

# PSR-SPP- 24DC/TS/S - Safety module



2986232

<https://www.phoenixcontact.com/us/products/2986232>

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The figure shows a version with a screw connection

Freely configurable safety module with 20 safe inputs and 4 safe outputs, 4 signal, 2 clock, and 2 ground switching outputs, diagnostics possible via bus gateways, up to SIL 3, Cat. 4/PL e, SIL 3, EN 50156, pluggable Push-in terminal block

## Your advantages

- Freely configurable safety module for monitoring emergency stops, safety doors, light grids, etc.
- 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
- Option for connecting fieldbus gateways for diagnostics and signaling functions
- Quick startup thanks to comprehensive simulation and test functions
- Easy graphical configuration instead of complex programming
- Easy graphical configuration with the SAFECONF software
- Including IFS-CONFSTICK memory stick for easily storing and saving the configuration
- Multifunctional use for a wide range of safety functions
- With 20 safe inputs, 4 safe outputs, 4 alarm outputs, and 2 clock outputs on a design width of just 67.5 mm

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2986232       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | DN02          |
| Product key                          | DNA311        |
| GTIN                                 | 4046356477185 |
| Weight per piece (including packing) | 396.4 g       |
| Weight per piece (excluding packing) | 300 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                          | Emergency stop                                |
|                                      | Light grid                                    |
|                                      | Safety door                                   |
|                                      | Two-hand control                              |
| Number of possible extension modules | 1 (max. continuous current via PSR-TBUS: 4 A) |
| 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 | 6372 mW (at a = 20, b = 2, c = 4, e = 2, $I_{\text{clock}} = 100 \text{ mA}$ , $I_{\text{signal}} = 100 \text{ mA}$ , $I_{\text{Out/GND}} = 2 \text{ A}$ , $I_{\text{Out/Out}} = 2 \text{ A}$ ) |
| Nominal operating mode                          | 100% operating factor   |
| Interfaces                                      | USB   |
|   | DIN rail TBUS for extension modules and bus couplers  |

#### 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 (A1/A2)   |
| Rated control supply current $I_S$         | typ. 110 mA   |
| Limiting continuous current                | max. 6 A (For looped-through current paths A1/A1 and A2/A2)         |
| 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                             | 3 x LED (green), 1 x LED (red)                                      |

### Input data

#### Digital

|                          |                               |
|--------------------------|-------------------------------|
| Description of the input | Digital, type HTL             |
| Number of inputs         | 10 (Two-channel, up to SIL 3) |
|                          | 20 (1-channel, up to SIL 2)   |

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|                                |                                  |
|--------------------------------|----------------------------------|
| 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                 | 20 x LED green (1 LED per input) |
| Current consumption            | typ. 4 mA                        |

## Output data

### Digital

|                              |  |
|------------------------------|--|
| Number of outputs            | 4 (Safe semiconductor outputs, up to Cat. 4 in accordance with EN ISO 13849-1)<br>2 (Ground switching outputs) |
| Note on protection circuit   | Yes, within the scope of the operating voltage limits  |
| Short-circuit protection     | Yes  |
| Output voltage               | < 5 V (Low state)  |
| Leakage current              | max. 2 mA  |
| Max. capacitive load         | max. 1 µF (Electronic components)  |
| Max. inductive load          | See "Protective circuit"   |
| Limiting continuous current  | 2 A (Per channel, see Derating)<br>2 A (Total current of all outputs)  |
| Nominal output voltage       | 24 V DC (Supply via 24 V/0 V)  |
| Nominal output voltage range | 18 V DC ... 30 V DC (Incl. all tolerances, incl. residual ripple)  |
| Status display               | 4 x LED green (1 LED per output)   |
| Test pulses                  | < 1 ms   |

### Signal

|                             |                               |
|-----------------------------|-------------------------------|
| Output description          | digital                       |
| Number of outputs           | 4                             |
| Voltage                     | 24 V DC (Supply via 24 V/0 V) |
| Limiting continuous current | 100 mA                        |
| Short-circuit protection    | Yes                           |

### Clock

|                             |                               |
|-----------------------------|-------------------------------|
| Output description          | digital                       |
| Number of outputs           | 2                             |
| Voltage                     | 24 V DC (Supply via 24 V/0 V) |
| Limiting continuous current | 100 mA                        |
| Test pulses                 | < 1 ms                        |
| Short-circuit protection    | Yes                           |

## Connection data

### Connection technology

|           |     |
|-----------|-----|
| pluggable | yes |
|-----------|-----|

### Conductor connection

|                   |                    |
|-------------------|--------------------|
| Connection method | Push-in connection |
|-------------------|--------------------|

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|   |  |
|---|--|
| 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  | 67.5 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 |
|----------------------------|---|

### 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

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

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

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

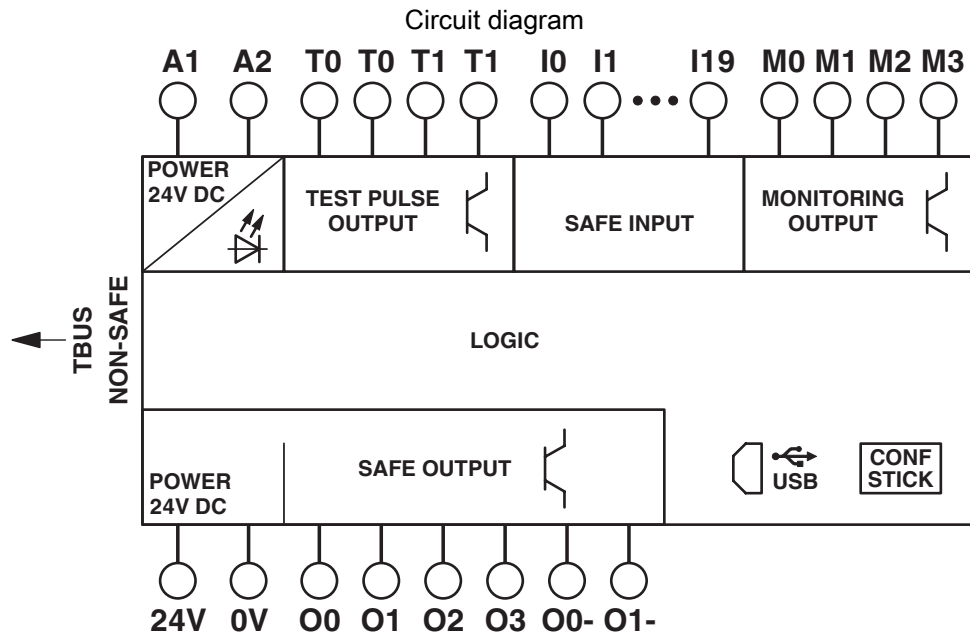


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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2986232>



**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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