

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



2702976

<https://www.phoenixcontact.com/pc/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

## 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
Product Key	DNA611
Catalog Page	Page 213 (C-6-2019)
GTIN	4055626447032
Weight per Piece (including packing)	40.3 g
Weight per Piece (excluding packing)	40.2 g
Customs tariff number	85365019

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Country of origin	DE
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## Technical Data

### Product properties

Product type	Safety switches
Application	Safety door monitoring
	Position monitoring
Technology	Transponder

### Insulation characteristics

Protection class	III
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### 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

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)

### Output data

#### Signal

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

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## 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
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## Signaling

Status display	2 LEDs
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## Dimensions

Dimensional drawing	
Width	26.5 mm
Height	40 mm
Depth	18 mm
Minimum distance	140 mm (between two safety circuits) 7 mm (between sensor and actuator when traveling in the Y-direction)

## Material specifications

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Housing material	PBT
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## Characteristics

Safety data: EN ISO 13849

Category	4
Performance level (PL)	e

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3
Probability of a hazardous failure per hour (PFH <sub>D</sub> )	$6 \times 10^{-10}$

## 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	not flush
Assembly instructions	Note EN ISO 14119 Maximum tightening torque to secure: 0.8 Nm
Mounting position	any
Connection method	Connector

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

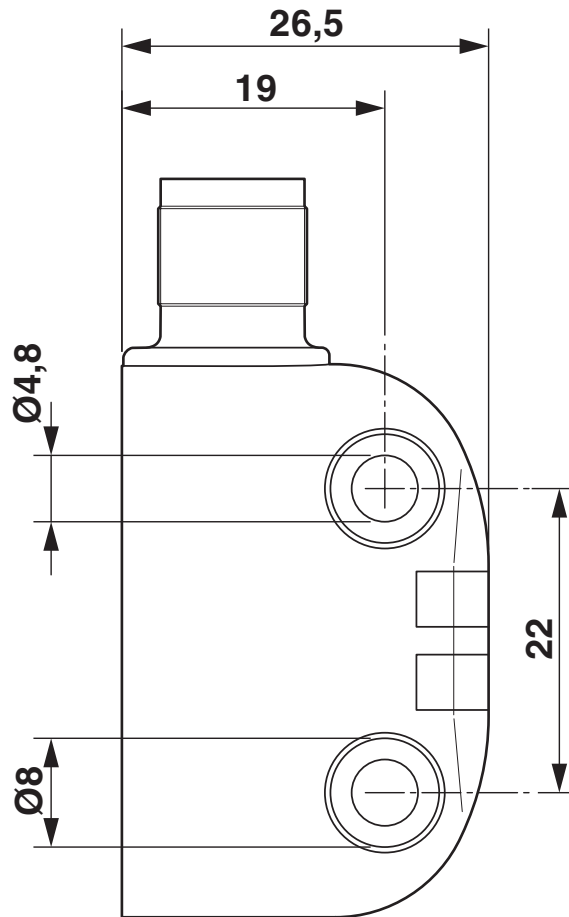
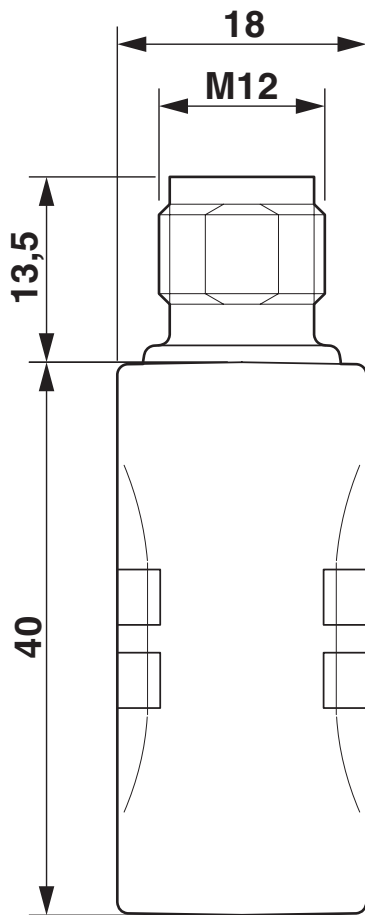


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## Drawings

Dimensional drawing

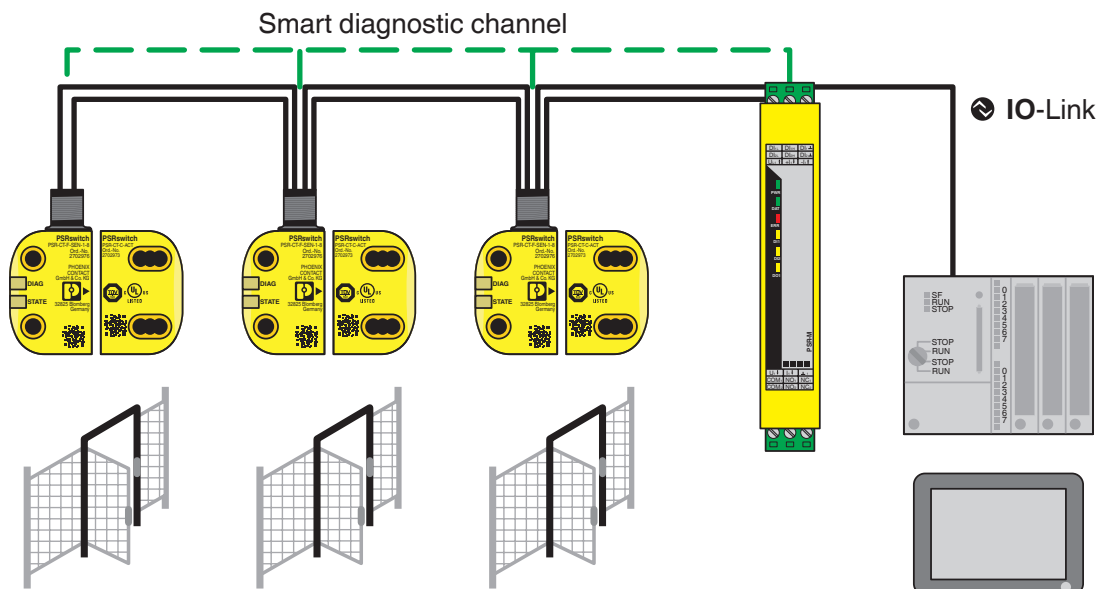


# PSR-CT-F-SEN-1-8 - Safety switch sensor

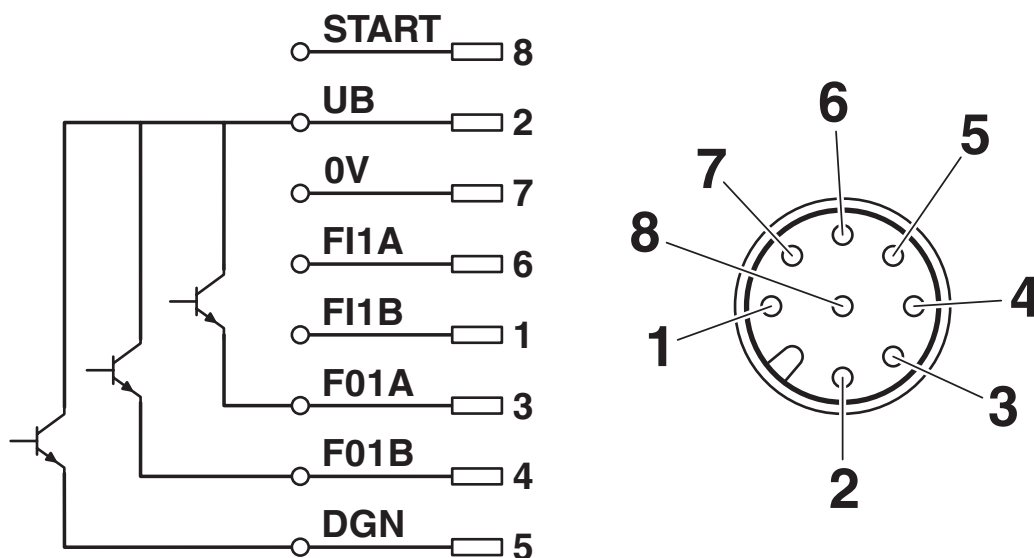
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Application drawing



Connection diagram



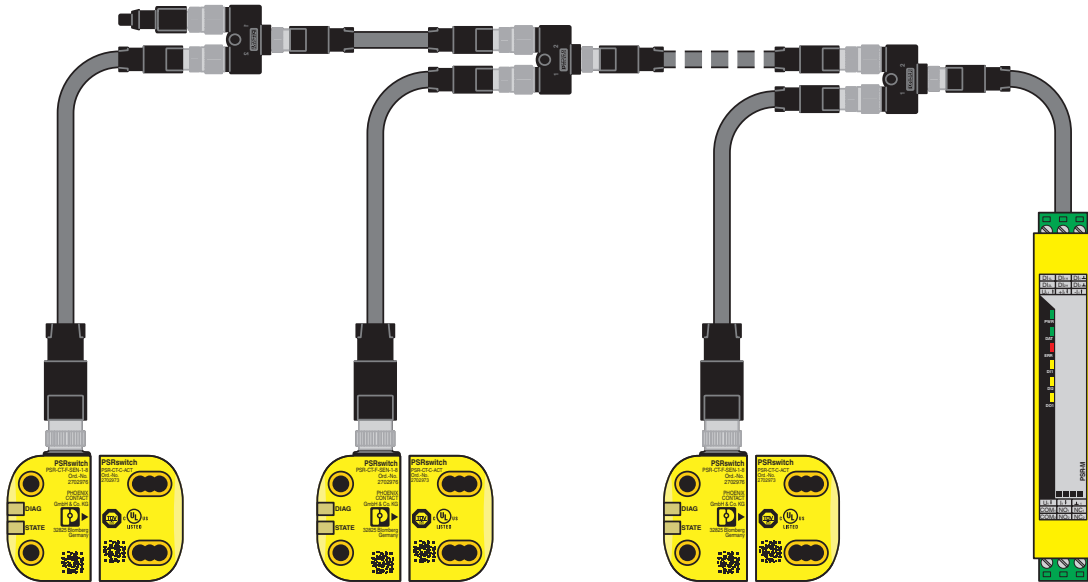
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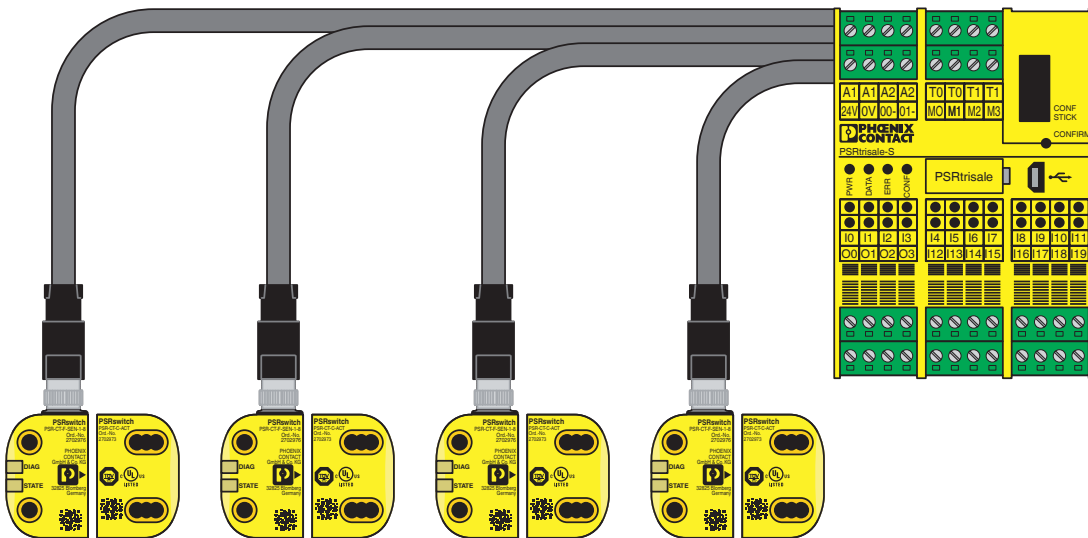
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Application drawing



Application drawing



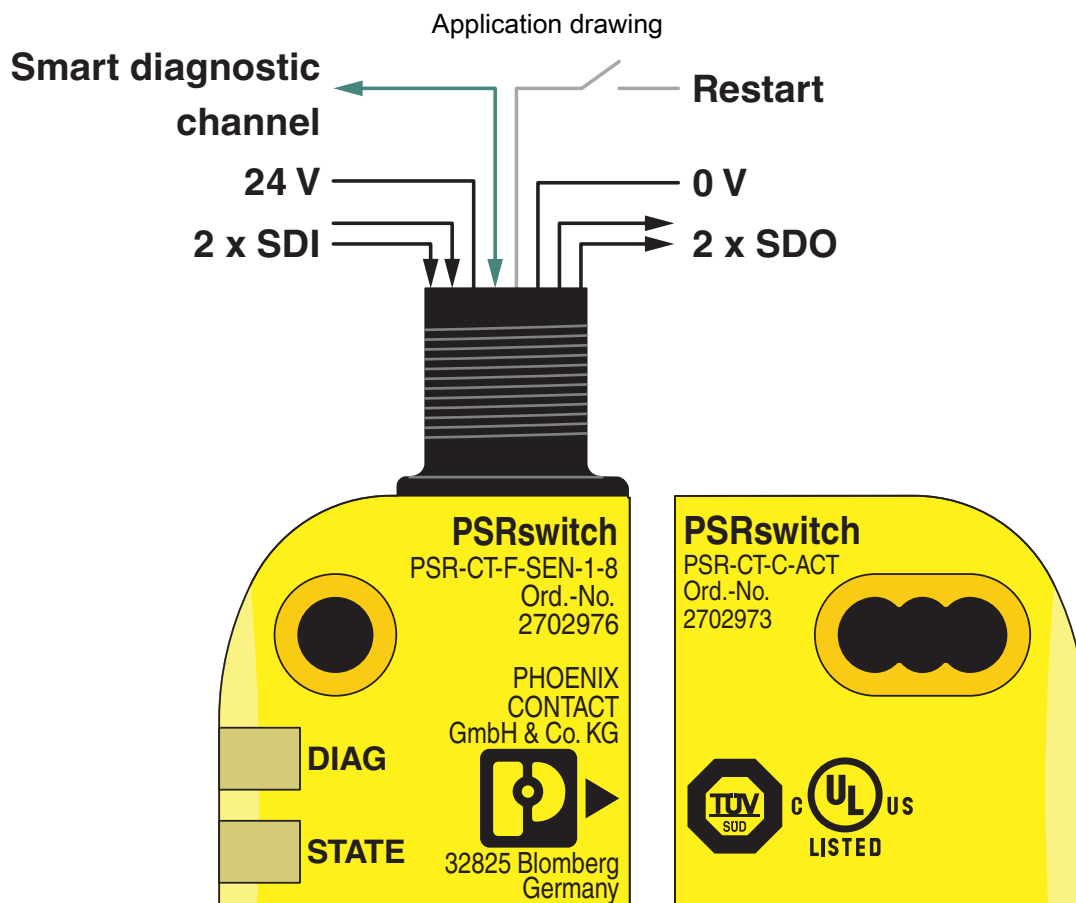


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## Approvals

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



### UL Listed

Approval ID: FILE E 196162



### cUL Listed

Approval ID: FILE E 196162

### Functional Safety

Approval ID: Z10 18 04 29429 005

### FCC

Approval ID: YG3-PSR1

### Industry Canada

Approval ID: 4720B-PSR1

### cULus Listed

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## Classifications

### ECLASS

ECLASS-11.0	27272403
ECLASS-12.0	27274601
ECLASS-13.0	27274601

### ETIM

ETIM 8.0	EC003015
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### UNSPSC

UNSPSC 21.0	32151800
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## Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
	Lead titanium trioxide 12060-00-3
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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## Accessories

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

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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

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

1054366

<https://www.phoenixcontact.com/pc/products/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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## SAC-8PY-M/2XF BK 1-PSR - Y distributor

1054338

<https://www.phoenixcontact.com/pc/products/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

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

1054339

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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

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

1054341

<https://www.phoenixcontact.com/pc/products/1054341>



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

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## PSR-MC42-2NO-1DO-24DC-SC - Safety relays

2702901

<https://www.phoenixcontact.com/pc/products/2702901>



Safety relay with IO-Link for emergency stop, safety doors, and light grids, up to SIL 3, Cat. 4, PL e, 2 sensor circuits, automatic or manual, monitored start, 2 enabling current paths, 1 signal output,  $U_S = 24 \text{ V DC}$ , plug-in screw terminal block

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## PSR-MC42-2NO-1DO-24DC-SP - Safety relays

2702902

<https://www.phoenixcontact.com/pc/products/2702902>



Safety relay with IO-Link for emergency stop, safety doors and light grids, up to SIL 3, Cat. 4, PL e, 2 sensor circuits, automatic or manual, monitored start, 2 enabling current paths, 1 signal output,  $U_S = 24 \text{ V DC}$ , pluggable Push-in terminal block

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## PSR-MC43-2SDO-1DO-24DC-SC - Safety device

1087561

<https://www.phoenixcontact.com/pc/products/1087561>



Safety relay module with IO-Link for emergency stop, safety doors, and light grids, to SIL 3, cat. 4, PL e, 2 sensor circuits, automatic or manual, monitored start, 2 safe digital outputs, 1 signal output,  $U_S = 24 \text{ V DC}$ , pluggable screw terminal block



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## PSR-MC43-2SDO-1DO-24DC-SP - Safety device

1087569

<https://www.phoenixcontact.com/pc/products/1087569>



Safety relay module with IO-Link for emergency stop, safety doors, and light grids, to SIL 3, Cat. 4, PL e, 2 sensor circuits, automatic or manual, monitored start, 2 safe digital outputs, 1 signal output,  $U_S = 24 \text{ V DC}$ , pluggable Push-in terminal block

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## PSR-CT-GWY-1DGN-IOL-PI - Data interface

1106407

<https://www.phoenixcontact.com/pc/products/1106407>



Gateway module for acquiring standard status and diagnostic data from PSR-CT safety switches and forwarding data packets to an IO-Link master

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