

Datasheet - SRB320XV3 / V.2



Guard door monitors and Safety control modules for Emergency Stop applications / General Purpose safety controllers (Series PROTECT SRB) / SRB320XV3 / V.2



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

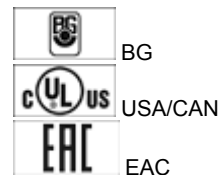
- Level 1: Reset without edge detection, Optional Automatic reset function, Short-circuit recognition, Level 2: / Opener (NC) Normally open contact (NO)
- Suitable for signal processing of potential-free outputs, e.g. emergency stop command devices, position switches and solenoid interlocks
- Suitable 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

Ordering details

Product type description	SRB320XV3 / V.2
Article number	101195579
EAN Code	4250116202171
Replaced article number 101188433	
eCl@ss	27-37-19-01

Approval

Approval



Classification

Standards	EN ISO 13849-1, IEC 61508, EN 60947-5-1
PL	up e
Control category	bis 4
DC	99% (High)
CCF	> 65 points
PFH value	≤ 2,0 x 10 ⁻⁸ /h
SIL	up 3

Mission time

- notice

20 Years

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

SRB320XV3 / V.2

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
- Material of the contacts

Plastic, glass-fibre reinforced thermoplastic, ventilated

AgSn0, Ag-Ni, self-cleaning, positive action

Weight

475

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 reset button

typ. 20 ms

Drop-out delay

- Drop-out delay in case of power failure
- Drop-out delay in case of emergency stop

typ. 50 ms

≤ 25

Mechanical data

Connection type

Screw connection

Cable section

- Min. Cable section
- Max. Cable section

0,25

2.5

Pre-wired cable

rigid or flexible

Tightening torque for the terminals

0,6

Detachable terminals (Y/N)

No

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	2.6 W; 5.4 VA
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 > 1.0 A Reset after disconnection of supply voltage
Current and tension on control circuits	
- S11, S12	24 VDC, Test current: 60 mA
- S21, S22	24 VDC, Test current: 20 mA, Start pulse: 360 mA / 10 ms
- S31, S32	24 VDC, Test current: 65 mA
- S13, S14	24 VDC, Start pulse: 250 mA / 15 ms
- S33, S34	24 VDC, Start pulse: 180 mA / 5 ms
Bridging in case of voltage drops	typ. 50 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	1500 m with 1.5 mm ² ;

Conduction resistance

2500 m with 2.5 mm² (for Rated voltage)
max. 40 Ω

Outputs





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
- Stop category 1	Residual current at ambient temperature up to: - 45°C = 12 A; - 55°C = 10 A; - 60°C = 8 A
Number of safety contacts	5
Number of auxiliary contacts	0
Number of signalling outputs	0
Switching capacity	
- Switching capacity of the safety contacts	max. 250 V, 8 A ohmic (inductive in case of appropriate protective wiring)
Fuse rating	
- Protection of the safety contacts	8 A slow blow
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	0
Number of undelayed outputs with signaling function (with contact)	0
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 K3	
- Position relay K1	
- Position relay K4	
- Position relay K2	
- Supply voltage	
- Internal operating voltage Ui	

Miscellaneous data

Applications

	Guard system
	Emergency-Stop button
	Pull-wire emergency stop switches
	Safety light curtain

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 time-delayed safety outputs 47-48 and 57-58 meet the requirements of STOP category 1 to EN 60204-1. The non-delayed safety outputs meet the requirements of STOP category 0 to EN 60204-1.

Setting of the drop-out delay time is carried out by means of a DIP switch 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) 590 kB, 24.11.2017

Code: mrl_srb_320xv3_v2_en

Operating instructions and Declaration of conformity (it) 609 kB, 01.02.2018

Code: mrl_srb_320xv3_v2_it

Operating instructions and Declaration of conformity (jp) 692 kB, 17.10.2014

Code: mrl_srb_320xv3_v2_jp

Operating instructions and Declaration of conformity (de) 591 kB, 24.11.2017

Code: mrl_srb_320xv3_v2_de

Operating instructions and Declaration of conformity (nl) 609 kB, 12.07.2018

Code: mrl_srb_320xv3_v2_nl

Operating instructions and Declaration of conformity (da) 677 kB, 02.09.2013

Code: mrl_srb_320xv3_v2_da

Operating instructions and Declaration of conformity (pt) 612 kB, 05.01.2018

Code: mrl_srb_320xv3_v2_pt

Operating instructions and Declaration of conformity (es) 608 kB, 05.01.2018

Code: mrl_srb_320xv3_v2_es

Operating instructions and Declaration of conformity (fr) 667 kB, 07.03.2018

Code: mrl_srb_320xv3_v2_fr

Operating instructions and Declaration of conformity (pl) 695 kB, 23.05.2018

Code: mrl_srb_320xv3_v2_pl

Wiring example (99) 19 kB, 04.08.2008

Code: ksrb3l16

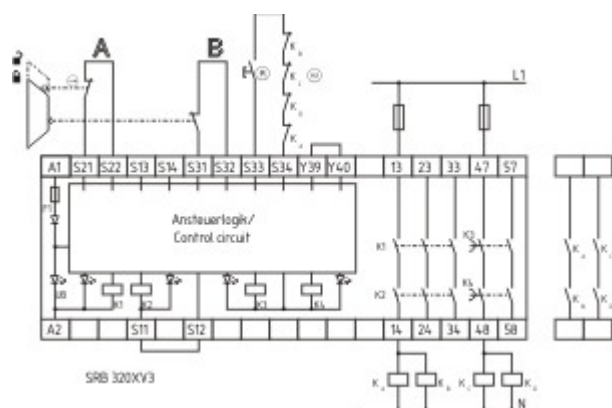
BG-test certificate (de) 63 kB, 05.10.2006

Code: z_220p01

EAC certification (ru) 1 MB, 15.03.2018

Code: q_aesp01

Images



Wiring example

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

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