Datasheet - SRB301X1

Guard door monitors and Safety control modules for Emergency Stop applications / General Purpose safety controllers (Series PROTECT SRB) / SRB301X1

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

- Suitable for signal processing of potential-free outputs, e.g. emergency stop command devices, position switches and solenoid interlocks
- 3 safety contacts, STOP 0
- 1 Signalling output

Ordering details

Product type description	SRB301X1
Article number	101182835
EAN Code	4250116202140
Replaced article number 101188430	
eCl@ss	27-37-19-01

Approval

Approval	BG USA/CAN EAC

Classification

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

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 %	75.087	7,0 min
80 %	30.918	17,0 min
100 %	12.223	43,0 min

Global Properties

Permanent light	SRB301X1
Standards	IEC/EN 60204-1, EN 60947-5-1, EN ISO 13849-1, IEC 61508
Compliance with the Directives (Y/N) CE	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	AgSn0, self-cleaning, positive action
Weight	280
Start conditions	Automatic or Start button
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)	No
Pull-in delay	
- ON delay with reset button	≤ 55 ms
Drop-out delay	
- Drop-out delay in case of emergency stop	≤ 50 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)	No
Mechanical life	10.000.000 operations
Electrical lifetime	Derating curve available on request
restistance 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 °C
- Max. environmental temperature	+60 °C

Storage and transport temperature	
- Min. Storage and transport temperature	−25 °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

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	1.4 W; 3.2 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 HZ
Electronic protection (Y/N)	Yes
Fuse rating for the operating voltage	Internal electronic trip, tripping current > 1.0 A
Bridging in case of voltage drops	≤ 40 ms

Inputs

Monitored inputs	
- Short-circuit recognition (Y/N)	No
- Wire breakage detection (Y/N)	Yes
- Earth connection detection (Y/N)	Yes
Number of shutters	0 piece
Number of openers	1 piece
Cable length	1500 m with 1.5 mm²; 2500 m with 2.5 mm²
Conduction resistance	max. 40 Ω

Outputs

Stop category	0
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. 230 V, 8 A ohmic (inductive in case of appropriate protective wiring)
- Switching capacity of the auxiliary contacts	24 VDC, 2 A
Fuse rating	
- Protection of the safety contacts	external fuse (I_k = 1000 A) To EN 60947-5-1 Safety fuse 10 A quick-blow, 8 A slow blow
- Fuse rating for the auxiliary contacts	external fuse (I_k = 1000 A) To EN 60947-5-1 Safety fuse 2.5 A quick-blow, 2 A slow blow
Utilisation category To IEC/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
LED switching conditions display	
- The integrated LEDs indicate the following operating states.	
- Position relay K2	
- Position relay K1	
- Supply voltage	

Miscellaneous data

Applications

 Emergency-Stop button

 Guard system

 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

The example shows a 1-channel control with contact A for a guard door monitor; 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 system recognises wire-breakage and earth faults in the monitoring circuit.

Control category 3 to EN ISO 13849-1 for 2-channel loop in the supply voltage UB.

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

Documents

Operating instructions and Declaration of conformity (de) 283 kB, 15.11.2017
Code: mrl_srb_301x1_de

Operating instructions and Declaration of conformity (en) 278 kB, 15.11.2017
Code: mrl_srb_301x1_en

Operating instructions and Declaration of conformity (jp) 552 kB, 20.03.2014
Code: mrl_srb_301x1_jp

Operating instructions and Declaration of conformity (fr) 293 kB, 24.11.2017
Code: mrl_srb_301x1_fr

Operating instructions and Declaration of conformity (it) 292 kB, 29.11.2017
Code: mrl_srb_301x1_it

Operating instructions and Declaration of conformity (pl) 312 kB, 29.11.2017
Code: mrl_srb_301x1_pl

Operating instructions and Declaration of conformity (pt) 298 kB, 29.11.2017
Code: mrl_srb_301x1_pt

Operating instructions and Declaration of conformity (nl) 293 kB, 29.11.2017
Code: mrl_srb_301x1_nl

Operating instructions and Declaration of conformity (es) 291 kB, 16.11.2017
Code: mrl_srb_301x1_es

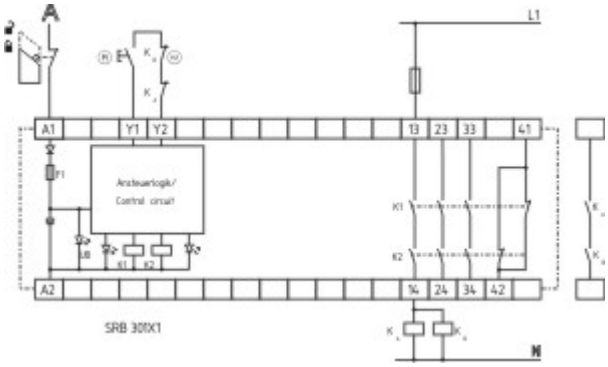
Operating instructions and Declaration of conformity (da) 293 kB, 16.11.2017
Code: mrl_srb_301x1_da

Wiring example (99) 18 kB, 04.08.2008
Code: ksrb3l13

BG-test certificate (de) 71 kB, 05.10.2006
Code: z_3x1p01

EAC certification (ru) 1 MB, 15.03.2018
Code: q_aesp01

Images



Wiring diagram

K.A. Schmersal GmbH & Co. KG, Möddinghofe 30, D-42279 Wuppertal

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