# PSR-M-EF8-SDI8-SDO2-DO2-SC - Extension module

1105522

https://www.phoenixcontact.com/us/products/1105522

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CRA-READY



Safe extension module with 8 safe inputs and 2 safe outputs, 2 reset inputs, 2 signal outputs, 4 clock outputs, TBUS interface, up to SIL 3, Cat. 4/PL e, pluggable screw terminal block, TBUS connector included

## Product description

The configurable and individually scalable PSRmodular safety system is a flexible safety solution for monitoring your machine or system. The safe extension module provides the system additional safe inputs and outputs as well as signal outputs.

## Your advantages

- Cost-effective safety solution with a high level of adaptability to individual requirements
- Fast startup, thanks to easy hardware and software configuration
- Machine downtimes minimized with comprehensive, easy-to-understand diagnostics
- Low housing width of just 22.6 mm
- 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
- Suitable for elevator applications in accordance with EN 81-20

ELEKTROGERÄTE RÜCKNAHME

## Commercial data

| | |
|---|---|
| Item number | 1105522 |

| | |
|---|---|
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DN02 |
| Product key | DNA362 |
| GTIN | 4055626987934 |
| Weight per piece (including packing) | 192 g |
| Weight per piece (excluding packing) | 159 g |
| Customs tariff number | 85371098 |
| Country of origin | IT |

# Technical data

## Notes

| | |
|---|---|
| Note on application | Only for industrial use |
| Note on application | As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA. |

## Product properties

| | |
|---|---|
| Product type | Safety device |
| Application | Emergency stop |
| | Light grid |
| | Safety door |
| | Safe shutdown |
| Control | 1 and 2 channel |
| Special properties | The product is being prepared for compliance with the Cyber Resilience Act (CRA) |

### Insulation characteristics

| | |
|---|---|
| Protection class | III |

### Insulation characteristics

| | |
|---|---|
| Overvoltage category | II |
| Degree of pollution | 2 |

### Times

| | |
|---|---|
| Response time | see user manual |
| Restart time | min. 5 s (Boot time) |
| | max. 10 s (Boot time) |

## Electrical properties

| | |
|---|---|
| Maximum power dissipation for nominal condition | 5.88 W (with max. permissible load) |
| Nominal operating mode | 100% operating factor |
| Interfaces | DIN rail TBUS for connection to the master module, supplied as standard |
| Rated surge voltage/insulation | Basic insulation 4 kV between 24 V power supply and I/Os to the housing |

### Supply

| | |
|---|---|
| Designation | A1/A2 |
| Rated control circuit supply voltage $U_S$ | 19.2 V DC ... 28.8 V DC |
| Rated control circuit supply voltage $U_S$ | 24 V DC -20 % / +20 % (provide external protection, typically 8 A) |
| Rated control supply current $I_S$ | typ. 40 mA (Outputs inactive) |
| | typ. 55 mA (Outputs active, without load) |
| Power consumption at $U_S$ | typ. 0.96 W (Outputs inactive) |

| | |
|---|---|
| Inrush current | < 9 A (Δt = 1 ms at $U_s$) |
| Filter time | typ. 5 ms (at A1 in the event of voltage dips at $U_s$) |
| Protective circuit | Serial protection against polarity reversal |

## Input data

Digital: IN1, IN2, IN3, IN4, IN5, IN6, IN7, IN8

| | |
|---|---|
| Description of the input | Safety-related digital inputs |
| | IEC 61131-2 type 1 |
| Number of inputs | 8 |
| Input voltage range "0" signal | 0 V DC ... 5 V DC |
| Input voltage range "1" signal | 15 V DC ... 28.8 V DC |
| Input current range "0" signal | < 1 mA |
| Filter time | min. 3 ms ±2 ms (adjustable) |
| | max. 250 ms ±2 ms (adjustable) |
| | Test pulse rate ≥ 2x set filter time, min. Test pulse rate = 10 ms |
| Cable length | max. 100 m (per input) |
| Max. permissible overall conductor resistance | max. 1.2 kΩ (Input and reset circuit at $U_S$) |
| Current consumption | typ. 8 mA (typ. with $U_S$) |
| | max. 10 mA (at a control voltage of 28.8 V DC) |

Digital: Reset inputs (FBK1, FBK2)

| | |
|---|---|
| Description of the input | IEC 61131-2 type 3 |
| Number of inputs | 2 |
| Input voltage range "0" signal | 0 V DC ... 5 V DC |
| Input voltage range "1" signal | 11 V DC ... 28.8 V DC |
| Input current range "0" signal | < 1 mA |
| Filter time | 250 ms ±2 ms (Test pulse rate > 500 ms) |
| Cable length | max. 100 m (per input) |
| Max. permissible overall conductor resistance | 1.2 kΩ (Input and reset circuit at $U_S$) |
| Current consumption | typ. 10 mA (typ. with $U_S$) |
| | max. 13 mA (at a control voltage of 28.8 V DC) |

## Output data

Digital: O1A, O1B, O2A, O2B

| | |
|---|---|
| Output description | Safety-related digital outputs |
| | PNP, OSSD |
| | IEC 61131-2 type 0.5 (observe limiting continuous current) |
| Number of outputs | 4 (can be used as 2 x 2 channel outputs) |
| Short-circuit protection | Yes (self-limitation at 1.1 A) |
| Leakage current | max. 500 µA |
| Cable length | max. 100 m (per output) |
| Ohmic load | min. 50 Ω (Observe limiting continuous current) |
| Max. capacitive load | max. 680 nF |
| Max. inductive load | max. 1.4 mH |

| | |
|---|---|
| Limiting continuous current | 400 mA (per channel) |
| | 1.6 A (Total current of all safe digital outputs) |
| Inrush current | max. 750 mA (Δt ≤ ⎍ s) |
| Nominal output voltage | 24 V DC (Supply via A1) |
| Nominal output voltage range | 18 V DC ... 27.6 V DC ($U_S$ - 1.2 V) |
| Switching frequency | max. 1/(4 x $t_{Cycle}$) [Hz] |
| Output voltage when switched off | < 1.5 V |
| Test pulses | < 80 µs (Test pulse width of low test pulses) |
| | Test pulse rate for low test pulses > 2 x $T_{Cycle}$ |
| | < 20 µs (Test pulse width, high test pulse) |
| | ≥ 1.5 s (Test pulse rate, high test pulse) |
| Discharging circuit | Yes, internal |

Signal: MO1, MO2

| | |
|---|---|
| Output description | PNP, IEC 61131-2 Typ 0,1 |
| | non-safety-related |
| Number of outputs | 2 |
| Output voltage when switched off | max. 0.1 V |
| Output voltage range | 18.2 V DC ... 27.8 V DC ($U_S$ - 1 V) |
| Voltage | 24 V DC (via A1) |
| Maximum inrush current | 1.1 A (Δt = 3 s at $U_s$) |
| Limiting continuous current | 100 mA (per channel) |
| | 200 mA (Total current of all digital signal outputs) |
| Leakage current | max. 100 µA |
| Ohmic load | min. 180 Ω (Observe limiting continuous current) |
| Switching frequency | max. 1/(4 x $t_{Cycle}$) [Hz] |
| Short-circuit protection | Yes (self-limitation at 1.1 A) |
| Discharging circuit | No |
| Cable length | max. 100 m (per output) |

Clock: T1, T2, T3, T4

| | |
|---|---|
| Output description | PNP, IEC 61131-2 type 0.5 |
| Number of outputs | 4 |
| Voltage | 24 V DC (via A1) |
| Output voltage when switched off | max. 0.1 V |
| Maximum inrush current | 1.1 A (Δt = 3 s at $U_s$) |
| Limiting continuous current | 100 mA (per channel) |
| | 400 mA (Total current of all outputs) |
| Leakage current | max. 100 µA |
| Test pulses | ≤ 220 µs (Test pulse duration) |
| | Test pulse rate = 8 x $t_{Cycle}$ [ms] |
| Short-circuit protection | Yes (self-limitation at 1.1 A) |
| Cable length | max. 100 m (per output) |
| Max. capacitive load | max. 470 nF |
| Max. inductive load | max. 2.4 mH |

| | |
|---|---|
| Discharging circuit | Yes, internal |

## 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 |

## Signaling

| | |
|---|---|
| Status display | 1 x LED (green), 2 x LED (orange) |
| | 12 x LED (yellow) |
| | 2 x LED (green, red) |
| Operating voltage display | 1 x LED (green) |
| Error indication | 2 x LED (red) |

## Dimensions

| | |
|---|---|
| Width | 22.61 mm |
| Height | 112.58 mm |
| Depth | 113.6 mm |

## Material specifications

| | |
|---|---|
| Color (Housing) | yellow (RAL 1018) |
| Housing material | Polyamide PA non-reinforced |

## Characteristics

Safety data

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

Safety data: EN ISO 13849

| | |
|---|---|
| Performance level (PL) | e (2-channel wiring) |
| | d (1-channel wiring) |

Safety data: IEC 61508 - High-demand for 2-channel wiring

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

Safety data: IEC 61508 - High-demand for 1-channel wiring

| | |
|---|---|
| Safety Integrity Level (SIL) | 2 |

Safety data: EN IEC 62061

| | |
|---|---|
| Safety Integrity Level (SIL) | 3 (2-channel wiring) |
| | 2 (1-channel wiring) |

## Environmental and real-life conditions

Ambient conditions

| | |
|---|---|
| Degree of protection | IP20 |
| Min. degree of protection of inst. location | IP54 |
| Ambient temperature (operation) | -10 °C ... 55 °C (observe derating) |
| Ambient temperature (storage/transport) | -20 °C ... 85 °C |
| Maximum altitude | ≤ 2000 m (Above sea level) |
| Max. permissible humidity (storage/transport) | 95 % (non-condensing) |
| Max. permissible relative humidity (operation) | 95 % (non-condensing) |
| Shock | 10g for Δt = 16 ms (continuous shock, 1000 shocks in each space direction) |
| Vibration (operation) | 10 Hz ... 150 Hz, 2g |

## Approvals

CE

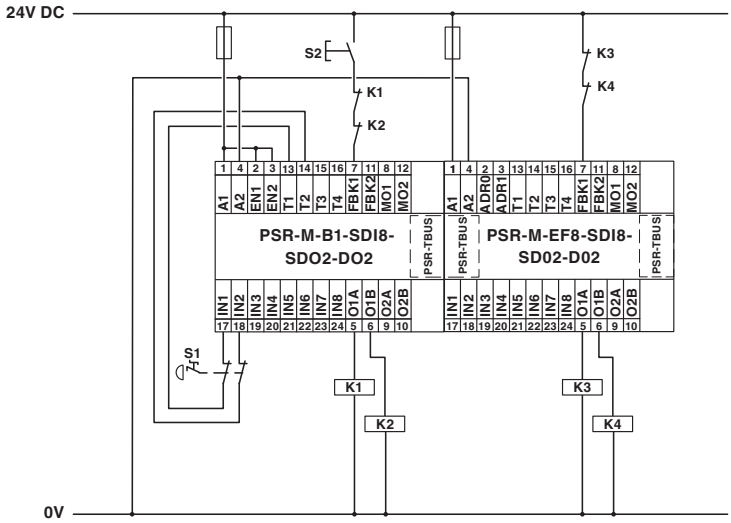
| | |
|---|---|
| Identification | CE-compliant |

## Mounting

| | |
|---|---|
| Mounting type | DIN rail mounting |
| Assembly note | Observe derating |
| Mounting position | vertical or horizontal |

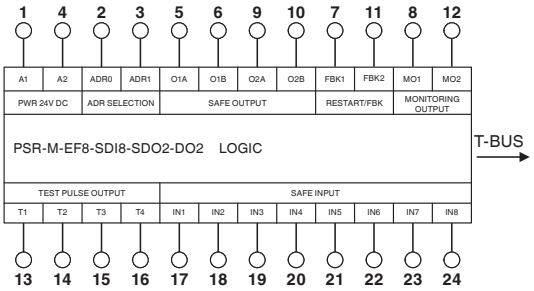
## Drawings

Application drawing




Example application

Block diagram




Block diagram

## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1105522

**cULus Listed**
Approval ID: E238705

**Functional Safety**
Approval ID: Z10029429 0013Rev.02

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27371819 |
| ECLASS-15.0 | 27371819 |
| ECLASS-15.0 ASSET | 27250101 |

### ETIM

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

### UNSPSC

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

## Environmental product compliance

EU RoHS

| | |
|---|---|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |

China RoHS

| | |
|---|---|
| Environment friendly use period (EFUP) | EFUP-E |
| | No hazardous substances above the limits |

EU REACH SVHC

| | |
|---|---|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |

EF3.1 Climate Change

| | |
|---|---|
| CO2e kg | 26.565 kg CO2e |


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