

Datasheet - SRB 211ST

Guard door monitors and Safety control modules for Emergency Stop applications / Monitoring of electromechanical switchgear / SRB 211ST



- 2 safety contacts, STOP 0; 1 safety contact, STOP 1
- 1 Signalling output
- 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

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

Ordering details

Product type description	SRB 211ST
Article number	1165475
EAN code	4030661293530

Approval

Approval



BG




USA/CAN

Classification

Standards	EN ISO 13849-1, IEC 61508, EN 60947-5-1
PL	up e
Control category	up 4
PFH value	5.0 x 10 ⁻⁹ /h
- notice	up to max. 36500 switching cycles/year and at max. 60% contact load
SIL	up 3
Mission time	20 Years

Global Properties

Product name	SRB 211ST
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	100 g
Start conditions	Automatic or Start button (Optional monitored)
Start input (Y/N)	Yes
Feedback circuit (Y/N)	Yes
Start-up test (Y/N)	No
Reset after disconnection of supply voltage (Y/N)	No
Automatic reset function (Y/N)	Yes
Reset with edge detection (Y/N)	Yes
Pull-in delay	
- ON delay with automatic start	≤ 100 ms
- ON delay with reset button	≤ 25 ms
Drop-out delay	
- Drop-out delay in case of power failure	≤ 55 ms
- Drop-out delay in case of emergency stop	≤ 20 ms

Mechanical data

Connection type	Screw connection, plug-in
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	10 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	+ 60°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	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	
- Min. rated DC voltage for controls	20.4 VDC
- Max. rated DC voltage for controls	28.8 VDC
Rated AC voltage for controls, 50 Hz	
- Min. rated AC voltage for controls, 50 Hz	20.4 VAC
- Max. rated AC voltage for controls, 50 Hz	26.4 VAC
Rated AC voltage for controls, 60 Hz	
- Min. rated AC voltage for controls, 60 Hz	20.4 VAC
- Max. rated AC voltage for controls, 60 Hz	26.4 VAC
Contact resistance	max. 100 mΩ
Power consumption	5.1 W; 5.7 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	0,24 A
Frequency range	50 / 60 Hz
Electronic protection (Y/N)	Yes
Fuse rating for the operating voltage	Internal electronic trip, tripping current > 1.0 A, Reset after disconnection of supply voltage

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 piece
Number of openers	2 piece
Cable length	1500 m with 1.5 mm ² ; 2500 m with 2.5 mm ² (for Rated voltage)
Conduction resistance	max. 40 Ω

Outputs

Stop category	0 / 1
Number of safety contacts	3 piece
Number of auxiliary contacts	0 piece
Number of signalling outputs	1 piece
Switching capacity	
- Switching capacity of the safety contacts	max. 250 VAC, 4 A ohmic (inductive in case of appropriate protective wiring)
- Switching capacity of the signaling/diagnostic outputs	24 VDC, 100 mA
Fuse rating	
- Protection of the safety contacts	4 A gG D-fuse
- Fuse rating for the signaling/diagnostic outputs	Internal electronic trip, tripping current > 0,1 A
Utilisation category To EN 60947-5-1	
- Stop category 0	13-14, 23-24: AC-15: 230 V / 1,5 A DC-13: 24 V / 1,2 A
- Stop category 1	37-38: AC-15: 230 V / 3 A DC-13: 24 V / 2 A
Number of undelayed semi-conductor outputs with signaling function	1 piece
Number of undelayed outputs with signaling function (with contact)	0 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.	2 piece
Number of secure, delayed semi-conductor outputs with signaling function	0 piece
Number of secure, delayed outputs with signaling function (with contact).	1 piece

LED switching conditions display

LED switching conditions display (Y/N)	Yes
Number of LED's	5 piece

LED switching conditions display

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

Miscellaneous data

Applications



Emergency-Stop button



Pull-wire emergency stop switches



Guard system

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

Input level: The example shows a 2-channel control of a guard door monitoring with two position switches, whereof one with positive break, external reset button (R) and feedback circuit (H2).

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

F1 = hybrid fuse

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.

For 1-channel control, connect NC contact to S11/S12 and bridge S12/S22

Connect potential p-type outputs of safety light grids/curtains to S12/S22. The devices must have the same reference potential.

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

Time delay: The time-delayed safety enable 37/38 is adjustable for 1 to 30 seconds drop-out delay (see setting instructions).

The safety enabling circuit 37/38 conforms to EN 60204-1 for STOP Category 1. The safety enabling circuits 13/14 and 23/24 conform to EN 60204-1 for STOP Category 0.

Setting of the drop-out delay time is carried out by means of a potentiometer from the front of the enclosure.

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

Documents

Operating instructions and Declaration of conformity (en) 1 MB, 16.02.2010

http://www.schmersal.net/Bilddata/Si_baust/Pdf/srb211st/bedien/en/mrl_srb211st_en.pdf

Operating instructions and Declaration of conformity (nl) 799 kB, 18.03.2010

http://www.schmersal.net/Bilddata/Si_baust/Pdf/srb211st/bedien/nl/mrl_srb211st_nl.pdf

Operating instructions and Declaration of conformity (jp) 1 MB, 17.05.2010

http://www.schmersal.net/Bilddata/Si_baust/Pdf/srb211st/bedien/jp/mrl_srb211st_jp.pdf

Operating instructions and Declaration of conformity (de) 919 kB, 21.06.2010

http://www.schmersal.net/Bilddata/Si_baust/Pdf/srb211st/bedien/de/mrl_srb211st_de.pdf

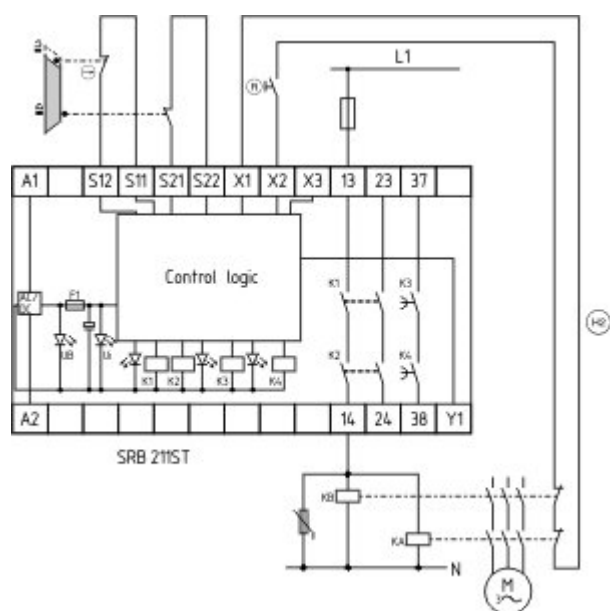
Wiring example (99) 19 kB, 04.08.2008

http://www.schmersal.net/Bilddata/Si_baust/Srb211st/Schaltun/Ksrb2103.pdf

BG-test certificate (de) 35 kB, 28.02.2005

http://www.schmersal.net/Bilddata/Si_baust/Pdf/srb211st/baumuste/z_211p01.pdf

Images



Wiring example

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

Generiert am 20.07.2010 - 08:54:43h Kasbase 1.3.5 DBI