

Datasheet - SRB301HC/T-230V



Guard door monitors and Safety control modules for Emergency Stop applications / General Purpose safety controllers (Series PROTECT SRB) / SRB301HC/T



- Suitable for signal processing of potential-free outputs, e.g. emergency stop command devices, position switches and solenoid interlocks and Safety mats
- 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	SRB301HC/T-230V
Article number	101190595
EAN Code	4250116202348
Replaced article number	101193479
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)
Control category	up 4 (STOP 0)
DC	99% (STOP 0)
CCF	> 65 points
PFH value	$\leq 2,0 \times 10^{-8}/h$ (STOP 0)
SIL	up 3 (STOP 0)

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

SRB301HC/T

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

AgSn₃₀, self-cleaning, positive action

Weight

356

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

typ. 200 ms, max. 400 ms

Drop-out delay

- Drop-out delay in case of power failure

typ. 100 ms

- Drop-out delay in case of emergency stop

typ. 20 ms, max. 25 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 °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	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	-
- Max. rated DC voltage for controls	-
Rated AC voltage for controls, 50 Hz	
- Min. rated AC voltage for controls, 50 Hz	48
- Max. rated AC voltage for controls, 50 Hz	240
Rated AC voltage for controls, 60 Hz	
- Min. rated AC voltage for controls, 60 Hz	48
- Max. rated AC voltage for controls, 60 Hz	240
Contact resistance	max. 100 mΩ
Power consumption	2 W; 5.1 VA
Type of actuation	AC
Rated operating voltage U_e	48 ... 240 VAC
Frequency range	50 / 60 HZ
Electronic protection (Y/N)	Yes
Fuse rating for the operating voltage	Internal electronic trip: tripping current F1: > 0,5 A; primary side: Safety fuse T1A
Current and tension on control circuits	
- S13 ... S14	24 VDC, Test current: 20 mA, Start pulse: 80 mA / 120 ms
- S23 ... S24	24 VDC, Test current: 20 mA
- X1 ... X2	24 VDC, Start pulse: 80 mA / 120 ms
Bridging in case of voltage drops	typ. 90 ms

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, 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	8 A slow blow, 10 A quick-blow
- Fuse rating for the auxiliary contacts	2 A slow blow, 2.5 A quick-blow
Utilisation category To EN 60947-5-1	AC-15: 230 V / 6 A DC-13: 24 V / 6 A
Note on the utilisation category	Residual current at ambient temperature up to: - 45°C = 24 A; - 55°C = 18 A; - 60°C = 12 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 U_B	

Miscellaneous data

Applications	 Emergency-Stop button
	 Guard system
	 Safety mats
	 Pull-wire emergency stop switches

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 (de) 320 kB, 10.10.2018

Code: mrl_srb_301hc_t_de

Operating instructions and Declaration of conformity (pt) 342 kB, 10.10.2018

Code: mrl_srb_301hc_t_pt

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

Code: mrl_srb_301hc_t_cs

Operating instructions and Declaration of conformity (pl) 347 kB, 10.10.2018

Code: mrl_srb_301hc_t_pl

Operating instructions and Declaration of conformity (fr) 336 kB, 10.10.2018

Code: mrl_srb_301hc_t_fr

Operating instructions and Declaration of conformity (nl) 346 kB, 10.10.2018

Code: mrl_srb_301hc_t_nl

Operating instructions and Declaration of conformity (it) 338 kB, 10.10.2018

Code: mrl_srb_301hc_t_it

Operating instructions and Declaration of conformity (jp) 425 kB, 10.10.2018

Code: mrl_srb_301hc_t_jp

Operating instructions and Declaration of conformity (es) 337 kB, 10.10.2018

Code: mrl_srb_301hc_t_es

Operating instructions and Declaration of conformity (en) 331 kB, 10.10.2018

Code: mrl_srb_301hc_t_en

Wiring example (99) 19 kB, 04.08.2008

Code: ksr3l22

TÜV certification (de, en) 599 kB, 21.03.2017

Code: z_srbp05

CCC certification (en) 739 kB, 24.07.2017

Code: q_srbp03

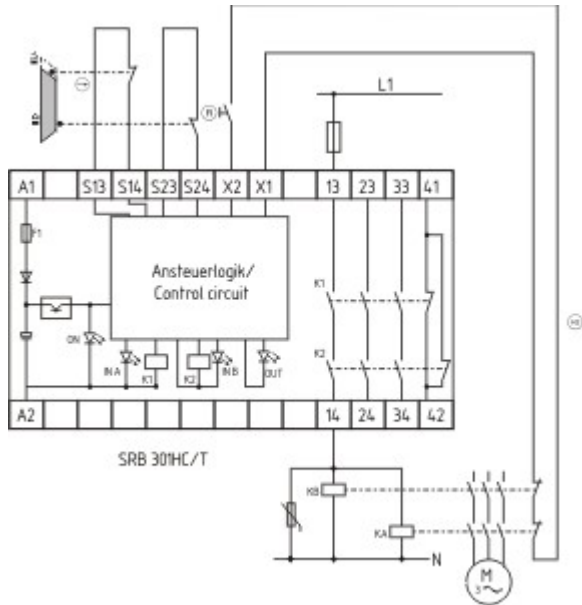
CCC certification (cn) 738 kB, 24.07.2017

Code: q_srbp04

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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