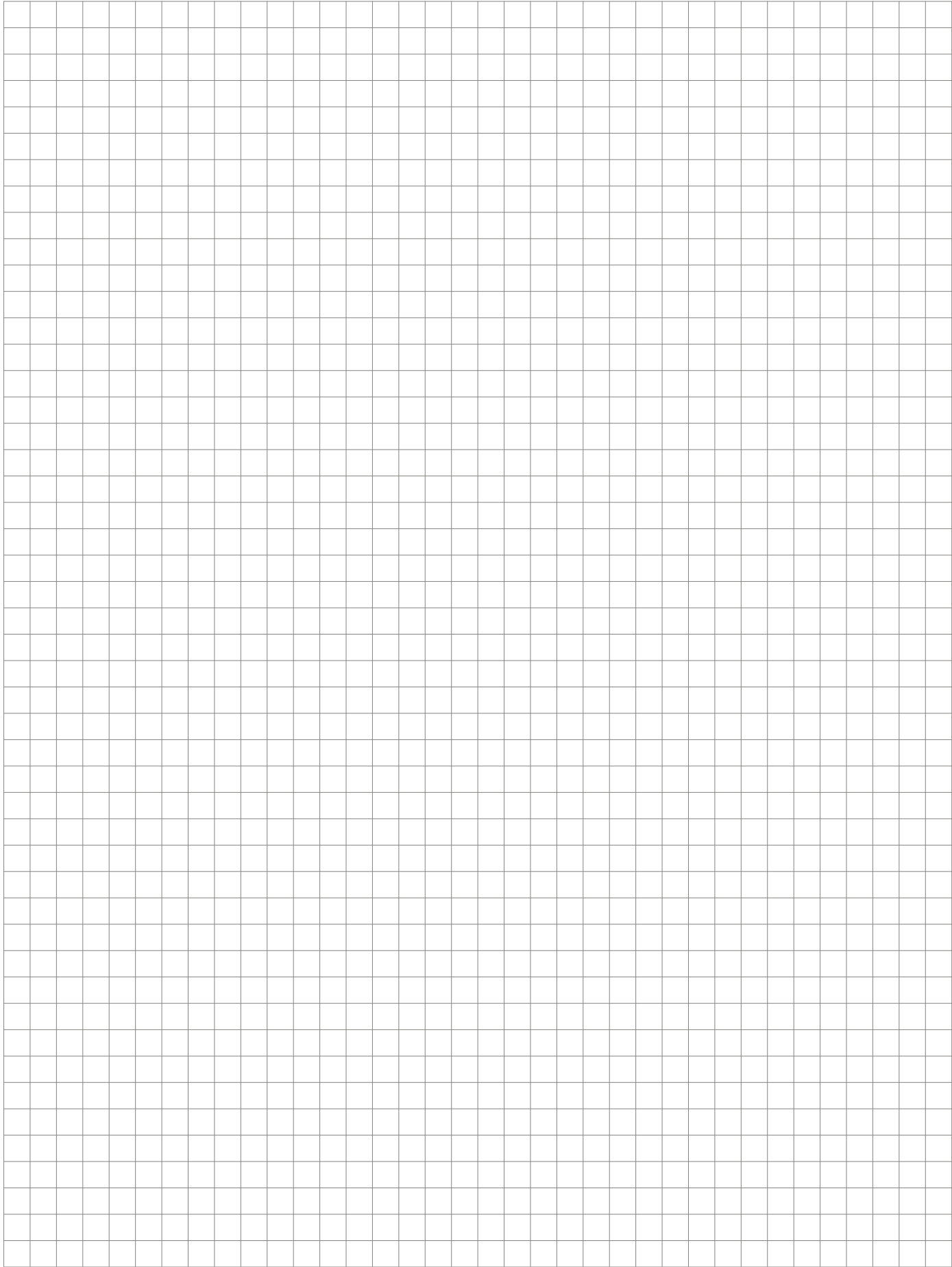




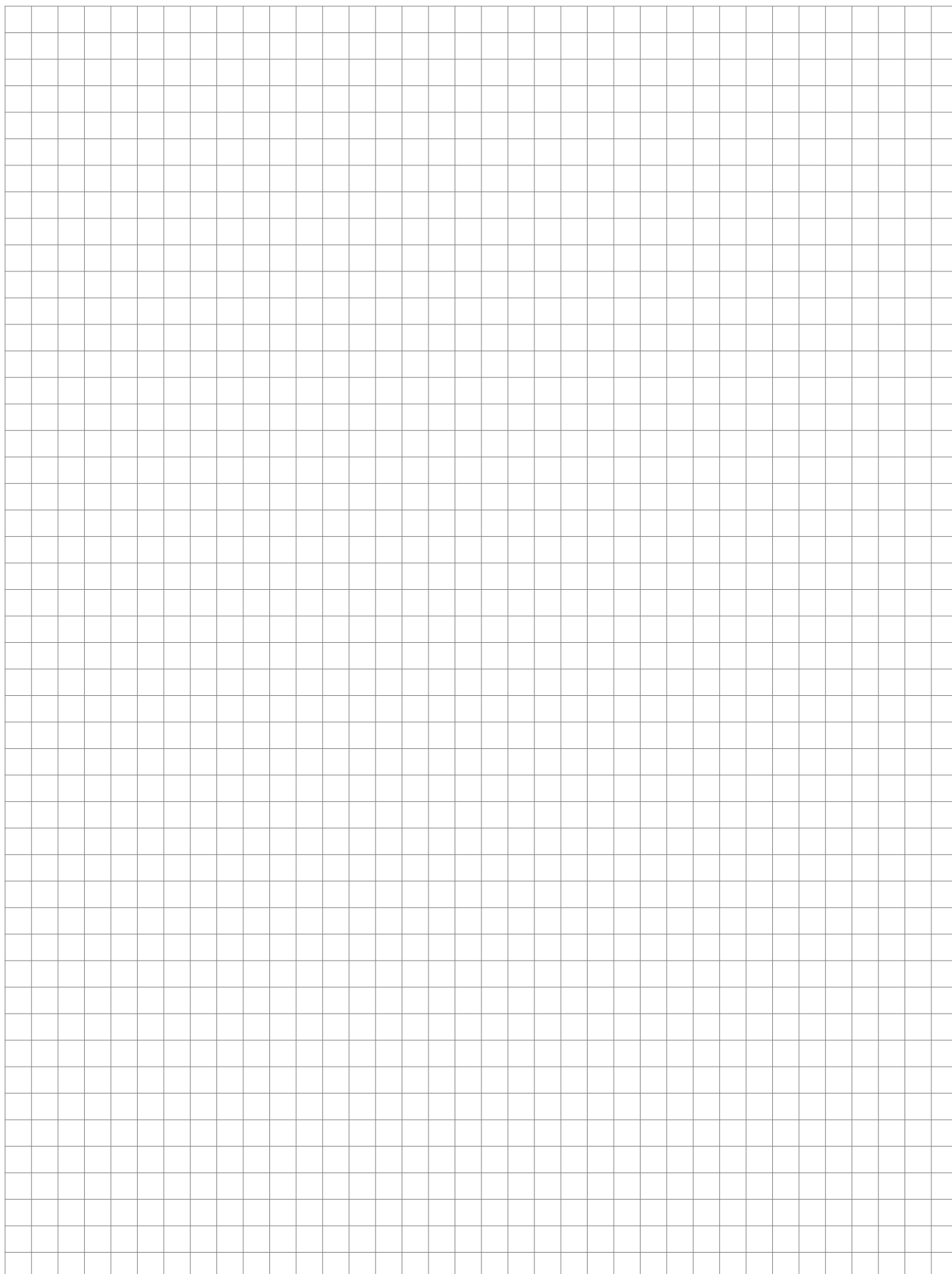




# Notes



## Notes





**WAGO Kontakttechnik GmbH & Co. KG**

Postfach 2880 · D · 32385 Minden

Hansastraße 27 · D · 32423 Minden

[info@wago.com](mailto:info@wago.com)

[www.wago.com](http://www.wago.com)

Headquarters

Sales

Order Service

Fax

+49 571 887 - 0

+49 571 887 - 44222

+49 571 887 - 44333

+49 571 887 - 844169

[www.comoso.com](http://www.comoso.com)