SRB301MA

- **1 Signalling output**
- **3 safety contacts, STOP 0**
- **Fit for signal evaluation of outputs of safety magnetic switches**
- **Suitable for signal processing of outputs connected to potentials (AOPDs), e.g. safety light grids/curtains**
- **Suitable for signal processing of potential-free outputs, e.g. emergency stop command devices, position switches and solenoid interlocks**

Data

Ordering data	
Product type description	SRB301MA-24V
Article number (order number)	101212415
EAN (European Article Number)	4030661446561
eCl@ss number, Version 9.0	27-37-18-19
Available until	31.12.2022
Replacement article number	101215369
Approval - Standards	
Certificates	TÜV cULus EAC
General data	
Product name	SRB301MA

Standards	IEC 61508 IEC/EN 60204-1 ISO 13849-1 EN 60947-5-1
Climatic stress	EN 60068-2-78
Enclosure material	Glass-fibre reinforced thermoplastic, ventilated
Material of the contacts, electrical	AgSn0, Ag-Ni, self-cleaning, positive drive
Gross weight	250 g

General data - Features

Stop-Category	0
Electronic Fuse	Yes
Wire breakage detection	Yes
Short-circuit recognition	Yes
Start input	Yes
Feedback circuit	Yes
Reset edge detection	Yes
Earth connection detection	Yes
Integral System Diagnostics, status	Yes
Number of auxiliary contacts	1
Number of LEDs	4
Number of openers	2
Number of safety contacts	3

Safety appraisal

Standards	EN 60947-5-1 IEC 61508

Safety appraisal - Relay outputs

Performance level, stop 0, up to	e
Category, Stop 0	4
Diagnostic Coverage (DC) Level, Stop 0	≥ 99 %
PFH-Value Stop 0	2.00×10^{-8} /h
Safety Integrity Level (SIL), Stop 0, applicable for	3

Mission time	20 Year(s)
Common Cause Failure (CCF), minimum	65
Mechanical data	
Mounting	Snaps onto standard DIN rail to EN 60715
Mechanical life, minimum	10,000,000 Operations
Mechanical data - Connection technique	
Terminal Connector	Screw connection rigid or flexible
Terminal designations	IEC/EN 60947-1
Cable section, minimum	0.25 mm²
Cable section, maximum	2.5 mm²
Tightening torque of Clips	0.6 Nm
Mechanical data - Dimensions	
Width	22.5 mm
Height	100 mm
Depth	121 mm
Ambient conditions	
Protection class of the enclosure	IP40
Protection class of the Clearance	IP54
Protection class of Clips or Terminals	IP20
Ambient temperature, minimum	-25 °C
Ambient temperature, maximum	+60 °C
Storage and transport temperature, minimum	-40 °C

Storage and transport temperature, maximum	+85 °C
Resistance to vibrations to EN 60068-2-6	10 ... 55 Hz, Amplitude 0.35 mm
Restistance to shock	30 g / 11 ms
Ambient conditions - Insulation value	
Rated impulse withstand voltage	4 kV
Overvoltage category	III
Degree of pollution to IEC/EN 60664-1	2
Electrical data	
Frequency range	50 Hz 60 Hz
Rated operating voltage	24 VAC -15% / +10% 24 VDC -15% / +20%, residual ripple max. 10 %
Rated AC voltage for controls, 50 Hz, minimum	20.4 VAC
Rated control voltage at AC 50 Hz, maximum	26.4 VAC
Rated AC voltage for controls, 60 Hz, minimum	20.4 VAC
Rated control voltage at AC 60 Hz, maximum	26.4 VAC
Rated AC voltage for controls at DC minimum	20.4 VDC
Rated control voltage at DC, maximum	28.8 VDC
Electrical power consumption	1.8 W
Electrical power consumption	4.4 VA
Contact resistance, maximum	0.1 Ω
Note (Contact resistance)	in new state

Drop-out delay in case of power failure, typically	80 ms
Drop-out delay in case of emergency, typically	20 ms
Pull-in delay at automatic start, maximum, typically	100 ms
Pull-in delay at RESET, typically	20 ms
Electrical data - Safe relay outputs	
Voltage, Utilisation category AC15	230 VAC
Current, Utilisation category AC-15	6 A
Voltage, Utilisation category DC13	24 VDC
Current, Utilisation category DC13	6 A
Switching capacity, minimum	10 VDC
Switching capacity, minimum	10 mA
Switching capacity, maximum	250 VAC
Switching capacity, maximum	8 A
Electrical data - Digital inputs	
Conduction resistance, maximum	40 Ω
Electrical data - Relay outputs (auxiliary contacts)	
Switching capacity, maximum	24 VDC
Switching capacity, maximum	2 A
Electrical data - Electromagnetic compatibility (EMC)	
EMC rating	EMC-Directive
Status indication	

Indicated operating states	Position relay K2 Position relay K1 Internal operating voltage U_i
Other data	
Note (applications)	Safety sensor Guard system Emergency-Stop button Pull-wire emergency stop switches Safety light curtain
Notes	
Note (General)	Inductive loads (e.g. contactors, relays, etc.) are to be suppressed by means of a suitable circuit.
Circuit example	
Note (Wiring diagram)	The wiring diagram is shown with guard doors closed and in de-energised condition. Monitoring 1 guard door(s), each with a magnetic safety sensor of the BNS range To secure a guard door up to PL e and Category 4 The feedback circuit monitors the position of the contactors KA and KB. Switch setting: The cross-wire short detection function (factory default) is programmed by means of the switch located underneath the front cover of the module: Pposition nQS (top): no cross-wire short protection, suitable for 1-channel applications and applications with outputs with potential in the control circuits. Position QS (bottom): cross-wire short protection, suitable for 2-channel applications without outputs with potential in the control circuits. For 1-channel control, connect NC contact to S11/S12 and bridge S12/S22 (QS-switch = nQS) Connect potential p-type outputs of safety light grids/curtains to S12/S22. The devices must have the same reference potential. QS-switch = nQS

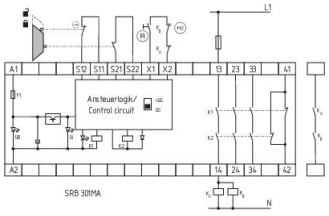
Pictures

Product picture (catalogue individual photo)

ID: ksrb3f30

| 714,1 kB | .jpg | 265.642 x 529.167 mm - 753 x 1500 Pixel - 72 dpi
| 85,1 kB | .png | 74.083 x 147.461 mm - 210 x 418 Pixel - 72 dpi

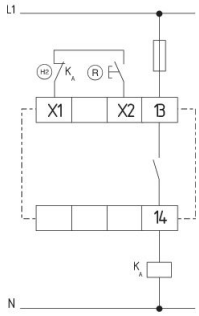
Wiring example



ID: ksrb3l289

| 37,8 kB | .cdr |
| 112,9 kB | .jpg | 352.778 x 226.483 mm - 1000 x 642 Pixel - 72 dpi

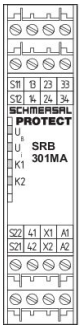
Wiring example



ID: ksrb3l293

| 100,6 kB | .jpg | 352.778 x 601.486 mm - 1000 x 1705 Pixel - 72 dpi

Wiring example



ID: ksrb3l295

| 622,7 kB | .jpg | 352.778 x 1502.833 mm - 1000 x 4260 Pixel - 72 dpi

Symbol (technical standard)

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

ID: kformm02

| 191,1 kB | .jpg | 352.778 x 246.592 mm - 1000 x 699 Pixel - 72 dpi