PSR-SCP- 24DC/TS/SDOR4/4X1 - Extension module

2986096

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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 alarm outputs; up to SIL 3, Cat.4/PLe, SIL 3, EN 50156, plug-in screw connection terminal blocks

Commercial data

Item number	2986096
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN02
Product key	DNA332
GTIN	4046356536554
Weight per piece (including packing)	201.1 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

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_{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 LED (green) , 1 x LED (red)

Output data

Maximum switching voltage	250 V AC
	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))
	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	$AgSnO_2$ (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 10^6 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

Conductor connection

Connection method	Screw connection
Conductor cross-section rigid	0.2 mm² ... 2.5 mm²

Conductor cross-section flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section AWG	24 ... 12
Stripping length	7 mm
Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm
	5 lb_f-in. ... 7 lb_f-in.

Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

Material specifications

Color	yellow
Housing material	Polyamide PA non-reinforced

Characteristics

Safety data

Stop category (EN 60204-1)	0

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)

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 (see to derating)
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 (Δt = 11 ms, three shocks in each space direction)
	10g (Δt = 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

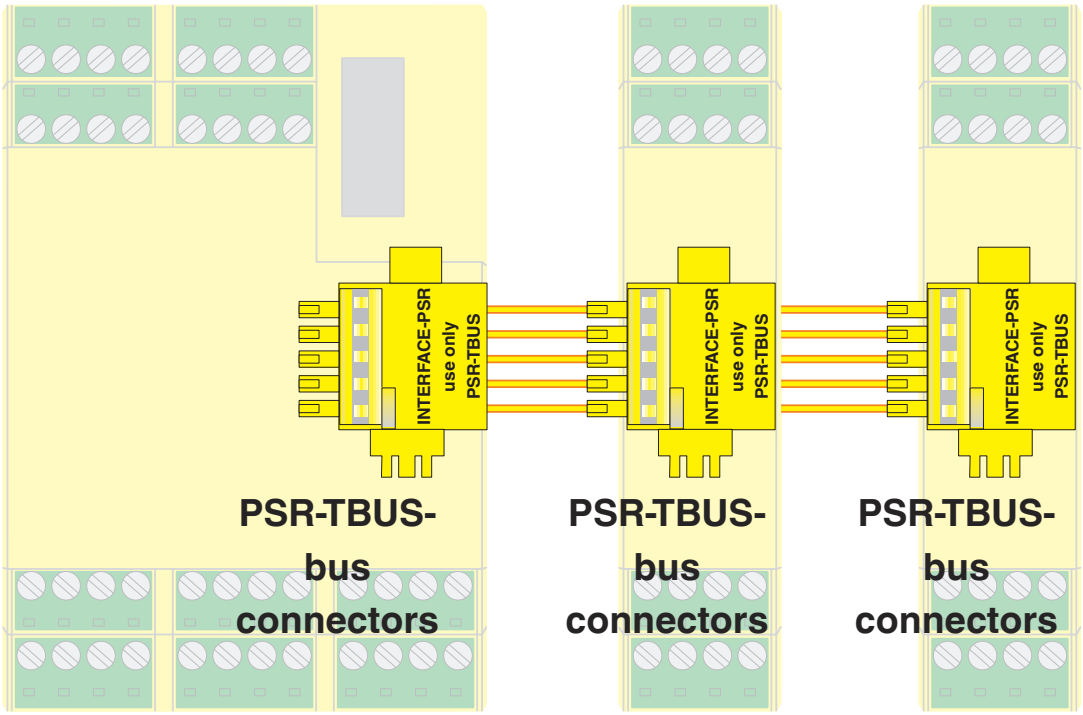
Standards/regulations	DIN EN 50178

Mounting

Mounting type	DIN rail mounting
Mounting position	On horizontal DIN rail

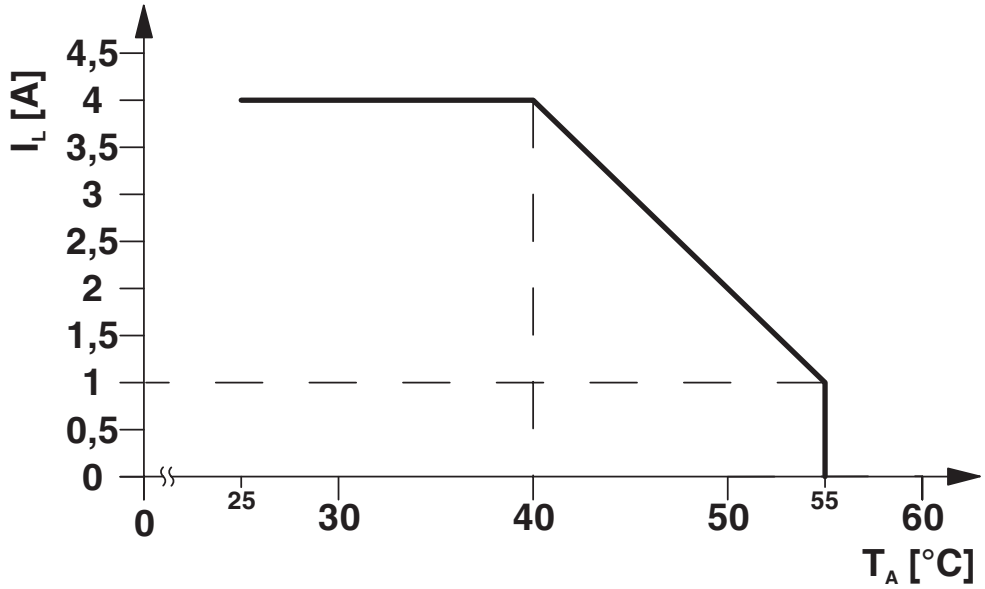
Drawings

Connection diagram

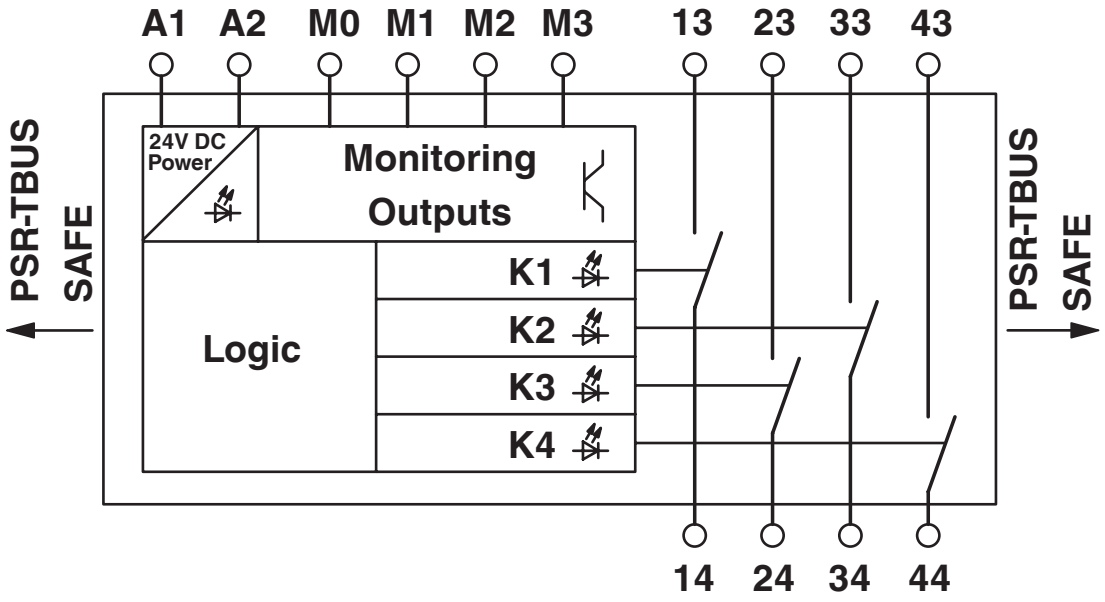


PSR-TBUS DIN rail connectors are used for cross-wiring between the modules.

Diagram



Circuit diagram



Approvals

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cULus Listed
Approval ID: E140324

Functional Safety
Approval ID: 01/205/5151.04/20

Functional Safety
Approval ID: 01/205/5151.05/25

Classifications

ECLASS

ECLASS-13.0	27371819

ETIM

ETIM 9.0	EC001449

UNSPSC

UNSPSC 21.0	39122200

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)

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