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PSR-TRISAFE-M input/output extension module with 8 safe inputs and 4 safe, configurable channels (choice of safe inputs or outputs), 2 clock/alarm outputs, up to SIL 3, Cat. 4/PL e, SIL 3, EN 50156, plug-in screw connection terminal blocks

Your advantages

- Flexible extension with safe inputs and outputs
- Up to Cat. 4/PL e in accordance with ISO 13849-1, SIL 3 in accordance with EN IEC 62061, SIL 3 in accordance with IEC 61508
- EN 50156
- 2 alarm outputs or 2 clock outputs (that can be configured using SAFECONF)
- Quick startup thanks to comprehensive simulation and test functions
- Easy graphical configuration instead of complex programming
- Multifunctional use for a wide range of safety functions
- Including PSR-TBUS connector (DIN rail connector) for adapting to the PSR-TRISAFE-M master module
- 4 safe digital outputs or 4 additional digital inputs (that can be configured using SAFECONF)
- 8 safe digital inputs
- Narrow 22.5 mm housing

Commercial data

Item number	2986038
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	DNA341
Catalog page	Page 262 (C-6-2019)
GTIN	4046356451871
Weight per piece (including packing)	183 g
Weight per piece (excluding packing)	130 g
Customs tariff number	85364900
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. 30 ms (plus response time of PSR-TS-SDOR4)
Recovery time	< 10 s

Electrical properties

Maximum power dissipation for nominal condition	2323 mW (at $f = 8$, $g = 2$, $h = 4$, $I_{\text{clock}} = 50$ mA, $I_{\text{OUT/GND}} = 500$ mA)
Nominal operating mode	100% operating factor
Interfaces	DIN rail TBUS for connection to the master module, supplied as standard

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
	typ. 51.6 mA (No inputs or outputs set, A1/A2 open)
	typ. 66 mA (All inputs and safe outputs set)
Filter time	typ. 20 ms (Load-dependent, in the event of voltage dips at U_S)
Protective circuit	Yes, within the scope of the operating voltage limits
Status display	1 x green LED, 1 x red LED

Input data

Digital

Description of the input	Digital input
Number of inputs	12 (Of which 4 can be configured as input or output)
Input voltage range "0" signal	0 V DC ... 5 V DC (for safe Off)
Input voltage range "1" signal	11 V DC ... 30 V DC
Cable length	max. 2000 m
Status display	12 LEDs (green)
Current consumption	typ. 4 mA

Output data

Digital

Number of outputs	4 (If the configurable inputs/outputs are used as outputs)
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PSR-SCP- 24DC/TS/SDI8/SDIO4 - Extension module



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Note on protection circuit	Yes, within the scope of the operating voltage limits
Short-circuit protection	Yes
Max. capacitive load	max. 1 μ F (Electronic components)
Max. inductive load	See "Protective circuit"
Nominal output voltage	24 V DC (Supply via A1/A2)
Nominal output voltage range	18 V DC ... 30 V DC (Incl. all tolerances, incl. residual ripple)
Status display	4x LED green
Test pulses	< 1 ms

Clock/signal

Output description	Digital
Number of outputs	2
Voltage	24 V DC (Supply via A1/A2)
Limiting continuous current	50 mA
Test pulses	~ 1 ms
Short-circuit protection	Yes

Connection data

Connection technology

pluggable	yes
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Conductor connection

Connection method	Screw connection
Conductor cross section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
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	0
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Safety data: EN ISO 13849

PSR-SCP- 24DC/TS/SDI8/SDIO4 - Extension module



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Category	2 (1-channel parameterization)
	4 (2-channel parameterization)
Performance level (PL)	d (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)	2 (1-channel parameterization)
	3 (2-channel parameterization)

Safety data: IEC 61508 - Low demand

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

Safety data: EN IEC 62061

Safety Integrity Level (SIL)	2 (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")
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

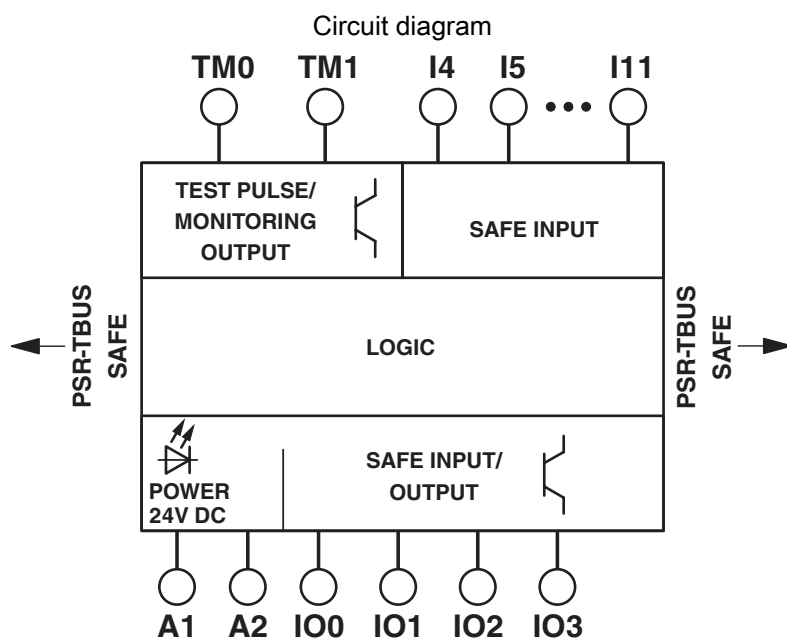
Air clearances and creepage distances between the power circuits

Standards/regulations	DIN EN 50178
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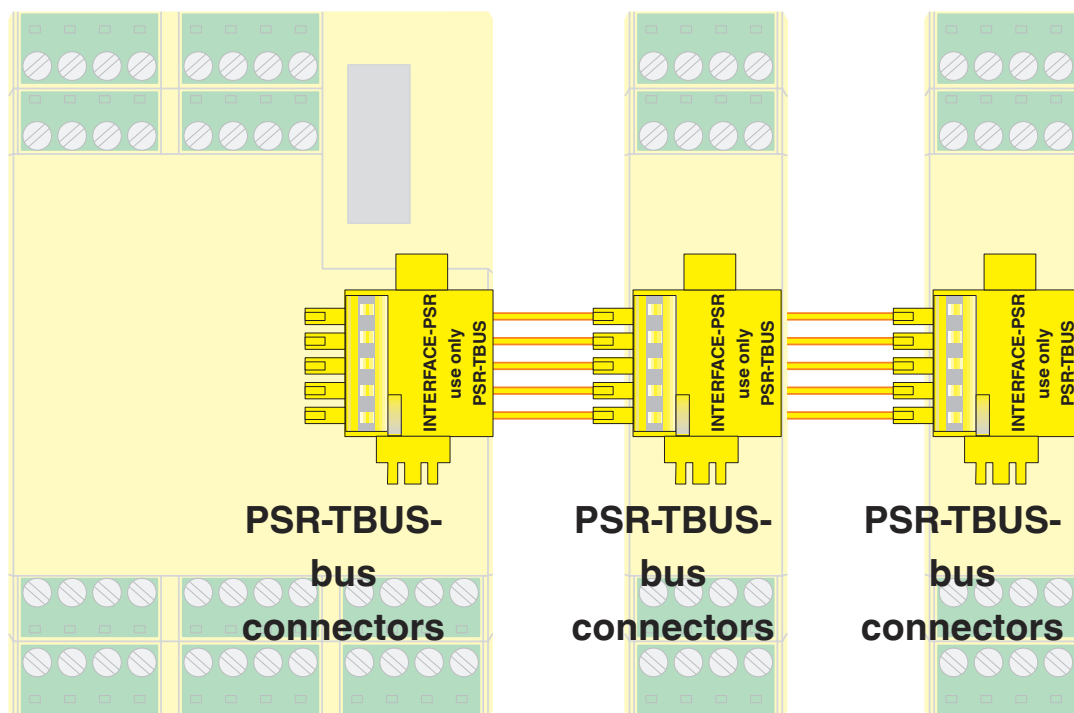
Mounting

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.

Approvals

 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/2986038>



UL Listed
Approval ID: FILE E 140324



cUL Listed
Approval ID: FILE E 140324

cULus Listed

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Classifications

ECLASS

ECLASS-11.0	27371819
ECLASS-13.0	27371819
ECLASS-12.0	27371819

ETIM

ETIM 9.0	EC001449
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UNSPSC

UNSPSC 21.0	39122200
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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)