# PSR-M-EF7-XC-SAI4-PI - Extension module

1337851

https://www.phoenixcontact.com/in/products/1337851

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Safe extension module with 4 safe analog inputs, 0 V ... 10 V; 0 mA or 4 mA ... 20 mA; TBUS interface, up to Cat. 4/PL e, SIL 3, plug-in Push-in 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 with additional safe analog inputs.

## 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
- Tool-free and time-saving installation thanks to Push-in technology
- 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
- Corrosion protection through protective coating on the PCB

## Commercial data

| | |
|---|---|
| Item number | 1337851 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Product key | DNA362 |
| GTIN | 4063151639730 |
| Weight per piece (including packing) | 198 g |
| Weight per piece (excluding packing) | 159 g |
| Country of origin | IT |

# Technical data

## Notes

### Note on application

| | |
|---|---|
| Note on application | Only for industrial use |

## Product properties

| | |
|---|---|
| Product type | Safety device |
| Application | Analog IN |
| Control | 1 and 2 channel |

### Insulation characteristics

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

### 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 | 2.76 W (with max. permissible load) |
| Nominal operating mode | 100% operating factor |
| Interfaces | DIN rail TBUS for connection to the master module, supplied as standard |

### Air clearances and creepage distances

| | |
|---|---|
| Rated surge voltage/insulation | Basic insulation 4 kV between all current paths and housing |
| | Electrical isolation, 0.5 kV functional insulation between logic and analog inputs and between the analog inputs |

### 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 % (external fuse, typically 6 A) |
| Rated control supply current $I_S$ | typ. 82 mA (without sensor supply) |
| | typ. 212 mA (with sensor supply) |
| Power consumption at $U_S$ | typ. 1.96 W (without sensor supply) |
| | typ. 5.08 W (with sensor supply) |
| Inrush current | max. 14 A ($\Delta t$ = 1 ms at $U_s$) |
| Filter time | typ. 5 ms (in the event of voltage dips at $U_s$) |
| Protective circuit | Serial protection against polarity reversal |

## Input data

### General

| | |
|---|---|
| Protective circuit | Overload protection of the current inputs; Suppressor diode |

Analog

| | |
|---|---|
| Input name | IN S1, IN S2, IN S3, IN S4 |
| Description of the input | Safety-oriented analog inputs, configurable as current or voltage inputs, galvanically isolated |
| Number of inputs | 4 |
| Connection technology | 2-conductor, 3-conductor or 4-conductor (2-conductor sensor signal + 2-conductor sensor supply) |
| Note regarding the connection technology | shielded |
| Scanning rate | 2.5/5/10/16.6/20/50/60/100/200/400/800/1000/2000/4000 Hz |
| Current input signal | 0 mA ... 25 mA (Measuring range) |
| | 0 mA ... 20 mA (Configurable measuring range with diagnostics range 20.1 mA ... 23 mA) |
| | 4 mA ... 20 mA (Configurable measuring range with diagnostics range 20.1 mA ... 23 mA (upper limit), 2.5 mA ... 3.8 mA (lower limit)) |
| Voltage input signal | 0 V ... 12 V (Measuring range) |
| | 0 V ... 10 V (Configurable measuring range with diagnostics range 10.05 V ... 11.5 V (upper limit), 0.1 V (lower limit)) |
| Max. permissible current | max. 35 mA (as current input) |
| Permissible voltage | max. 24 V (as current input) |
| | max. 14 V (as voltage input) |
| Input resistance current input | 290 Ω ±25 % (incl. internal protective circuit) |
| Input resistance of voltage input | 185 kΩ ±25 % |
| A/D converter resolution | 16 bit |
| Resolution (current) | 381 nA |
| Resolution (voltage) | 152 µV |
| Precision | typ. ± 2 % (as current input, relative to the measuring range final value) |
| | max. ± 2.5 % (as current input) |
| | typ. ± 1 % (as voltage input, relative to the measuring range final value) |
| | max. ± 1.5 % (as voltage input) |
| Temperature coefficients | typ. ± 0.07 %/K |
| | max. ± 0.07 %/K |
| Limit frequency (3 dB) | 160 Hz (RC low pass, 1st order, as current input) |
| | 4 Hz (RC low pass, as voltage input) |
| Frequency | 20 Hz (max. recommended sensor signal frequency, as current input) |
| | 2 Hz (max. recommended sensor signal frequency, as voltage input) |
| Permissible cable length | max. 100 m (per input) |
| Protective circuit | Overload protection of the current inputs |
| | Overload protection of the voltage inputs |

## Output data

Sensor supply: OUT S1/0V ...OUT S4/0V

| | |
|---|---|
| Description | Sensor supply voltage per analog input |
| Supply voltage | 24 V DC ±3 % |
| Current | max. 30 mA (Sensor current recording per channel) |
| Short-circuit-proof | yes |
| Protective circuit | Overload protection Overload detection at ≥ ⎓ mA |

## Connection data

Connection technology

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

Conductor connection

| | |
|---|---|
| Connection method | Push-in 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 ... 14 |
| Stripping length | 10 mm |

## Signaling

| | |
|---|---|
| Status display | 4 x LED (yellow, red) |
| Operating voltage display | 1 x LED (green) |

## Dimensions

| | |
|---|---|
| Width | 22.61 mm |
| Height | 107.74 mm |
| Depth | 113.6 mm |

## Material specifications

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

## Characteristics

Safety data

| | |
|---|---|
| Stop category | 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

| | |
|---|---|
| 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 ... 70 °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 |

Environmental simulation test

| | |
|---|---|
| Identification | ISA-S71.04 |
| Note | G3 |

## Mounting

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

## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/in/products/1337851

**cULus Listed**
Approval ID: E238705

## Classifications

### ECLASS

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

### ETIM

| | |
|---|---|
| ETIM 9.0 | EC001449 |

## 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% |

## Accessories

### CP-MSTB - Coding profile

1734634

https://www.phoenixcontact.com/in/products/1734634

Coding profile, is inserted into the slot on the plug or inverted header, red insulating material

### CR-MSTB - Coding section

1734401

https://www.phoenixcontact.com/in/products/1734401

Coding section, inserted into the recess in the header or the inverted plug, red insulating material

## CRIMPFOX 6 - Crimping pliers

1212034

https://www.phoenixcontact.com/in/products/1212034

Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 $mm^2$ ... 6.0 $mm^2$, lateral entry, trapezoidal crimp

## EBP 2- 5 - Insertion bridge

1733169

https://www.phoenixcontact.com/in/products/1733169

Insertion bridge for connectors with 5.0 mm or 5.08 mm pitch




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