

Datasheet - RSS 36-SD-ST

Safety sensors / RSS 36



- Thermoplastic enclosure
- Misaligned actuation possible
- 27 mm x 108.2 mm x 35 mm
- High repeat accuracy of the switching points
- 2 short-circuit proof PNP safety outputs
- Integral cross-short, wire-breakage and external voltage monitoring of the safety cables up to the control cabinet
-
- 1 x connector socket M12, 8-pole
- Actuation from side
- Max. 31 sensors can be wired in series.
- serial diagnostic output

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

Ordering details

| | |
|--------------------------|---------------|
| Product type description | RSS 36-SD-ST |
| Article number | 101214772 |
| EAN code | 4030661413402 |
| eCl@ss | 27-27-24-01 |

Approval

Approval



Classification

| | |
|------------------|--|
| Standards | EN ISO 13849-1, IEC 61508, IEC 60947-5-3, EN 62061 |
| PL | bis e |
| Control category | bis 4 |
| PFH | 2.7 x 10 ⁻¹⁰ /h |
| SIL | 3 |
| Mission time | 20 Years |
| Classification | PDF-M |

Global Properties

| | |
|--|--|
| Product name | RSS 36 |
| Standards | IEC 60947-5-3 |
| Compliance with the Directives (Y/N)  | Yes |
| Suitable for safety functions (Y/N) | Yes |
| Function | Sensor for series wiring |
| Series-wiring | up to 31 components |
| Length of the sensor chain | max. 30 m |
| Mounting | For the assembly of the sensors as well as for flat mounted actuators 25 mm screw length is usually sufficient. The 30 mm long screws are recommended when the actuator is mounted upright and/or when the sealing disks are used. |
| Active principle | RFID |
| Coding | |
| Coding levels according to ISO 14119 | low |
| Materials | |
| - Material of the active surface | Plastic, glass-fibre reinforced thermoplastic |
| - Material of the housings | Plastic, glass-fibre reinforced thermoplastic, self-extinguishing |
| Housing construction form | Block |
| Weight | |
| Input for enabling pushbutton, suitable for automatic start (Y/N) | No |
| Input for reset pushbutton, with edge monitoring (Y/N) | No |
| Diagnostic output (Y/N) | Yes |
| Reaction time | ≤ 100 ms |
| Duration of risk | ≤ 200 ms |
| Time to readiness | ≤ 5 s |
| Cascadable (Y/N) | Yes |
| Recommended actuator | RST 36-1, RST 36-1-R |

Mechanical data

| | |
|--------------------------------------|--|
| Design of electrical connection | Connector M12, 8-pole |
| mechanical installation conditions | not flush |
| Actuating planes | Actuation from side |
| Active area | lateral |
| Switch distance S_n | 12 mm |
| Ensured switch distance ON S_{ao} | 10 mm |
| Ensured switch distance OFF S_{ar} | 16 mm |
| hysteresis | max. 2 mm |
| Repeat accuracy R_R | < 0,5 mm |
| notice | Axial offset: The long side allows for a maximum height misalignment (x) of sensor and actuator of 8 mm (e.g. mounting tolerance or due to guard door sagging). The axial misalignment (y) is max. ± 18 mm. see drawing: Operating principle |
| | minimum distance 100 mm in case of approach from side |
| restistance to shock | 30 g / 11 ms |
| Resistance to vibration | 10 ... 55 Hz, Amplitude 1 mm |
| Latching (Y/N) | No |
| Latching force | - |

Ambient conditions

| | |
|----------------------------------|--------|
| Ambient temperature | |
| - Min. environmental temperature | -25 °C |

| | |
|---|--|
| - Max. environmental temperature | +70 °C |
| Storage and transport temperature | |
| - Min. Storage and transport temperature | -25 °C |
| - Max. Storage and transport temperature | +85 °C |
| Temperature resistance cable | |
| - min. Temperature resistance | -30 °C in position of rest, -10 °C in Movement |
| - max. Temperature resistance | +105 °C |
| Protection class | IP65, IP67 to IEC/EN 60529 IP69K to DIN 40050-9 |
| Protection rating | II |
| Air clearances and creepage distances To IEC/EN 60664-1 | |
| - Rated impulse withstand voltage U_{imp} | 0,8 kV |
| - Overvoltage category | III |
| - Degree of pollution | 3 |

Electromagnetic compatibility (EMC)

| | |
|-----------------------|------------------|
| EMC rating | to IEC 60947-3 |
| Interfering radiation | to IEC 61000-6-4 |

Electrical data

| | |
|--|---|
| Cross circuit/short circuit recognition possible (Y/N) | Yes |
| Voltage type | DC |
| Switch frequency | 1 Hz |
| Rated insulation voltage U_i | 32 VDC |
| Rated operating voltage U_e (stabilised PELV) | |
| - Min. Rated operating voltage | 20.4 VDC |
| - Max. Rated operating voltage | 26.4 VDC |
| Operating current I_e | 0,6 A |
| No-load current I_0 | 0,1 A |
| Required rated short-circuit current notice | 100 A |
| | The cable section of the interconnecting cable must be observed for both wiring variants! Cable length and cable section alter the voltage drop depending on the output current |

Electrical data - Safety inputs

| | |
|-------------------------------|--------------------|
| Safety inputs | X1 and X2 |
| Rated operating voltage U_e | 24 VDC -15% / +10% |

Electrical data - Safety outputs

| | |
|--|---------------------|
| Safety outputs | Y1 and Y2 |
| Fuse rating | short-circuit proof |
| Design of control output | p-type |
| Number of secure semi-conductor outputs | 2 piece |
| Voltage drop U_d | < 1 V |
| Max. output current at secured output | 0,25 A |
| Rated operating voltage | min. ($U_e - 1$ V) |
| Residual current I_r | $\leq 0,5$ mA |
| Operating current I_e | max. 0,25 A |
| - Ambient temperature: -25 °C ... +70 °C | $\leq 0,1$ A |
| Minimum operating current I_m | 0,5 mA |
| - Ambient temperature: -25 °C ... +65 °C | $\leq 0,25$ A |

| | |
|----------------------|--|
| Utilisation category | DC-12: 24 V / 0,25 A DC-13: 24 V / 0,25 A |
|----------------------|--|

Electrical data - Diagnostic output

| | |
|--|--|
| Serial diagnostics (Y/N) | Yes |
| Fuse rating | short-circuit proof |
| Design of control output | p-type |
| Number of semi-conductor outputs with signaling function | 1 piece |
| Rated operating voltage | $U_e < 2 \text{ V}$ |
| Operating current I_e | max. 0,05 A |
| Utilisation category | DC-12: 24 V / 0,05 A DC-13: 24 V / 0,05 A |
| Wiring capacitance for serial diagnostics | 50 nF |

LED switching conditions display

| | |
|--|---------------------|
| LED switching conditions display (Y/N) | Yes |
| Number of LED's | 3 piece |
| green LED | Supply voltage |
| red LED | Error |
| yellow LED | switching condition |

ATEX

| | |
|---|------|
| Explosion protection categories for gases | None |
| Explosion protected category for dusts | None |

Dimensions

| | |
|--------------------------|----------|
| Dimensions of the sensor | |
| - Width of sensor | 106.3 mm |
| - Height of sensor | 25 mm |
| - Length of sensor | 22 mm |

Pin assignment

| | |
|----------------------------------|--------|
| 1 - A1 U_e | Brown |
| 2 - X1 Safety input 1 | White |
| 3 - A2 GND | Blue |
| 4 - Y1 Safety output 1 | Black |
| 5 - serial diagnostic output OUT | Grey |
| 6 - X2 Safety input 2 | violet |
| 7 - Y2 Safety output 2 | red |
| 8 - IN serial diagnostic input | Pink |

notice

| | |
|---|---|
| Requirements for the safety monitoring module | 2-channel safety input, suitable for p-type sensors with NO function. The safety monitoring module must tolerate internal functional tests of the sensors with cyclic switch-off of the sensor outputs for max. 0,25 ms. The safety monitoring module does not need to have a cross-wire short monitoring function. |
|---|---|

Included in delivery

Actuators must be ordered separately.

Ordering code

RSS 36 (1)-(2)-(3)-(4)

| | | |
|----------------|--|--|
| (1) | | |
| <i>without</i> | | Included in standard version Coding |
| I1 | | Individual coding |
| I2 | | Individual coding, |
| (2) | | |
| D | | with Diagnostic output |
| SD | | with serial diagnostic function |
| (3) | | |
| <i>without</i> | | without latching |
| R | | with latching, Latching force approx. 18 N |
| (4) | | |
| <i>without</i> | | with Pre-wired cable 2 m |
| ST | | with connector plug M12 |

Documents

Operating instructions and Declaration of conformity (pl) 448 kB, 08.04.2014

Code: mrl_rss36_pl

Operating instructions and Declaration of conformity (fr) 460 kB, 08.10.2012

Code: mrl_rss36_fr

Operating instructions and Declaration of conformity (jp) 592 kB, 26.06.2014

Code: mrl_rss36_jp

Operating instructions and Declaration of conformity (de) 532 kB, 31.01.2012

Code: mrl_rss36_de

Operating instructions and Declaration of conformity (pt) 436 kB, 08.04.2014

Code: mrl_rss36_pt

Operating instructions and Declaration of conformity (cn) 610 kB, 30.04.2015

Code: mrl_rss36_cn

Operating instructions and Declaration of conformity (sv) 426 kB, 02.03.2015

Code: mrl_rss36_sv

Operating instructions and Declaration of conformity (it) 650 kB, 22.02.2012

Code: mrl_rss36_it

Operating instructions and Declaration of conformity (es) 461 kB, 04.06.2012

Code: mrl_rss36_es

Operating instructions and Declaration of conformity (nl) 462 kB, 08.11.2012

Code: mrl_rss36_nl

Operating instructions and Declaration of conformity (en) 528 kB, 18.01.2012

Code: mrl_rss36_en

TÜV certification (de, en) 5 MB, 16.02.2015

Code: z_rssp01

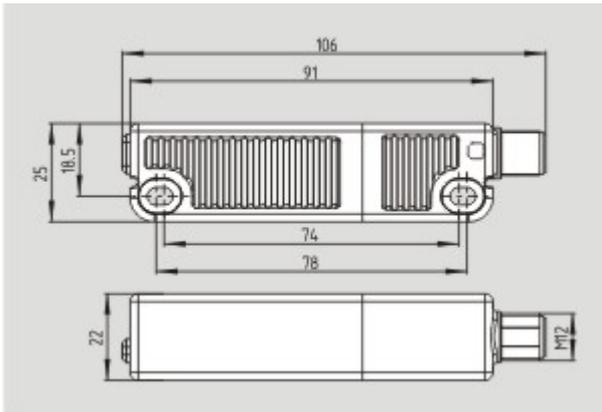
ECOLAB certification (de) 403 kB, 08.07.2011

Code: q_rssp01

ECOLAB certification (en) 383 kB, 08.07.2011

Code: q_rssp02

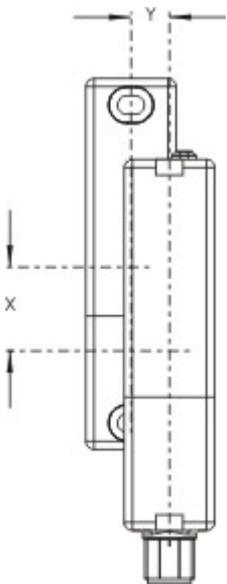
Images



Dimensional drawing (basic component)



Contact arrangement



Product graph

System components

Actuator



101213821 - RST 36-1-R

- Actuation from side
- with latching magnet
- Simple flexible mounting and adjustment



101213820 - RST 36-1

- Actuation from side
- Simple flexible mounting and adjustment

Accessories



101215048 - ACC RSS 36-SK

- to seal the mounting holes and as spacer (approx. 3 mm) to facilitate the cleaning below the mounting surface
- also suitable as tampering protection for the screw fixings

Connector



101209960 - A-K8P-M12-S-G-10M-BK-1-X-A-2

- Pre-wired cable
- 10 m
- 8-pole



101209964 - A-K8P-M12-S-G-5M-BK-1-X-A-2

- 5 m
- Pre-wired cable
- 8-pole



101209963 - A-K8P-M12-S-G-2,5M-BK-1-X-A-2

- 2.5 m
- Pre-wired cable
- 8-pole



101210561 - A-K8P-M12-S-W-5M-BK-1-X-A-4-69-VA

- 5 m
 - Pre-wired cable
 - angled
 - 8-pole
-



101210560 - A-K8P-M12-S-G-5M-BK-1-X-A-4-69-VA

- 5 m
- Pre-wired cable
- 8-pole

Mounting accessories



101217747 - NRS-M4X30-FHS-4PCS

- Set of 4 Tamperproof screws M4 x 30
- Stainless steel (V4A)



101217746 - NRS-M4X25-FHS-4PCS

- Set of 4 Tamperproof screws M4 x 25 and Washer
- Stainless steel (V4A)

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The data and values have been checked thoroughly. Technical modifications and errors excepted.

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