



## SRB400CS/T 24VDC

- Level 1: Reset with edge detection, Level 2: / Opener (NC) Opener (NC)
- Two-functions safety monitoring module (double evaluation)
- 2 x 2 enabling paths with different shut-down behaviour, e.g. emergency exit opens both enabling paths (level 1); guard door monitoring only opens the second enabling path (level 2)
- Suitable for signal processing of potential-free contacts, e.g. Emergency Stop command devices (level 1), position switches with safety function, solenoid interlocks and safety sensors (level 2)

## Data

### Ordering data

EAN (European Article Number)	4250116201921
eCl@ss number, Version 9.0	27-37-18-19
eCl@ss number, Version 11.0	27-37-18-19
ETIM number, version 6.0	EC001449
Replacement article number	101177161
Available until	31.12.2022

### Approval - Standards

Certificates	cULus EAC
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## General data

Standards	IEC 61508 IEC/EN 60204-1 EN 60947-5-1 EN ISO 13849-1
Climatic stress	EN 60068-2-78
Enclosure material	Glass-fibre reinforced thermoplastic, ventilated
Material of the contacts, electrical	Ag-Ni, self-cleaning, positive drive
Gross weight	235 g

## General data - Features

Stop-Category	0
Electronic Fuse	Yes
Wire breakage detection	Yes
Removable Terminals	Yes
Start input	Yes
Feedback circuit	Yes
Reset edge detection	Yes
Earth connection detection	Yes
Integral System Diagnostics, status	Yes
Number of inputs for NC	2
Number of inputs for NO	2
Number of LEDs	6
Number of safety contacts	4

## Safety appraisal

Standards	EN 60947-5-1 IEC 61508
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## 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, suitable for applications in	3
Mission time	20 Year(s)
Common Cause Failure (CCF), minimum	65

## Mechanical data

Mechanical life, minimum	10,000,000 Operations
Mounting	Snap onto standard DIN rail to EN 60715

## Mechanical data - Connection technique

Terminal Connector	Screw connection rigid or flexible
Terminal designations	IEC/EN 60947-1
Cable section, minimum	0.25 mm <sup>2</sup>
Cable section, maximum	2.5 mm <sup>2</sup>
Tightening torque of Clips	0.6 Nm

## Mechanical data - Dimensions

Width	22.5 mm
Height	100 mm
Depth	121 mm

## Ambient conditions

Degree of protection of the enclosure	IP40
Degree of protection of the mounting space	IP54
Degree of protection of clips or terminals	IP20
Ambient temperature, minimum	-25 °C
Ambient temperature, maximum	+45 °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
Resistance to shock	10 g / 11 ms

## Ambient conditions - Insulation value

Rated impulse withstand voltage $U_{imp}$	4 kV
Overvoltage category	III
Degree of pollution to IEC/EN 60664-1	2

## Electrical data

Rated operating voltage	24 VDC -15%/+20%, residual ripple max. 10%
Rated AC voltage for controls at DC minimum	20.4 VDC
Rated control voltage at DC, maximum	28.8 VDC

Electrical power consumption	4.4 W
Contact resistance, maximum	0.1 $\Omega$
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
ON delay at automatic start	Adjustable
Pull-in delay at RESET, typically	20 ms

### Electrical data - Safe relay outputs

Voltage, Utilisation category AC15	250 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
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**Electrical data - Relay outputs (auxiliary contacts)**

Switching capacity, maximum	24 VDC
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Switching capacity, maximum	2 A
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**Electrical data - Electromagnetic compatibility (EMC)**

EMC rating	EMC-Directive
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**Status indication**

Indicated operating states	Position relay K2
	Position relay K1
	Internal operating voltage U <sub>i</sub>
	Position relay K3

**Other data**

Note (applications)	Safety sensor
	Guard system
	Pull-wire emergency stop switches
	Emergency stop button

**Notes**

Note (General)	Inductive loads (e.g. contactors, relays, etc.) are to be suppressed by means of a suitable circuit.
Note (Short-circuit recognition)	Level 1

**Circuit example**

Note (Wiring diagram)

The wiring diagram is shown with guard doors closed and in de-energised condition.  
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.

Input level: the example shows a 2-channel control of an Emergency Stop command device (level 1) with external reset button (R), and guard door monitoring (level 2) with feedback circuit (H2).

Automatic start (level 1): The automatic start is programmed by connecting the feedback circuit to the terminals X1/+24 V DC. Automatic start (level 2): The automatic start is programmed by connecting the feedback circuit to the terminals X2/+24 V DC. If the feedback circuit is not required, establish a bridge.

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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.

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