



SRB301ST-24V-(V.2)

- 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.2)
	103006151
EAN (European Article Number)	4030661521589
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	$\geq 99 \%$
PFH-Value Stop 0	$2.00 \times 10^{-8} /h$
Safety Integrity Level (SIL), Stop 0, applicable for	3

Mission time	20 Year(s)
Common Cause Failure (CCF), minimum	65

Mechanical data

Mounting	Snap 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 mm ²
	2.5 mm ²
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, 20.4 VAC
minimum

Rated control
voltage at AC 50 Hz, 26.4 VAC
maximum

Rated AC voltage for
controls, 60 Hz, 20.4 VAC
minimum

Rated control
voltage at AC 60 Hz, 26.4 VAC
maximum

Rated AC voltage for
controls at DC 20.4 VDC
minimum

Rated control
voltage at DC, 28.8 VDC
maximum

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 80 ms
failure, typically

Drop-out delay in
case of emergency, 20 ms
typically

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: P position 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

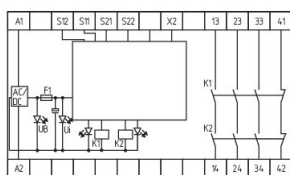
| 101,1 kB | .png | 74.083 x 173.919 mm - 210 x 493

Pixel - 72 dpi

| 808,3 kB | .jpg | 265.994 x 625.122 mm - 754 x 1772

Pixel - 72 dpi

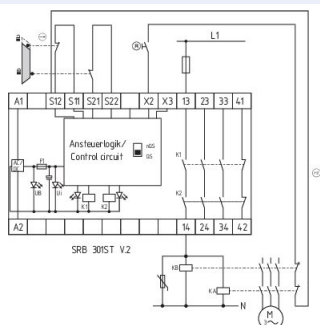
Graphic/Product/Wiring



ID: 1srb3l05

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

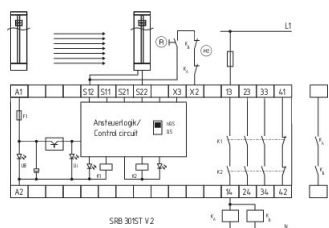
Graphic/Product/Wiring



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

K.A. Schmersal GmbH & Co. KG, Möddinghofe 3, D-42279 Wuppertal

The details and data referred to have been carefully checked. Images may diverge from original. Further technical data can be found in the manual. Technical amendments and errors possible.

Generated on 062021-01-31T12:25:06+01:001201Europe/BerlinSun, 31 Jan 2021 12:25:06

+010006pmSunday.31pm31Europe/BerlinCET2501Europe/BerlinJanuary2021Sun, 31 Jan 2021 12:25:06

+010001pm31