

<meta name='Description' content='Suitable for signal processing of potential-free outputs, e.g. emergency stop command devices, position switches and solenoid interlocks, Suitable for signal processing of outputs connected to potentials (AOPDs), e.g. safety light grids/curtains, 3 safety contacts, STOP 0;

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Datasheet - SRB324ST 24V (V.3)



Guard door monitors and Safety control modules for Emergency Stop applications / General Purpose safety controllers (Series PROTECT SRB) / SRB324ST

Preferred typ



- Suitable for signal processing of potential-free outputs, e.g. emergency stop command devices, position switches and solenoid interlocks
- Suitable for signal processing of outputs connected to potentials (AOPDs), e.g. safety light grids/curtains
- 3 safety contacts, STOP 0;
2 safety contacts, STOP 1 (adjustable 1 ... 30 s)
- 4 Signalling outputs
- Optional: Short-circuit recognition, Manual reset with edge detection in fail-safe circuit, Automatic reset function

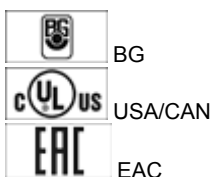
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Ordering details

Product type description	SRB324ST 24V (V.3)
Article number	101195504
EAN Code	4030661446547
Replaced article number	101179876
eCl@ss	27-37-19-01

Approval

Approval



Classification

Standards	EN ISO 13849-1, IEC 61508, EN 60947-5-1
PL	up e (STOP 0) bis d (STOP 1)

Control category	up 4 (STOP 0) bis 3 (STOP 1)
DC	99% (STOP 0) > 60% (STOP 1)
CCF	> 65 points
PFH value	≤ 2,0 x 10 ⁻⁸ /h (STOP 0) ≤ 2,0 x 10 ⁻⁷ /h (STOP 1)
SIL	up 3 (STOP 0) bis 2 (STOP 1)
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 %	525.600	1,0 min
40 %	210.240	2,5 min
60 %	75.067	7,0 min
80 %	30.918	17,0 min
100 %	12.223	43,0 min

Global Properties

Permanent light	SRB324ST
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	AgSnO, Ag-Ni, self-cleaning, positive action
Weight	435
Start conditions	Automatic or Start button (Optional monitored)
Start input (Y/N)	Yes
Feedback circuit (Y/N)	Yes
Start-up test (Y/N)	No
Automatic reset function (Y/N)	Yes
Reset with edge detection (Y/N)	Yes
Pull-in delay	
- ON delay with automatic start	typ. 250 ms
- ON delay with reset button	typ. 20 ms
Drop-out delay	
- Drop-out delay in case of power failure	typ. 80 ms
- Drop-out delay in case of emergency stop	typ. 30 ms / ≤ 36 ms

Mechanical data

Connection type	Screw connection
Cable section	
- Min. Cable section	0,25
- Max. Cable section	2.5
Pre-wired cable	rigid or flexible
Tightening torque for the terminals	0,6
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

Ambient conditions

Ambient temperature	
- Min. environmental temperature	-25
- Max. environmental temperature	+60
Storage and transport temperature	
- Min. Storage and transport temperature	-40
- Max. Storage and transport temperature	+85
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	III 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	
- Max. rated DC voltage for controls	20.4
- Max. rated DC voltage for controls	28.8
Rated AC voltage for controls, 50 Hz	
- Min. rated AC voltage for controls, 50 Hz	20.4
- Max. rated AC voltage for controls, 50 Hz	26.4
Rated AC voltage for controls, 60 Hz	
- Min. rated AC voltage for controls, 60 Hz	20.4
- Max. rated AC voltage for controls, 60 Hz	26.4
Contact resistance	max. 100 mΩ
Power consumption	3.2 W; 7.1 VA, plus signalling output
Type of actuation	AC/DC
Rated operating voltage U_e	24 VDC -15% / +20%, residual ripple max. 10% 24 VAC -15% / +10%
Operating current I_e	
Frequency range	50 / 60
Electronic protection (Y/N)	Yes
Fuse rating for the operating voltage	Internal electronic trip, tripping current F1: > 2.5 A; F2 > 50 mA (S11 - S31), > 800 mA (x 4); Reset after disconnection of supply voltage
Current and tension on control circuits	
- S11, S12, S21, S22, S31, S32	24 VDC, Test current: 10 mA
- X1, X2	24 VDC, Start pulse: 350 mA / 15 ms
- X3, X4	24 VDC, Start pulse: 130 mA / 80 ms
- X4, X5	24 VDC, Start pulse: 140 mA / 15 ms
Bridging in case of voltage drops	typ. 70 ms

Inputs

Monitored inputs

- Short-circuit recognition (Y/N)	optional
- Wire breakage detection (Y/N)	Yes
- Earth connection detection (Y/N)	Yes
Number of shutters	0
Number of openers	2
Cable length	1-channel without cross-wire detection: 850 m with 1.5 mm ² 1400 m with 2.5 mm ² 2-channel with/ without cross-wire detection
Conduction resistance	max. 40 Ω

Outputs

- Stop category 1	Residual current at ambient temperature up to: - 45°C = 12 A; - 55°C = 10 A; - 60°C = 8 A
Stop category	0 / 1
- Stop category 0	Residual current at ambient temperature up to: - 45°C = 18 A; - 55°C = 15 A; - 60°C = 12 A
Number of safety contacts	5
Number of auxiliary contacts	1
Number of signalling outputs	3
Switching capacity	
- Switching capacity of the safety contacts	(13-14; 23-24; 33-34) max. 250 V, 8 A ohmic (inductive in case of appropriate protective wiring) (47-48; 57-58) max. 250 V, 6 A ohmic (inductive in case of appropriate protective wiring)
- Switching capacity of the auxiliary contacts	61-62: 24 VDC / 2 A
- Switching capacity of the signaling/diagnostic outputs	Y1-Y3: 24 VDC / 100 mA, residual current: 200 mA
Fuse rating	
- Protection of the safety contacts	8 A slow blow (13-14; 23-24) 6.3 A slow blow (37-38)
- Fuse rating for the auxiliary contacts	2 A slow blow
- Fuse rating for the signaling/diagnostic outputs	500 mA (Internal electronic trip F3)
Utilisation category To EN 60947-5-1	13-14, 23-24, 33-34: AC-15: 230 V / 6 A, DC-13: 24 V / 6 A 37-38, 47-48: AC-15: 230 V / 3 A, DC-13: 24 V / 2 A
Note on the utilisation category	
Number of undelayed semi-conductor outputs with signaling function	3
Number of undelayed outputs with signaling function (with contact)	1
Number of delayed semi-conductor outputs with signaling function.	0
Number of delayed outputs with signalling function (with contact).	0
Number of secure undelayed semi-conductor outputs with signaling function	0
Number of secure, undelayed outputs with signaling function, with contact.	3
Number of secure, delayed semi-conductor outputs with signaling function	0
Number of secure, delayed outputs with signaling function (with contact).	2

LED switching conditions display

LED switching conditions display (Y/N)	Yes
Number of LED's	6
LED switching conditions display	

- The integrated LEDs indicate the following operating states.
- Position relay K2
- Position relay K3
- Position relay K1
- Position relay K4
- Supply voltage
- Internal operating voltage Ui

Miscellaneous data

Applications



Guard system



Emergency-Stop button



Pull-wire emergency stop switches



Safety light curtain



Safety sensor

Dimensions

Dimensions

- Width 45 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

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.

(H2) = Feedback circuit

The control recognises cross-short, cable break and earth leakages in the monitoring circuit.

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

Documents

Operating instructions and Declaration of conformity (pt) 615 kB, 10.10.2018

Code: mrl_srb_324st_v3_pt

Operating instructions and Declaration of conformity (es) 613 kB, 10.10.2018

Code: mrl_srb_324st_v3_es

Operating instructions and Declaration of conformity (jp) 860 kB, 10.10.2018

Code: mrl_srb_324st_v3_jp

Operating instructions and Declaration of conformity (pl) 605 kB, 10.10.2018

Code: mrl_srb_324st_v3_pl

Operating instructions and Declaration of conformity (cn) 759 kB, 23.11.2018

