

# PSR-MC42-2NO-1DO-24DC-SC - Safety relays



2702901

<https://www.phoenixcontact.com/us/products/2702901>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Safety relay with IO-Link for emergency stop, safety doors, and light grids, up to SIL 3, Cat. 4, PL e, 2 sensor circuits, automatic or manual, monitored start, 2 enabling current paths, 1 signal output,  $U_S = 24 \text{ V DC}$ , plug-in screw terminal block

## Your advantages

- 2 enabling current paths, 1 digital signal output
- Diagnostic data via IO-Link in combination with PSR-CT safety switches
- For emergency stop and safety door monitoring, plus evaluation of light grids
- Automatic and manual activation
- 1- and 2-channel control
- 2 sensor circuits
- 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

## Commercial data

Item number	2702901
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA181
GTIN	4055626458540
Weight per piece (including packing)	187.65 g
Weight per piece (excluding packing)	157.28 g
Customs tariff number	85371098
Country of origin	DE

# PSR-MC42-2NO-1DO-24DC-SC - Safety relays



2702901

<https://www.phoenixcontact.com/us/products/2702901>

## 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
	Magnetic switch
	Transponder
Control	1 and 2 channel
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

### Insulation characteristics

Overvoltage category	II
Degree of pollution	2

### Times

Typical response time	< 220 ms (automatic start)
	< 175 ms (manual, monitored start)
Typ. starting time with $U_s$	< 250 ms (when controlled via A1)
Typical release time	< 20 ms (on demand via the sensor circuit)
	< 20 ms (on demand via A1)
Restart time	< 1 s (Boot time)
Recovery time	< 500 ms
Start pulse length	$\geq$ 500 ms (manual start)

### Electrical properties

Maximum power dissipation for nominal condition	6.45 W ( $U_S = 30$ V, $U_L = 30$ V, $I^2 = 72$ A <sup>2</sup> )
Nominal operating mode	100% operating factor
Rated insulation voltage	320 V
Rated surge voltage/insulation	See data sheet, section "Insulation coordination".

### Supply

Designation	L+/L-
Nominal voltage for I/O supply	24 V DC -20 % / +25 % (Provided via the IO-Link interface of the IO-Link master.)
Current consumption	typ. 16 mA
Protective circuit	Serial protection against polarity reversal
	Suppressor diode

# PSR-MC42-2NO-1DO-24DC-SC - Safety relays



2702901

<https://www.phoenixcontact.com/us/products/2702901>

## 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 % (provide external protection)
Rated control supply current $I_S$	typ. 60 mA
Power consumption at $U_S$	typ. 1.44 W
Inrush current	typ. 2.5 A ( $\Delta t = 500 \mu s$ at $U_S$ )
Filter time	1 ms (at A1 in the event of voltage dips at $U_S$ )
Protective circuit	Serial protection against polarity reversal Suppressor diode

## Input data

### Digital: Sensor circuit S0 (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 (S12) For S22, see note in "Signal generator connection versions" section.
Input voltage range "1" signal	11 V DC ... 30 V DC
Input current range "0" signal	0 mA ... 2 mA (S12, S22)
Inrush current	< 5 mA (typ. with $U_S$ at S12, $\Delta t = 500 \mu s$ ) < 5 mA (typ. with $U_S$ at S22/24 V, $\Delta t = 500 \mu s$ ) > -5 mA (typ. with $U_S$ at S22/0 V, $\Delta t = 500 \mu s$ )
Filter time	max. 1.5 ms (Test pulse width of low test pulses) Test pulse rate = 5 x Test pulse width Deactivate the switch-on pulses for safety applications.
Concurrence	$\infty$
Max. permissible overall conductor resistance	150 $\Omega$
Protective circuit	Suppressor diode
Current consumption	< 5 mA (typ. with $U_S$ at S12) < 5 mA (typ. with $U_S$ at S22/24 V) > -5 mA (typ. with $U_S$ at S22/0 V)

### Digital: Sensor circuit S1 (S32, S42)

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	< 20 mA (typ. with $U_S$ )
Filter time	max. 1.5 ms (Test pulse width of low test pulses) Test pulse rate = 5 x Test pulse width Deactivate the switch-on pulses for safety applications.
Concurrence	$\infty$

# PSR-MC42-2NO-1DO-24DC-SC - Safety relays



2702901

<https://www.phoenixcontact.com/us/products/2702901>

Max. permissible overall conductor resistance	150 Ω
Protective circuit	Suppressor diode
Current consumption	< 5 mA (typ. with U <sub>S</sub> )

## Digital: Diagnostic input (DGN)

Description of the input	non-safety-related
Number of inputs	1
Input voltage range	0 V DC ... 30 V DC
Protective circuit	Suppressor diode
Current consumption	typ. 30 mA

## Digital: Start circuit (S34)

Description of the input	NPN (manual start), PNP (autostart)
Number of inputs	1
Input voltage range "1" signal	19.2 V DC ... 30 V DC (manual start, autostart: 0 V)
Inrush current	< 10 mA (typ. with U <sub>S</sub> , Δt = 100 ms)
Max. permissible overall conductor resistance	150 Ω
Protective circuit	Suppressor diode
Current consumption	< 5 mA (typ. with U <sub>S</sub> at S34/24 V) > -5 mA (typ. with U <sub>S</sub> at S34/0 V)

## IO-Link

Designation	IO-Link
Transmission speed	230 kbps (COM3)
Cycle Time	5 ms
Process data update	5 ms
Amount of process data	max. 31 Byte (Input data) max. 16 Byte (Output data)
Description of the input	IO-Link switching and communication cable
Number of inputs	1
Connection method	Screw connection
Connection technology	3-conductor
Number of ports	1
Port type	Class A

## Output data

### Relay: Enabling current path (13/14, 23/24)

Output description	safety-related N/O contacts 2 NO contacts each in series, without delay, floating
Number of outputs	2 (undelayed)
Contact switching type	2 enabling current paths
Contact material	AgSnO <sub>2</sub>
Switching voltage	min. 12 V AC/DC max. 250 V AC/DC
Switching power	min. 60 mW

# PSR-MC42-2NO-1DO-24DC-SC - Safety relays



2702901

<https://www.phoenixcontact.com/us/products/2702901>

Inrush current	min. 3 mA
	max. 6 A
Switching capacity	5 A (AC15)
	4 A (DC13)
Limiting continuous current	6 A
Sq. Total current	72 A <sup>2</sup> (observe derating)
Switching frequency	0.1 Hz
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. 22 V DC (U <sub>s</sub> - 2 V)
Current	max. 100 mA
Maximum inrush current	500 mA (Δt = 1 ms at U <sub>s</sub> )
Protective circuit	Suppressor diode

## Connection data

### Connection technology

pluggable	yes
-----------	-----

### 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	5 x LED (green)
Operating voltage display	1 x LED (green, yellow, red)

## Dimensions

Width	17.5 mm
Height	112.2 mm
Depth	114.5 mm

## Material specifications

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

## Characteristics

### Safety data

Stop category (EN 60204-1)	0
Safety data: EN ISO 13849	
Performance level (PL)	e (4 A DC13; 5 A AC15; 8760 switching cycles/year)
Safety data: IEC 61508 - High demand	
Safety Integrity Level (SIL)	3
Safety data: IEC 61508 - Low 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)	-25 °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)
Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)
Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, amplitude 0.15 mm, 2g

## Approvals

### CE

Identification	CE-compliant
----------------	--------------

## Mounting

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

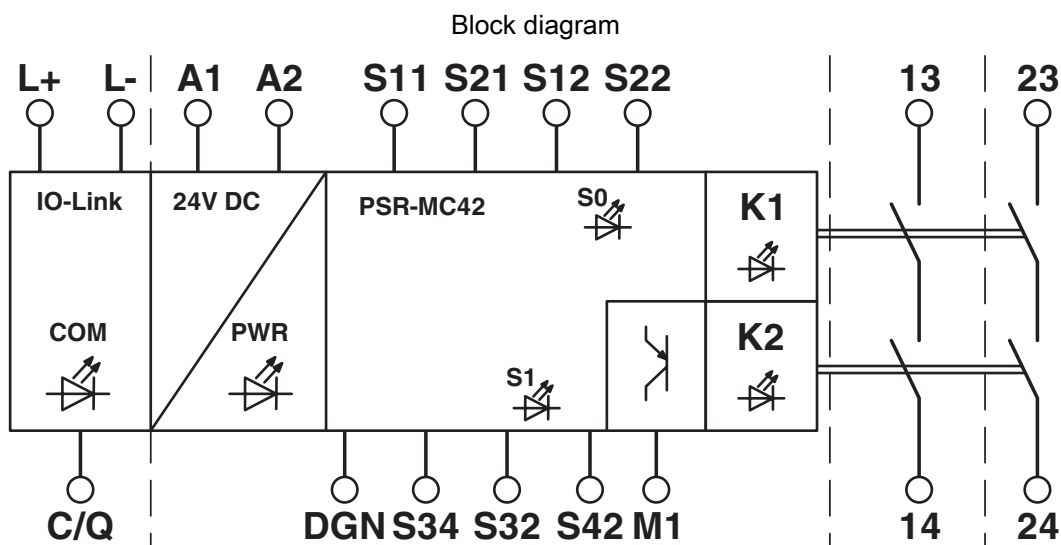
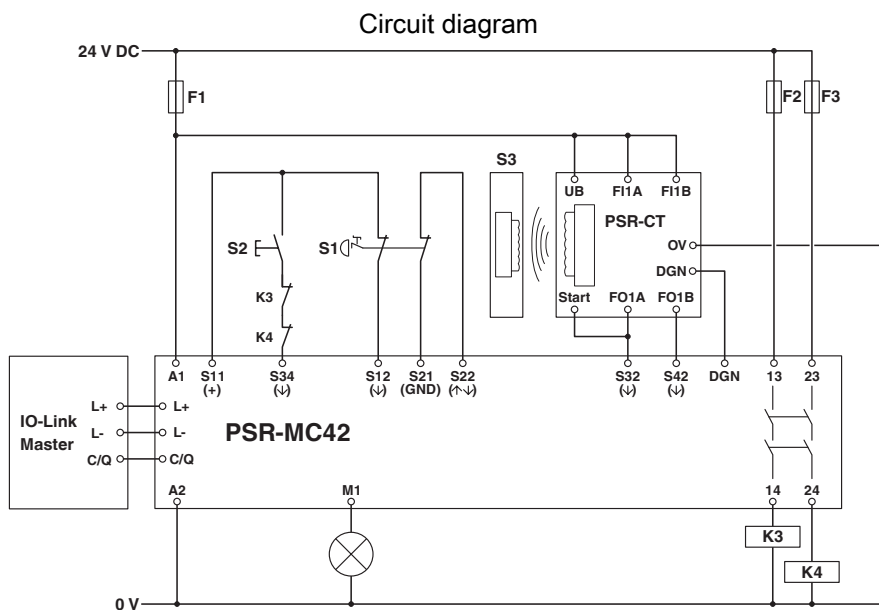
# PSR-MC42-2NO-1DO-24DC-SC - Safety relays



2702901

<https://www.phoenixcontact.com/us/products/2702901>

## Drawings



Block diagram

# PSR-MC42-2NO-1DO-24DC-SC - Safety relays



2702901

<https://www.phoenixcontact.com/us/products/2702901>

## Approvals

🔗 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2702901>



**cULus Listed**

Approval ID: E140324



**Functional Safety**

Approval ID: 01/205/5677.02/24

# PSR-MC42-2NO-1DO-24DC-SC - Safety relays



2702901

<https://www.phoenixcontact.com/us/products/2702901>

## 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
-------------	----------

2702901

<https://www.phoenixcontact.com/us/products/2702901>

## 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)
SCIP	06c37c05-4d86-4236-997e-0585da70bfa9

### EF3.1 Climate Change

CO2e kg	27.352 kg CO2e
---------	----------------

Phoenix Contact 2026 © - all rights reserved  
<https://www.phoenixcontact.com>

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