

# PSR-SPP- 24DC/TS/SDOR4/4X1 - Extension module



2986106

<https://www.phoenixcontact.com/us/products/2986106>

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The figure shows a version with a screw connection

PSR-TRISAFE-M relay output extension module with 4 safe relay output contacts (choice of 4 single-channel or 2 two-channel relay contacts), 4 signal outputs; up to SIL 3, Cat. 4/PL e, SIL 3, EN 50156, pluggable Push-in terminal block

## Commercial data

Item number	2986106
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN02
Product key	DNA332
GTIN	4046356536547
Weight per piece (including packing)	200 g
Weight per piece (excluding packing)	140 g
Customs tariff number	85371098
Country of origin	DE

## Technical data

### Notes

#### Note on application

Note on application	Only for industrial use
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### Product properties

Product type	Safety device
Application	PSR-TRISAFE-M extension module
Control	1 and 2 channel

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

Overvoltage category	III
Pollution degree	2

#### Times

Response time	max. 50 ms
Recovery time	< 10 s

### Electrical properties

Maximum power dissipation for nominal condition	3932 mW (up to 40°C ambient temperature, at m = 4, n = 4, I <sub>load</sub> = 4 A, I <sub>signal</sub> = 50 mA)
	1532 mW (up to 55°C ambient temperature, at m = 4, n = 4, I <sub>load</sub> = 1 A, I <sub>signal</sub> = 50 mA)
Nominal operating mode	100% operating factor
Interfaces	DIN rail TBUS for connection to the master module, supplied as standard

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

Rated insulation voltage	250 V AC
Rated surge voltage/insulation	4 kV / basic insulation between output contact current paths (13/14, 23/24, 33/34, 43/44); 6 kV / safe isolation, reinforced insulation between output contact current paths (13/14, 23/24, 33/34, 43/44) and the other circuits

#### Supply

Rated control circuit supply voltage U <sub>S</sub>	18 V DC ... 30 V DC (Incl. all tolerances, incl. residual ripple)
Rated control circuit supply voltage U <sub>S</sub>	24 V DC (Electrical supply via PSR-TBUS)
Rated control supply current I <sub>S</sub>	Electrical supply via PSR-TBUS
	74 mA (At 24 V DC, relay outputs set)
	54 mA (At 24 V DC, relay outputs not set)
Protective circuit	Yes, within the scope of the operating voltage limits
Status display	1 x LED (green) , 1 x LED (red)

### Output data

Maximum switching voltage	250 V AC/DC
	24 V DC

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Minimum switching voltage	5 V AC/DC
Limiting continuous current	4 A (see derating curve)
Maximum inrush current	6 A
Inrush current, minimum	5 mA
Switching capacity (3600/h cycles)	3 A (230 V (AC 15))
	5 A (24 V (DC13))
Output fuse	6 A gL/gG
Response time	max. 50 ms

## Relay

Output description	Relay contacts, safety-related N/O contacts
Number of outputs	4 (Single-channel)
	2 (Two-channel, connected in pairs)
Contact switching type	4 relay output contacts
Contact material	AgSnO <sub>2</sub> (From HW03) AgCuNi +0.2 ... 0.4 µm Au (up to HW02)
Switching voltage	min. 12 V AC/DC (from HW 03)
	min. 5 V AC/DC (Up to HW02)
	max. 250 V AC/DC (For modules from HW03, see Section "Relay data" in the user manual.)
Switching current	min. 3 mA (from HW 03)
	min. 5 mA (Up to HW02)
Switching power	min. 60 mW
Switching capacity in accordance with IEC 60947-5-1	2 A (AC15)
	4 A (DC13)
Limiting continuous current	4 A (see to derating)
Mechanical service life	10x 10 <sup>6</sup> cycles
Output fuse	4 A (gL/gG)
Status display	4 x LED (green)

## Signal

Output description	digital
Number of outputs	4
Voltage	24 V DC (Supply via A1/A2)
Limiting continuous current	50 mA
Protective circuit	Yes, within the scope of the operating voltage limits
Short-circuit protection	Yes

## Connection data

### Connection technology

pluggable	yes
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### Conductor connection

Connection method	Push-in connection
Conductor cross-section rigid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>

2986106

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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	22.5 mm
Height	112 mm
Depth	114.5 mm

## Material specifications

Color	yellow
Housing material	Polyamide PA non-reinforced

## Characteristics

### Safety data

Stop category (EN 60204-1)	0
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### Safety data: EN ISO 13849

Performance level (PL)	c (1-channel parameterization)
	e (2-channel parameterization)

### Safety data: EN 50156

Safety Integrity Level (SIL)	max. 3 (Reference IEC 61508)
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### Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	1 (1-channel parameterization)
	3 (2-channel parameterization)

### Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	1 (1-channel parameterization)
	3 (2-channel parameterization)

### Safety data: EN IEC 62061

Safety Integrity Level (SIL)	1 (1-channel parameterization)
	3 (2-channel parameterization)

## 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)	-20 °C ... 70 °C
Maximum altitude	max. 2000 m (See Appendix "Using PSR-TRISAFE modules at altitudes greater than 2000 m above sea level")

2986106

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Max. permissible humidity (storage/transport)	75 % (On average, 85 % occasionally)
Max. permissible relative humidity (operation)	75 % (On average, 85 % occasionally)
Shock (operation)	10g ( $\Delta t = 11$ ms, three shocks in each space direction)
	10g ( $\Delta t = 16$ ms, continuous shock, 1000 shocks in each space direction)
Vibration (operation)	2g
Air pressure (operation)	70 kPa ... 108 kPa (up to 3000 m above sea level)
Air pressure (storage/transport)	66 kPa ... 108 kPa (up to 3500 m above sea level)

## Standards and regulations

Air clearances and creepage distances between the power circuits

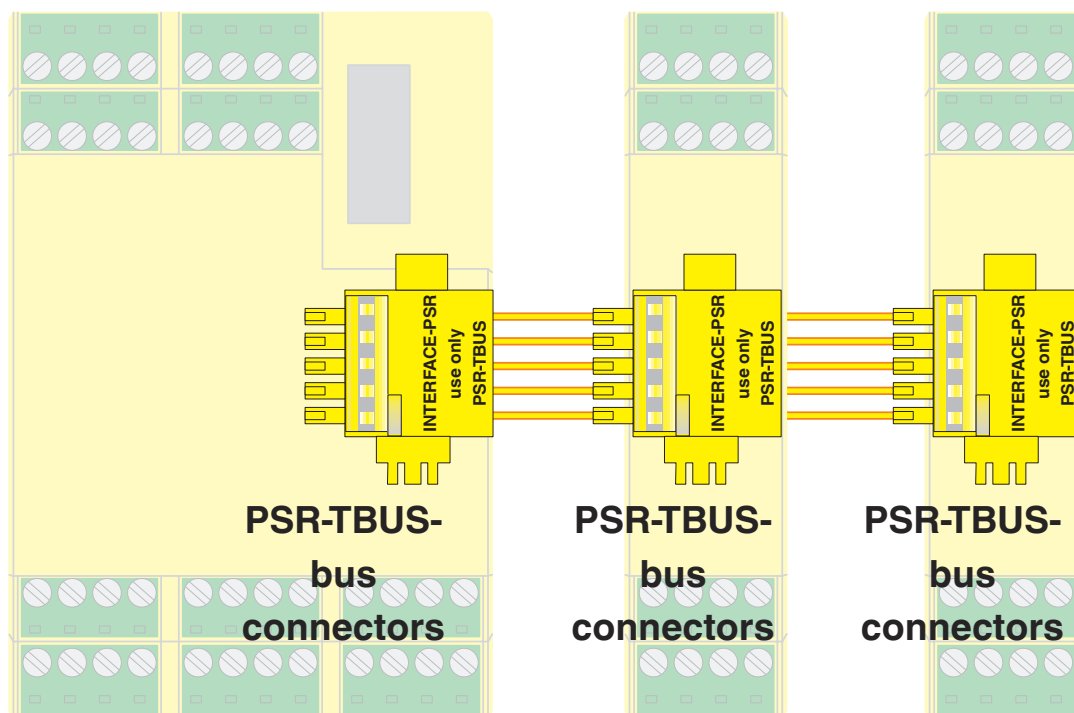
Standards/regulations	DIN EN 50178
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## Mounting

Mounting type	DIN rail mounting
Mounting position	On horizontal DIN rail

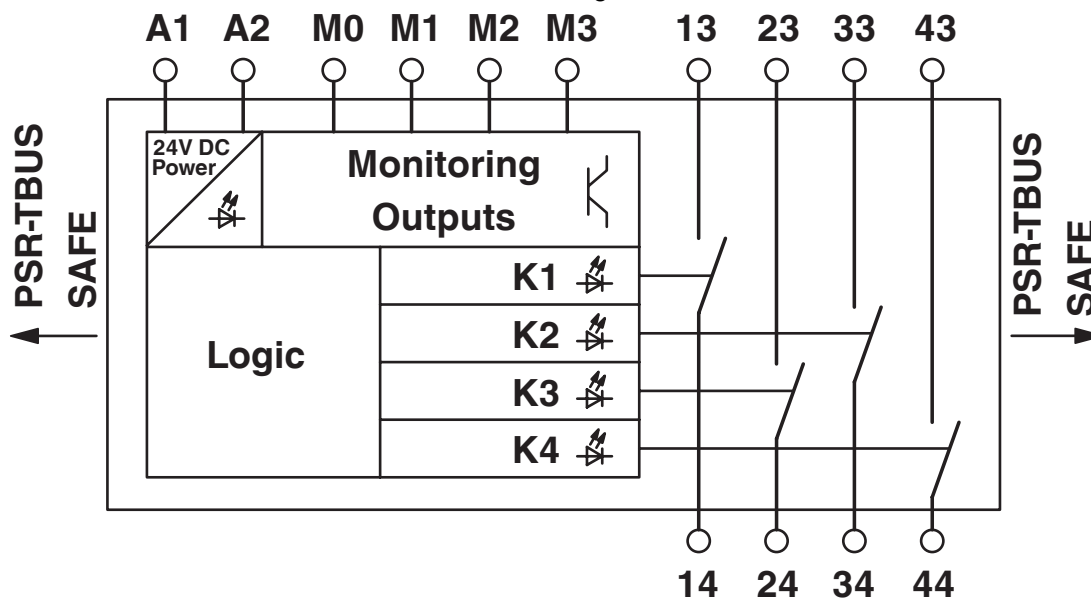
## Drawings

Connection diagram



PSR-TBUS DIN rail connectors are used for cross-wiring between the modules.

Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2986106>



**cULus Listed**

Approval ID: E140324



**Functional Safety**

Approval ID: 01/205/5151.04/20

2986106

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## Classifications

### ECLASS

ECLASS-13.0

27371819

### ETIM

ETIM 9.0

EC001449

### UNSPSC

UNSPSC 21.0

39122200

2986106

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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	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(CAS: 7439-92-1)
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7)

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