# PSR-SCP- 24DC/SDC4/2X1/B - Safety relays

2981486

https://www.phoenixcontact.com/us/products/2981486

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Safety relay for emergency stop, safety door, and magnetic switches and for light grids, up to SIL 3 or Cat. 4, PL e in accordance with EN ISO 13849, 2 N/O contacts, TBUS interface, automatic or manual activation, plug-in screw connection terminal blocks

## Your advantages

- 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
- Modular system with TBUS extension
- For emergency stop and safety door monitoring, plus evaluation of light grids
- 2 enabling current paths, 1 signaling current path
- 1- and 2-channel control

ELEKTROGERÄTE RÜCKNAHME

## Commercial data

| | |
|---|---|
| Item number | 2981486 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DN01 |
| Product key | DNA211 |
| GTIN | 4046356051682 |
| Weight per piece (including packing) | 186 g |
| Weight per piece (excluding packing) | 186 g |
| Customs tariff number | 85371098 |
| Country of origin | DE |

# Technical data

## Product properties

| | |
|---|---|
| Product type | Safety relays |
| Product family | PSRclassic |
| Application | Emergency stop |
| | Safety door |
| | Light grid |
| | Magnetic switch |
| Control | 1 and 2 channel |
| Mechanical service life | approx. $10^7$ cycles |
| Relay type | Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3 |

Insulation characteristics

| | |
|---|---|
| Overvoltage category | II, III (See the section “Insulation coordination”) |
| Degree of pollution | 2 |

Times

| | |
|---|---|
| Typical response time | 20 ms (manual start) |
| | 150 ms (automatic start) |
| Typical release time | 10 ms |
| Recovery time | 1 s |

## Electrical properties

| | |
|---|---|
| Maximum power dissipation for nominal condition | 5.6 W |
| Nominal operating mode | 100% operating factor |
| Rated insulation voltage | 250 V |
| Rated surge voltage/insulation | See data sheet, section “Insulation coordination”. |

Supply

| | |
|---|---|
| Designation | A1/A2, PSR-TBUS |
| Rated control circuit supply voltage $U_S$ | 24 V DC -15 % / +10 % |
| Rated control supply current $I_S$ | typ. 70 mA |
| Power consumption at $U_S$ | typ. 1.7 W |
| Protective circuit | Serial protection against polarity reversal |
| | Suppressor diode |

## Input data

Digital: Sensor circuit (S10, S12, S13, S22)

| | |
|---|---|
| Description of the input | safety-related |
| Number of inputs | 4 |
| Concurrence | ∞ |
| Max. permissible overall conductor resistance | 50 Ω |
| Protective circuit | Suppressor diode |

Digital: Start circuit ()

| | |
|---|---|
| Description of the input | non-safety-related |

## Output data

Relay: Enabling current paths (13/14, 23/24)

| | |
|---|---|
| Output description | 2 N/O contacts in series, safety-related, floating |
| Number of outputs | 2 |
| Contact switching type | 2 enabling current paths |
| Contact material | $AgSnO_2$ |
| Switching voltage | max. 250 V AC/DC |
| | min. 15 V AC/DC |
| Switching power | min. 0.4 W |
| Inrush current | min. 25 mA |
| | max. 6 A |
| Switching capacity | 5 A (AC15) |
| | 5 A (DC13) |
| Limiting continuous current | 6 A |
| Sq. Total current | 72 $A^2$ (observe derating) |
| Mechanical service life | 10x $10^6$ cycles |
| Output fuse | 10 A gL/gG NEOZED |

Signal: Y30

| | |
|---|---|
| Output description | PNP |
| | non-safety-related |
| Number of outputs | 1 |
| Load/output load voltage output | min. 240 Ω |
| Voltage | typ. 23 V DC ($U_S$ - 1 V) |
| Current | max. 100 mA |
| Switching frequency | 1 Hz |

## 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 |

## Dimensions

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

## Material specifications

| | |
|---|---|
| Color (Housing) | yellow (RAL 1018) |
| Housing material | PA |

## Characteristics

Safety data

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

Safety data: EN ISO 13849

| | |
|---|---|
| Performance level (PL) | e (5 A DC13; 5 A AC15; 8760 switching cycles/year) |

Safety data: IEC 61508 - High demand

| | |
|---|---|
| Safety Integrity Level (SIL) | 3 |

Safety data: IEC 61508 - Low demand

| | |
|---|---|
| Safety Integrity Level (SIL) | 3 |

Safety data: EN IEC 62061

| | |
|---|---|
| Safety Integrity Level (SIL) | 3 |

## 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) | -40 °C ... 70 °C |
| Maximum altitude | ≤ 2000 m (Above sea level) |
| Max. permissible humidity (storage/transport) | 75 % (on average, 85% infrequently, non-condensing) |
| Max. permissible relative humidity (operation) | 75 % (on average, 85% infrequently, non-condensing) |
| Shock (operation) | 15g |
| Vibration (operation) | 10 Hz ... 150 Hz, 2g |

## Approvals

CE

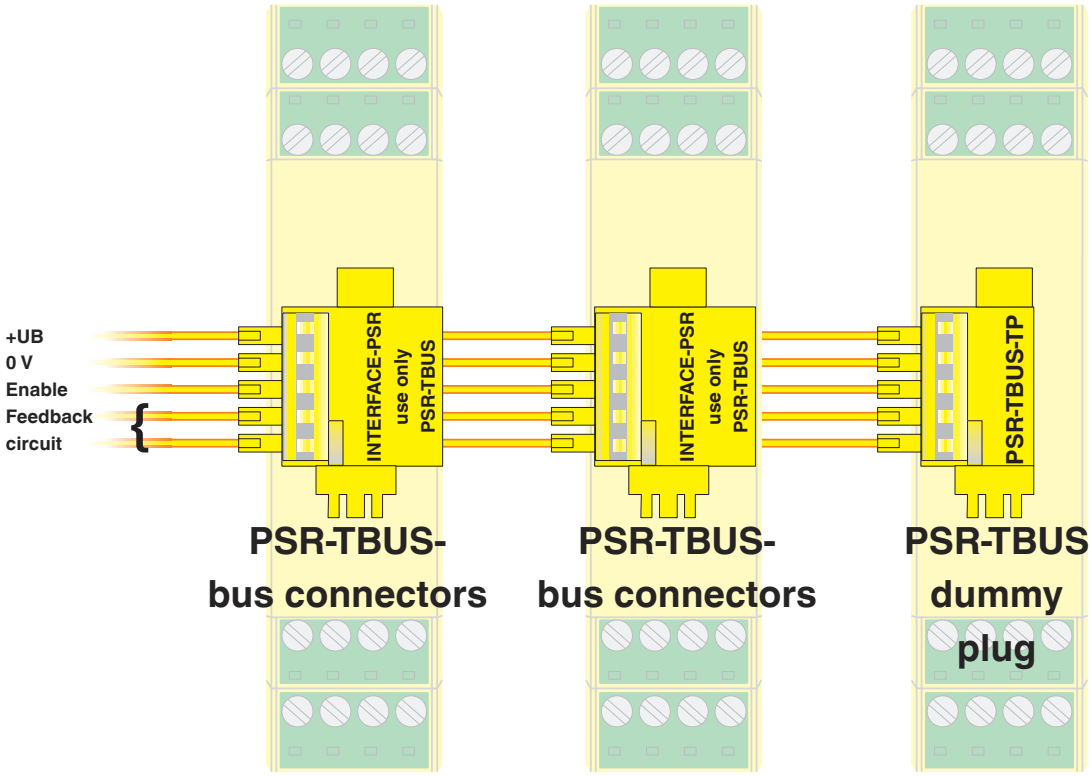
| | |
|---|---|
| Identification | CE-compliant |

## Mounting

| | |
|---|---|
| Mounting type | DIN rail mounting |
| Mounting position | any |

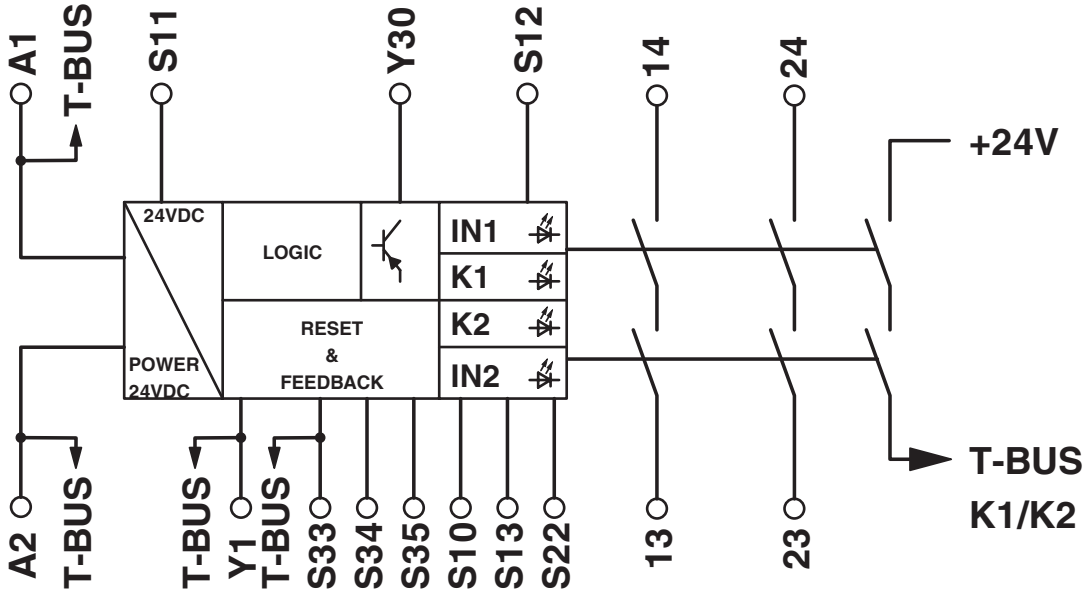
## Drawings

Connection diagram



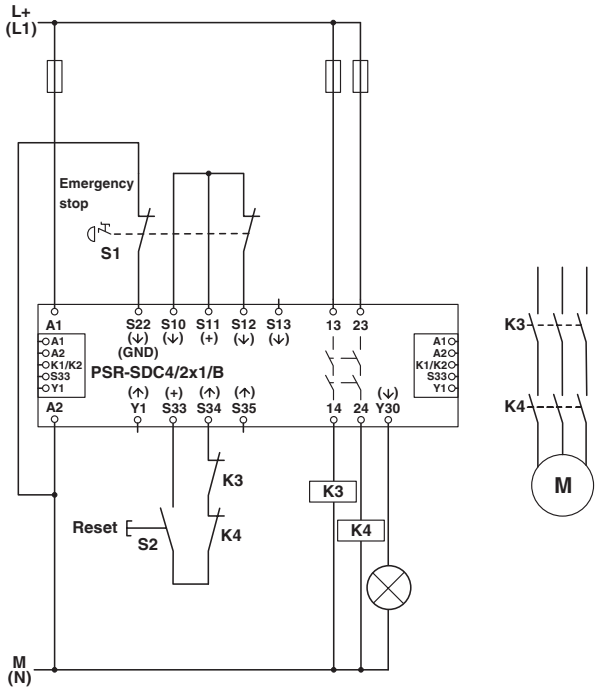

PSR-TBUS DIN rail connectors are used for cross-wiring between the modules.

Circuit diagram



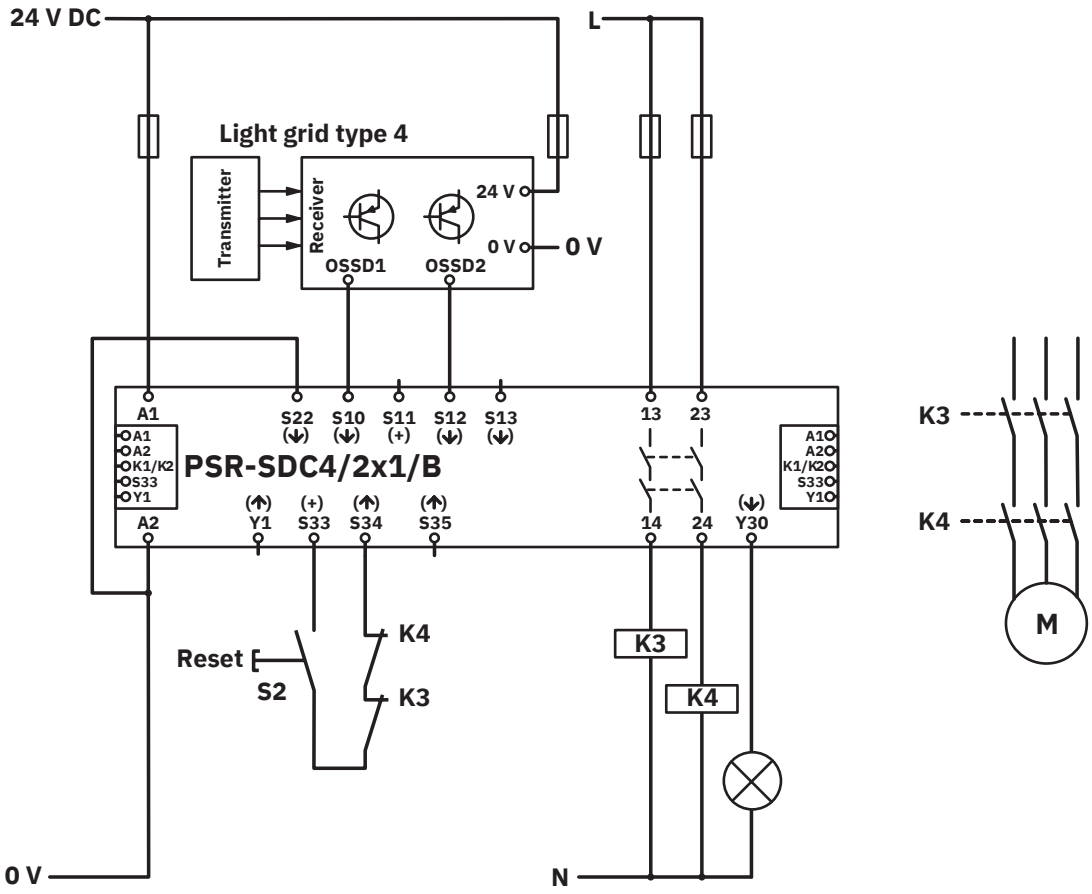

Block diagram

Circuit diagram



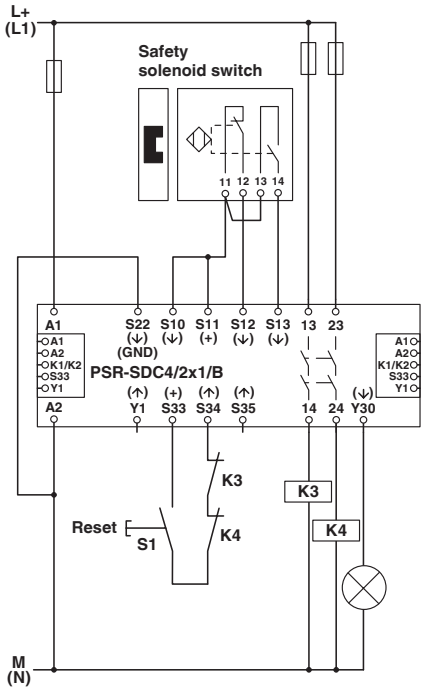

2-channel emergency stop monitoring

Circuit diagram




Light grid monitoring

Circuit diagram




Two-channel magnetic switch monitoring

## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2981486

**cULus Listed**
Approval ID: E140324

**Functional Safety**
Approval ID: 01/205/0660.04/24

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27371819 |
| ECLASS-15.0 | 27371819 |

### ETIM

| | |
|---|---|
| ETIM 10.0 | EC001449 |

### UNSPSC

| | |
|---|---|
| UNSPSC 21.0 | 39122200 |

## Environmental product compliance

EU RoHS

| | |
|---|---|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(a)-I, 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) |
| SCIP | d72e7db1-94f1-4bbe-b1b1-ea81c50ae8cb |

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