

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



1105523

<https://www.phoenixcontact.com/mx/products/1105523>

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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 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 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
- Tool-free and time-saving installation thanks to Push-in technology
- Narrow 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

## Commercial data

Item number	1105523
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	02
Product key	DNA362
GTIN	4055626988313
Weight per piece (including packing)	174.4 g
Weight per piece (excluding packing)	141 g
Customs tariff number	85371098
Country of origin	IT

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## Technical data

### Product properties

Product type	Safety device
Application	Emergency stop
	Light grid
	Safety door
	Safe shutdown

### Insulation characteristics

Protection class	III
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### 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

### Air clearances and creepage distances

Rated insulation voltage	250 V AC
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 ( $\Delta t = 1$ 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
	Suppressor diode

### Input data

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

Description of the input	Safety-related digital inputs
	EN 61131-2 type 1
Number of inputs	8

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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 <sub>S</sub> )
Protective circuit	Suppressor diode
Current consumption	typ. 8 mA (typically with U <sub>S</sub> )
	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 <sub>S</sub> )
Protective circuit	Suppressor diode
Current consumption	typ. 10 mA (typically with U <sub>S</sub> )
	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 two-channel outputs)
Protective circuit	Suppressor diode
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 ≤ 1 s)
Nominal output voltage	24 V DC (Supply via A1)
Nominal output voltage range	18 V DC ... 27.6 V DC (U <sub>S</sub> - 1.2 V)
Switching frequency	max. 1/4 x t <sub>Cycle</sub> [Hz]

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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 <sub>Cycle</sub>
	< 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
Voltage	24 V DC (via A1)
Maximum inrush current	1.1 A (Δt = 3 s at U <sub>s</sub> )
Limiting continuous current	100 mA (per channel)
	200 mA (Total current of all digital signal outputs)
Leakage current	max. 100 µA
Switching frequency	max. 1/4 x t <sub>Cycle</sub> [Hz]
Protective circuit	Suppressor diode
Short-circuit protection	Yes (self-limitation at 1.1 A)
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 <sub>s</sub> )
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 <sub>Cycle</sub> [ms]
Protective circuit	Suppressor diode
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
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Conductor connection

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Connection method	Push-in connection
Conductor cross section rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 16
Stripping length	10 mm

## 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 green LED
Error indication	2 x LED (red)

## Dimensions

Width	22.61 mm
Height	107.74 mm
Depth	113.6 mm

## Material specifications

Housing material	Polyamide PA non-reinforced
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## Characteristics

### Safety data

Stop category	0
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### 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
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### Safety data: IEC 61508 - High-demand for 1-channel wiring

Safety Integrity Level (SIL)	2
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### 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

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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
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## Mounting

Mounting type	DIN rail mounting
Assembly instructions	Observe derating
Mounting position	vertical or horizontal
Connection method	Push-in connection

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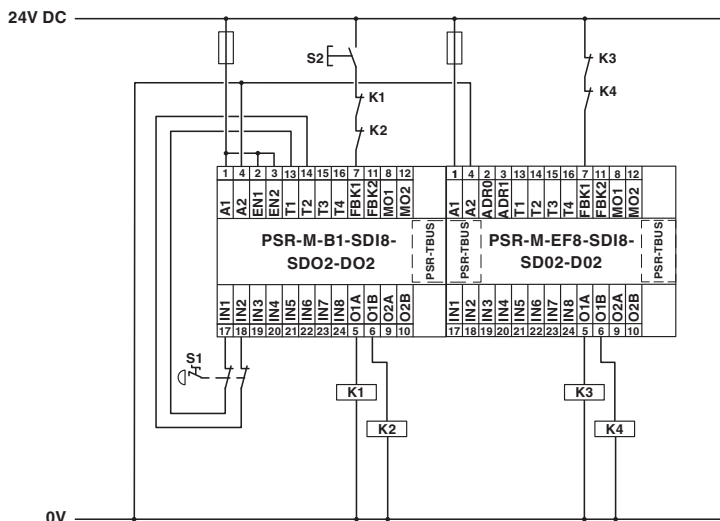


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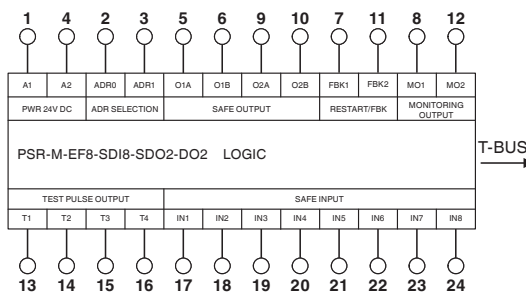
## Drawings

Application drawing



Example application

Block diagram




Block diagram

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## Approvals

 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/mx/products/1105523>



### UL Listed

Approval ID: FILE E 238705



### cUL Listed

Approval ID: FILE E 238705



### EAC

Approval ID: RU\*-DE\*B.00606/20

### Functional Safety

Approval ID: Z10 029429 0013

### cULus Listed



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## Classifications

### ECLASS

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

### ETIM

ETIM 9.0	EC001449
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### UNSPSC

UNSPSC 21.0	39122200
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## Environmental product compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

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## Accessories

### CP-MSTB - Coding profile

1734634

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



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### CR-MSTB - Coding section

1734401

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



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