



## SRB-E-232ST

- STOP 0 / 1 Function
- 1 oder 2-channel control
- 2 Safety outputs STOP 0
- 3 safety contacts STOP 1
- Drop-out delay 0 ... 30

## Data

### Ordering data

|                               |               |
|-------------------------------|---------------|
| Product type description      | SRB-E-232ST   |
| Article number (order number) | 103014308     |
| EAN (European Article Number) | 4030661500270 |
| 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      |

### Approval - Standards

|              |                     |
|--------------|---------------------|
| Certificates | TÜV<br>cULus<br>EAC |
|--------------|---------------------|

### General data

|                                      |                                                                               |
|--------------------------------------|-------------------------------------------------------------------------------|
| Standards                            | IEC 61508<br>IEC/EN 60204-1<br>EN 60947-5-1<br>IEC/EN 62061<br>EN ISO 13849-1 |
| Enclosure material                   | Glass-fibre reinforced thermoplastic, ventilated                              |
| Material of the contacts, electrical | Ag-Ni, self-cleaning, positive drive                                          |

|              |       |
|--------------|-------|
| Gross weight | 170 g |
|--------------|-------|

## General data - Features

|                                         |        |
|-----------------------------------------|--------|
| Stop-Category                           | 0<br>1 |
| 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    |
| Integral System Diagnostics, error code | Yes    |
| Number of auxiliary contacts            | 1      |
| Number of LEDs                          | 6      |
| Number of openers                       | 2      |
| Number of shutters                      | 1      |
| Number of Safety contacts, STOP 1       | 3      |
| Number of fail-safe outputs, Stop 0     | 2      |
| Number of signalling outputs            | 1      |

## Safety appraisal

|           |                                          |
|-----------|------------------------------------------|
| Standards | IEC 62061<br>IEC 61508<br>EN ISO 13849-1 |
|-----------|------------------------------------------|

## Safety appraisal - Relay outputs

|                                |        |
|--------------------------------|--------|
| Performance Level, up to       | e      |
| Control category to EN13849    | 4      |
| Diagnostic Coverage (DC) Level | > 94 % |

|                                                            |                            |
|------------------------------------------------------------|----------------------------|
| PFH-value                                                  | 1.25 x 10 <sup>-8</sup> /h |
| PFD value                                                  | 5.30 x 10 <sup>-5</sup>    |
| Safety Integrity Level (SIL), suitable for applications in | 3                          |
| Mission time                                               | 20 Year(s)                 |
| Common Cause Failure (CCF), minimum                        | 65                         |

### Safety appraisal - Fail-safe digital outputs

|                                                            |                            |
|------------------------------------------------------------|----------------------------|
| Performance level, up to                                   | e                          |
| Control category to EN13849                                | 4                          |
| PFH-value                                                  | 2.66 x 10 <sup>-9</sup> /h |
| PFD value                                                  | 2.42 x 10 <sup>-5</sup>    |
| Safety Integrity Level (SIL), suitable for applications in | 3                          |
| Mission time                                               | 20 Year(s)                 |

### Mechanical data

|                          |                                          |
|--------------------------|------------------------------------------|
| Mechanical life, minimum | 10,000,000 Operations                    |
| Mounting                 | Snaps onto standard DIN rail to EN 60715 |

### Mechanical data - Connection technique

|                            |                                                |
|----------------------------|------------------------------------------------|
| Terminal Connector         | Screw connection, plug-in<br>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 | 0.5 Nm                                         |

### Mechanical data - Dimensions

|        |         |
|--------|---------|
| Width  | 22.5 mm |
| Height | 98 mm   |
| Depth  | 115 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               | +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 |
| Resistance to shock                        | 30 g / 11 ms                    |

## Ambient conditions - Insulation value

|                                                                 |        |
|-----------------------------------------------------------------|--------|
| Rated impulse withstand voltage, relay output $U_{imp}$         | 4 kV   |
| Rated impulse withstand voltage, semiconductor output $U_{imp}$ | 0.8 kV |
| Overvoltage category                                            | III    |
| Degree of pollution to IEC/EN 60664-1                           | 2      |

## Electrical data

|                                                      |                                            |
|------------------------------------------------------|--------------------------------------------|
| Rated operating voltage                              | 24 VDC -20%/+20%, residual ripple max. 10% |
| Rated AC voltage for controls at DC minimum          | 19.2 VDC                                   |
| Rated control voltage at DC, maximum                 | 28.8 VDC                                   |
| Electrical power consumption                         | 3 W                                        |
| Contact resistance, maximum                          | 0.1 $\Omega$                               |
| Note (Contact resistance)                            | in new state                               |
| Drop-out delay in case of power failure, typically   | 10 ms                                      |
| Drop-out delay in case of emergency, typically       | 10 ms                                      |
| Pull-in delay at automatic start, maximum, typically | 150 ms                                     |
| Pull-in delay at RESET, typically                    | 150 ms                                     |
| Switching frequency, maximum                         | 0.3 Hz                                     |

### Electrical data - Fail-safe digital outputs

|                                    |        |
|------------------------------------|--------|
| Voltage drop $U_d$ , maximum       | 0.5 V  |
| Current leakage $I_r$              | 1 mA   |
| Voltage, Utilisation category DC12 | 24 VDC |
| Current, Utilisation category DC12 | 2 A    |
| Voltage, Utilisation category DC13 | 24 VDC |
| Current, Utilisation category DC13 | 2 A    |

### Electrical data - Safe relay outputs

|                                     |         |
|-------------------------------------|---------|
| Voltage, Utilisation category, AC15 | 230 VAC |
| Current, Utilisation category, AC15 | 4 A     |
| Voltage, Utilisation category, DC13 | 24 VDC  |
| Current, Utilisation category, DC13 | 4 A     |
| Switching capacity, minimum         | 10 VDC  |
| Switching capacity, minimum         | 10 mA   |
| Switching capacity, maximum         | 250 VAC |
| Switching capacity, maximum         | 6 A     |

### Electrical data - Digital inputs

|                                |             |
|--------------------------------|-------------|
| Conduction resistance, maximum | 40 $\Omega$ |
|--------------------------------|-------------|

### Electrical data - Digital Output

|                                    |        |
|------------------------------------|--------|
| Voltage, Utilisation category DC12 | 24 VDC |
| Current, Utilisation category DC12 | 0.1 A  |

### Electrical data - Relay outputs (auxiliary contacts)

|                             |        |
|-----------------------------|--------|
| Switching capacity, maximum | 24 VDC |
| Switching capacity, maximum | 1 A    |

## Electrical data - Electromagnetic compatibility (EMC)

EMC rating

EMC-Directive

## Other data

Note (applications)

Safety sensor  
Guard system  
hinged safety guard  
Emergency-Stop button  
Pull-wire emergency stop switches  
Safety light curtain  
Safety light barriers

## Pictures

### Product picture (catalogue individual photo)

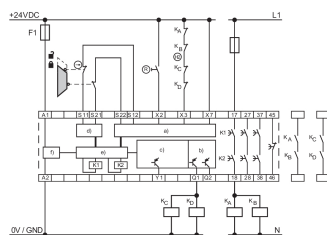


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| 1.0 MB | .jpg | 281.869 x 655.814 mm - 799 x 1859 px - 72 dpi

| 125.1 kB | .png | 74.083 x 172.156 mm - 210 x 488 px - 72 dpi

### Wiring example



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| 310.5 kB | .ai | 297 x 210.002 mm - 841 x 595 px - 72 dpi

| 127.3 kB | .jpg | 352.778 x 248.356 mm - 1000 x 704 px - 72 dpi

K.A. Schmersal GmbH & Co. KG, Möddinghofe 30, 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.

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