

<meta name='Description' content='Fit for signal evaluation of outputs of safety magnetic switches (to this end, integrated current and voltage limiters), Possibility to connect a non-contact end switch or speed reduction switch, 2 safety contacts, switch-off level 1;

13.02.2019

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13:03:59h

## Datasheet - SRB402NE 24V



Guard door monitors and Safety control modules for Emergency Stop applications / General Purpose safety controllers (Series PROTECT SRB) / SRB402NE



- Fit for signal evaluation of outputs of safety magnetic switches (to this end, integrated current and voltage limiters)
- Possibility to connect a non-contact end switch or speed reduction switch
- 2 safety contacts, switch-off level 1;  
2 safety contacts, switch-off level 2
- 2 Signalling outputs

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

### Ordering details

Product type description	SRB402NE 24V
Article number	101178395
EAN Code	4250116202409
Replaced article number	101178530
eCl@ss	27-37-19-01

### Approval

Approval




### Classification

Standards	EN ISO 13849-1, IEC 61508, IEC/EN 60947-1
PL	up e (STOP 0)
Control category	up 4 (STOP 0)
DC	99% (STOP 0)
CCF	> 65 points
PFH value	≤ 2,0 x 10 <sup>-8</sup> /h
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>75.067</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 %	75.067	7,0 min	80 %	30.918	17,0 min	100 %	12.223	43,0 min
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## Global Properties

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Permanent light	SRB402NE
Standards	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	464
Start conditions	Automatic
Start input (Y/N)	No
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)	No
Pull-in delay	
- ON delay with automatic start	typ. 500 ms
Drop-out delay	
- Drop-out delay in case of emergency stop	≤ 50 ms

## Mechanical data

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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
restistance to shock	30 g / 11 ms
Resistance to vibration To EN 60068-2-6	10...55 HZ, Amplitude 0,35 mm, ± 15 %

## Ambient conditions

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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	III To VDE 0110
- Degree of pollution	2 To VDE 0110

## Electromagnetic compatibility (EMC)

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EMC rating	conforming to EMC Directive
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## Electrical data

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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	6 W; 6 VA
Type of actuation	AC/DC
Rated operating voltage $U_e$	24 VDC -15% / +20%, residual ripple max. 10% 24 VAC -15% / +10%
Frequency range	50 / 60 HZ
Electronic protection (Y/N)	No
Fuse rating for the operating voltage	1.0 A slow blow

## Inputs

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<b>Monitored inputs</b>	
- 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	4 piece
Cable length	1500 m with 1.5 mm <sup>2</sup> ; 2500 m with 2.5 mm <sup>2</sup>
Conduction resistance	max. 40 Ω

## Outputs

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Stop category	0
Number of safety contacts	4 piece
Number of auxiliary contacts	0 piece
Number of signalling outputs	2 piece

Switching capacity	
- Switching capacity of the safety contacts	max. 230 VAC, 6 A ohmic (inductive in case of appropriate protective wiring)
- Switching capacity of the auxiliary contacts	230 VAC, 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 / 4 A DC-13: 24 V / 4 A
Note on the utilisation category	
- 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 undelayed semi-conductor outputs with signaling function	0 piece
Number of undelayed outputs with signaling function (with contact)	2 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.	4 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

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LED switching conditions display (Y/N)	Yes
Number of LED's	7
LED switching conditions display	
- The integrated LEDs indicate the following operating states.	
- Position relay K1	
- Position relay K2	
- Position relay K5	
- Position relay K3	
- Position relay K4	
- Supply voltage	
- Internal operating voltage Ui	

## Miscellaneous data

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Applications	 Guard system  Safety sensor
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## Dimensions

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Dimensions	
- Width	45 mm
- Height	100 mm
- Depth	121 mm

## notice

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Inductive loads (e.g. contactors, relays, etc.) are to be suppressed by means of a suitable circuit.

## notice - Wiring example

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The example shows a 2-channel control of a circuit with limit switches

Relay outputs: Suitable for 1 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.

The wiring diagram is shown with non-actuated limit switches and in de-energised condition.

## Documents

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**Operating instructions and Declaration of conformity (jp)** 1 MB, 29.03.2011

Code: mrl\_srb400-402ne\_jp

**Operating instructions and Declaration of conformity (fr)** 675 kB, 19.03.2018

Code: mrl\_srb400-402ne\_fr

**Operating instructions and Declaration of conformity (en)** 668 kB, 16.11.2017

Code: mrl\_srb400-402ne\_en

**Operating instructions and Declaration of conformity (nl)** 645 kB, 07.08.2018

Code: mrl\_srb400-402ne\_nl

**Operating instructions and Declaration of conformity (pt)** 664 kB, 15.01.2018

Code: mrl\_srb400-402ne\_pt

**Operating instructions and Declaration of conformity (pl)** 687 kB, 09.05.2018

Code: mrl\_srb400-402ne\_pl

**Operating instructions and Declaration of conformity (it)** 672 kB, 15.01.2018

Code: mrl\_srb400-402ne\_it

**Operating instructions and Declaration of conformity (es)** 670 kB, 15.01.2018

Code: mrl\_srb400-402ne\_es

**Operating instructions and Declaration of conformity (de)** 656 kB, 16.11.2017

Code: mrl\_srb400-402ne\_de

**Operating instructions and Declaration of conformity (da)** 642 kB, 07.08.2018

Code: mrl\_srb400-402ne\_da

**Wiring example (99)** 21 kB, 04.08.2008

Code: ksr404

**BG-test certificate (de)** 48 kB, 05.10.2006

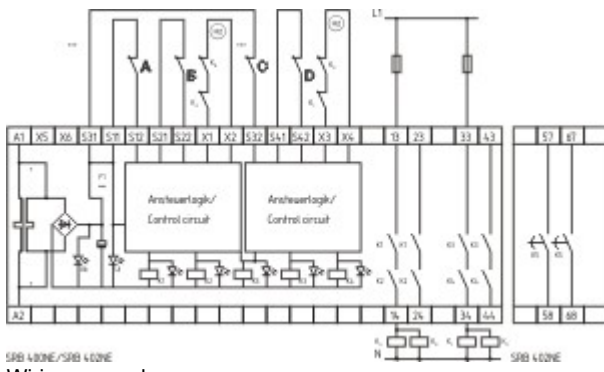
Code: z\_400p01

**EAC certification (ru)** 1 MB, 15.03.2018

Code: q\_aesp01

## Images

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SRB 4.03NE/SRB 4.02NE  
Wiring example

K.A. Schmersal GmbH & Co. KG, Mödinghofe 30, D-42279 Wuppertal  
 The data and values have been checked thoroughly. Technical modifications and errors excepted.  
 Generiert am 13.02.2019 - 13:03:59h Kasbase 3.3.0.F.64I