

## Datasheet - SRB 207AN-230V

Guard door monitors and Safety control modules for  
Emergency Stop applications / General Purpose safety  
controllers (Series PROTECT SRB) / SRB 207AN



- Fit for signal evaluation of outputs of safety magnetic switches
- 2 safety contacts, STOP 0
- 6 Signalling outputs
- Multi-evaluation of up to 6 safety guards
- Suitable for signal processing of potential-free outputs, e.g. emergency stop command devices, position switches and solenoid interlocks

(Minor differences between the printed image and the original product may exist!)

### Ordering details

|                          |                |
|--------------------------|----------------|
| Product type description | SRB 207AN-230V |
| Article number           | 1196817        |
| EAN code                 | 4030661365022  |

### Approval

Approval



### Classification


|                  |                                         |
|------------------|-----------------------------------------|
| Standards        | EN ISO 13849-1, IEC 61508, EN 60947-5-1 |
| PL               | up d (STOP 0)                           |
| Control category | up 3 (STOP 0)                           |
| DC               | > 60% (STOP 0)                          |
| CCF              | > 65 points                             |
| PFH value        | $\leq 2 \times 10^{-7}/h$ (STOP 0)      |
| SIL              | up 2 (STOP 0)                           |

|              |                                                                                                                                                                                                                                                                                                                                                             |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mission time | 20 Years                                                                                                                                                                                                                                                                                                                                                    |
| - notice     | The PFH value is applicable for the combinations listed in the table for contact load (K) (current through enabling paths) and switching cycle number (n-op/y). In case of 365 operating days per year and a 24-hour operation, this results in the specified switching cycle times (t-cycle) for the relay contacts.<br>Diverging applications on request. |



## Global Properties

---

|                                                                                                                        |                                                           |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Product name                                                                                                           | SRB 207AN                                                 |
| Standards                                                                                                              | IEC/EN 60204-1, EN 60947-5-1, EN ISO 13849-1, IEC 61508   |
| Compliance with the Directives (Y/N)  | Yes                                                       |
| Climatic stress                                                                                                        | EN 60068-2-78                                             |
| Mounting                                                                                                               | snaps onto standard DIN rail to EN 60715                  |
| Terminal designations                                                                                                  | IEC/EN 60947-1                                            |
| Materials                                                                                                              |                                                           |
| - Material of the housings                                                                                             | Plastic, glass-fibre reinforced thermoplastic, ventilated |
| - Material of the contacts                                                                                             | , self-cleaning, positive action                          |
| Weight                                                                                                                 | 400 g                                                     |
| Start conditions                                                                                                       | Automatic or Start button (Optional monitored)            |
| Start input (Y/N)                                                                                                      | Yes                                                       |
| Feedback circuit (Y/N)                                                                                                 | Yes                                                       |
| Start-up test (Y/N)                                                                                                    | No                                                        |
| Reset after disconnection of supply voltage (Y/N)                                                                      | No                                                        |
| Automatic reset function (Y/N)                                                                                         | Yes                                                       |
| Reset with edge detection (Y/N)                                                                                        | Yes                                                       |
| Pull-in delay                                                                                                          |                                                           |
| - ON delay with automatic start                                                                                        | 120 ms                                                    |
| - ON delay with reset button                                                                                           | 30 ms                                                     |
| Drop-out delay                                                                                                         |                                                           |
| - Drop-out delay in case of emergency stop                                                                             | ≤ 20 ms                                                   |

## Mechanical data

---

|                                         |                                       |
|-----------------------------------------|---------------------------------------|
| Connection type                         | Screw connection                      |
| Cable section                           |                                       |
| - Min. Cable section                    | 0,25 mm <sup>2</sup>                  |
| - Max. Cable section                    | 2.5 mm <sup>2</sup>                   |
| Pre-wired cable                         | rigid or flexible                     |
| Tightening torque for the terminals     | 0,6 Nm                                |
| Detachable terminals (Y/N)              | Yes                                   |
| Mechanical life                         | 10.000.000 operations                 |
| Electrical lifetime                     | Derating curve available on request   |
| restistance to shock                    | 30 g / 11 ms                          |
| Resistance to vibration To EN 60068-2-6 | 10...55 Hz, Amplitude 0,35 mm, ± 15 % |

## Ambient conditions

---

Ambient temperature

|                                                         |                |
|---------------------------------------------------------|----------------|
| - Min. environmental temperature                        | -25 °C         |
| - Max. environmental temperature                        | +45 °C         |
| Storage and transport temperature                       |                |
| - Min. Storage and transport temperature                | -40 °C         |
| - Max. Storage and transport temperature                | +85 °C         |
| Protection class                                        |                |
| - Protection class-Enclosure                            | IP40           |
| - Protection class-Terminals                            | IP20           |
| - Protection class-Clearance                            | IP54           |
| Air clearances and creepage distances To IEC/EN 60664-1 |                |
| - Rated impulse withstand voltage $U_{imp}$             | 4 kV           |
| - Overvoltage category                                  | II To VDE 0110 |
| - Degree of pollution                                   | 2 To VDE 0110  |

### Electromagnetic compatibility (EMC)

---

|            |                             |
|------------|-----------------------------|
| EMC rating | conforming to EMC Directive |
|------------|-----------------------------|

### Electrical data

---

|                                             |                                                                                                                          |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Rated DC voltage for controls               |                                                                                                                          |
| - Min. rated DC voltage for controls        | -                                                                                                                        |
| - Max. rated DC voltage for controls        | -                                                                                                                        |
| Rated AC voltage for controls, 50 Hz        |                                                                                                                          |
| - Min. rated AC voltage for controls, 50 Hz | 48 V                                                                                                                     |
| - Max. rated AC voltage for controls, 50 Hz | 240 V                                                                                                                    |
| Rated AC voltage for controls, 60 Hz        |                                                                                                                          |
| - Min. rated AC voltage for controls, 60 Hz | 48 V                                                                                                                     |
| - Max. rated AC voltage for controls, 60 Hz | 240 V                                                                                                                    |
| Contact resistance                          | max. 100 mΩ                                                                                                              |
| Power consumption                           | 6.8 VA, plus signalling outputs Y1...Y6                                                                                  |
| Type of actuation                           | AC                                                                                                                       |
| Switch frequency                            | max. 3 Hz                                                                                                                |
| Rated operating voltage $U_e$               | 48 ... 240 VAC                                                                                                           |
| Operating current $I_e$                     | 0,11 A                                                                                                                   |
| Frequency range                             | 50 / 60 Hz                                                                                                               |
| Electronic protection (Y/N)                 | Yes                                                                                                                      |
| Fuse rating for the operating voltage       | secondary side: Internal electronic trip, tripping current > 0,12 A<br>primary side: Safety fuse, tripping current > 1 A |

### Inputs

---

#### Monitored inputs

|                                    |                                                                      |
|------------------------------------|----------------------------------------------------------------------|
| - Short-circuit recognition (Y/N)  | Yes                                                                  |
| - Wire breakage detection (Y/N)    | Yes                                                                  |
| - Earth connection detection (Y/N) | Yes                                                                  |
| Number of shutters                 | 6 piece                                                              |
| Number of openers                  | 6 piece                                                              |
| Cable length                       | 1500 m with 1.5 mm <sup>2</sup> ;<br>2500 m with 2.5 mm <sup>2</sup> |
| Conduction resistance              | max. 40 Ω                                                            |

## Outputs

---

|                                                                            |                                                                               |
|----------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Stop category                                                              | 0                                                                             |
| Number of safety contacts                                                  | 2 piece                                                                       |
| Number of auxiliary contacts                                               | 1 piece                                                                       |
| Number of signalling outputs                                               | 6 piece                                                                       |
| Switching capacity                                                         |                                                                               |
| - Switching capacity of the safety contacts                                | max. 230 VAC, 6 A ohmic ( inductive in case of appropriate protective wiring) |
| - Switching capacity of the auxiliary contacts                             | 24 VDC; 2 A                                                                   |
| - Switching capacity of the signaling/diagnostic outputs                   | Y1...Y6: 24 VDC, 20 mA                                                        |
| Fuse rating                                                                |                                                                               |
| - Protection of the safety contacts                                        | 6.3 A slow blow                                                               |
| - Fuse rating for the auxiliary contacts                                   | 2 A slow blow                                                                 |
| - Fuse rating for the signaling/diagnostic outputs                         | Internal electronic trip, tripping current > 0,2 A                            |
| Utilisation category To EN 60947-5-1                                       | AC-15: 230 V / 6 A<br>DC-13: 24 V / 6 A                                       |
| Number of undelayed semi-conductor outputs with signaling function         | 0 piece                                                                       |
| Number of undelayed outputs with signaling function (with contact)         | 7 piece                                                                       |
| Number of delayed semi-conductor outputs with signaling function.          | 0 piece                                                                       |
| Number of delayed outputs with signalling function (with contact).         | 0 piece                                                                       |
| Number of secure undelayed semi-conductor outputs with signaling function  | 0 piece                                                                       |
| Number of secure, undelayed outputs with signaling function, with contact. | 2 piece                                                                       |
| Number of secure, delayed semi-conductor outputs with signaling function   | 0 piece                                                                       |
| Number of secure, delayed outputs with signaling function (with contact).  | 0 piece                                                                       |

## LED switching conditions display

---

|                                                                |         |
|----------------------------------------------------------------|---------|
| LED switching conditions display (Y/N)                         | Yes     |
| Number of LED's                                                | 3 piece |
| LED switching conditions display                               |         |
| - The integrated LEDs indicate the following operating states. |         |
| - Position relay K1                                            |         |
| - Position relay K2                                            |         |
| - Internal operating voltage $U_i$                             |         |

## Miscellaneous data

---

Applications



Emergency-Stop button



Pull-wire emergency stop switches



Guard system



Safety sensor

## Dimensions

---

### Dimensions

|          |        |
|----------|--------|
| - Width  | 45 mm  |
| - Height | 100 mm |
| - Depth  | 121 mm |

## notice

---

Inductive loads (e.g. contactors, relays, etc.) are to be suppressed by means of a suitable circuit.

## notice - Wiring example

---

To secure 6 guard doors up to PL d and Category 3

Monitoring 6 guard door(s), each with a magnetic safety sensor of the BNS range

Start button (S) with edge detection

The feedback circuit monitors the position of the contactors K3 and K4.

**Automatic start:** The automatic start is programmed by connecting the feedback circuit to the terminals X1/X3. If the feedback circuit is not required, establish a bridge

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

## Documents

---

**Operating instructions and Declaration of conformity** (es) 455 kB, 20.01.2011

Code: mrl\_srb207an-230v\_es

**Operating instructions and Declaration of conformity** (fr) 457 kB, 20.01.2011

Code: mrl\_srb207an-230v\_fr

**Operating instructions and Declaration of conformity** (it) 455 kB, 20.01.2011

Code: mrl\_srb207an-230v\_it

**Operating instructions and Declaration of conformity** (nl) 458 kB, 20.01.2011

Code: mrl\_srb207an-230v\_nl

**Operating instructions and Declaration of conformity** (jp) 551 kB, 05.07.2011

Code: mrl\_srb207an-230v\_jp

**Operating instructions and Declaration of conformity** (de) 903 kB, 25.06.2010

Code: mrl\_srb207an-230v\_de

**Operating instructions and Declaration of conformity** (en) 847 kB, 22.02.2010

Code: mrl\_srb207an-230v\_en

**Wiring example** (99) 18 kB, 04.08.2008

Code: ksr2114

## Images

---



Wiring example

---

K.A. Schmersal GmbH, Möddinghofe 30, D-42279 Wuppertal  
The data and values have been checked thoroughly. Technical modifications and errors excepted.  
Generiert am 28.09.2011 - 14:05:34h Kasbase 1.5.5 DBI