



Standards	IEC 60947-5-3
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Active principle	inductive
Housing construction form	Block
Installation conditions (mechanical)	not flush
Sensor topology	Sensor for series wiring
Enclosure material	Glass-fibre, reinforced thermoplastic
Active area	Glass-fibre, reinforced thermoplastic
Gross weight	140 g
Reaction time, maximum	30 ms
Duration of risk, maximum	60 ms

General data - Features

Serial diagnostics	Yes
Diagnostic output	Yes
Short circuit detection	Yes
Short-circuit recognition	Yes
Safety functions	Yes
Cascadable	Yes
Integral System Diagnostics, status	Yes
Number of LEDs	3
Number of semi-conductor outputs with signaling function	1
Number of fail-safe digital outputs	2
Number of Series-wiring of sensors	31

Safety appraisal

Standards	EN ISO 13849-1 IEC 60947-5-3 IEC 61508
Performance level, up to	e
Control category to EN13849	4
PFH-value	3.60×10^{-9} /h
Safety Integrity Level (SIL), suitable for applications in	3
Mission Time	20 Year(s)

Mechanical data

Actuating panels	lateral
Active area	lateral
Actuator switch distance	Actuator CST 180-1 / CST 180-2: 10 mm Actuator CST 34-S-1: 14 mm Actuator CST 34-S-2: 14 mm Actuator CST 34-S-3: 14 mm Actuator CST 34-S-1: 12 mm Actuator CST 34-S-2: 12 mm Actuator CST 34-S-3: 12 mm Actuator CST 180-1 / CST 180-2: 8 mm Actuator CST 34-S-1: 17 mm Actuator CST 34-S-2: 17 mm Actuator CST 34-S-3: 17 mm Actuator CST 180-1 / CST 180-2: 13 mm
Hysteresis (Switch distance), maximum	1.5 mm
Repeat accuracy R R	0.5 mm
Note (Repeat accuracy R_R)	Axial offset: The long side allows for a maximum height misalignment (x) of sensor and actuator of 36 mm (e.g. mounting tolerance or due to guard door sagging). Increased misalignment, max. 53 mm, possible when the CST 34-S-2 actuator is used. The axial misalignment (y) is max. ± 10 mm (see figure: Operating principle)

Mechanical data - Switching distances according IEC 60947-5-3

Switch distance	10 mm 14 mm
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Ensured switch distance "ON"	12 mm
S_{ao}	8 mm
Ensured switch distance	13 mm
"OFF" S_{ar}	17 mm

Mechanical data - Connection technique

Terminal Connector	Connector plug M12, 8-pole
Note	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

Mechanical data - Dimensions

Length of sensor	35 mm
Width of sensor	27 mm
Height of sensor	108.2 mm

Ambient conditions

Degree of protection	IP65 to EN 60529 IP67 to EN 60529
Ambient temperature, minimum	-25 °C
Ambient temperature, maximum	+70 °C
Storage and transport temperature, minimum	-25 °C
Storage and transport temperature, maximum	+85 °C
Resistance to vibrations to EN 60068-2-6	10 ... 55 Hz, amplitude 1 mm
Resistance to shock	30 g / 11 ms
Protection rating	II

Ambient conditions - Insulation value

Rated insulation voltage U_i	32 VDC
Rated impulse withstand voltage U_{imp}	0.8 kV
Overvoltage category	III
Degree of pollution to VDE 0100	3

Electrical data

Voltage type	DC (direct current)
No-load supply current I_0	100 mA
Operating current	600 mA
Required rated short-circuit current to EN 60947-5-1	100 A
Switching frequency, approx.	3 Hz

Electrical data - Fail-safe digital outputs

Rated operating current (safety outputs)	250 mA
Output current, (fail-safe output), maximum	0.25 A
Versions	p-type
Voltage drop U_d , maximum	0.5 V
Current leakage I_r	0.5 mA
Voltage, Utilisation category DC12	24 VDC
Current, Utilisation category DC12	0.25 A
Voltage, Utilisation category DC13	24 VDC
Current, Utilisation category DC13	0.25 A

Electrical data - Diagnostic output

Operating current	150 mA
Versions	p-type
Voltage drop U_d , maximum	5 V

Electrical data - Electromagnetic compatibility (EMC)

Interfering radiation	IEC 61000-6-4
EMC rating	IEC 61000-6-2

Pin assignment

PIN 1	1A1 Ue: (1)
PIN 2	X1 Safety input 1
PIN 3	A2 GND
PIN 4	Y1 Safety output 1
PIN 5	SD serial diagnostic output
PIN 6	X2 Safety input 2
PIN 7	Y2 Safety output 2
PIN 8	IN serial diagnostic input

Scope of delivery

Included in delivery	Actuators must be ordered separately.
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Accessory

Recommendation (actuator)	CST 34-S-2 CST 34-S-3 CST 180-1 CST 180-2 CST 34-S-1
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Recommended safety switchgear	PROTECT PSC1 SRB-E-301ST SRB-E-201LC
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Notes

Note (General)	Evaluation requirements: dual-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. 0.5 ms. Short-circuit recognition by the evaluation is not necessary.
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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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