

# PSR-M-EF4-SDO4-DO4-SC - Extension module



1104856

<https://www.phoenixcontact.com/us/products/1104856>

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Safe extension module with 4 safe outputs (0.4 A), 4 reset inputs, 4 signal outputs, TBUS interface, up to SIL 3, cat. 4/PL e, plug-in 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 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

## Commercial data

Item number	1104856
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN02
Product key	DNA362
GTIN	4055626971056
Weight per piece (including packing)	192.2 g
Weight per piece (excluding packing)	159 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
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### Product properties

Product type	Safety device
Application	Safe shutdown
Control	1 and 2 channel

#### Insulation characteristics

Protection class	III
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#### Insulation characteristics

Overtoltage 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	6.67 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 % (external fuse, typically 6 A)
Rated control supply current $I_S$	typ. 30 mA (Outputs inactive)
	typ. 55 mA (Outputs active, without load)
Power consumption at $U_S$	typ. 0.72 W (Outputs inactive)
Inrush current	< 10 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

#### Supply

Designation	24V/0V
Rated control circuit supply voltage $U_S$	24 V DC -20 % / +20 % (provide external protection, typically 5 A)

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Rated control supply current $I_S$	See supply A1/A2
Inrush current	10 A ( $\Delta t = 1$ ms at $U_S$ )
Filter time	typ. 1 ms (in the event of voltage dips)
Protective circuit	Serial protection against polarity reversal

## Input data

Digital: Reset inputs (FBK1, FBK2, FBK3, FBK4)

Description of the input	IEC 61131-2 type 3
Number of inputs	4
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 $\pm$ 2 ms (Test pulse rate > 500 ms)
Cable length	max. 100 m (per input)
Max. permissible overall conductor resistance	1.2 k $\Omega$ (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, O3A, O3B, O4A, O4B

Output description	Safety-related digital outputs
	PNP, OSSD
	IEC 61131-2 type 0.5 (observe limiting continuous current)
Number of outputs	8 (can be used as 4 x 2 channel outputs)
Short-circuit protection	Yes (self-limitation at 1.1 A)
Leakage current	max. 500 $\mu$ A
Cable length	max. 100 m (per output)
Ohmic load	min. 50 $\Omega$ (Observe limiting continuous current)
Max. capacitive load	max. 680 nF
Max. inductive load	max. 1.4 mH
Limiting continuous current	400 mA (per channel)
	3.2 A (Total current of all safe digital outputs)
Inrush current	max. 750 mA ( $\Delta t \leq \text{[Symbol]} s$ )
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. $1/4 \times t_{\text{Cycle}}$ [Hz]
Output voltage when switched off	< 0.1 V
Test pulses	< 80 $\mu$ s (Test pulse width of low test pulses)
	Test pulse rate for low test pulses > 2 x $T_{\text{Cycle}}$
	< 20 $\mu$ s (Test pulse width, high test pulse)
	$\geq 1.5$ s (Test pulse rate, high test pulse)
Discharging circuit	Yes, internal

Signal: MO1, MO2, MO3, MO4

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Output description	PNP, IEC 61131-2 Typ 0,1
	non-safety-related
	Reference ground A2/0V
Number of outputs	4
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 ( $\Delta t = 3 s$ at $U_S$ )
Limiting continuous current	100 mA (per channel)
	400 mA (Total current of all digital signal outputs)
Leakage current	max. 100 $\mu A$
Ohmic load	min. 180 $\Omega$ (Observe limiting continuous current)
Switching frequency	max. $1/4 \times t_{Cycle}$ [Hz]
Short-circuit protection	Yes (self-limitation at 1.1 A)
Discharging circuit	No
Cable length	max. 100 m (per output)

## Connection data

### Connection technology

pluggable	yes
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### Conductor connection

Connection method	Screw 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 ... 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)
	8 x LED (yellow)
	4 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)
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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
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 note	Observe derating
Mounting position	vertical or horizontal

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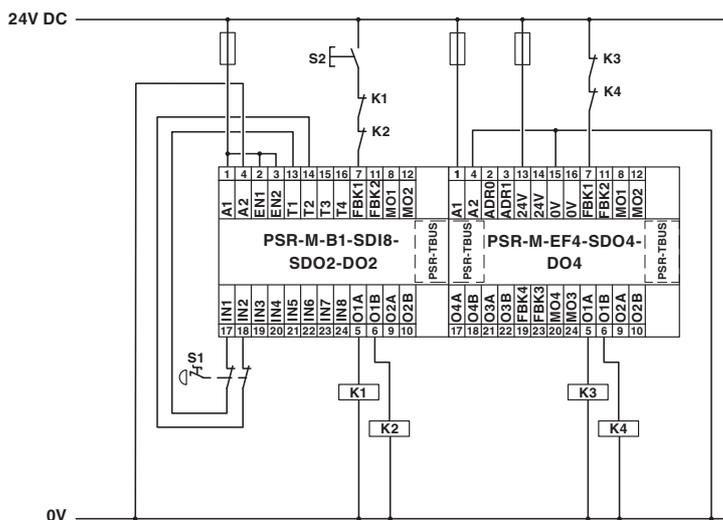


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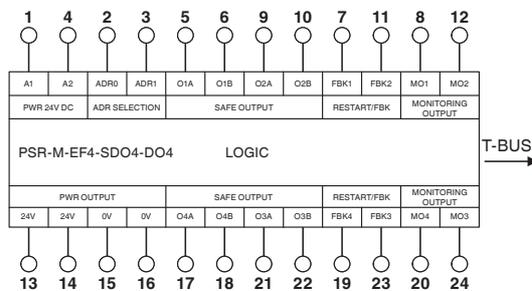
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## Drawings

### Application drawing



### Block diagram



Block diagram

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1104856>



### Functional Safety

Approval ID: Z10 029429 0013



### cULus Listed

Approval ID: E238705

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## Classifications

### ECLASS

ECLASS-13.0	27371819
ECLASS-15.0	27371819

### ETIM

ETIM 9.0	EC001449
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### UNSPSC

UNSPSC 21.0	39122200
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### 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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