

# 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 |
|---------------------|-------------------------|

### Product properties

|  |   |
|--|---|
| Product type                                   | Safety switches                               |
| Product family                                 | PSR-CT  |
| Technology                                     | Transponder                                   |
| Application                                    | Safety door monitoring<br>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)<br>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)<br>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 |
|----------------|--------|

## 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<br>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<br>max. tightening torque to secure: 0.8 Nm  |
| Mounting position | any  |
| Minimum distance  | 140 mm (between two safety circuits)<br>7 mm (between sensor and actuator when traveling in the Y-direction) |

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

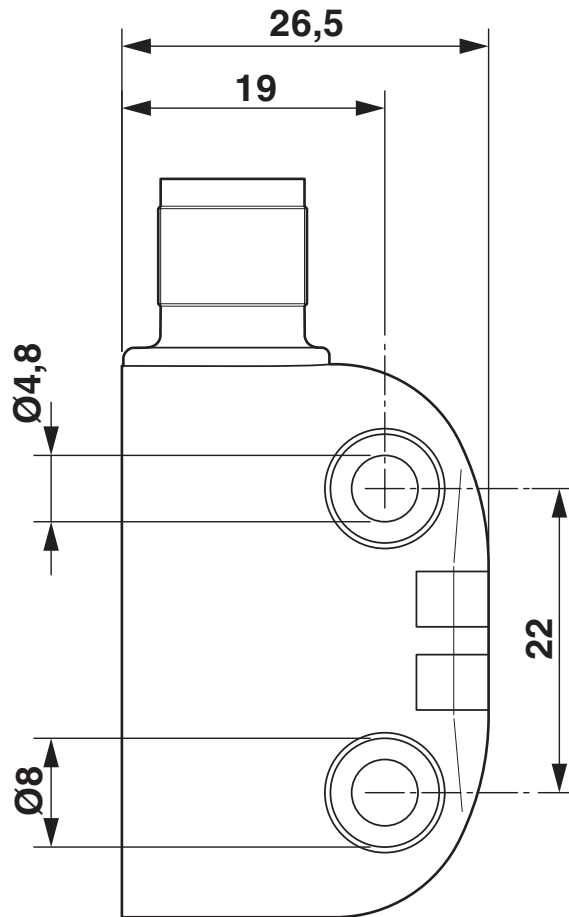
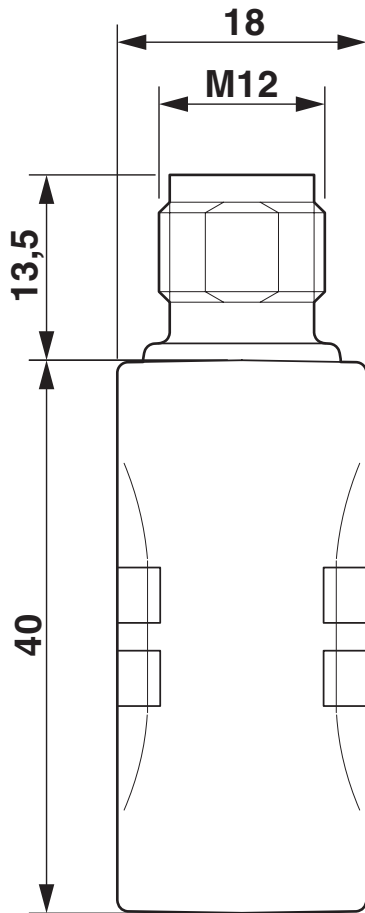


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## Drawings

Dimensional drawing





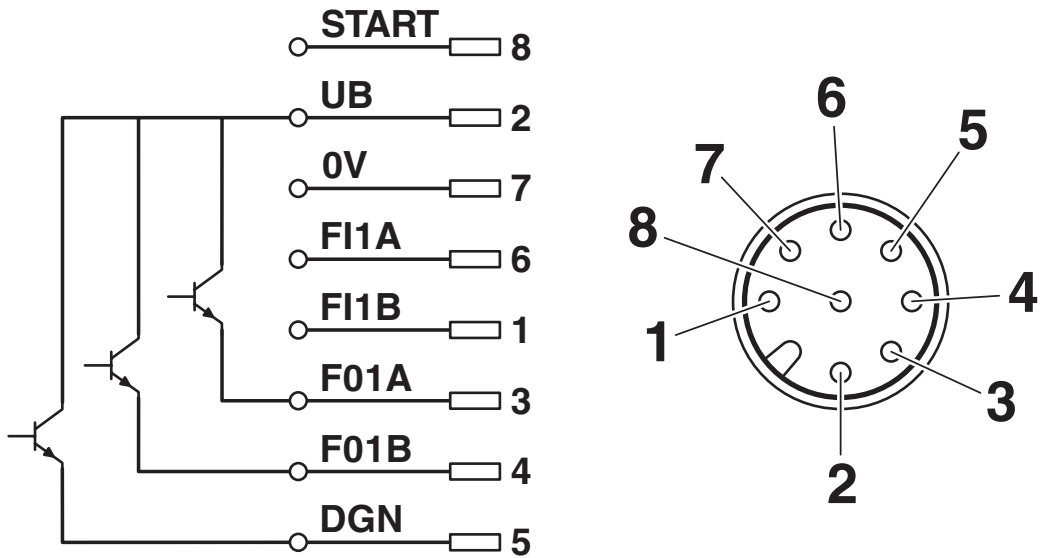


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Connection diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2702976>



### 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 |
|-----------|----------|

### 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                                | 946cc629-7073-4f40-8a0d-16f69f833d19    |

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 9.831 kg CO2e |
|---------|---------------|