

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	 4 055626 447025
GTIN	4055626447025
Weight per Piece (excluding packing)	41.600 g

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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. ($U_B - 1.5\text{ V (HIGH)}$)
	max. ($U_B\text{ (HIGH)}$)
	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. ($U_B - 1.5\text{ V (HIGH FO1A, FO1B)}$)
	max. ($U_B\text{ (HIGH FO1A, FO1B)}$)
	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	$\leq 0.25\text{ mA}$

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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 μ s (Test pulse duration)
	approx. 100 ms (Test pulse interval)

General

Net weight	41.6 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

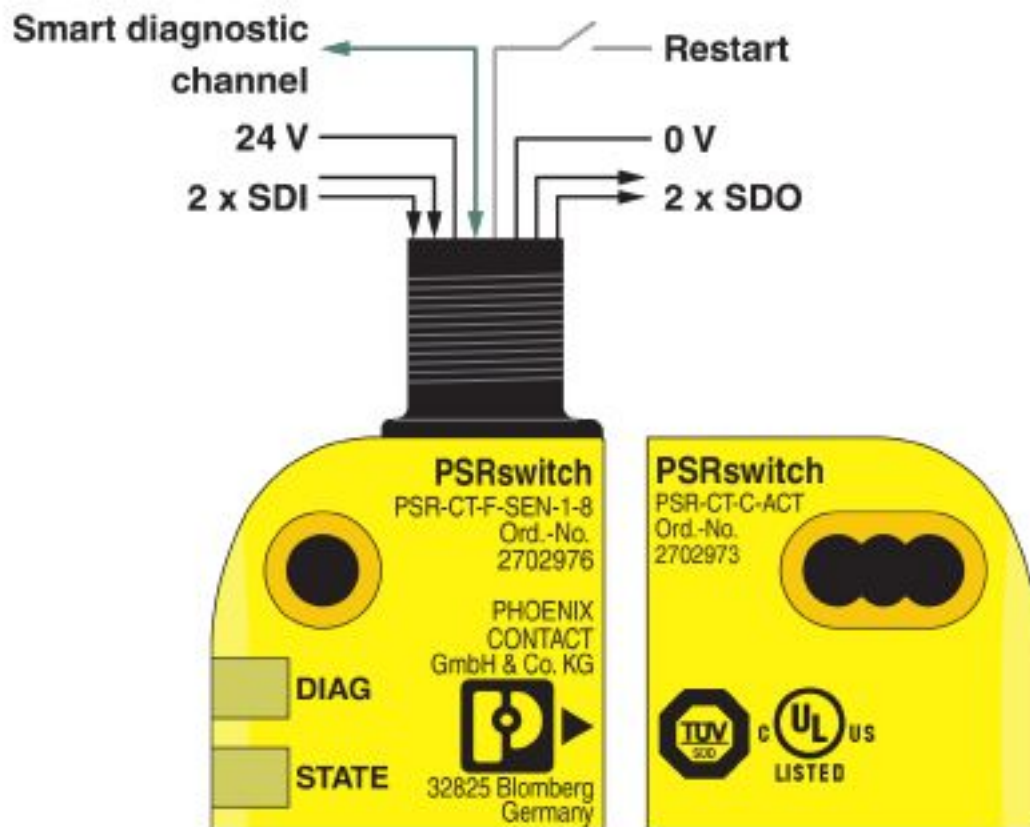
EMC conformance	EN 60947-5-3
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 10;
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

Application drawing



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

Application drawing

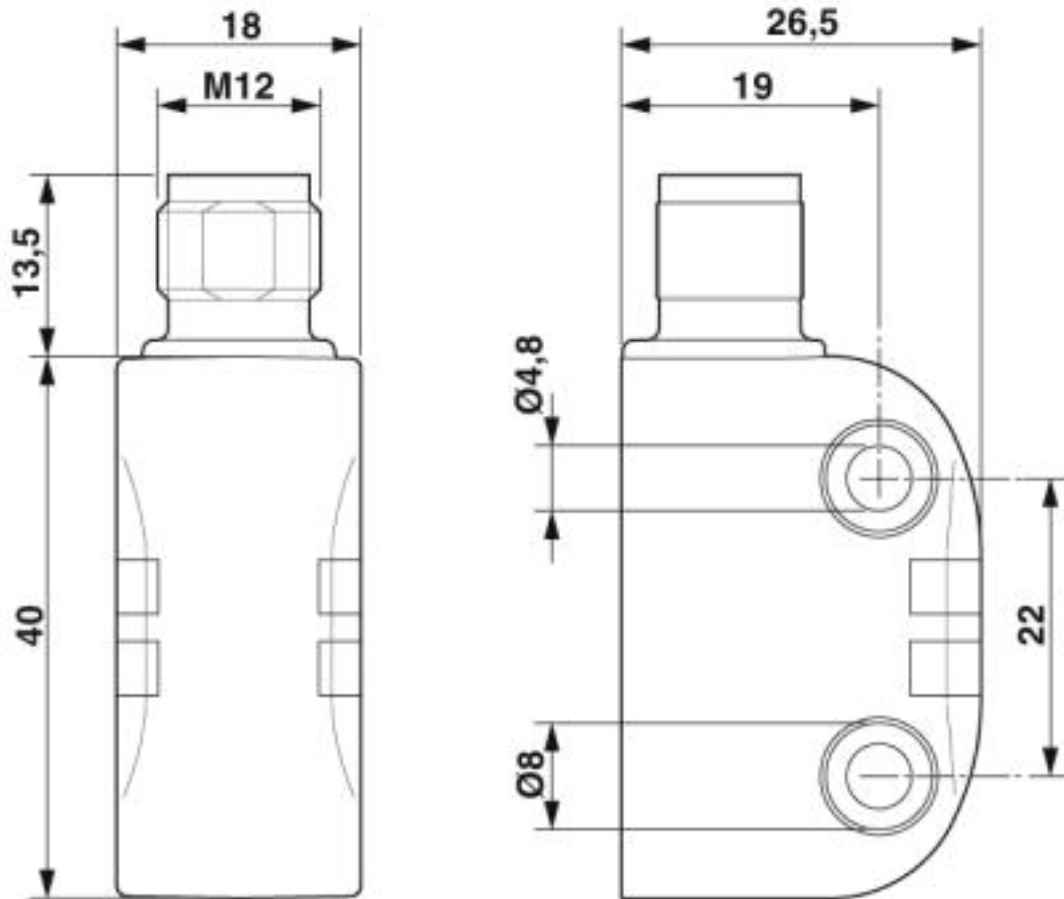


Application drawing



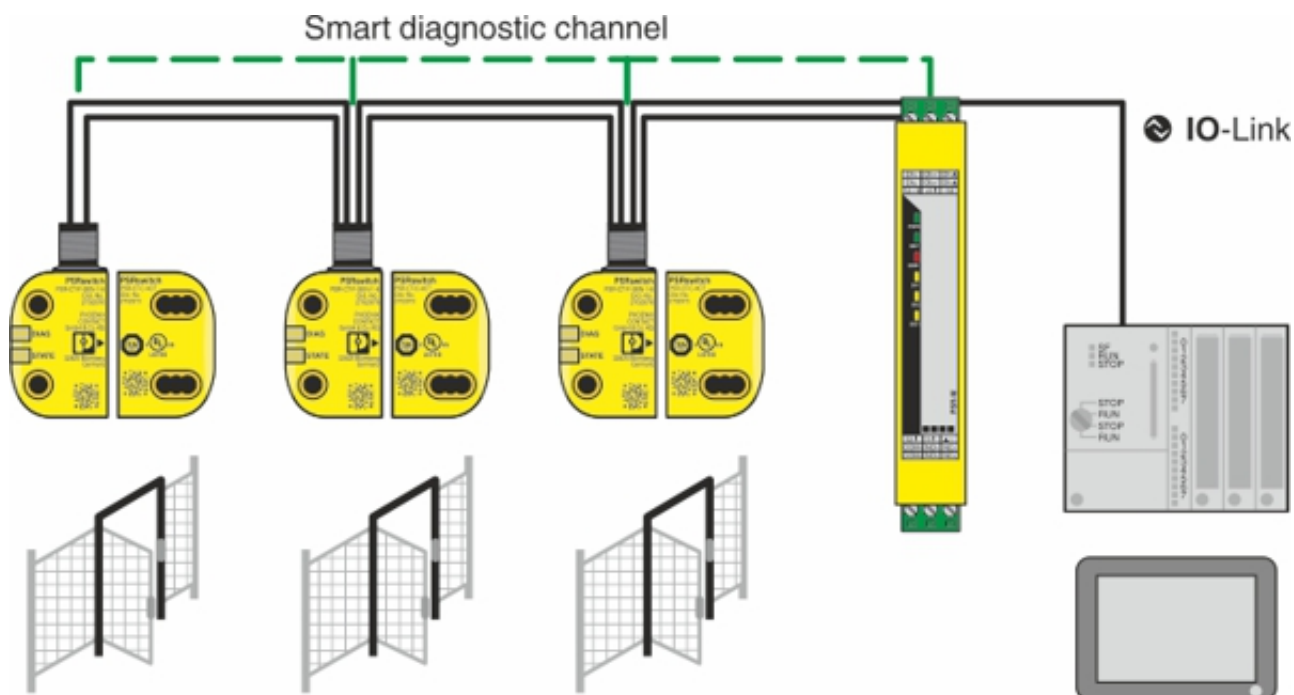
Safety switch sensor - PSR-CT-M-SEN-1-8 - 2702975

Dimensional drawing



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

Application drawing



Classifications

eCl@ss

eCl@ss 5.0	27272400
eCl@ss 6.0	27272400
eCl@ss 7.0	27272403
eCl@ss 9.0	27272403

ETIM

ETIM 5.0	EC001526
ETIM 6.0	EC001526
ETIM 7.0	EC001526

Approvals

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

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Approvals

Ex Approvals

Approval details

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



Termination plug for PSR-CT series RFID transponder switches, M12 male, 5-pos., closes the circuit at the last Y distributor in a series connection

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Accessories

Y-distributor

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



Y distributor for PSR-CT series RFID transponder switches, M12 male/female, 5- and 8-pos., for safe series connection of up to 30 devices

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



Y distributor for PSR-CT series RFID transponder switches, M12 male/female, 5- and 8-pos., for implementation of a manual start circuit in the field

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



Y distributor for PSR-CT series RFID transponder switches, M12 male/female, 5- and 8-pos., for signal contact feedback to the PLC