

Safety controllers

SRB 504ST

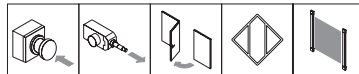


- Suitable for signal processing of potential-free outputs, e.g. emergency stop command devices, interlocking devices, magnetic safety switches and outputs connected to potentials (AOPDs)
- 1 or 2 channel control
- 5 safety contacts, STOP 0
- 4 signalling outputs
- Switching capacity of the safety contacts 6 A
- Automatic reset, manual reset with edge detection
- 6 LEDs to show operating conditions
- Plug-in screw terminals

Technical data

Standards:	IEC/EN 60204-1; EN 60947-5-1; EN ISO 13849-1; IEC 61508
Start conditions:	Automatic or start button (monitored)
Feedback circuit (Y/N):	yes
ON delay with automatic start:	typ. 400 ms
ON delay with reset button:	typ. 30 ms
Drop-out delay in case of emergency stop:	30 ms
Drop-out delay on „supply failure“:	typ. 80 ms
Rated operating voltage U _e :	24 VDC –15%/+20%, residual ripple max. 10%; 24 VAC –15%/+10%
Frequency range:	50 / 60 Hz
Fuse rating for the operating voltage:	Internal electronic protection; tripping current F1: > 2.5 A, F2: > 50 mA (S11-S31), > 800 mA (X4)
Internal electronic protection (Y/N):	yes
Power consumption:	3.2 W; 7.1 VA, plus signalling output
Monitored inputs:	
- Short-circuit recognition:	optional
- Wire breakage detection:	yes
- Earth connection detection:	yes
Number of NC contacts:	2
Number of NO contacts:	0
Max. conduction resistance:	max. 40
Outputs:	
Stop category:	0
Number of safety contacts:	5 (13-14; 23-24; 33-34; 43-44; 53-54)
Number of auxiliary contacts:	1 (61-62)
Number of signalling outputs:	3 (Y1-Y3)
Max. switching capacity of the safety contacts:	250 VAC, 8 A ohmic (inductive in case of appropriate protective wiring)
Max. switching capacity of the auxiliary contacts:	24 VDC, 2 A
Max. switching capacity of the signalling outputs:	24 VDC, 100 mA; residual current: 200 mA
Utilisation category to EN 60947-5-1:	AC-15; DC-13
Fuse rating of the safety contacts:	8 A slow blow
Fuse rating of the auxiliary contacts:	2 A slow blow
Fuse rating of the signalling outputs:	100 mA slow blow
Mechanical life:	10 million operations
Ambient conditions:	
Ambient temperature:	–25 °C ... +60 °C
Storage and transport temperature:	–40 °C ... +85 °C
Protection class:	Enclosure: IP40, Terminals: IP20, Clearance: IP54
Mounting:	Snaps onto standard DIN rail to EN 60715
Connection type:	Screw terminals, plug-in
- min. cable section:	0.25 mm ²
- max. cable section:	2.5 mm ²
Weight:	420 g
Dimensions (Height x Width x Depth):	100 x 45 x 121 mm

Approvals



Ordering details

SRB 504ST-24V

Classification

Safety parameters:

Standards:	EN ISO 13849-1, IEC 61508, EN 60947-5-1
PL:	STOP 0: up to e
Category:	STOP 0: up to 4
PFH value:	STOP 0: 2.00 x 10 ⁻⁸ /h
SIL:	STOP 0: up to 3
Mission time:	20 years

The PFH value of 2.00 x 10⁻⁸/h applies to the combinations of contact load (current through enabling contacts) and number of switching cycles (n-op/y) mentioned in the table below. At 365 operating days per year and a 24-hours operation, this results in the below-mentioned switching cycle times (t-cycle) for the relay contacts. Diverging applications upon request.

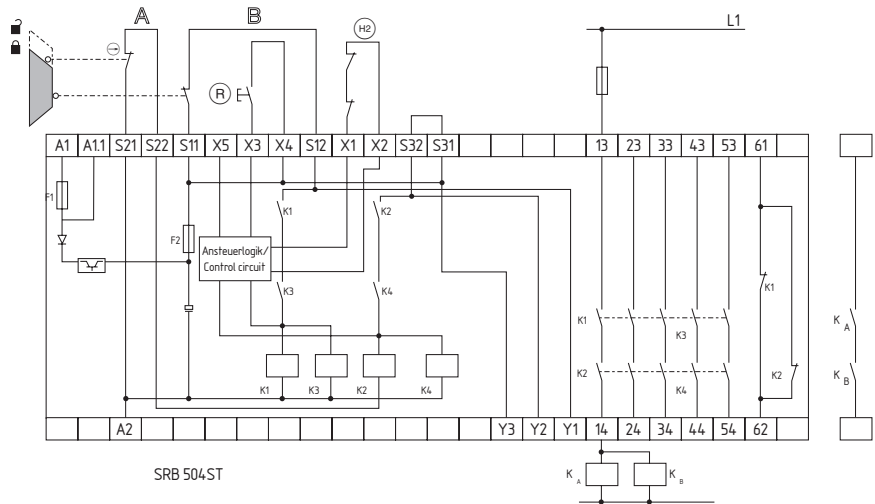
Contact load	n-op/y	t-cycle
20 %	525,600	1.0 min
40 %	210,240	2.5 min
60 %	75,087	7.0 min
80 %	30,918	17.0 min
100 %	12,223	43.0 min

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Note

- 2 channel control shown for a guard-door monitor with two contacts, of which at least one contact has positive break, with external reset button (R).
- Relay outputs: Suitable for 2 channel control, for increase in capacity or number of contacts by means of contactors or relays with positive-guided contacts.
- (HD) = Feedback circuit
- The control recognises cross-short, cable break and earth leakages in the monitoring circuit.
- Inductive loads (e.g. contactors, relays, etc.) are to be suppressed by means of a suitable circuit.

Wiring diagram



LED

The integrated LEDs indicate the following operating states.

- Position relay K1
- Position relay K2
- Position relay K3
- Position relay K4
- Supply voltage U_B
- Internal operating voltage U_i

Note

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