

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



2702975

<https://www.phoenixcontact.com/us/products/2702975>

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The figure shows a product version of the article

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

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 | 2702975 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DN04 |
| Product key | DNA611 |
| GTIN | 4055626447025 |
| Weight per piece (including packing) | 41.03 g |

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2702975

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| | |
|--------------------------------------|----------|
| Weight per piece (excluding packing) | 40.3 g |
| Customs tariff number | 85365019 |
| Country of origin | DE |

Technical data

Notes

Note on application

| | |
|---------------------|-------------------------|
| Note on application | Only for industrial use |
|---------------------|-------------------------|

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 | low |

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 μ 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 | ≤ 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 | NOTE: 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 |
|----------------|--------|

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 |
|------------------------|---|

Safety data: IEC 61508 - High demand

| | |
|------------------------------|---|
| Safety Integrity Level (SIL) | 3 |
|------------------------------|---|

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 |
|-----------------|--------------|

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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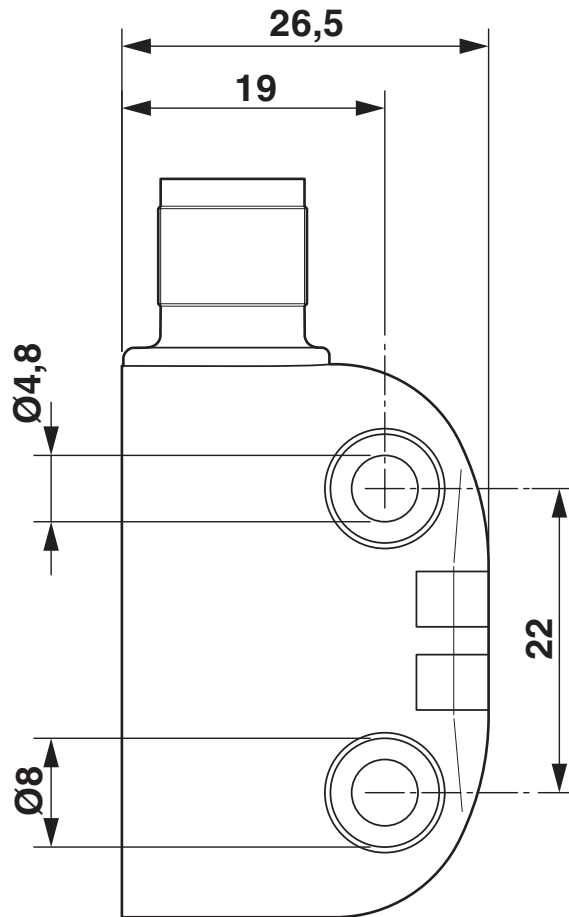
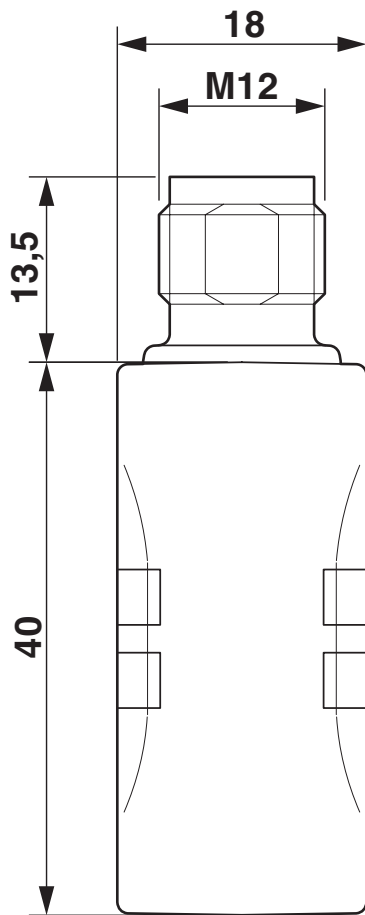


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Drawings

Dimensional drawing

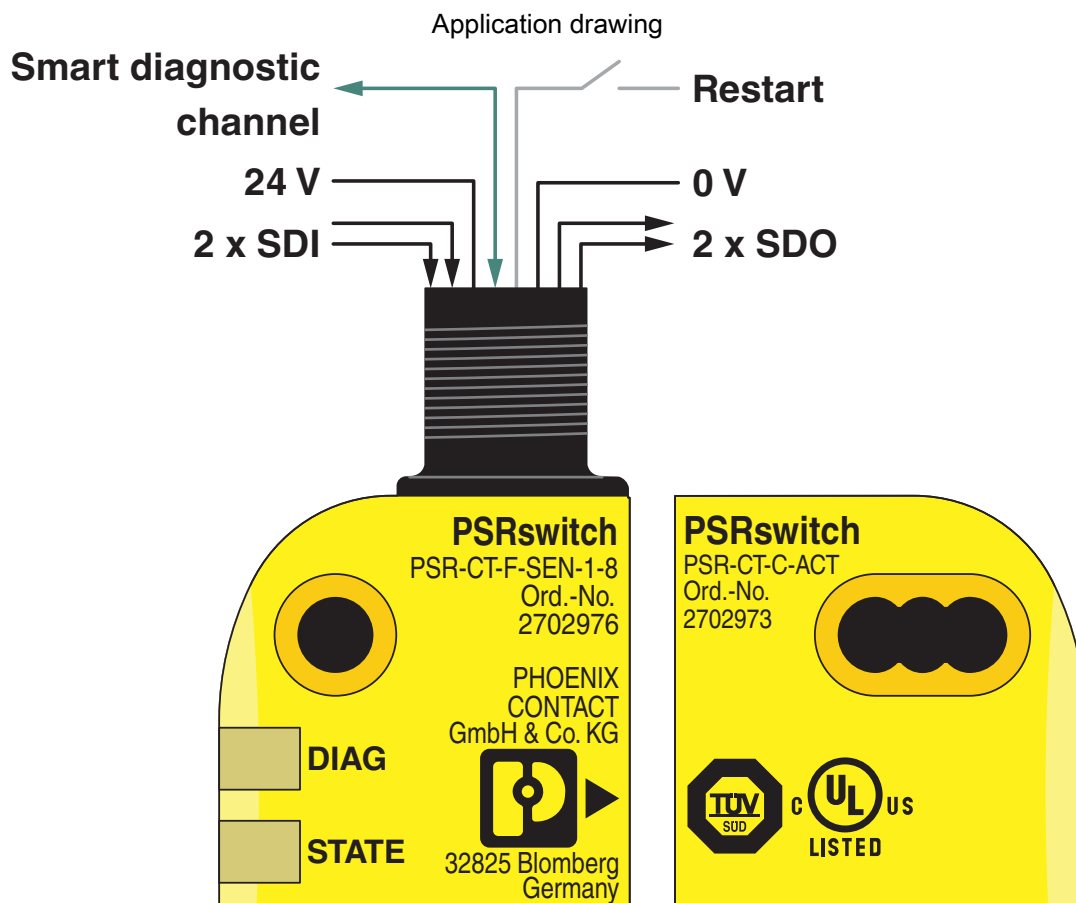


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Application drawing



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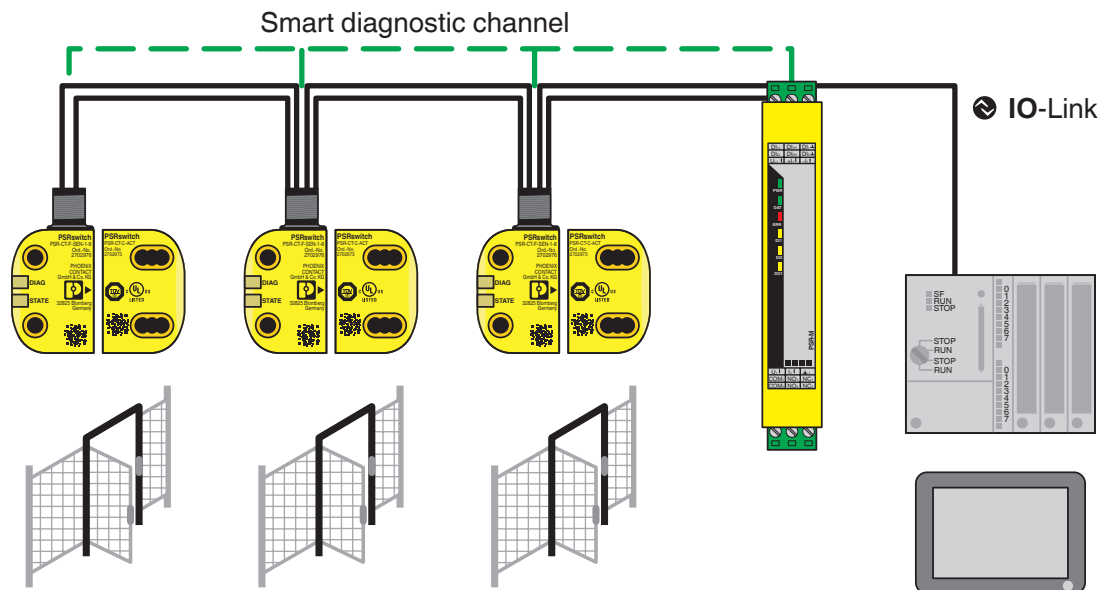
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Application drawing



Application drawing

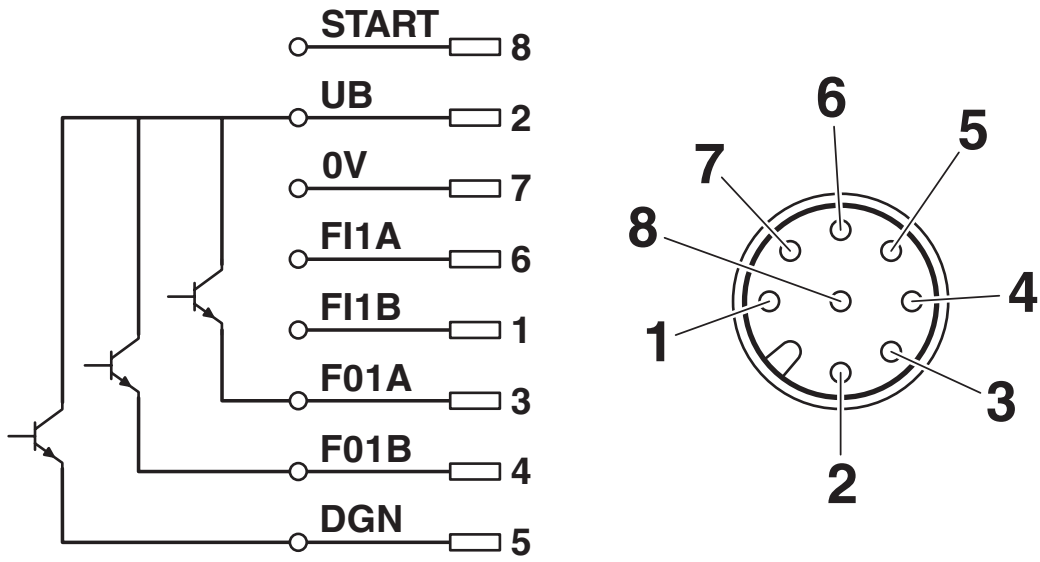


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Connection diagram



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

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC003015 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 32151800 |
|-------------|----------|

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 | fe998480-0ec0-43d2-b524-cc43d9d98f75 |

EF3.1 Climate Change

| | |
|---------|---------------|
| CO2e kg | 9.478 kg CO2e |
|---------|---------------|