

# PSR-SPP- 24UC/ESM4/2X1/1X2 - Safety relays



2963705

<https://www.phoenixcontact.com/us/products/2963705>

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 for emergency stop and safety door monitoring up to SIL 3 or Cat. 4, PL e in accordance with EN ISO 13849, 2-channel operation, 2 enabling current paths, nominal input voltage: 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, SIL 3 in accordance with IEC 61508
- 2 channel control
- 2 enabling current paths, 1 signaling current path

## Commercial data

Item number	2963705
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA112
Catalog page	Page 20 (IF-2009)
GTIN	4017918904753
Weight per piece (including packing)	192.18 g
Weight per piece (excluding packing)	159.47 g
Customs tariff number	85371098
Country of origin	DE

## Technical data

### Product properties

Product type	Safety relays
Product family	PSRclassic
Application	Emergency stop
	Safety door
Mechanical service life	approx. $10^7$ cycles
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

### Electrical properties

Maximum power dissipation for nominal condition	16.44 W ( $U_S = 26.4$ V, $I_L^2 = 72$ A <sup>2</sup> , $P_{Total\ max} = 2.04$ W + 14.4 W)
Nominal operating mode	100% operating factor

### Air clearances and creepage distances between the power circuits

Rated insulation voltage	250 V
Rated surge voltage/insulation	See section "Insulation coordination"

### Input data

#### General

Rated control circuit supply voltage $U_S$	24 V DC -15 % / +10 %
Power consumption at $U_S$	typ. 1.68 W (DC)
Rated control supply current $I_S$	typ. 70 mA
Input voltage range in reference to $U_N$	0.85 ... 1.1
Typical input current at $U_N$	70 mA DC
Inrush current	< 3.5 A ( $\Delta t = 3$ ms at $U_S$ )
	< 100 mA ( $\Delta t = 500$ ms, with $U_S/I_x$ at S12)
	> -100 mA ( $\Delta t = 300$ ms, with $U_S/I_x$ at S22)
	< 6 mA (with $U_S/I_x$ to S34)
Current consumption	typ. 38 mA (S12)
	typ. -38 mA (S22)
	typ. 1 mA (with $U_S/I_x$ to S34)
Voltage at input/start and feedback circuit	approx. 24 V DC
Filter time	5 ms (at A1 in the event of voltage dips at $U_S$ )
	No test pulses permitted
Typical response time	100 ms (Monitored/manual start)
Typical release time	20 ms (on demand via the sensor circuit)
	45 ms (on demand via A1)
Concurrence	$\infty$
Recovery time	1 s (following demand of the safety function)
	< 1 s (Boot time)
Protective circuit	Surge protection; Suppressor diode
Max. permissible overall conductor resistance	approx. 50 $\Omega$ (Input and start circuits at $U_S$ )

# PSR-SPP- 24UC/ESM4/2X1/1X2 - Safety relays



2963705

<https://www.phoenixcontact.com/us/products/2963705>

Operating voltage display	Green LED
Status display	Green LED

## Output data

Contact switching type	2 enabling current paths
	1 signaling current path
Contact material	AgSnO <sub>2</sub> , + 0.2 µm Au
Maximum switching voltage	250 V AC
Minimum switching voltage	10 V AC/DC
Limiting continuous current	6 A (N/O contact)
Maximum inrush current	6 A
Inrush current, minimum	10 mA
Sq. Total current	72 A <sup>2</sup> (Enabling current paths)
	36 A <sup>2</sup> (Signaling current path 31/32)
Switching capacity min.	100 mW
Switching capacity in accordance with IEC 60947-5-1	6 A (DC13, enabling current paths)
	5 A (AC15, enabling current paths)
	2 A (DC13, signaling current paths)
	1.5 A (AC15, signaling current paths)
Output fuse	10 A gL/gG (Enabling current paths)
	4 A gL/gG (Low-demand enabling current paths)
	6 A gL/gG (Signaling current path)

## Connection data

### Connection technology

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

### Conductor connection

Connection method	Push-in connection
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

## Dimensions

Width	22.5 mm
Height	112 mm
Depth	114.5 mm

## Material specifications

Housing material	Polyamide
------------------	-----------

# PSR-SPP- 24UC/ESM4/2X1/1X2 - Safety relays



2963705

<https://www.phoenixcontact.com/us/products/2963705>

## Characteristics

### Safety data

Stop category	0
---------------	---

### Safety data: EN ISO 13849

Category	4
Performance level (PL)	e (5 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)	-20 °C ... 55 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 70 °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, 2g

## Approvals

### CE

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

## Standards and regulations

### Air clearances and creepage distances between the power circuits

Standards/regulations	DIN EN 60947-1
-----------------------	----------------

## Mounting

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

# PSR-SPP- 24UC/ESM4/2X1/1X2 - Safety relays

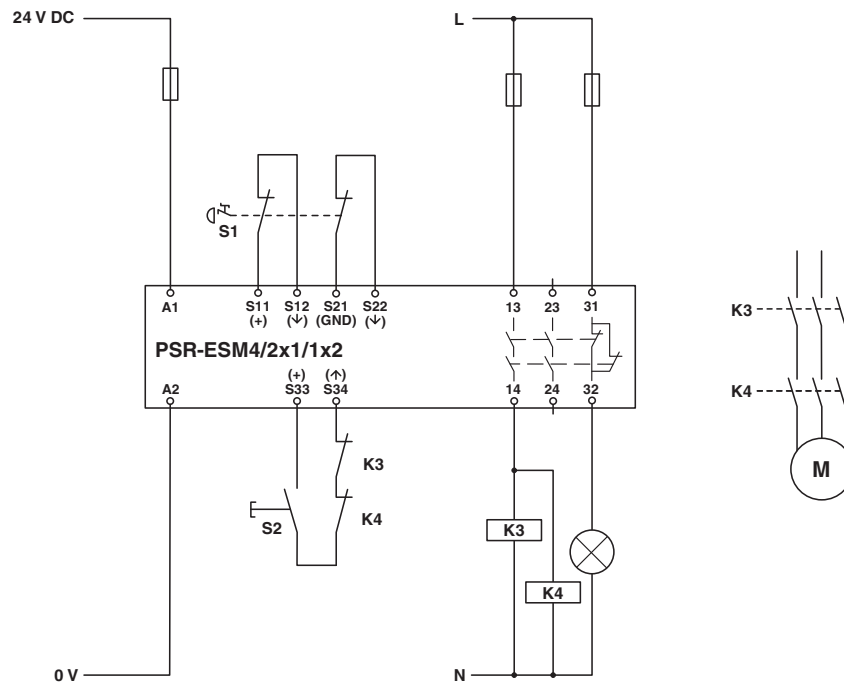


2963705

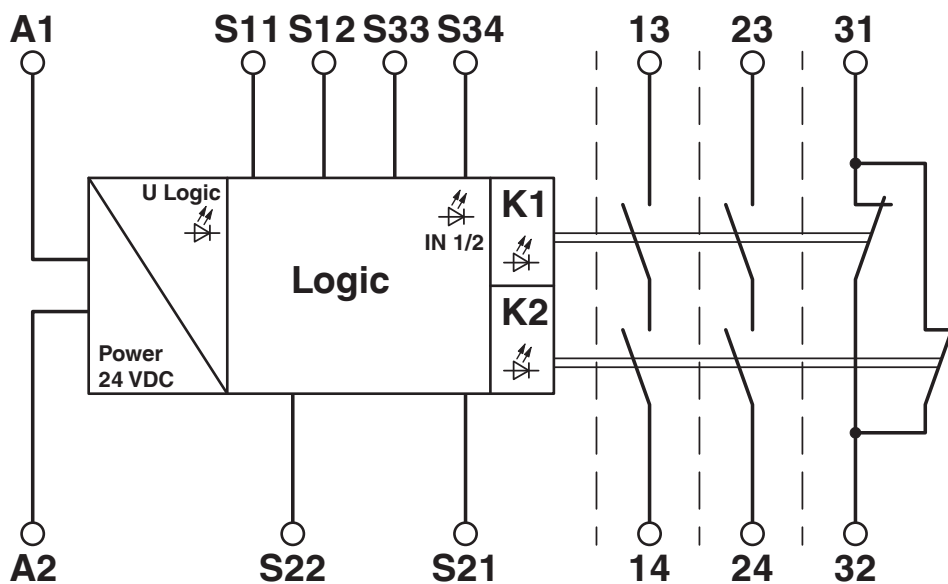
<https://www.phoenixcontact.com/us/products/2963705>

## Drawings

Circuit diagram



Circuit diagram



# PSR-SPP- 24UC/ESM4/2X1/1X2 - Safety relays



2963705

<https://www.phoenixcontact.com/us/products/2963705>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2963705>



**EAC**

Approval ID: RU C-DE.A\*30.B.01082



**UL Listed**

Approval ID: FILE E 140324



**cUL Listed**

Approval ID: FILE E 140324



**Functional Safety**

Approval ID: 01/205/0652.05/22



**Functional Safety**

Approval ID: 968/EZ 404.07/22

**cULus Listed**

# PSR-SPP- 24UC/ESM4/2X1/1X2 - Safety relays



2963705

<https://www.phoenixcontact.com/us/products/2963705>

## Classifications

### ECLASS

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

### ETIM

ETIM 9.0	EC001449
----------	----------

### UNSPSC

UNSPSC 21.0	39122205
-------------	----------

# PSR-SPP- 24UC/ESM4/2X1/1X2 - Safety relays



2963705

<https://www.phoenixcontact.com/us/products/2963705>

## Environmental product compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"



# PSR-SPP- 24UC/ESM4/2X1/1X2 - Safety relays



2963705

<https://www.phoenixcontact.com/us/products/2963705>

## Accessories

### CP-MSTB - Coding profile

1734634

<https://www.phoenixcontact.com/us/products/1734634>

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



---

### CR-MSTB - Coding section

1734401

<https://www.phoenixcontact.com/us/products/1734401>

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



---

Phoenix Contact 2023 © - 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)