

# PSR-MC73-5NO-1DO-24DC-SP - Safety relays



1015526

<https://www.phoenixcontact.com/us/products/1015526>

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Safety relay for emergency stop, safety doors, light grids up to SIL 3, Cat. 4, PL e, 1- or 2-channel operation, cross-circuit detection, can be retriggered, off/on delay of 0.2 s to 300 s, 5 enabling current paths,  $U_S = 24$  V DC, plug-in Push-in terminal block

## Your advantages

- Up to Cat. 4/PL e in accordance with EN ISO 13849-1, SIL 3 in accordance with EN IEC 62061
- Low housing width of only 22.5mm
- 1- and 2-channel control
- 5 enabling current paths, 1 digital signal output
- Manually monitored and automatic activation in a single device

## Commercial data

Item number	1015526
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA181
GTIN	4055626496566
Weight per piece (including packing)	246 g
Weight per piece (excluding packing)	214.73 g
Customs tariff number	85371098
Country of origin	DE

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## Technical data

### Notes

#### Note on application

Note on application

Only for industrial use

### Product properties

Product type	Safety relays
Product family	PSRmini
Application	Emergency stop Safety door Light grid
Control	1 and 2 channel
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

### Insulation characteristics

Ovvoltage category	III
Degree of pollution	2

### Times

Typical response time	< 50 ms (automatic start) < 50 ms (manual, monitored start)
Typ. starting time with $U_s$	500 ms (with $U_s$ when controlled via A1)
Typical release time	< 25 ms (when controlled via S12 and S22 (only for undelayed contacts)) < 10 ms (when controlled via A1; applicative deactivation via A1/A2 is not permitted)
Delay time range	0.2 s ... 300 s $\pm 5\%$ (can be set for 47/48/58)
Restart time	< 1 s (Boot time)
Recovery time	500 ms (following demand of the safety function)

### Electrical properties

Maximum power dissipation for nominal condition	8.1 W (At $U_S = 30$ V, $I_L^2 = 108$ A $^2$ )
Nominal operating mode	100% operating factor
Rated insulation voltage	250 V AC
Rated surge voltage/insulation	See data sheet, section "Insulation coordination". Safe isolation, reinforced insulation 6 kV between (A1, A2, S11, S12, S21, S22, S34, M1) and enabling current path (13/14) and enabling current path (23/24/34) and enabling current path (47/48/58)

### Supply

Designation	A1/A2
Rated control circuit supply voltage $U_S$	19.2 V DC ... 30 V DC
Rated control circuit supply voltage $U_S$	24 V DC -20 % / +25 %

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Rated control supply current $I_S$	typ. 80 mA
Power consumption at $U_S$	typ. 1.92 W
Inrush current	typ. 28 A ( $\Delta t = 30 \mu s$ at $U_S$ )
Filter time	1 ms (For the logic. At A1 in the event of voltage dips at $U_S$ )
Protective circuit	Serial protection against polarity reversal; Suppressor diode

## Input data

### General

Limit frequency	min. 0 Hz max. 1 Hz
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### Digital: Sensor circuit (S12, S22)

Description of the input	safety-related sensor inputs
Number of inputs	2
Input voltage range "0" signal	0 V DC ... 5 V DC
Input voltage range "1" signal	11 V DC ... 30 V DC
Input current range "0" signal	0 mA ... 2 mA
Inrush current	< 11 mA (typ. with $U_S$ )
Filter time	max. 3 ms (Test pulse width of low test pulses) min. 21 ms (Test pulse rate for low test pulse)
Concurrence	$\infty$
Limit frequency	min. 0 Hz max. 1 Hz
Max. permissible overall conductor resistance	150 $\Omega$
Protective circuit	Varistor
Current consumption	< 4.5 mA (typ. with $U_S$ )

### Digital: Start circuit (S34)

Description of the input	non-safety-related
Number of inputs	1
Input voltage range "0" signal	0 V DC ... 5 V DC
Input voltage range "1" signal	11 V DC ... 30 V DC
Input current range "0" signal	0 mA ... 2 mA
Inrush current	< 8.6 mA (typ. with $U_S$ )
Filter time	max. 1 ms (Test pulse width of low test pulses) min. 21 ms (Test pulse rate for low test pulse)
Limit frequency	min. 0 Hz max. 1 Hz
Max. permissible overall conductor resistance	150 $\Omega$
Protective circuit	Varistor
Current consumption	< 3.2 mA (typ. with $U_S$ )

## Output data

Relay: Enabling current paths (13/14, 23/24/34, 47/48/58)

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Output description	2 N/O contacts each in series, safety-related, floating
Number of outputs	3 (undelayed: 13/14, 23/24/34)
	2 (delayed: 47/48/58)
Contact switching type	5 enabling current paths
Contact material	AgCuNi +0.2 µm ... 0.4 µm Au / AgSnO <sub>2</sub> +0.2 µm Au
Switching voltage	min. 12 V AC/DC max. 250 V AC/DC (Observe the load curve)
Switching power	min. 60 mW
Inrush current	min. 5 mA max. 6 A
Switching capacity	4 A (24 V (DC13)) 3 A (230 V (AC 15))
Limiting continuous current	6 A
Sq. Total current	108 A <sup>2</sup> (observe derating)
Switching frequency	0.5 Hz (depending on the set delay time)
Mechanical service life	10x 10 <sup>6</sup> cycles
Output fuse	6 A gL/gG 4 A gL/gG (for low-demand applications)

Signal: M1

Output description	PNP non-safety-related
Number of outputs	1
Voltage	approx. 23 V DC (U <sub>S</sub> - 1 V)
Current	max. 100 mA
Maximum inrush current	500 mA (Δt = 10 ms at U <sub>s</sub> )
Protective circuit	Suppressor diode
Short-circuit protection	Yes

Clock: S11, S21

Output description	PNP non-safety-related
Number of outputs	2
Voltage	corresponds to U <sub>S</sub>
Current	max. 100 mA
Maximum inrush current	500 mA (Δt = 10 ms at U <sub>s</sub> )
Protective circuit	Suppressor diode
Short-circuit protection	Yes

## Connection data

Connection technology	
pluggable	yes
Conductor connection	
Connection method	Push-in connection

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Conductor cross-section rigid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (only together with CRIMPFOX 6)
Conductor cross-section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (only together with CRIMPFOX 6)
Conductor cross-section AWG	24 ... 16
Stripping length	8 mm

## Signaling

Status display	5 x bi-color LED
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## Dimensions

Width	22.5 mm
Height	117.5 mm
Depth	114.5 mm

## Material specifications

Color (Housing)	yellow (RAL 1018)
Housing material	PA

## Characteristics

### Safety data

Stop category	0
	1

### Safety data: EN ISO 13849

Category	4
Performance level (PL)	e (4 A DC13; 3 A AC15; 8760 switching cycles/year)

### Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3
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### Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	3
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### Safety data: EN IEC 62061

Safety Integrity Level (SIL)	3
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## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Ambient temperature (operation)	-35 °C ... 60 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 2000 m (Above sea level)
Max. permissible humidity (storage/transport)	75 % (on average, 85% infrequently, non-condensing)

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Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)
Shock	10g (operation), 15g (transport)
Vibration (operation)	10 Hz ... 150 Hz, 2g

## Approvals

CE

Identification	CE-compliant
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## Mounting

Mounting type	DIN rail mounting
Assembly note	See derating curve
Mounting position	vertical or horizontal

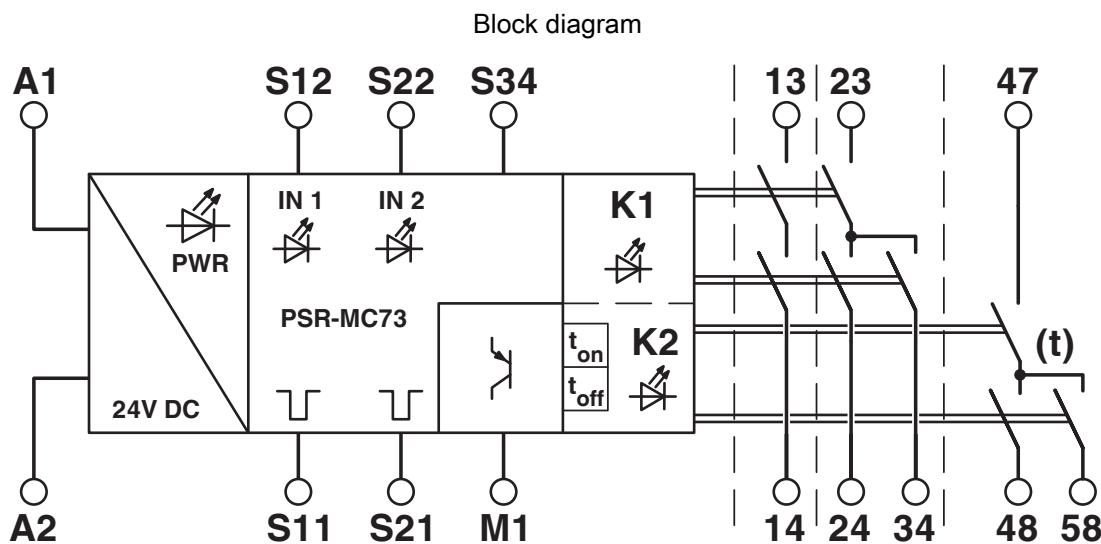
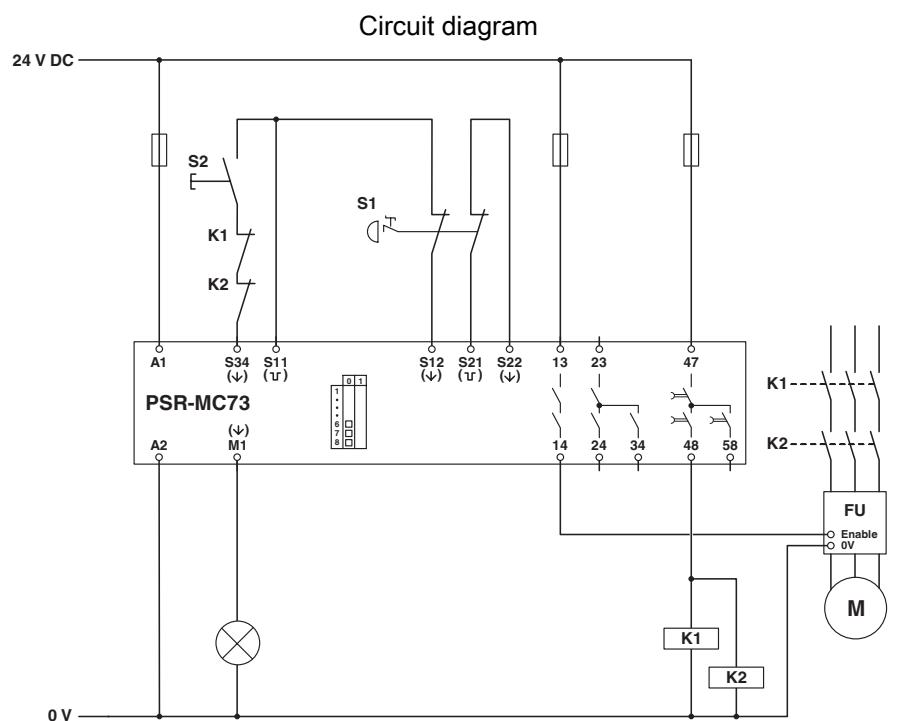
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## Drawings



Block diagram

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## Approvals

ⓘ To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1015526>



**cULus Listed**

Approval ID: E140324



**Functional Safety**

Approval ID: 01/205/5486.02/24

## Classifications

### ECLASS

ECLASS-13.0	27371819
ECLASS-15.0	27371819
ECLASS-15.0 ASSET	27250101

### 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
Exemption	7(a), 7(c)-I

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.	

### EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7)
SCIP	3efdd2ea-dc63-46a1-9231-1f96d79904e0

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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)