SRB301ST-24V-(V.3)

- **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	
	SRB301ST-24V-(V.3)
	103002205
eCl@ss number, Version 9.0	27-37-18-19
Available until	31.12.2022
Approval - Standards	
	TÜV cULus CCC EAC TILVA
General data	
	SRB301ST
	IEC 61508 IEC/EN 60204-1 ISO 13849-1 EN 60947-5-1 EN 81-20/-50 EN 60068-2-78
Enclosure material	Glass-fibre reinforced thermoplastic, ventilated

Material of the contacts, electrical	AgSn0. 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
Removable Terminals	Yes
Start input	Yes
Feedback circuit	Yes
Automatic reset function	Yes
Reset edge detection	Yes
Earth connection detection	Yes
Integral System Diagnostics, status	Yes
Number of auxiliary contacts	1
Number of LEDs	5
Number of openers	2
Number of safety contacts	3

Safety appraisal	
	ISO 13849-1 EN 62061 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, plug-in rigid or flexible
Terminal designations	IEC/EN 60947-1
	0.25 mm²
	2.5 mm²
Tightening torque of Clips	0.6 Nm
Mechanical data - Dimensions	
Width	22.5 mm
Height	120 mm
Depth	121 mm
Ambient conditions	
	IP40
	IP54
	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

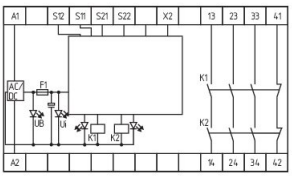
	30 g / 11 ms
Ambient conditions - Insulation value	
Rated impulse withstand voltage	4 kV
	III
	2
Electrical data	
Frequency range	60 Hz
	24 VAC -15% / +10%
Rated AC voltage for controls, 50 Hz, minimum	20.4 VAC
Rated control voltage at AC 50 Hz, maximum	26.4 VAC
Rated AC voltage for controls, 60 Hz, 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	2 W
Electrical power consumption	4.9 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	
Note (LED switching conditions display)	QS: cross-wire short detection status (LED on when cross-wire short detection active).
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 barriers
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. 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) and feedback circuit (H2). 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. The control recognises cross-short, cable break and earth leakages in the monitoring circuit. 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 Automatic start: The automatic start is programmed by connecting the feedback circuit to the terminals S12/X3. If the feedback circuit is not required, establish a bridge. F1 = Hybrid fuse

Pictures

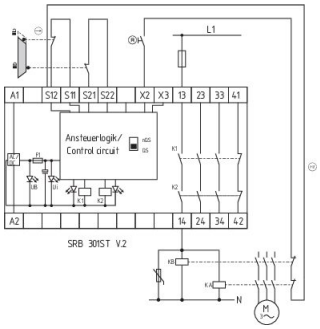
Photo/Product/Catalogue	
	ID: ksrb3f04 | 101,1 kB | .png | 74.083 x 173.919 mm - 210 x 493 Pixel - 72 dpi | 808,3 kB | .jpg | 265.994 x 625.122 mm - 754 x 1772 Pixel - 72 dpi
Graphic/Product/Wiring	



ID: 1srb3l05

| 96,2 kB | .jpg | 352.778 x 248.003 mm - 1000 x 703 Pixel - 72 dpi
| 69,6 kB | .cdr |

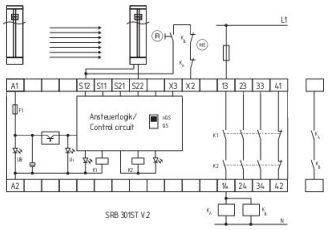
Graphic/Product/Wiring



ID: ksrb3l05

| 44,5 kB | .cdr |
| 161,4 kB | .jpg | 352.778 x 360.892 mm - 1000 x 1023 Pixel - 72 dpi

Graphic/Product/Wiring



ID: ksrb3l26

| 125,5 kB | .jpg | 352.778 x 241.3 mm - 1000 x 684 Pixel - 72 dpi
| 36,4 kB | .cdr |

Graphic/Product/Icon

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