

# PSR-CT-F-SEN-1-8 - Safety switch sensor



2702976

<https://www.phoenixcontact.com/us/products/2702976>

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Proximity safety circuit up to Cat. 4, PL e (EN ISO 13849), SIL 3 (IEC 61508), fixcode 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

## Commercial data

Item number	2702976
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN04
Product key	DNA611
GTIN	4055626447032
Weight per piece (including packing)	40.3 g

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Weight per piece (excluding packing)	40.2 g
Customs tariff number	85365019
Country of origin	DE

## Technical data

### Notes

#### Note on application

Note on application	Only for industrial use
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### Product properties

Product type	Safety switches
Product family	PSR-CT
Technology	Transponder
Application	Safety door monitoring Position monitoring
Design in accordance with EN ISO 14119	4
Encoding level in accordance with EN ISO 14119	high

#### Insulation characteristics

Protection class	III
Degree of pollution	3

#### Times

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

### Electrical properties

Switching frequency	max. 1 Hz
Short-circuit current	typ. 100 A (conditional short-circuit current)
Switching frequency	max. 1 Hz
Rated insulation voltage	max. 300 V
Rated surge voltage	max. 1.5 kV

#### 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)
Contact switching type	2 safe digital outputs

### Output data

#### Signal

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Designation	DGN
Output description	p-wired
Number of outputs	1
Output voltage	min. ( $U_B - 1.5$ V (HIGH))
	max. ( $U_B$ (HIGH))
	min. 0 V DC (LOW)
	max. 1 V DC (LOW)
Current	min. 1 mA
	max. 50 mA
Short-circuit-proof	yes

## Safety output

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)
Residual current	$\leq 0.25$ mA
Utilization category in accordance with IEC 60947-5-2	150 mA (24 V (DC13))
Short-circuit-proof	yes
Note on protection circuit	<b>NOTE:</b> Protect the outputs under inductive loads with a freewheeling diode.

## Connection data

### Connection technology

Connection technology	M12 connector
pluggable	no
Number of positions	8

### Conductor connection

Connection method	Connector
Connection technology	M12 connector
Number of positions	8

## Signaling

Status display	2 LEDs
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## Dimensions

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Dimensional drawing	
Width	26.5 mm
Height	40 mm
Depth	18 mm

## Material specifications

Color (Housing)	yellow (RAL 1018)
Housing material	PBT

## Characteristics

Safety data: EN ISO 13849

Performance level (PL)	e
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Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3
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## Environmental and real-life conditions

Ambient conditions

Degree of protection	IP65/IP67/IP69/IP69K IP67 (with SAC cabling)
Ambient temperature (operation)	-25 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Vibration (operation)	in accordance with EN 60947-5-2

## Approvals

Conformity/Approvals

EMC conformance	EN 60947-5-3
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## Mounting

Mounting type	Mounting panel
Assembly note	Note EN ISO 14119 max. tightening torque to secure: 0.8 Nm
Mounting position	any
Minimum distance	140 mm (between two safety circuits) 7 mm (between sensor and actuator when traveling in the Y-direction)

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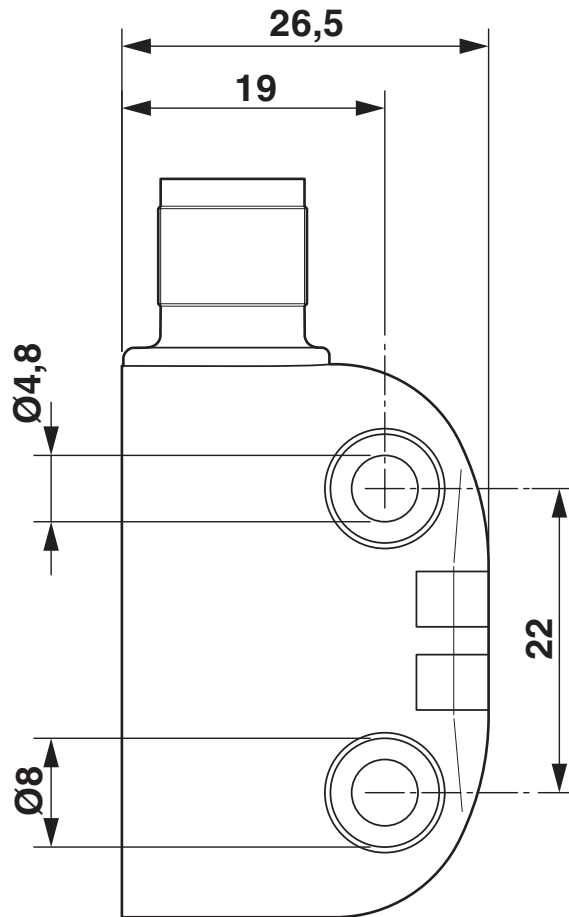
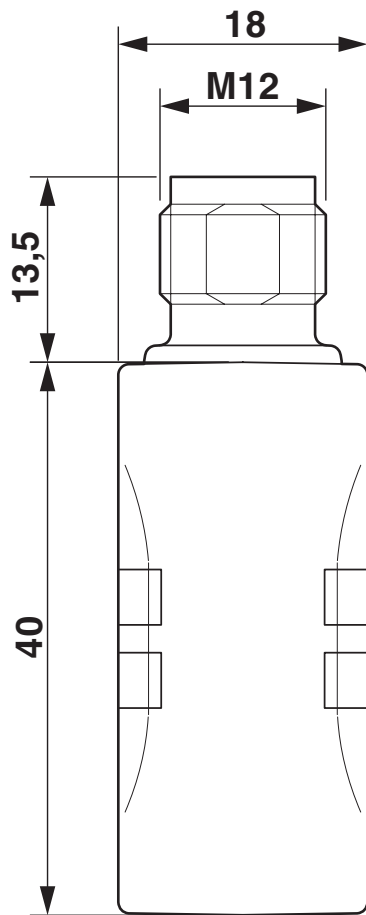


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## Drawings

Dimensional drawing

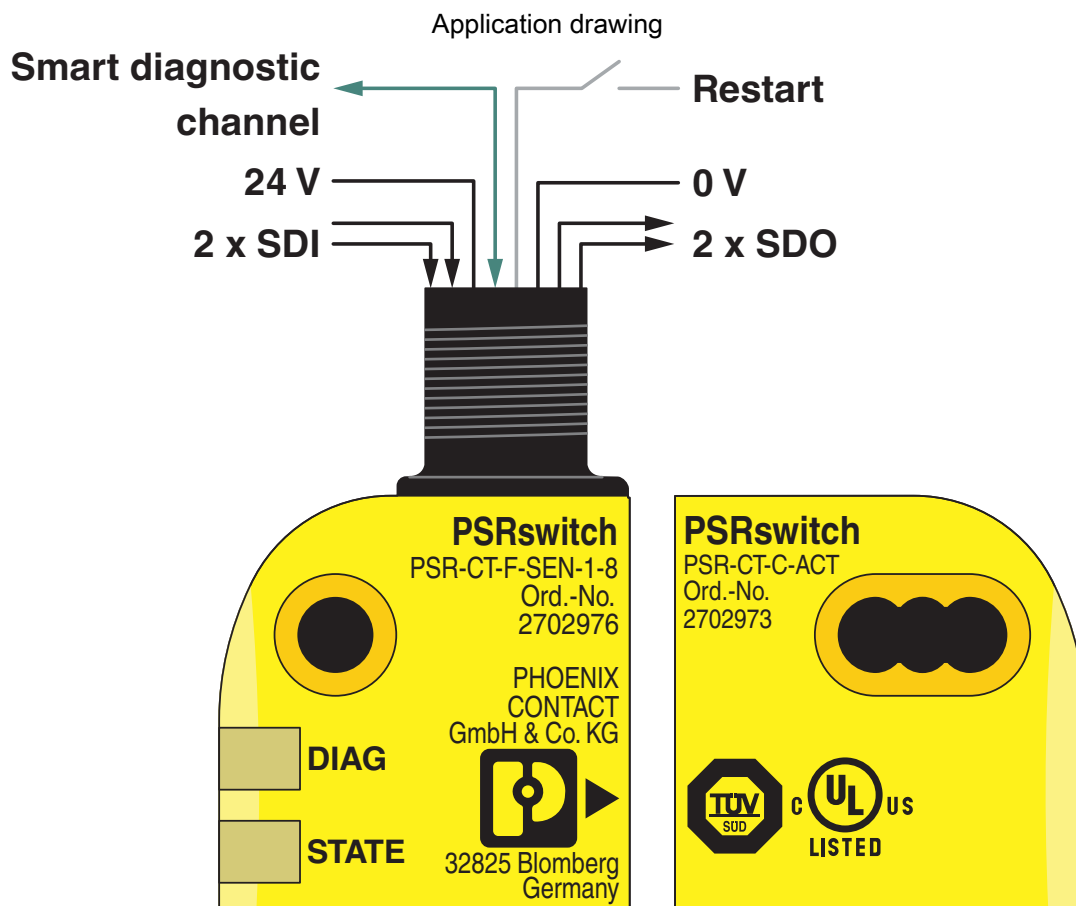


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Application drawing



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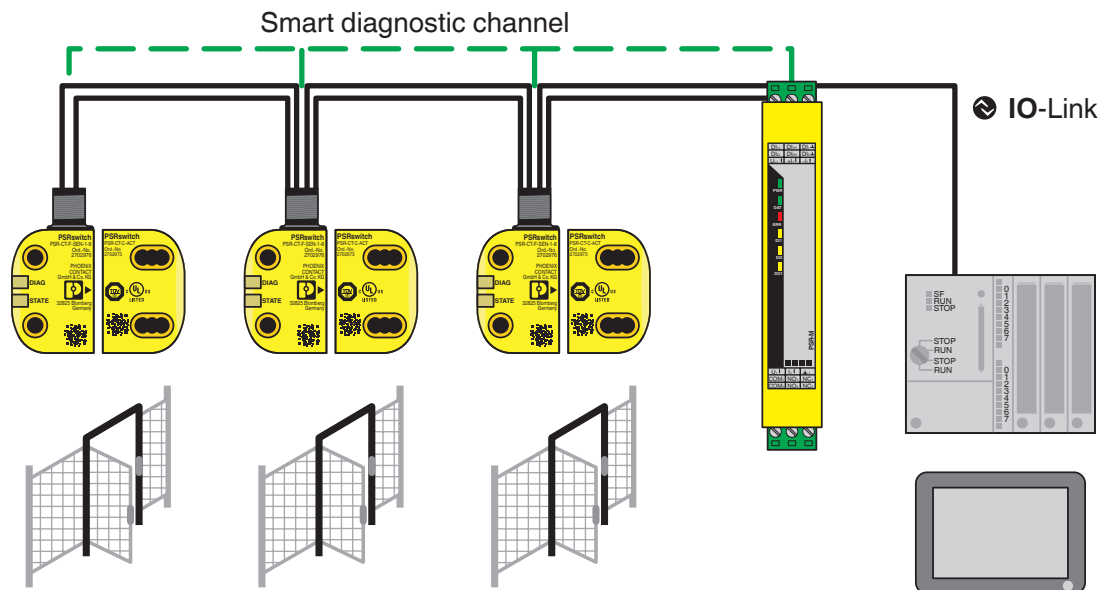
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Application drawing



Application drawing

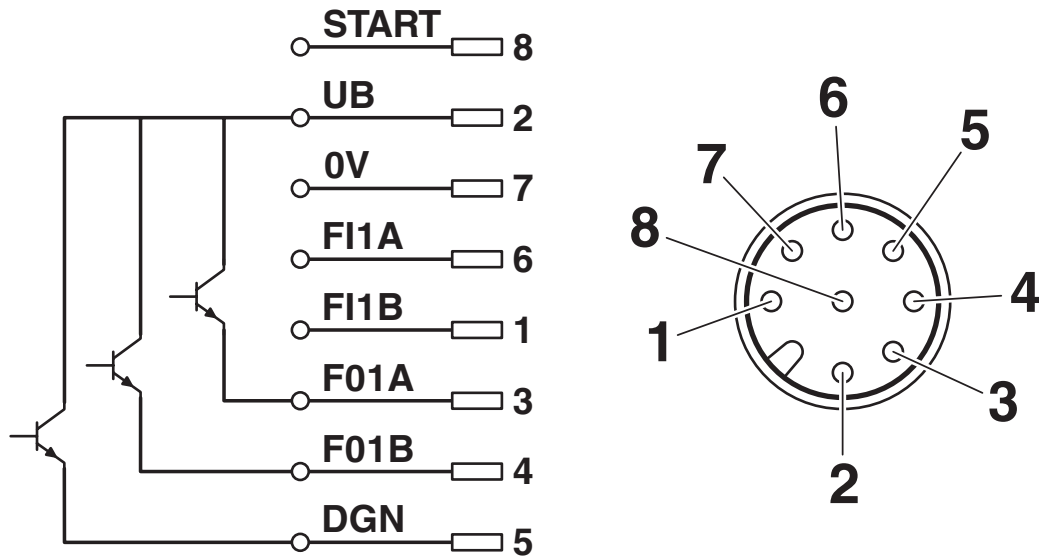


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Connection diagram



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## Approvals

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 **UL Listed**  
Approval ID: E196162

 **cUL Listed**  
Approval ID: E196162

 **Functional Safety**  
Approval ID: Z10 029429 0033

**FCC**  
Approval ID: YG3-PSR1

**Industry Canada**  
Approval ID: 4720B-PSR1

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## Classifications

### ECLASS

ECLASS-15.0	27274601
ECLASS-13.0	27274601
ECLASS-15.0 ASSET	27250101

### ETIM

ETIM 10.0	EC003015
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### UNSPSC

UNSPSC 21.0	32151800
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 7(a), 7(c)-I

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	Lead titanium trioxide(CAS: 12060-00-3)
	Lead(CAS: 7439-92-1)
SCIP	946cc629-7073-4f40-8a0d-16f69f833d19

### EF3.1 Climate Change

CO2e kg	9.831 kg CO2e
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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)