

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



2986038

<https://www.phoenixcontact.com/us/products/2986038>

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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 |
| Sales key | DN02 |
| Product key | DNA341 |
| 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

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. 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, $I_{\text{clock}} = 50 \text{ mA}$, $I_{\text{OUT/GND}} = 500 \text{ mA}$) |
| 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 LED (green) , 1 x LED (red) |

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) |

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| | |
|---------------------|-----------|
| Current consumption | typ. 4 mA |
|---------------------|-----------|

Output data

Digital

| | |
|------------------------------|---|
| Number of outputs | 4 (If the configurable inputs/outputs are used as outputs) |
| 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 | 4 x 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 |
|-----------|-----|

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

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|--------|----------|
| Width | 22.5 mm |
| Height | 99 mm |
| Depth | 114.5 mm |

Material specifications

| | |
|------------------|-----------------------------|
| Color | yellow |
| Housing material | Polyamide PA non-reinforced |

Characteristics

Safety data

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|----------------------------|---|
| Stop category (EN 60204-1) | 0 |
|----------------------------|---|

Safety data: EN ISO 13849

| | |
|------------------------|--------------------------------|
| Performance level (PL) | d (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) | 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

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|--|---|
| 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 |
|-----------------------|--------------|

Mounting

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



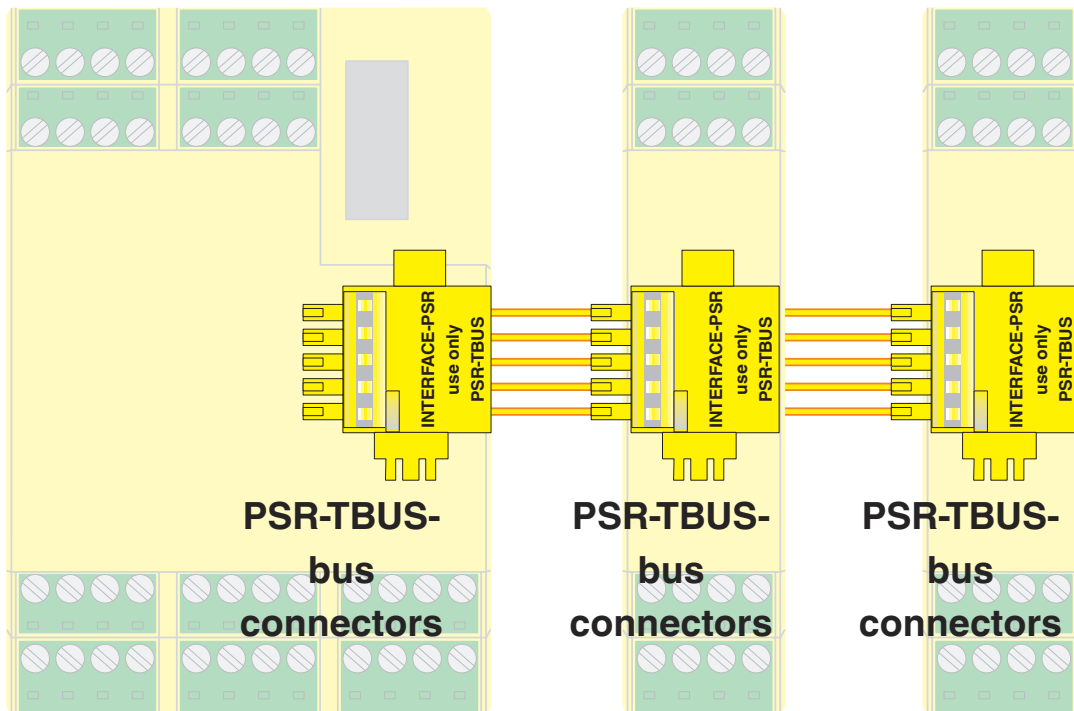
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| | |
|-------------------|------------------------|
| Mounting type | DIN rail mounting |
| Mounting position | On horizontal DIN rail |

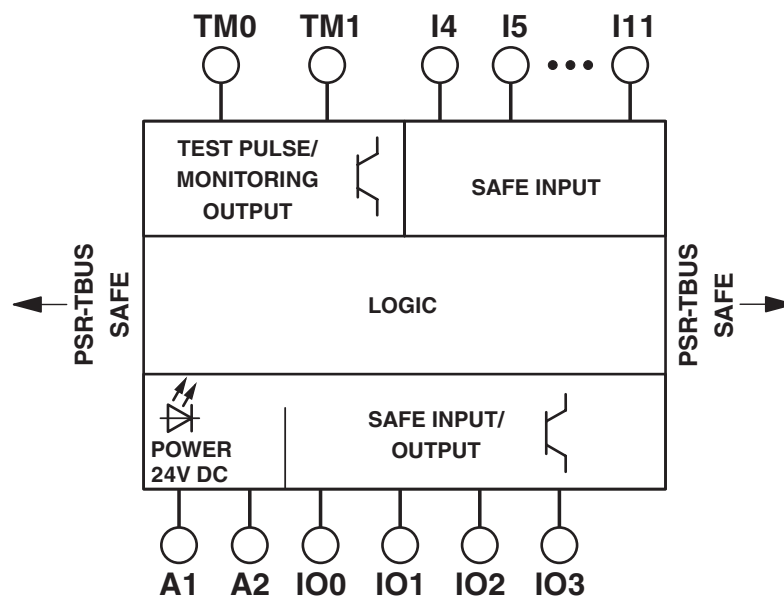
Drawings

Connection diagram



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

Circuit diagram



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Approvals

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cULus Listed

Approval ID: E140324



Functional Safety

Approval ID: 01/205/5151.05/25

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Classifications

ECLASS

ECLASS-13.0

27371819

ETIM

ETIM 9.0

EC001449

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) |

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