

Datasheet - SRB 301AN



Guard door monitors and Safety control modules for Emergency Stop applications / General Purpose safety controllers (Series PROTECT SRB) / SRB 301AN

Preferred typ



- Fit for signal evaluation of outputs of safety magnetic switches
- 3 safety contacts, STOP 0
- 1 Signalling output

(Minor differences between the printed image and the original product may exist!)

Ordering details

Product type description	SRB 301AN
Article number	101165473
EAN code	4030661293516

Approval

Approval



BG



USA/CAN

Classification

Standards	EN ISO 13849-1, IEC 61508, IEC/EN 60947-1
PL	up e (STOP 0)
Control category	up 4 (STOP 0)
DC	99% (STOP 0)
CCF	> 65 points
PFH value	$\leq 2,0 \times 10^{-8}/h$ (STOP 0)
SIL	up 3 (STOP 0)
Mission time	20 Years
- notice	The PFH value is applicable for the combinations listed in the table for contact load (K) (current through enabling paths) and switching cycle


number (n-op/y).

In case of 365 operating days per year and a 24-hour operation, this results in the specified switching cycle times (t-cycle) for the relay contacts.

Diverging applications on request.

K	n-op/y	t-cycle
20 %	525.800	1,0 min
40 %	210.240	2,5 min
60 %	75.087	7,0 min
80 %	30.918	17,0 min
100 %	12.223	43,0 min

Global Properties

Product name	SRB 301AN
Standards	IEC/EN 60204-1, EN 60947-5-1, EN ISO 13849-1, IEC 61508
Compliance with the Directives (Y/N) 	Yes
Climatic stress	EN 60068-2-78
Mounting	snaps onto standard DIN rail to EN 60715
Terminal designations	IEC/EN 60947-1
Materials	
- Material of the housings	Plastic, glass-fibre reinforced thermoplastic, ventilated
- Material of the contacts	, Ag-Ni, self-cleaning, positive action
Weight	245 g
Start conditions	Automatic or Start button
Start input (Y/N)	Yes
Feedback circuit (Y/N)	Yes
Start-up test (Y/N)	No
Reset after disconnection of supply voltage (Y/N)	
Automatic reset function (Y/N)	Yes
Reset with edge detection (Y/N)	Yes
Pull-in delay	
- ON delay with automatic start	170 ms
- ON delay with reset button	25 ms
Drop-out delay	
- Drop-out delay in case of power failure	20 ms
- Drop-out delay in case of emergency stop	15 ms, max. 23 ms

Mechanical data

Connection type	Screw connection
Cable section	
- Min. Cable section	0,25 mm ²
- Max. Cable section	2.5 mm ²
Pre-wired cable	rigid or flexible
Tightening torque for the terminals	0,6 Nm
Detachable terminals (Y/N)	Yes
Mechanical life	10.000.000 operations
Electrical lifetime	Derating curve available on request
resistance to shock	30 g / 11 ms
Resistance to vibration To EN 60068-2-6	10...55 Hz, Amplitude 0,35 mm, ± 15 %

Ambient conditions

Ambient temperature	
- Min. environmental temperature	-25 °C
- Max. environmental temperature	+45 °C

Storage and transport temperature	
- Min. Storage and transport temperature	-40 °C
- Max. Storage and transport temperature	+85 °C
Protection class	
- Protection class-Enclosure	IP40
- Protection class-Terminals	IP20
- Protection class-Clearance	IP54
Air clearances and creepage distances To IEC/EN 60664-1	
- Rated impulse withstand voltage U_{imp}	4 kV
- Overvoltage category	II To VDE 0110
- Degree of pollution	2 To VDE 0110

Electromagnetic compatibility (EMC)

EMC rating	conforming to EMC Directive
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Electrical data

Rated DC voltage for controls	
- Min. rated DC voltage for controls	20.4 V
- Max. rated DC voltage for controls	28.8 V
Rated AC voltage for controls, 50 Hz	
- Min. rated AC voltage for controls, 50 Hz	20.4 V
- Max. rated AC voltage for controls, 50 Hz	26.4 V
Rated AC voltage for controls, 60 Hz	
- Min. rated AC voltage for controls, 60 Hz	20.4 V
- Max. rated AC voltage for controls, 60 Hz	26.4 V
Contact resistance	max. 100 mΩ
Power consumption	max. 2.1 W; 3.5 VA
Type of actuation	AC/DC
Switch frequency	max. 3 Hz
Rated operating voltage U_e	24 VDC -10% / +20%, residual ripple max. 10% 24 VAC -15% / +10%
Operating current I_e	0,08 A
Frequency range	50 / 60 Hz
Electronic protection (Y/N)	Yes
Fuse rating for the operating voltage	Internal electronic trip, tripping current > 0,5 A, Reset after approximately 1 second/s
Bridging in case of voltage drops	15 ms

Inputs

Monitored inputs	
- Short-circuit recognition (Y/N)	Yes
- Wire breakage detection (Y/N)	Yes
- Earth connection detection (Y/N)	Yes
Number of shutters	1 piece
Number of openers	1 piece
Cable length	1500 m with 1.5 mm ² ; 2500 m with 2.5 mm ²
Conduction resistance	max. 40 Ω

Outputs

Stop category	0
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Number of safety contacts	3 piece
Number of auxiliary contacts	1 piece
Number of signalling outputs	0 piece
Switching capacity	
- Switching capacity of the safety contacts	max. 250 V, 6 A ohmic (inductive in case of appropriate protective wiring) min. 10 V, 10 mA
- Switching capacity of the auxiliary contacts	24 VDC, 2 A
Fuse rating	
- Protection of the safety contacts	Safety fuse 8 A quick-blow, 6 A slow blow
- Fuse rating for the auxiliary contacts	Safety fuse 2.5 A quick-blow, 2 A slow blow
Utilisation category To EN 60947-5-1	AC-15: 230 V / 6 A DC-13: 24 V / 6 A
Number of undelayed semi-conductor outputs with signaling function	0 piece
Number of undelayed outputs with signaling function (with contact)	1 piece
Number of delayed semi-conductor outputs with signaling function.	0 piece
Number of delayed outputs with signalling function (with contact).	0 piece
Number of secure undelayed semi-conductor outputs with signaling function	0 piece
Number of secure, undelayed outputs with signaling function, with contact.	3 piece
Number of secure, delayed semi-conductor outputs with signaling function	0 piece
Number of secure, delayed outputs with signaling function (with contact).	0 piece

LED switching conditions display

LED switching conditions display (Y/N)	Yes
Number of LED's	3 piece
LED switching conditions display	
- The integrated LEDs indicate the following operating states.	
- Position relay K2	
- Position relay K1	
- Internal operating voltage U_i	

Miscellaneous data

Applications



Safety sensor



Guard system



Emergency-Stop button



Pull-wire emergency stop switches

Dimensions

Dimensions

- Width	22.5 mm
- Height	100 mm
- Depth	121 mm

notice

Inductive loads (e.g. contactors, relays, etc.) are to be suppressed by means of a suitable circuit.

notice - Wiring example

To secure a guard door up to PL 4 and Category #03#

Monitoring 1 guard door(s), each with a magnetic safety sensor of the BNS range

Start button (S) with edge detection

The feedback circuit monitors the position of the contactors K3 and K4.

Automatic start: The automatic start is programmed by connecting the feedback circuit to the terminals X1/X3. If the feedback circuit is not required, establish a bridge

The wiring diagram is shown with guard doors closed and in de-energised condition.

Documents

Operating instructions and Declaration of conformity (da) 218 kB, 27.08.2013

Code: mrl_srb301an_da

Operating instructions and Declaration of conformity (pl) 320 kB, 15.04.2014

Code: mrl_srb301an_pl

Operating instructions and Declaration of conformity (es) 300 kB, 15.04.2014

Code: mrl_srb301an_es

Operating instructions and Declaration of conformity (pt) 218 kB, 22.11.2013

Code: mrl_srb301an_pt

Operating instructions and Declaration of conformity (en) 306 kB, 28.02.2014

Code: mrl_srb301an_en

Operating instructions and Declaration of conformity (it) 298 kB, 18.03.2014

Code: mrl_srb301an_it

Operating instructions and Declaration of conformity (nl) 299 kB, 15.04.2014

Code: mrl_srb301an_nl

Operating instructions and Declaration of conformity (de) 312 kB, 18.02.2014

Code: mrl_srb301an_de

Operating instructions and Declaration of conformity (fr) 303 kB, 29.04.2014

Code: mrl_srb301an_fr

Operating instructions and Declaration of conformity (jp) 597 kB, 18.03.2014

Code: mrl_srb301an_jp

Wiring example (99) 18 kB, 04.08.2008

Code: ksr30120

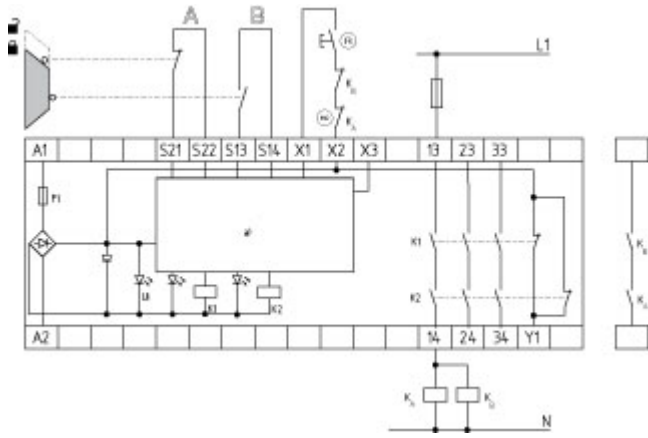
CCC certification (cn) 284 kB, 03.05.2011

Code: q_srbp06

CCC certification (en) 297 kB, 03.05.2011

Code: q_srbp05

Images



Wiring example

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The data and values have been checked thoroughly. Technical modifications and errors excepted.

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