

# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



2-channel over-speed and zero-speed safety relay up to SIL 3 or Cat. 4, PL e in accordance with EN ISO 13849, 4 N/O contacts, suitable for connecting incremental encoders and initiators, width: 45 mm, plug-in Push-in terminal block

## Your advantages

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

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 2981541             |
| Packing unit                         | 1 pc                |
| Sales key                            | DN01                |
| Product key                          | DNA242              |
| Catalog page                         | Page 244 (C-6-2019) |
| GTIN                                 | 4017918996833       |
| Weight per piece (including packing) | 363.6 g             |
| Weight per piece (excluding packing) | 363.069 g           |
| Customs tariff number                | 90328900            |
| Country of origin                    | DE                  |

# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

## Technical data

### Product properties

|                         |                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------|
| Product type            | Safety device                                                                        |
| Application             | Over-speed safety relay                                                              |
|                         | Zero-speed safety relay                                                              |
| Mechanical service life | > 50x 10 <sup>6</sup> cycles                                                         |
| Relay type              | Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3 |

### Electrical properties

|                                                 |                       |
|-------------------------------------------------|-----------------------|
| Maximum power dissipation for nominal condition | 2.4 W                 |
| Nominal operating mode                          | 100% operating factor |
| Interfaces                                      | Encoder               |
|                                                 | 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 <sub>N</sub>               | 24 V DC                            |
| Input voltage range in reference to U <sub>N</sub> | 0.85 ... 1.1                       |
| Typical input current at U <sub>N</sub>            | 100 mA                             |
| Voltage at input/start and feedback circuit        | approx. 24 V DC                    |
| Typical response time                              | 15 ms                              |
| Typical release time                               | 12 ms                              |
| Recovery time                                      | 1 s                                |
| Protective circuit                                 | Surge protection; Suppressor diode |
| Limit frequency                                    | 2 kHz (IN1, IN2)                   |
|                                                    | 400 kHz (RJ45)                     |
| Status display                                     | Green LED                          |

### Output data

|                             |                                                |
|-----------------------------|------------------------------------------------|
| Contact switching type      | 4 enabling 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      | 6 A                                            |

# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

|                                       |                                                                |
|---------------------------------------|----------------------------------------------------------------|
| Inrush current, minimum               | 1 mA                                                           |
| Sq. Total current                     | $42.25 \text{ A}^2 (I_{TH}^2 = I_1^2 + I_2^2 + I_3^2 + I_4^2)$ |
| Interrupting rating (ohmic load) max. | 67 W (24 V DC, $\tau = 0 \text{ ms}$ )                         |
|                                       | 36 W (48 V DC, $\tau = 0 \text{ ms}$ )                         |
|                                       | 43 MW (110 V DC, $\tau = 0 \text{ ms}$ )                       |
|                                       | 68 MW (220 V DC, $\tau = 0 \text{ ms}$ )                       |
| Switching capacity min.               | 1 mW                                                           |
| Switching capacity (3600/h cycles)    | 2 A (24 V (DC13))                                              |
|                                       | 3 A (230 V (AC15))                                             |
| Output fuse                           | 6 A gL                                                         |

## Clock/signal

|                   |   |
|-------------------|---|
| Number of outputs | 4 |
|-------------------|---|

## Connection data

### Connection technology

|           |     |
|-----------|-----|
| pluggable | yes |
|-----------|-----|

### 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, flexible, with ferrule, with plastic sleeve  | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (only together with CRIMPFOX 6) |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (only together with CRIMPFOX 6) |
| Conductor cross-section AWG                                           | 24 ... 16                                                                    |
| Stripping length                                                      | 8 mm                                                                         |

## Dimensions

|        |          |
|--------|----------|
| Width  | 45 mm    |
| Height | 112 mm   |
| Depth  | 114.5 mm |

## Material specifications

|                  |           |
|------------------|-----------|
| Color            | yellow    |
| Housing material | Polyamide |

## Characteristics

### Safety data

|               |   |
|---------------|---|
| Stop category | 0 |
|---------------|---|

### Safety data: EN ISO 13849

|                        |   |
|------------------------|---|
| Category               | 4 |
| Performance level (PL) | e |

Safety data: IEC 61508 - High demand

# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

|                                     |   |
|-------------------------------------|---|
| Safety Integrity Level (SIL)        | 3 |
| Safety data: IEC 61508 - Low demand |   |
| Safety Integrity Level (SIL)        | 3 |
| Safety data: EN IEC 62061           |   |
| Safety Integrity Level (SIL)        | 3 |

## Environmental and real-life conditions

### Ambient conditions

|                                                |                                                     |
|------------------------------------------------|-----------------------------------------------------|
| Degree of protection                           | 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

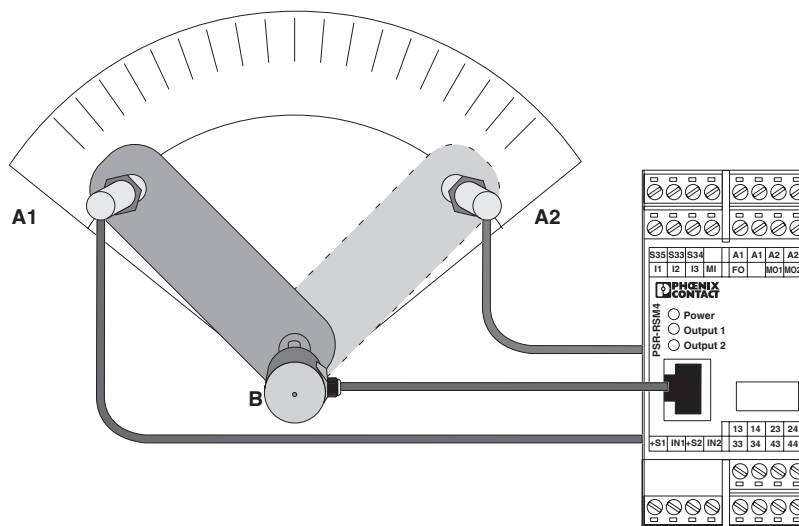
|                       |                |
|-----------------------|----------------|
| Standards/regulations | DIN EN 60664-1 |
|-----------------------|----------------|

## Mounting

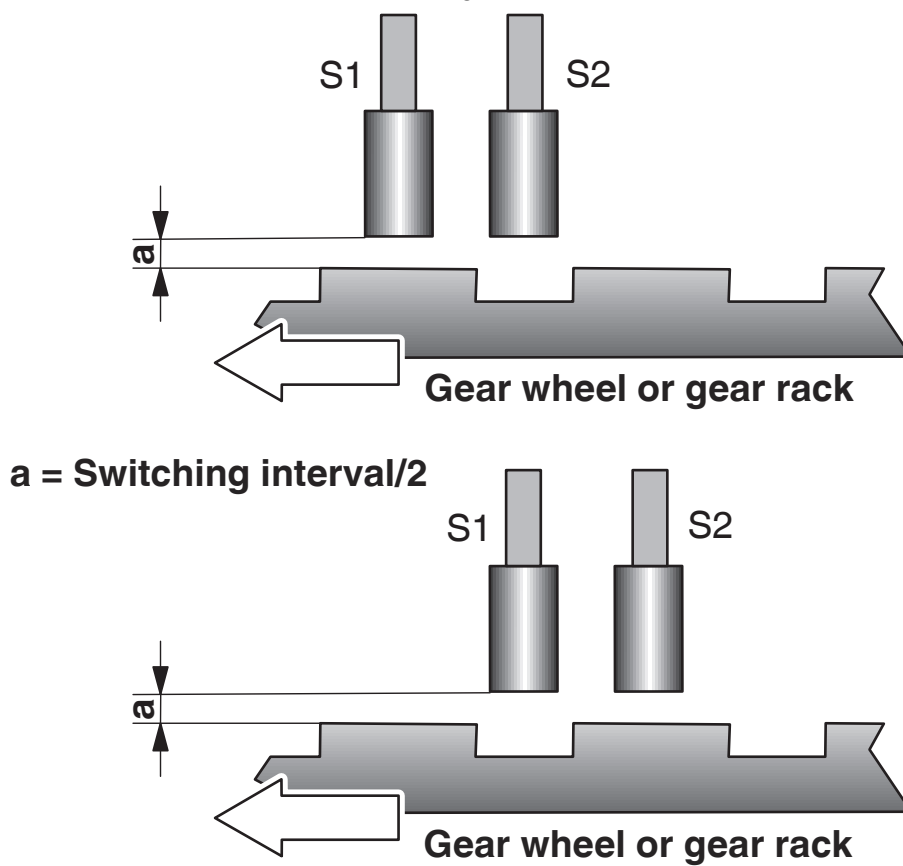
|                   |                           |
|-------------------|---------------------------|
| Mounting type     | DIN rail mounting         |
| Assembly note     | in rows with zero spacing |
| Mounting position | any                       |

## Drawings

Application drawing



Diagram

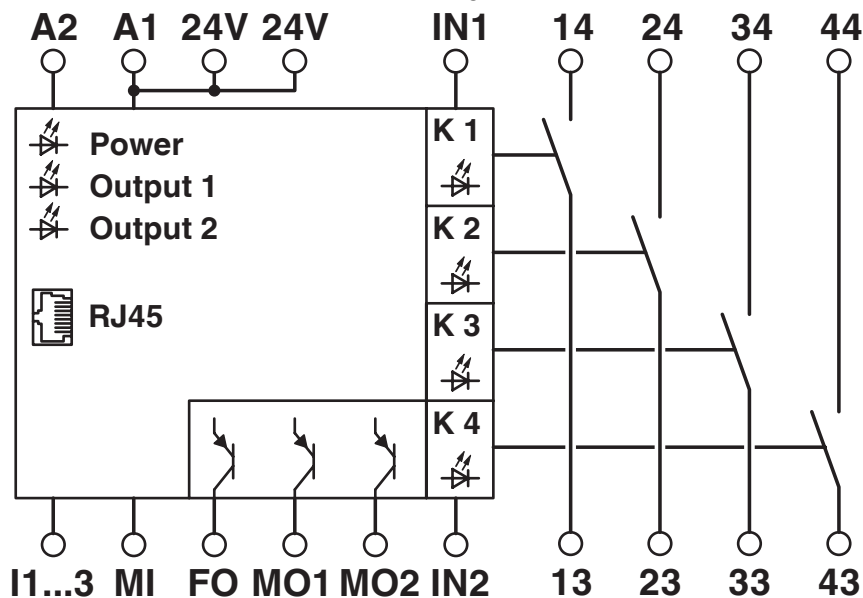


# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module

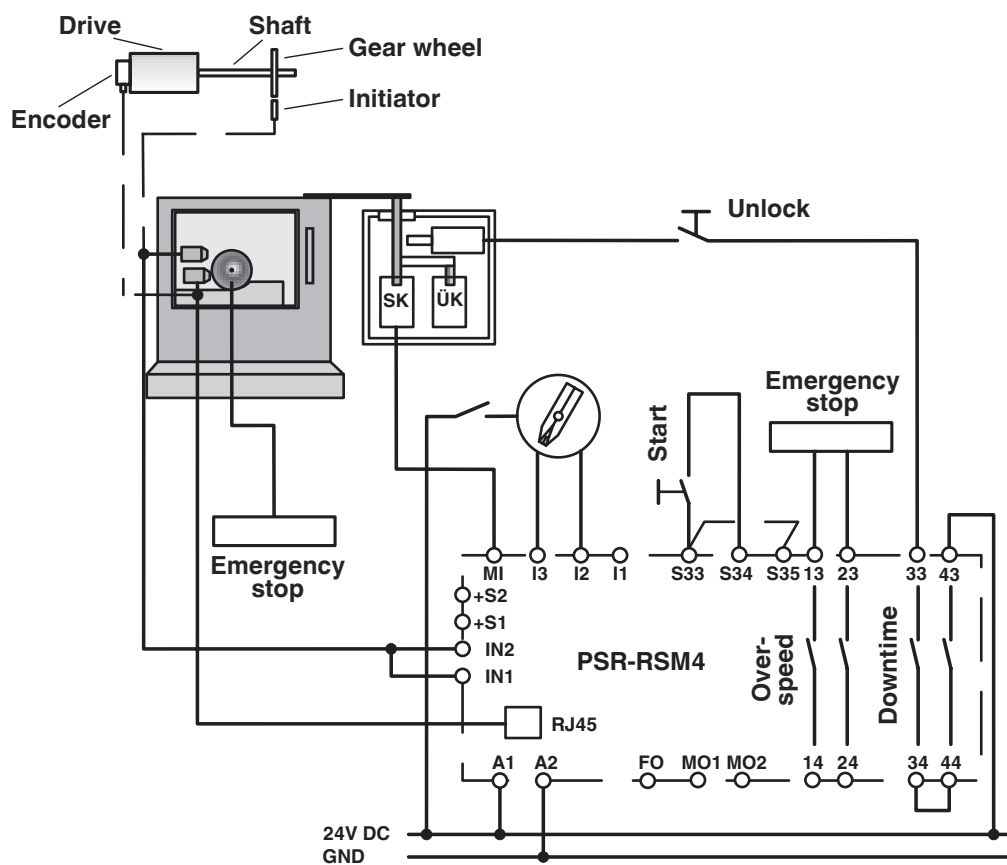
2981541

<https://www.phoenixcontact.com/us/products/2981541>

Circuit diagram



Diagram

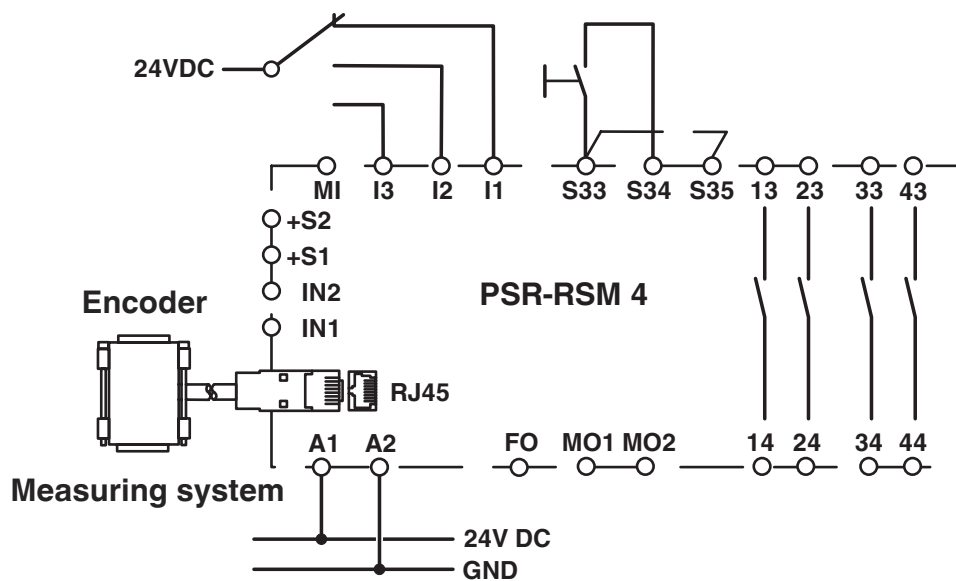


# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module

2981541

<https://www.phoenixcontact.com/us/products/2981541>

Diagram



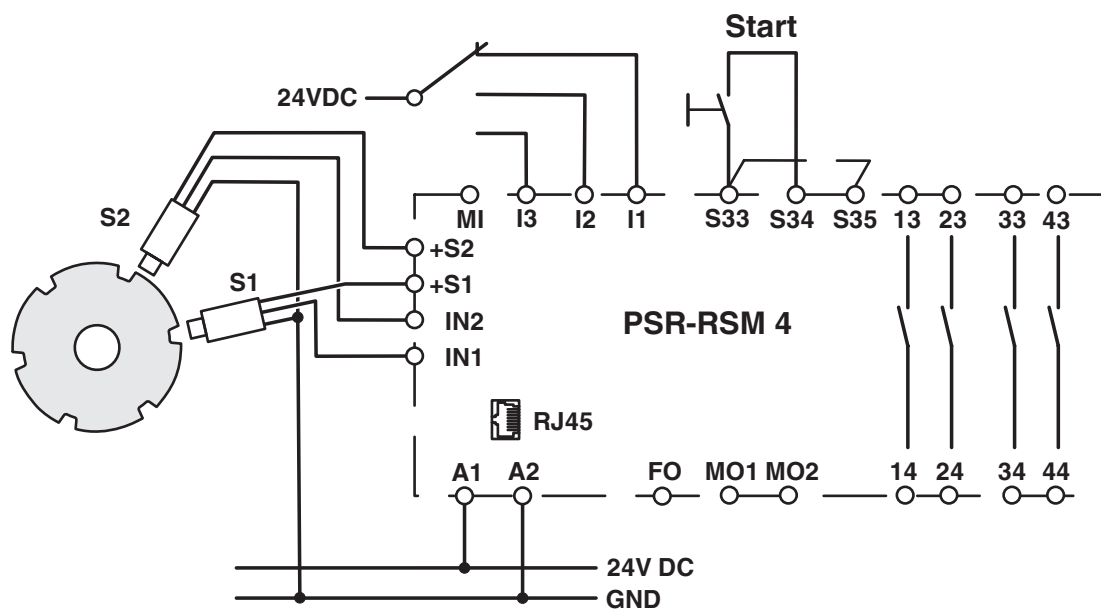
# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

Circuit diagram



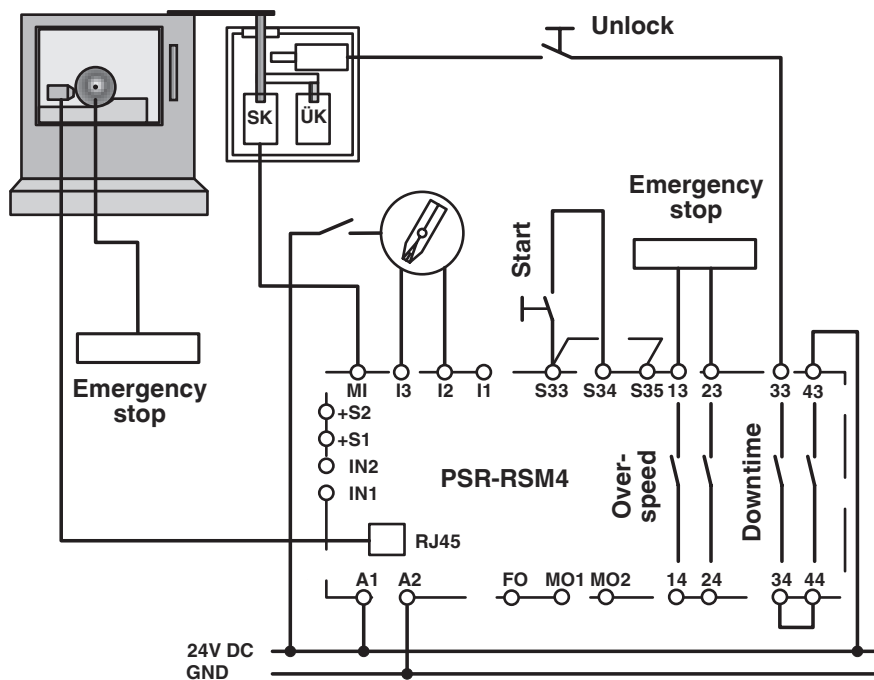
# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

Diagram

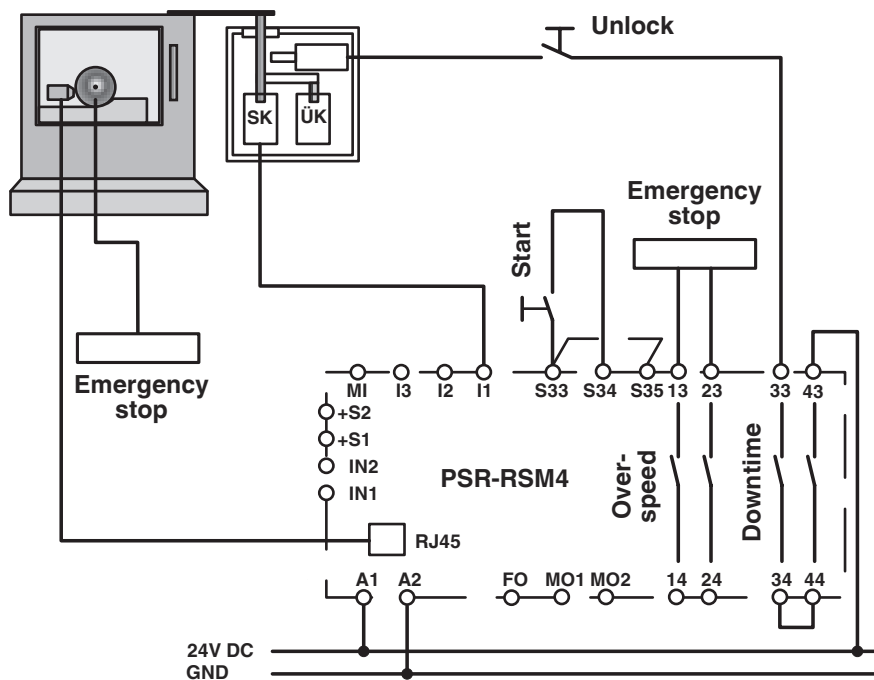


# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module

2981541

<https://www.phoenixcontact.com/us/products/2981541>

Diagram



# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2981541>

**EAC**  
Approval ID: TR TS\_D\_01838-19

**UL Listed**  
Approval ID: FILE E 140324

**cUL Listed**  
Approval ID: FILE E 140324

**Functional Safety**  
Approval ID: 968/EZ/213/10/22

**cULus Listed**

# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27371811 |
| ECLASS-12.0 | 27371811 |
| ECLASS-13.0 | 27371811 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001448 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39122300 |
|-------------|----------|

# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

## Environmental product compliance

|                                         |                                          |
|-----------------------------------------|------------------------------------------|
| EU RoHS                                 |                                          |
| Fulfills EU RoHS substance requirements | Yes, No exemptions                       |
| 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%               |

# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

## Accessories

### PSR-CONF-WIN1.0 - Configuration and diagnostic software

2981554

<https://www.phoenixcontact.com/us/products/2981554>



Configuration software for parameterizing the PSR-RSM4 safe downtime and over-speed safety relay, with programming cable

---

### CABLE-25/8/250/RSM/E-SIMO611D - Adapter cable

2901746

<https://www.phoenixcontact.com/us/products/2901746>



Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 25/8-pos., cable length: 2.5 m, for controller: Siemens, Heidenhain

# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

## CABLE-15/8/250/RSM/INDEL - Adapter cable

2902338

<https://www.phoenixcontact.com/us/products/2902338>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: INDEL



---

## CABLE- 9/8/250/RSM/ELAU - Adapter cable

2902984

<https://www.phoenixcontact.com/us/products/2902984>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 9/8-pos., cable length: 2.5 m, for controller: ELAU



# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

## CABLE-15/8/100/RSM/BM - Adapter cable

2904108

<https://www.phoenixcontact.com/us/products/2904108>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 1 m, for controller: Baumüller



---

## CABLE-25/8/250/RSM/SIMO611D - Adapter cable

2981583

<https://www.phoenixcontact.com/us/products/2981583>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 25/8-pos., cable length: 2.5 m, for controller: Siemens, Heidenhain



# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

## CABLE-25/8/250/RSM/ARADEx - Adapter cable

2981596

<https://www.phoenixcontact.com/us/products/2981596>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 25/8-pos., cable length: 2.5 m, for controller: Aradex



---

## CABLE-15/8/250/RSM/SIMO611D - Adapter cable

2981606

<https://www.phoenixcontact.com/us/products/2981606>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Siemens, Heidenhain



# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

## CABLE-15/8/250/RSM/MHD/G - Adapter cable

2981619

<https://www.phoenixcontact.com/us/products/2981619>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Indramat



---

## CABLE-15/8/250/RSM/SIN800 - Adapter cable

2981622

<https://www.phoenixcontact.com/us/products/2981622>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Siemens



# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

## CABLE-15/8/250/RSM/FM-NC - Adapter cable

2981635

<https://www.phoenixcontact.com/us/products/2981635>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Siemens



---

## CABLE-15/8/250/RSM/DKC - Adapter cable

2981648

<https://www.phoenixcontact.com/us/products/2981648>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Indramat



# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

## CABLE-15/8/250/RSM/AMK - Adapter cable

2981651

<https://www.phoenixcontact.com/us/products/2981651>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: AMK



---

## CABLE-15/8/250/RSM/SEW-X15 - Adapter cable

2981664

<https://www.phoenixcontact.com/us/products/2981664>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: SEW



# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

## CABLE-15/8/250/RSM/PD - Adapter cable

2981758

<https://www.phoenixcontact.com/us/products/2981758>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Parker Drives



---

## CABLE- 9/8/250/RSM/LENZE - Adapter cable

2981826

<https://www.phoenixcontact.com/us/products/2981826>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 9/8-pos., cable length: 2.5 m, for controller: Lenze



# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

## CABLE-15/8/250/RSM/KINETIX - Adapter cable

2986698

<https://www.phoenixcontact.com/us/products/2986698>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Allen-Bradley (Kinetix)



---

## CABLE-15/8/250/RSM/IHDUNI-SP - Adapter cable

2986973

<https://www.phoenixcontact.com/us/products/2986973>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Control Techniques, type: Unidrive SP



# PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

## CABLE-15/8/250/RSM/INDRADYN-2 - Adapter cable

2986986

<https://www.phoenixcontact.com/us/products/2986986>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), cable length: 2.5 m, for controller: Bosch Rexroth Indramat, type: IndraDrive - IndraDyn



---

## CABLE-20/8/250/RSM/FANUC - Adapter cable

2986999

<https://www.phoenixcontact.com/us/products/2986999>

Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), cable length: 2.5 m, for controller: FANUC CN



---

Phoenix Contact 2024 © - all rights reserved

<https://www.phoenixcontact.com>

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