

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



2986106

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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
Product Key	DNA332
Catalog Page	Page 262 (C-6-2019)
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

### Product properties

Product type	Safety device
Application	PSR-TRISAFE-M extension module

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, $I_{load} = 4$ A, $I_{signal} = 50$ mA)
	1532 mW (up to 55°C ambient temperature, at m = 4, n = 4, $I_{load} = 1$ A, $I_{signal} = 50$ 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 $U_S$	18 V DC ... 30 V DC (Incl. all tolerances, incl. residual ripple)
Rated control circuit supply voltage $U_S$	24 V DC (Electrical supply via PSR-TBUS)
Rated control supply current $I_S$	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 green LED, 1 x red LED

### Output data

Maximum switching voltage	250 V AC/DC
	24 V DC
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))

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	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
Switching current	min. 3 mA (from HW 03) min. 5 mA (Up to HW02)
Switching capacity	min. 60 mW
Limiting continuous current	4 A (see to derating)
Mechanical service life	10x 10 <sup>6</sup> cycles
Output fuse	6 A (gL/gG) 4 A (gL/gG for low-demand applications)
Status display	4 x green LEDs

## 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>
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
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Height	112 mm
Depth	114.5 mm

## Material specifications

Color	yellow
Housing material	Polyamide PA non-reinforced

## Characteristics

### Safety data

Stop category	0
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### Safety data: EN ISO 13849

Category	1 (1-channel parameterization)
	4 (2-channel parameterization)
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)
Proof test interval	240 Months
Duration of use	240 Months

### Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	1 (1-channel parameterization)
Proof test interval	60 Months
Duration of use	240 Months

## 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")
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)

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Air pressure (storage/transport)	66 kPa ... 108 kPa (up to 3500 m above sea level)
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## Standards and regulations

Air clearances and creepage distances between the power circuits

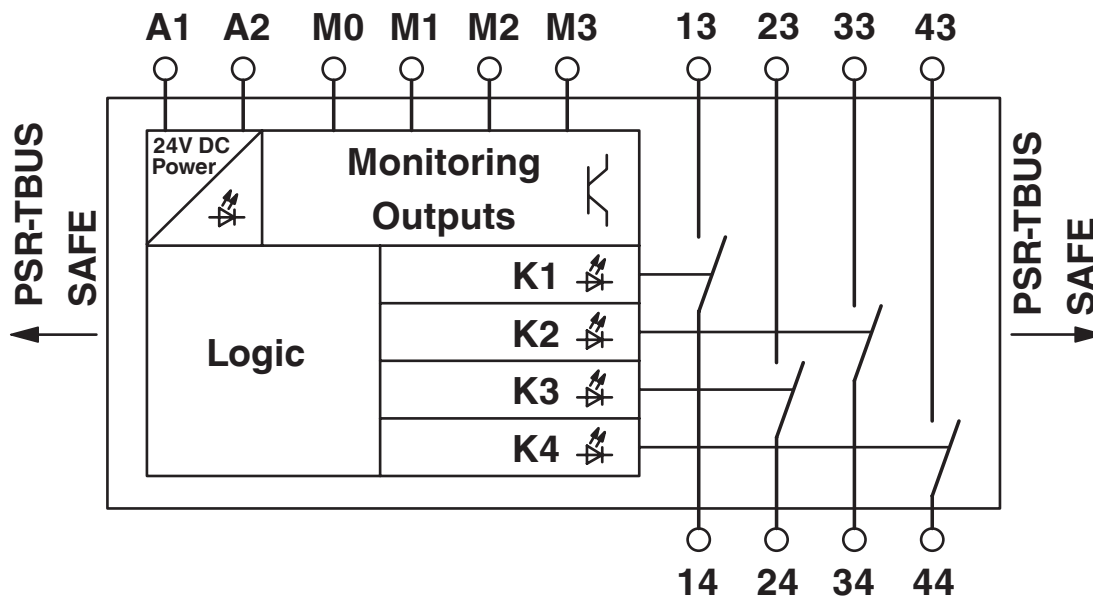
Standards/regulations	DIN EN 50178
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## Mounting

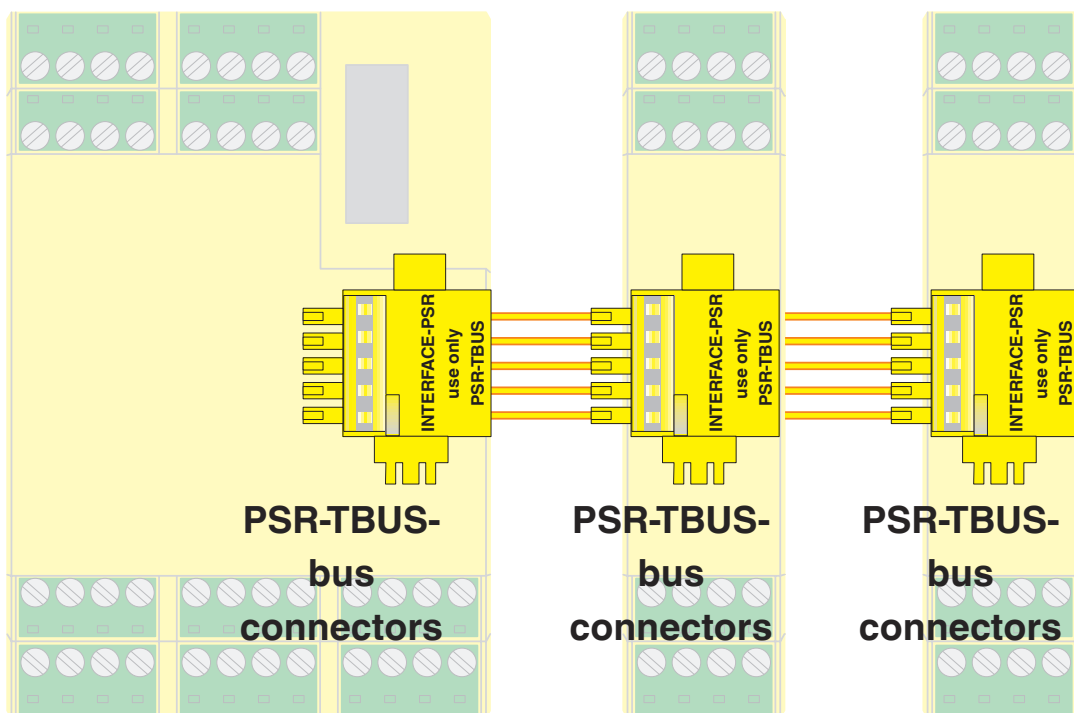
Mounting type	DIN rail mounting
Mounting position	On horizontal DIN rail
Connection method	Push-in connection

Drawings

Circuit diagram



Connection diagram



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

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