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

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

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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 (Δt = 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
	Suppressor diode

Input data

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
Protective circuit	Suppressor diode
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 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), 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
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

| Category | 3 |
| 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 Δt = 16 ms (continuous shock, 1000 shocks in each space direction)
Vibration (operation)	10 Hz ... 150 Hz, 2g

Approvals

CE

| Identification | CE-compliant |

Mounting

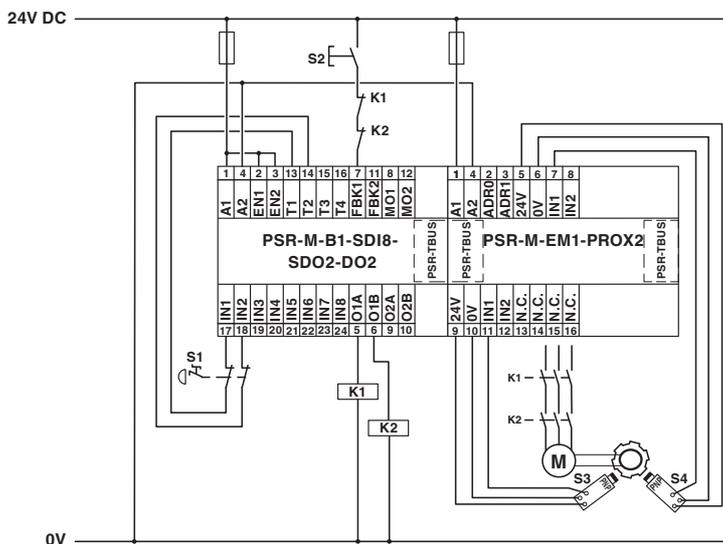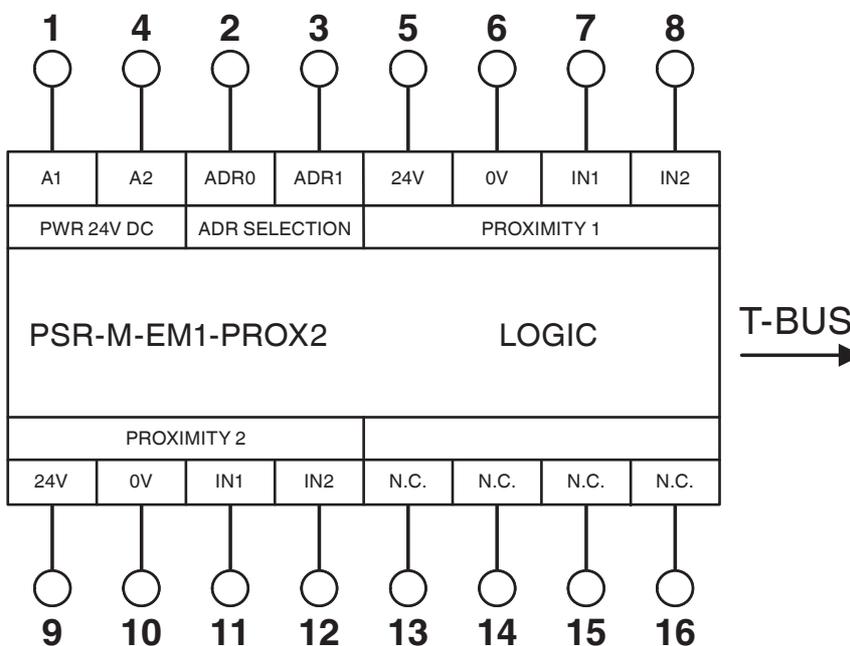| Mounting type | DIN rail mounting |
| Assembly note | Observe derating |
| Mounting position | vertical or horizontal |

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Drawings

Application drawing

Example application

Block diagram

Block diagram

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1104988

Functional Safety
Approval ID: Z10 029429 0013

cULus Listed
Approval ID: E238705

Classifications

ECLASS

ECLASS-13.0	27371819
ECLASS-15.0	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, 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%