

# Safety switch sensor - PSR-CT-M-SEN-1-8 - 2702975

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Proximity safety circuit up to Cat. 4, PL e (EN ISO 13849), SIL 3 (IEC 61508), multicode sensor with RFID coding, model 4 (EN ISO 14119), automatic or manual start, integrated diagnostics, 24 V DC supply, IP69K, M12 connector

The figure shows a product version of the article

## Product Description

The PSR-CT safety circuit consists of a combination of a PSR-CT-...-SEN-1-8 sensor with varying coding types and a coded PSR-CT-C-ACT actuator. It provides maximum tamper protection and the highest level of safety in accordance with EN ISO 14119. The PSR-CT safety circuit is available with the following types of coding:

**Fixcode:** For the sensor to detect the actuator, the actuator must first be associated with the sensor via a learning process. The learning process can only be completed once. The sensor and actuator are then permanently assigned to each other by their coding. Safety circuits with fixcode evaluation achieve a high coding level.

**Unicode:** For the sensor to detect the actuator, the actuator must first be assigned to the sensor via a learning process. The learning process for a new actuator can be repeated any number of times. The sensor only detects the last learned actuator. Safety circuits with unicode evaluation achieve a high coding level.

**Multicode:** The sensor detects every actuator of the approved type. No specific actuator code can be assigned. Safety circuits with multicode evaluation achieve a low coding level.

## Your advantages

- ✓ Integrated reset function on the switch
- ✓ 4 actuation settings, 3 travel directions
- ✓ Tamper protection via RFID transponder technology
- ✓ Rapid diagnostics, thanks to comprehensive status information
- ✓ Consistent M12 connection technology for convenient installation
- ✓ Safe series connection in accordance with EN ISO 14119
- ✓ Flexible use, thanks to compact design
- ✓ Safe, cost-effective complete solution



## Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4055626447025
Weight per Piece (excluding packing)	41.100 g

## Safety switch sensor - PSR-CT-M-SEN-1-8 - 2702975

Custom tariff number	85365019
Country of origin	Germany

### Technical data

#### Dimensions

Width	26.5 mm
Height	40 mm
Depth	18 mm

#### Ambient conditions

Ambient temperature (operation)	-25 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C

#### Power supply

Supply voltage	24 V DC $\pm$ 15 % (PELV, controlled, residual ripple < 5% )
Current consumption	max. 40 mA
Protection	min. 0.25 A (to be performed externally)
	max. 8 A (to be performed externally)

#### Alarm outputs

Designation	DGN
Output description	p-wired
Number of outputs	1
Short-circuit-proof	yes
Output voltage	min. ( $U_B - 1.5$ V (HIGH))
	max. ( $U_B$ (HIGH))
	min. 0 V DC (LOW)
	max. 1 V DC (LOW)
Current $I_{DGN}$	min. 1 mA

#### Safety outputs

Designation	FO1A, FO1B
Output description	Semiconductor outputs, p-wired
Number of outputs	2
Output voltage	min. ( $U_B - 1.5$ V (HIGH FO1A, FO1B))
	max. ( $U_B$ (HIGH FO1A, FO1B))
	min. 0 V DC (LOW FO1A/FO1B)
	max. 1 V DC (LOW FO1A/FO1B)
Switching current	min. 1 mA (per safety output)
	max. 150 mA (per safety output)
Short-circuit-proof	yes
Utilization category in accordance with IEC 60947-5-2	150 mA (24 V (DC13))
Note on protection circuit	NOTE: Protect the outputs under inductive loads with a freewheeling diode.
Residual current	$\leq$ 0.25 mA

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## Technical data

### Times

Switch-on delay	typ. 5 s (after switching $U_B$ on)
Risk time according to EN 60947-5-3	max. 125 ms (Stand-alone device)
Delay time	typ. 10 ms (Risk time delay per device)
Switch-on time	max. 400 ms (for the safety outputs)
Discrepancy time	max. 10 ms (between the safety outputs)
Test pulses	typ. 300 $\mu$ s (Test pulse duration)
	approx. 100 ms (Test pulse interval)

### General

Net weight	41.1 g
Mounting position	any
Mounting type	not flush
Minimum distance	140 mm (between two safety circuits)
	7 mm (between sensor and actuator when traveling in the Y-direction)
Assembly instructions	Note EN ISO 14119
	Maximum tightening torque to secure: 0.8 Nm
Degree of protection	IP65/IP67/IP69/IP69K
	IP67 (with SAC cabling)
Protection class	III
Short-circuit current	typ. 100 A (conditional short-circuit current)
Switching frequency	max. 1 Hz
Housing material	PBT
Housing color	yellow
Status display	2 LEDs

### Connection data

Connection method	Connector
Connection technology	M12 connector
pluggable	no
Number of positions	8

### Safety-related characteristic data

Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	3
Designation	EN ISO 13849
Performance level (PL)	e
Category	4

### Standards and Regulations

Rated insulation voltage	max. 300 V
Rated surge voltage	max. 1.5 kV
Degree of pollution	3
Vibration (operation)	in accordance with EN 60947-5-2

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## Technical data

### Standards and Regulations

EMC conformance	EN 60947-5-3
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### Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 10;
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Classifications

### eCl@ss

eCl@ss 6.0	27272400
eCl@ss 7.0	27272403
eCl@ss 9.0	27272403

### ETIM

ETIM 5.0	EC001526
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## Approvals

### Approvals

#### Approvals

UL Listed / cUL Listed / Functional Safety / FCC / Industry Canada / cULus Listed

#### Ex Approvals

### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 196162
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cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 196162
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Functional Safety	<a href="http://www.tuev-sued.de">http://www.tuev-sued.de</a>	Z10 18 04 29429 005
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FCC	YG3-PSR1
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Industry Canada	4720B-PSR1
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## Approvals

cULus Listed



## Accessories

Accessories

Safety switches

Safety switch actuator - PSR-CT-C-ACT - 2702973



Proximity safety circuit up to Cat. 4, PL e (EN ISO 13849), SIL 3 (IEC 61508), coded actuator, compatible with all sensor coding types, supplied inductively via the sensor, IP69K

## Terminal resistor

Short-circuit connector - SAC-5P-M12MS BK BR 1-2-4 - 1054366



M12 blind plug for sensor circuit from PSR-CT safety circuits, pin 1 bridged to pins 2 and 4

## Y-distributor

Y distributor - SAC-8PY-M/2XF BK 1-PSR - 1054338



Y distributor, 8-position, Plug straight M12 SPEEDCON, A-coded, on Socket straight M12 SPEEDCON, A-coded and Plug straight M12 SPEEDCON, A-coded, Special wiring

Y distributor - SAC-8PY-M/2XF BK 2-PSR - 1054339



Y distributor, 8-position, Plug straight M12 SPEEDCON, A-coded, on Socket straight M12 SPEEDCON, A-coded and Socket straight M12 SPEEDCON, A-coded, Special wiring

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### Accessories

Y distributor - SAC-8PY-M/2XF BK 3-PSR - 1054341



Y distributor, 8-position, Plug straight M12 SPEEDCON, A-coded, on Socket straight M12 SPEEDCON, A-coded and Socket straight M12 SPEEDCON, A-coded, Special wiring