

PSR-M-EM1-PROX2-PI - Extension module



1104988

<https://www.phoenixcontact.com/us/products/1104988>

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Safe extension module for monitoring zero-speed and speed, monitoring of 2 axes, suitable for NPN/PNP proximity switch, TBUS interface, up to SIL 3, Cat. 4/PL e, pluggable 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 is used to monitor downtimes and speed. The module is suitable for connection of NPN/PNP proximity switches.

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 EN 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

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 1104988 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DN02 |
| Product key | DNA363 |
| GTIN | 4055626971742 |
| Weight per piece (including packing) | 154.5 g |
| Weight per piece (excluding packing) | 154.5 g |
| Customs tariff number | 85371098 |
| Country of origin | IT |

Technical data

Notes

Note on application

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

Product properties

| | |
|--------------|--|
| Product type | Safety device |
| Application | Over-speed safety relay Zero-speed safety relay |
| Control | 1 and 2 channel |

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 | 2.18 W ($U_B = 28,8$ V, $IN1 = IN2 = 50$ mA) |
| Nominal operating mode | 100% operating factor |
| Interfaces | DIN rail TBUS for connection to the master module, supplied as standard Proximity switches |
| 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 200 mA) |
| Rated control supply current I_S | typ. 35 mA |
| Power consumption at U_S | typ. 0.84 W |
| Inrush current | 3.5 A ($\Delta t = 1$ ms at U_S) |
| Filter time | typ. 20 ms (at A1 in the event of voltage dips at U_S) |
| Protective circuit | Serial protection against polarity reversal |

Input data

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Measurement

| | |
|---|--|
| Input name | Proximity switch inputs |
| | IN1, IN2 |
| Description of the input | NPN / PNP (3- or 4-wire) |
| Number of inputs | 2 |
| Input voltage range "0" signal | 0 V DC ... 5 V DC (NPN) 16 V DC ... 28.8 V DC (PNP) |
| Input voltage range "1" signal | 16 V DC ... 28.8 V DC (NPN) 0 V DC ... 5 V DC (PNP) |
| Input current range "0" signal | < 2 mA (NPN) |
| Precision | 5 % (in reference to the parameterized limit value) |
| Limit frequency | max. 5 kHz |
| Duty factor | 55 % ... 95 % |
| Pulse width | min. 20 µs |
| Max. permissible overall conductor resistance | 150 Ω |
| Current consumption | typ. 13 mA (NPN, at U _S) typ. -13 mA (PNP, at U _S) max. 17 mA (NPN, at 28.8 V DC) max. -15 mA (PNP, at 28.8 V DC) |

Output data

Digital: Proximity switch supply (24V/0V)

| | |
|------------------------------|--|
| Short-circuit protection | no |
| Nominal output voltage range | 16.7 V DC ... 26.3 V DC (U _S - 2,5 V) |

Connection data

Connection technology

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

Conductor connection

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

Signaling

| | |
|---------------------------|---|
| Status display | 4 x LED (yellow), 1 x LED (green), 2 x LED (orange) |
| Operating voltage display | 1 x LED (green) |
| Error indication | 2 x LED (red) |

Dimensions

| | |
|-------|----------|
| Width | 22.61 mm |
|-------|----------|

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| | |
|--------|-----------|
| Height | 107.74 mm |
| Depth | 113.6 mm |

Material specifications

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

Characteristics

Safety data: EN ISO 13849

| | |
|------------------------|---|
| Performance level (PL) | e |
|------------------------|---|

Safety data: IEC 61508 - High 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) | -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 $\Delta t = 16$ 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 |

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Approvals

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cULus Listed

Approval ID: E238705



Functional Safety

Approval ID: Z10029429 0013Rev.02

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

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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% |
|-------------------------------------|----------------------------|

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