

Datasheet - SRB301LC 24VAC/DC



Guard door monitors and Safety control modules for Emergency Stop applications / General Purpose safety controllers (Series PROTECT SRB) / SRB301LC

Preferred typ



- 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

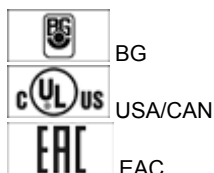
(Minor differences between the printed image and the original product may exist!)

Ordering details

Product type description	SRB301LC 24VAC/DC
Article number	101163475
EAN Code	4250116201532
Replaced article number	101165472
eCI@ss	27-37-19-01

Approval

Approval




Classification

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

SIL	up 3 (STOP 0)																		
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.																		
	<table border="1"> <thead> <tr> <th>K</th> <th>n-op/y</th> <th>t-cycle</th> </tr> </thead> <tbody> <tr> <td>20 %</td> <td>525.800</td> <td>1,0 min</td> </tr> <tr> <td>40 %</td> <td>210.240</td> <td>2,5 min</td> </tr> <tr> <td>60 %</td> <td>75.087</td> <td>7,0 min</td> </tr> <tr> <td>80 %</td> <td>30.918</td> <td>17,0 min</td> </tr> <tr> <td>100 %</td> <td>12.223</td> <td>43,0 min</td> </tr> </tbody> </table>	K	n-op/y	t-cycle	20 %	525.800	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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Global Properties

Permanent light	SRB301LC
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	AgSn0, self-cleaning, positive action
Weight	230
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 automatic start	typ. 30 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
resistance to shock	30 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	+45 °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	II 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	max. 1.7 W; 1.9 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	0,08 A
Frequency range	50 / 60 HZ
Electronic protection (Y/N)	No
Fuse rating for the operating voltage	0,5 A gG D-fuse

Inputs

Monitored inputs

- Short-circuit recognition (Y/N)	Yes
- 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
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. 250 VAC, 6 A ohmic (inductive in case of appropriate protective wiring) min. 10 V, 10 mA
- Switching capacity of the auxiliary contacts	24 VDC, 2 A
Fuse rating	
- Protection of the safety contacts	6 A slow blow
- Fuse rating for the auxiliary contacts	2 A slow blow
Utilisation category To 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	4
LED switching conditions display	
- The integrated LEDs indicate the following operating states.	
- Position relay K1	
- Position relay K2	
- Supply voltage	
- Internal operating voltage Ui	

Miscellaneous data

Applications	 Emergency-Stop button  Guard system  Pull-wire emergency stop switches
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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); cross-wire monitoring and feedback circuit (H2)

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

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.

In case of a 1-channel control, connect the NC contact to the operating voltage and bridge S11/S12 and S21/S22.

Automatic start: The automatic start is programmed by connecting the feedback circuit to the terminals X1/X2. If the feedback circuit is not required, establish a bridge

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

Documents

Operating instructions and Declaration of conformity (it) 312 kB, 10.10.2018

Code: mrl_srb_301lc_it

Operating instructions and Declaration of conformity (es) 310 kB, 10.10.2018

Code: mrl_srb_301lc_es

Operating instructions and Declaration of conformity (jp) 397 kB, 10.10.2018

Code: mrl_srb_301lc_jp

Operating instructions and Declaration of conformity (nl) 321 kB, 10.10.2018

Code: mrl_srb_301lc_nl

Operating instructions and Declaration of conformity (en) 303 kB, 10.10.2018

Code: mrl_srb_301lc_en

Operating instructions and Declaration of conformity (fr) 314 kB, 10.10.2018

Code: mrl_srb_301lc_fr

Operating instructions and Declaration of conformity (pl) 324 kB, 10.10.2018

Code: mrl_srb_301lc_pl

Operating instructions and Declaration of conformity (da) 311 kB, 10.10.2018

Code: mrl_srb_301lc_da

Operating instructions and Declaration of conformity (pt) 315 kB, 10.10.2018

Code: mrl_srb_301lc_pt

Operating instructions and Declaration of conformity (de) 289 kB, 10.10.2018

Code: mrl_srb_301lc_de

Wiring example (99) 19 kB, 04.08.2008

Code: Ksrb3104

Wiring example (99) 20 kB, 22.08.2008

Code: ksr3111

Wiring example (99) 18 kB, 22.08.2008

Code: ksr3119

TÜV certification (de, en) 763 kB, 07.04.2017

Code: z_l30p01

CCC certification (cn) 296 kB, 16.01.2017

Code: q_srbp02

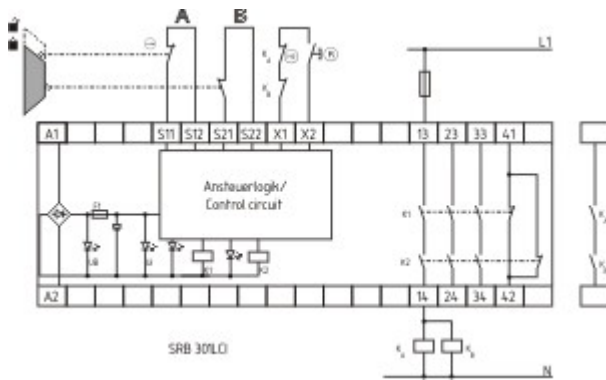
CCC certification (en) 314 kB, 16.01.2017

Code: q_srbp01

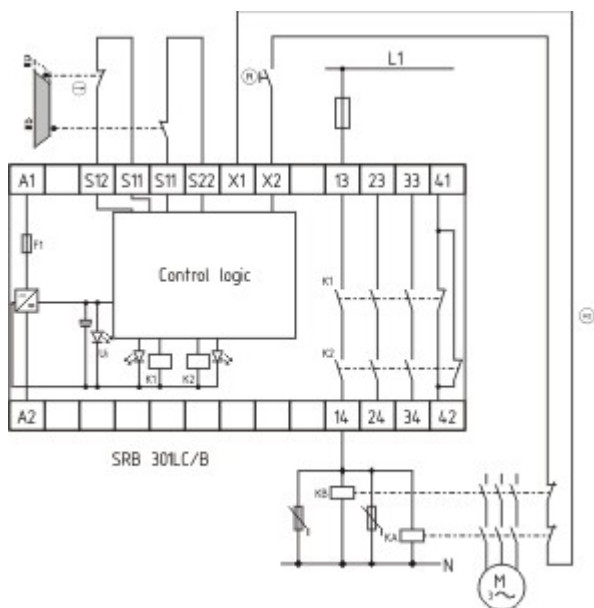
EAC certification (ru) 1 MB, 15.03.2018

Code: q_aesp01

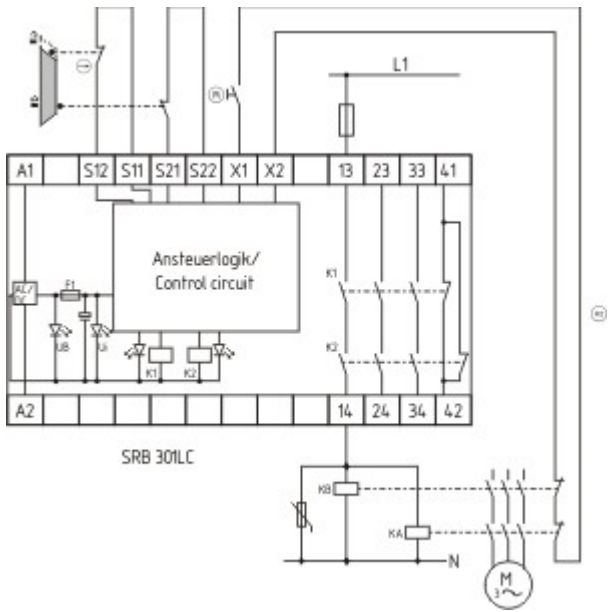
Images



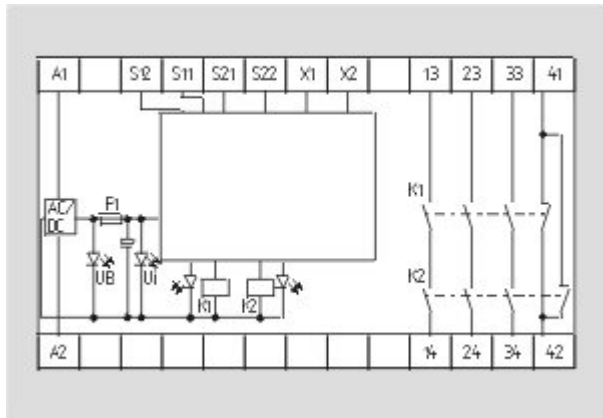
Wiring example



Wiring example



Wiring example



Internal wiring diagram

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

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