

# Safety relays - PSR-SPP- 24DC/FSP/2X1/1X2 - 2986957

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Safe coupling relay for SIL3 high and low demand applications, connects digital output signals to the I/O, 2 enabling current paths, 1 signal contact, module for safe state off applications, integrated test pulse filter, plug-in spring-cage connection, width: 17.5 mm

## Product Features

- Narrow 17.5 mm housing
- Up to SIL 3 according to IEC 61508
- Easy proof test according to IEC 61508 thanks to integrated signal contact
- Forcibly guided contacts according to EN 50205
- Long service life thanks to filtering of controller test pulses
- Couples digital output signals from failsafe controllers to I/O devices (valves, etc.) for electrical isolation and power adaptation
- Two enabling current paths



## Key commercial data

package_quantity	1
GTIN	4046356520928

## Technical data

### Note:

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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### Dimensions

Width	17.5 mm
Height	112 mm
Depth	114.5 mm

### Ambient conditions

Ambient temperature (operation)	-20 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Max. permissible humidity (storage/transport)	≤ 75 % (Condensation and icing are not permitted based on the average annual temperature)
Max. permissible humidity (storage/transport)	≤ 85 % (On an individual basis, condensation and icing are not permitted)

### Input data

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## Technical data

### Input data

Nominal input voltage $U_N$	24 V DC
Input voltage range in reference to $U_N$	0.85 ... 1.1
Typical input current at $U_N$	55 mA
Typical inrush current	max. 100 mA
Typical response time	50 ms
Typical release time	50 ms
Recovery time	1 s

### Output data

Contact type	2 undelayed enabling current paths
Contact type	1 undelayed confirmation current path
Contact material	AgCuNi, + 0.2 $\mu$ m Au
Maximum switching voltage	250 V AC/DC
Minimum switching voltage	15 V AC/DC
Limiting continuous current	5 A (N/O contact)
Limiting continuous current	100 mA (N/C contact)
Maximum inrush current	5 A
Inrush current, minimum	5 mA
Sq. Total current	$50 \text{ A}^2 (I_{TH}^2 = I_1^2 + I_2^2 + \dots + I_N^2)$
Interrupting rating (ohmic load) max.	120 W (24 V DC, $\tau = 0$ ms, N/C contact: 2.4 W)
Interrupting rating (ohmic load) max.	192 W (48 V DC, $\tau = 0$ ms, N/C contact: 4.8 W)
Interrupting rating (ohmic load) max.	162 W (60 V DC, $\tau = 0$ ms, N/C contact: 6 W)
Interrupting rating (ohmic load) max.	66 W (110 V DC, $\tau = 0$ ms, N/C contact: 11 W)
Interrupting rating (ohmic load) max.	60 W (220 V DC, $\tau = 0$ ms, N/C contact: 22 W)
Interrupting rating (ohmic load) max.	1250 VA (250 V AC, $\tau = 0$ ms, N/C contact: 25 VA)
Maximum interrupting rating (inductive load)	72 W (24 V DC, $\tau = 40$ ms, N/C contact: 2.4 W)
Maximum interrupting rating (inductive load)	43 W (48 V DC, $\tau = 40$ ms, N/C contact: 4.8 W)
Maximum interrupting rating (inductive load)	41 W (60 V DC, $\tau = 40$ ms, N/C contact: 6 W)
Maximum interrupting rating (inductive load)	35 W (110 V DC, $\tau = 40$ ms, N/C contact: 11 W)
Maximum interrupting rating (inductive load)	48 W (220 V DC, $\tau = 40$ ms, N/C contact: 22 W)
Switching capacity min.	75 mW
Output fuse	10 A gL/gG (N/O contact)
Output fuse	6 A gL/gG (N/C contact)

### General

Relay type	Electromechanically forcibly guided, dust-proof relay.
Mechanical service life	Approx. $10^7$ cycles
Mounting position	Any
Category according to EN 13849-1	4
Stop category	0
Name	Air and creepage distances between the power circuits
Standards/regulations	DIN EN 50178/VDE 0160

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## Technical data

### General

<b>Rated surge voltage / insulation</b>	6 kV / Safe isolation, increased insulation
<b>Rated insulation voltage</b>	250 V
<b>Pollution degree</b>	2
<b>Surge voltage category</b>	III

### Connection data

<b>Conductor cross section solid min.</b>	0.2 mm <sup>2</sup>
<b>Conductor cross section solid max.</b>	1.5 mm <sup>2</sup>
<b>Conductor cross section stranded min.</b>	0.2 mm <sup>2</sup>
<b>Conductor cross section stranded max.</b>	1.5 mm <sup>2</sup>
<b>Conductor cross section AWG/kcmil min.</b>	24
<b>Conductor cross section AWG/kcmil max</b>	16
<b>Stripping length</b>	8 mm
<b>Connection method</b>	Spring-cage conn.

## classifications

### eCl@ss

<b>eCl@ss 4.0</b>	27371102
<b>eCl@ss 4.1</b>	27371102
<b>eCl@ss 5.0</b>	27371901
<b>eCl@ss 5.1</b>	27371901
<b>eCl@ss 6.0</b>	27371819
<b>eCl@ss 7.0</b>	27371819
<b>eCl@ss 8.0</b>	27371819

### ETIM

<b>ETIM 2.0</b>	EC001449
<b>ETIM 3.0</b>	EC001449
<b>ETIM 4.0</b>	EC001449
<b>ETIM 5.0</b>	EC001449

### UNSPSC

<b>UNSPSC 6.01</b>	30211901
<b>UNSPSC 7.0901</b>	39121501
<b>UNSPSC 11</b>	39121501
<b>UNSPSC 12.01</b>	39121501
<b>UNSPSC 13.2</b>	39121501

## approvals

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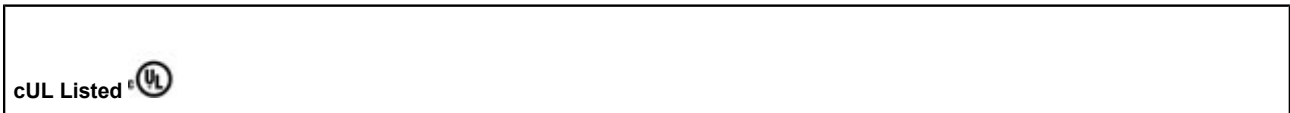
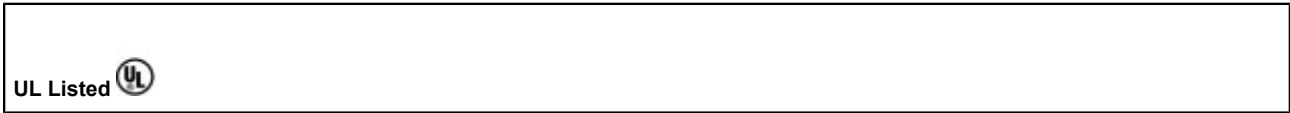
UL Listed / cUL Listed / Functional Safety / cULus Listed /

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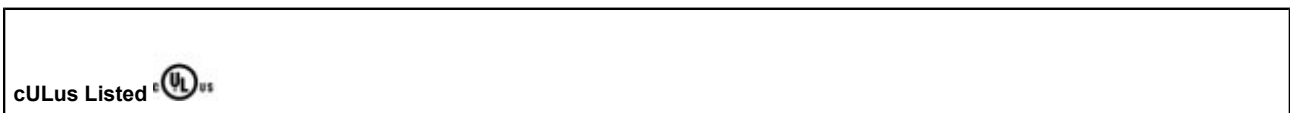
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approvals

Approval details

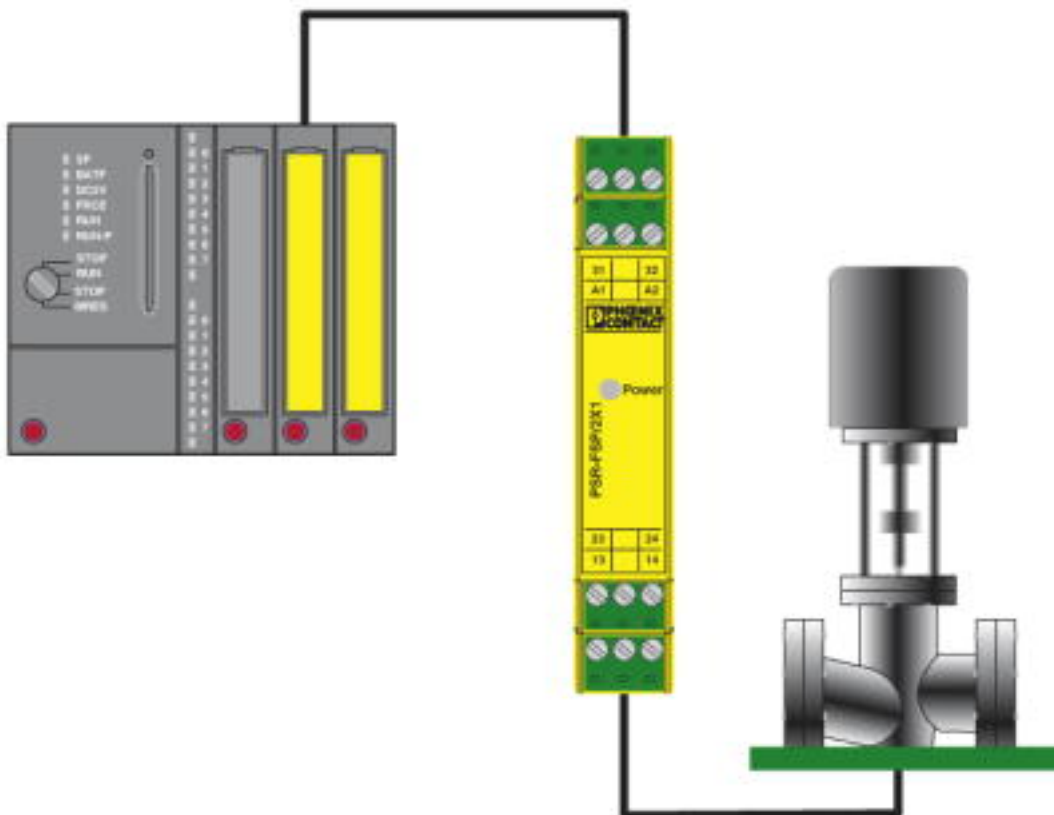


Functional Safety



Drawings

Application drawing



Example of electrical isolation of a safety PLC output from the field.

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Circuit diagram

