Datasheet - RSS 36-SD-ST

Safety sensors / RSS 36



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

- 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

Ordering details

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

Approval

Approval	TÜV USA/CAN ECOLAB

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) CE	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	100 A
notice	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	≤ 0,5 mA
Operating current I_e	max. 0,25 A
- Ambient temperature: −25 °C … +70 °C	≤ 0,1 A
Minimum operating current I_m	0,5 mA
- Ambient temperature: −25 °C … +65 °C	≤ 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 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 Ue	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)	
without	Included in standard version Coding
I1	Individual coding
I2	Individual coding,
(2)	
D	with Diagnostic output
SD	with serial diagnostic function
(3)	
without	without latching
R	with latching, Latching force approx. 18 N
(4)	
without	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

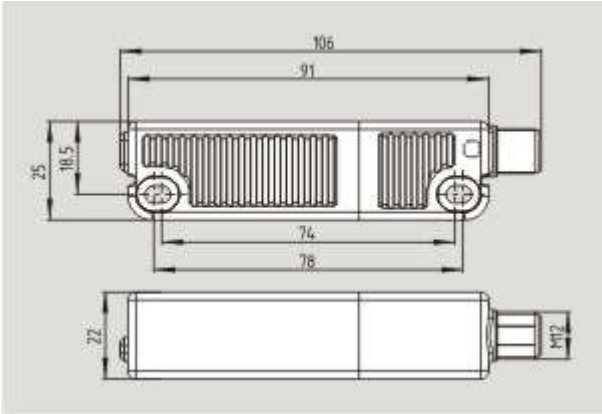
Code: mrl_rss36_en

TÜV certification (de, en) 5 MB, 16.02.2015
Code: z_rssp01

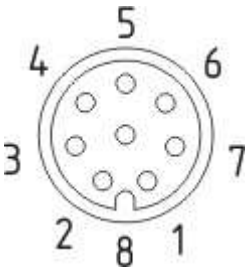
ECOLAB certification (de) 403 kB, 08.07.2011
Code: q_rssp01

ECOLAB certification (en) 383 kB, 08.07.2011
Code: q_rssp02

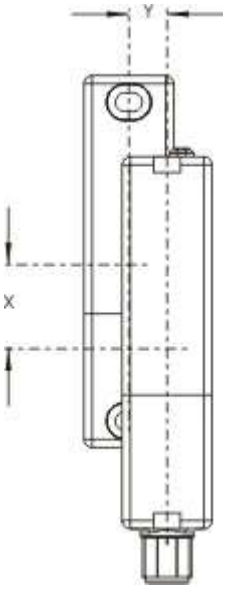
Images



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 throroughly. Technical modifications and errors excepted.
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