

# PSR-SPP- 24DC/SSM/2X1 - Safety relay module



2981570

<https://www.phoenixcontact.com/us/products/2981570>

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The figure shows a version with a screw connection

2-channel zero-speed safety relay, 2 N/O contacts for SIL 3 in accordance with IEC 61508, control with 2 standard initiators, width: 22.5 mm, plug-in Push-in terminal block

## Your advantages

- Standard sensors can be connected
- Up to SIL 3 in accordance with IEC 61508
- Easy configuration via software (PSR-RSM4)

## Commercial data

Item number	2981570
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	DN01
Product key	DNA241
GTIN	4017918996864
Weight per piece (including packing)	217.2 g
Weight per piece (excluding packing)	217.2 g
Customs tariff number	85371099
Country of origin	DE

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## Technical data

### Notes

#### Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area
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### Product properties

Product type	Safety device
Application	Zero-speed safety relay
Mechanical service life	> 20x 10 <sup>6</sup> cycles
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

#### Insulation characteristics: Air clearances and creepage distances between the power circuits

Overvoltage category	III
Degree of pollution	2

### Electrical properties

Nominal operating mode	100% operating factor
Interfaces	Initiator connection

#### Air clearances and creepage distances between the power circuits

Rated insulation voltage	250 V
Rated surge voltage/insulation	4 kV / Basic isolation, (safe isolation, reinforced insulation and 6 kV between input circuit and enabling current paths.)

### Input data

#### General

Nominal input voltage $U_N$	24 V DC
Input voltage range in reference to $U_N$	0.85 ... 1.1
Typical input current at $U_N$	60 mA
Voltage at input/start and feedback circuit	approx. 24 V DC
Typical response time	12 ms
Typical release time	8 ms
Recovery time	1 s
Protective circuit	Surge protection; Suppressor diode
Limit frequency	2 kHz
Switching range (operation)	> 2.5 Hz
Switching range (complete stop)	< 2 Hz
Status display	LED (green)

### Output data

Contact switching type	2 enabling current paths
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	2 signaling current paths
Contact material	AgNi10, + 5 µm Au
Maximum switching voltage	250 V AC/DC (when the gold layer is destroyed) 60 V AC/DC (with gold layer existing)
Minimum switching voltage	100 mV AC/DC
Limiting continuous current	5 A 100 mA (alarm outputs)
Maximum inrush current	5 A
Inrush current, minimum	1 mA
Sq. Total current	$20.5 \text{ A}^2 (I_{TH}^2 = I_1^2 + I_2^2)$
Interrupting rating (ohmic load) max.	120 W (24 V DC, $\tau = 0 \text{ ms}$ ) 130 W (48 V DC, $\tau = 0 \text{ ms}$ ) 88 W (110 V DC, $\tau = 0 \text{ ms}$ ) 66 W (220 V DC, $\tau = 0 \text{ ms}$ )
Switching power min.	1 mW
Switching capacity (3600/h cycles)	2 A (24 V (DC13)) 3 A (230 V (AC15))
Output fuse	6 A gL

## Connection data

### Conductor connection

Connection method	Push-in connection
Conductor cross-section, rigid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section, flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 16
Stripping length	8 mm

## Dimensions

Width	22.5 mm
Height	112 mm
Depth	114.5 mm

## Material specifications

Color	yellow
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## Characteristics

### Safety data

Stop category (EN 60204-1)	0
Category in acc. with EN 954-1	4

### Safety data: IEC 61508 - High demand

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

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## Ambient conditions

Degree of protection	IP54
	IP20
Min. degree of protection of inst. location	IP54
Ambient temperature (operation)	-20 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Maximum altitude	max. 2000 m (Above sea level)
Max. permissible humidity (storage/transport)	75 % (on average, 85% infrequently, non-condensing)
Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)

## Standards and regulations

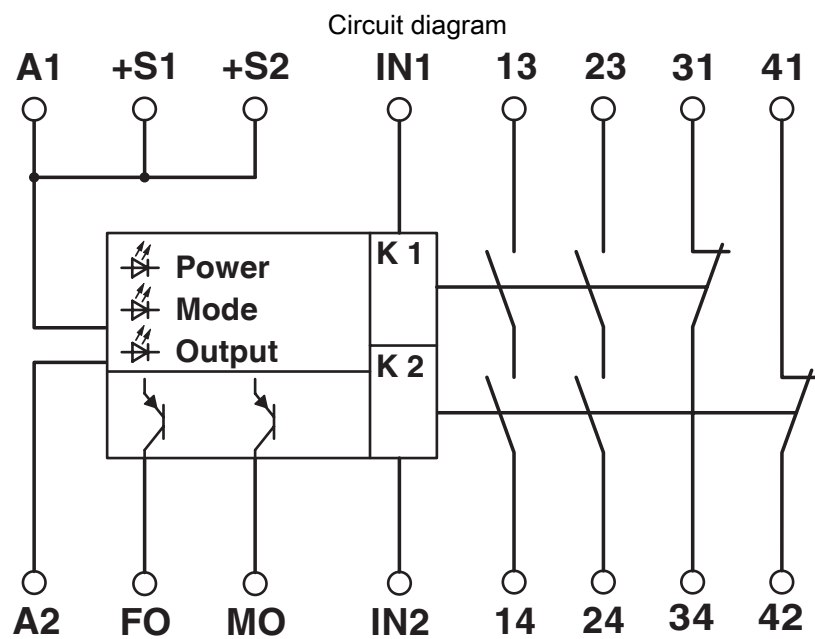
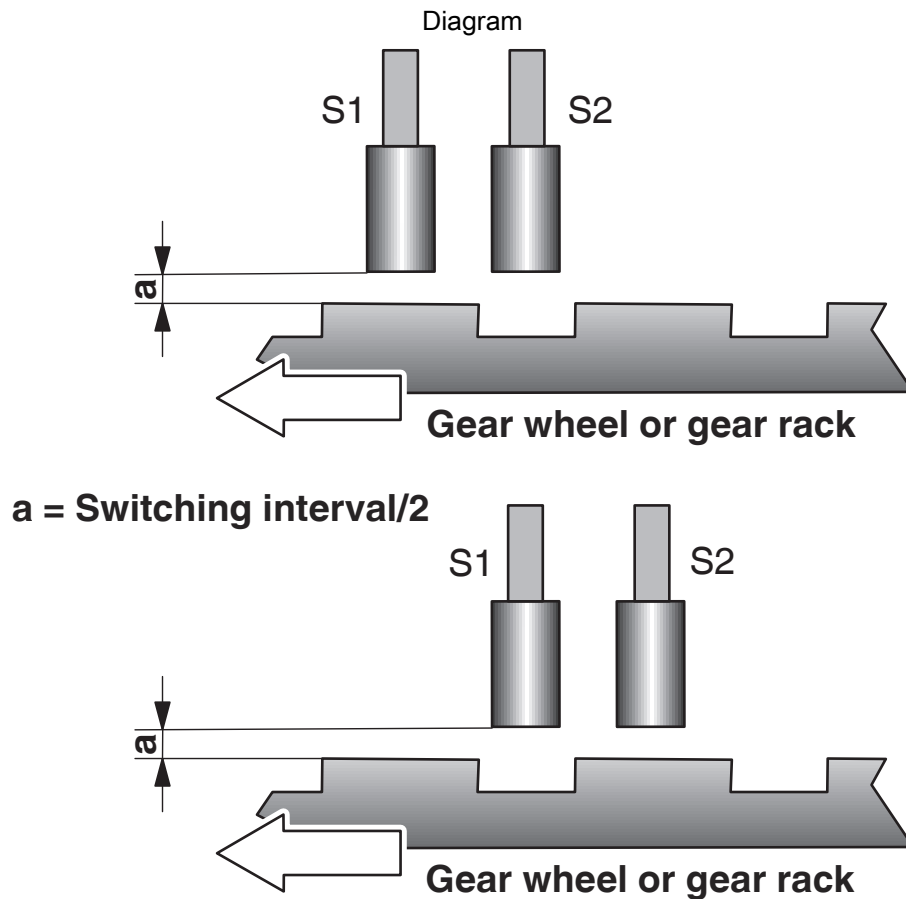
### Air clearances and creepage distances between the power circuits

Standards/regulations	EN 60664/VDE 0110
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## Mounting

Mounting type	DIN rail mounting
Assembly note	in rows with zero spacing
Mounting position	any

Drawings



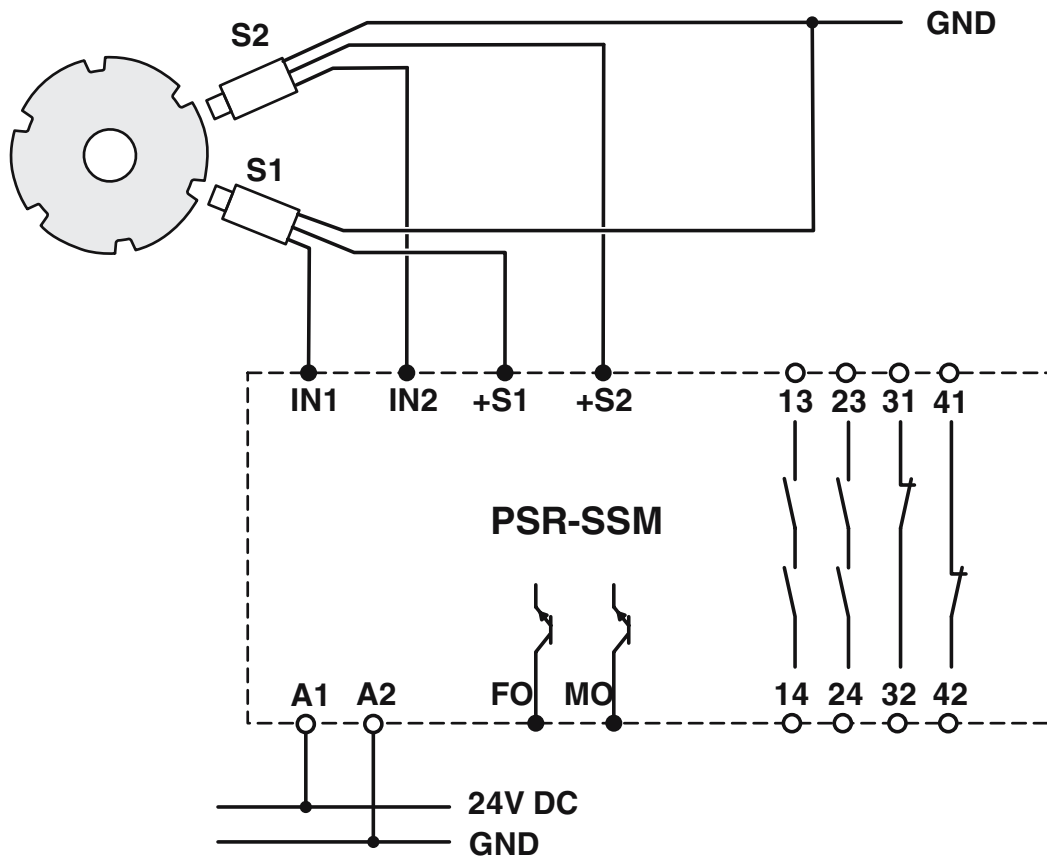
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Circuit diagram



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## Environmental product compliance

### China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

### EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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