

## Safety relays - PSR-SPP- 24UC/ESA4/3X1/1X2/B - 2963941

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's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)



Safety relay for emergency stop and safety door monitoring up to SIL 3 or Cat. 4, PL e according to EN ISO 13849, single or two-channel operation, 3 enabling current paths, nominal input voltage of 24 V AC/DC, plug-in spring-cage terminal block


The figure shows a version with a screw connection

### Why buy this product

- ✓ Up to Cat.4/PL e according to EN ISO 13849-1, SILCL 3 according to EN 62061, SIL 3 according to IEC 61508
- ✓ Single and two-channel control
- ✓ 3 enabling current paths, 1 signaling current path



### Key Commercial Data

Packing unit	1 STK
GTIN	 4 017918 904784
GTIN	4017918904784
Weight per Piece (excluding packing)	200.000 g
Custom tariff number	85371098
Country of origin	Germany

### Technical data

#### Note

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

#### Dimensions

Width	22.5 mm
Height	112 mm

# Safety relays - PSR-SPP- 24UC/ESA4/3X1/1X2/B - 2963941

## Technical data

### Dimensions

Depth	114.5 mm
-------	----------

### Ambient conditions

Ambient temperature (operation)	-20 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)
Max. permissible humidity (storage/transport)	75 % (on average, 85% infrequently, non-condensing)
Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g
Maximum altitude	≤ 2000 m (Above sea level)

### Input data

Nominal input voltage $U_N$	24 V AC/DC
Input voltage range in reference to $U_N$	0.85 ... 1.1
Typical input current at $U_N$	140 mA AC
	65 mA DC
Voltage at input/start and feedback circuit	approx. 24 V DC
Typical response time	100 ms (automatic start)
Typical release time	45 ms (single-channel)
	10 ms (two-channel)
Concurrence input 1/2	∞
Recovery time	1 s
Status display	Green LED
Max. permissible overall conductor resistance	approx. 50 Ω (Input and start circuits at $U_N$ )

### Output data

Contact type	3 enabling current paths
	1 signaling current path
Contact material	AgSnO <sub>2</sub> , + 0.2 μm Au
Minimum switching voltage	15 V AC/DC
Maximum switching voltage	250 V AC/DC
Limiting continuous current	6 A (N/O contact)
Inrush current, minimum	25 mA
Maximum inrush current	6 A
Sq. Total current	72 A <sup>2</sup> ( $I_{TH}^2 = I_1^2 + I_2^2 + I_3^2$ )
Interrupting rating (ohmic load) max.	144 W (24 V DC, τ = 0 ms)
	288 W (48 V DC, τ = 0 ms)
	77 W (110 V DC, τ = 0 ms)

## Safety relays - PSR-SPP- 24UC/ESA4/3X1/1X2/B - 2963941

### Technical data

#### Output data

	88 W (220 V DC, $\tau = 0$ ms)
	1500 VA (250 V AC, $\tau = 0$ ms)
Maximum interrupting rating (inductive load)	48 W (24 V DC, $\tau = 40$ ms)
	40 W (48 V DC, $\tau = 40$ ms)
	35 W (110 V DC, $\tau = 40$ ms)
	33 W (220 V DC, $\tau = 40$ ms)
Switching capacity min.	0.4 W
Output fuse	10 A gL/gG NEOZED (N/O contact)
	6 A gL/gG NEOZED (N/C contact)

#### General

Relay type	Electromechanical relay with forcibly guided contacts in accordance with EN 50205
Mechanical service life	Approx. $10^7$ cycles
Nominal operating mode	100% operating factor
Net weight	225.8 g
Mounting type	DIN rail mounting
Mounting position	any
Degree of protection	IP54
	IP20
Min. degree of protection of inst. location	IP54
Housing color	yellow

#### Connection data

Connection method	Spring-cage connection
pluggable	Yes
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	1.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

#### Safety-related characteristic data

Stop category	0
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	3
Designation	IEC 61508 - Low demand

# Safety relays - PSR-SPP- 24UC/ESA4/3X1/1X2/B - 2963941

## Technical data

### Safety-related characteristic data

Safety Integrity Level (SIL)	3
Designation	EN ISO 13849
Performance level (PL)	e
Category	4
Designation	EN 62061
Safety Integrity Level Claim Limit (SIL CL)	3

### Standards and Regulations

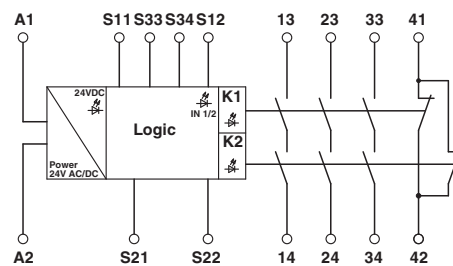
Shock	15g
Designation	Air clearances and creepage distances between the power circuits
Standards/regulations	DIN EN 50178/VDE 0160
Rated insulation voltage	250 V
Rated surge voltage/insulation	4 kV / basic insulation (safe isolation, reinforced insulation, and 6 kV between A1-A2/logic/enabling and signaling current paths)
Degree of pollution	2
Overvoltage category	III
Vibration (operation)	10 Hz ... 150 Hz, 2g

### Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

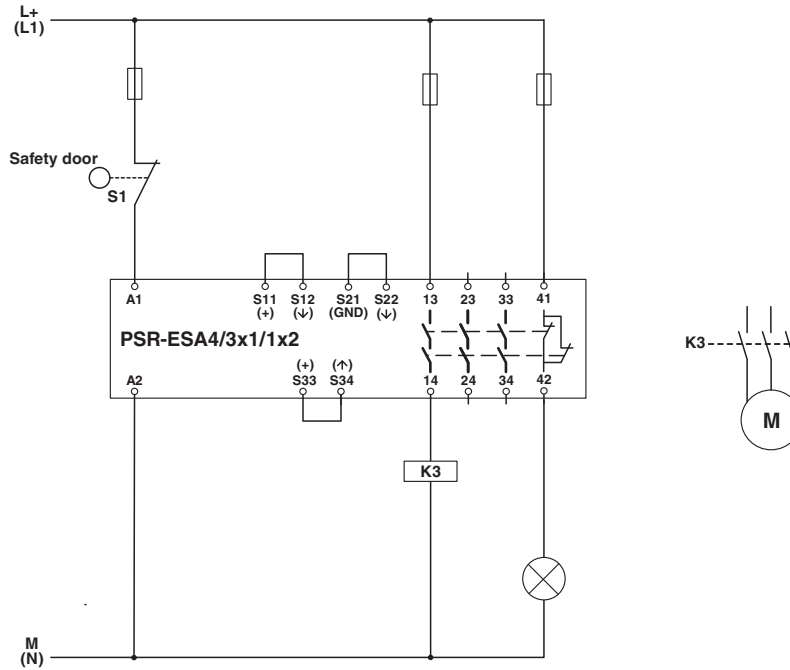
## Drawings

Circuit diagram



# Safety relays - PSR-SPP- 24UC/ESA4/3X1/1X2/B - 2963941

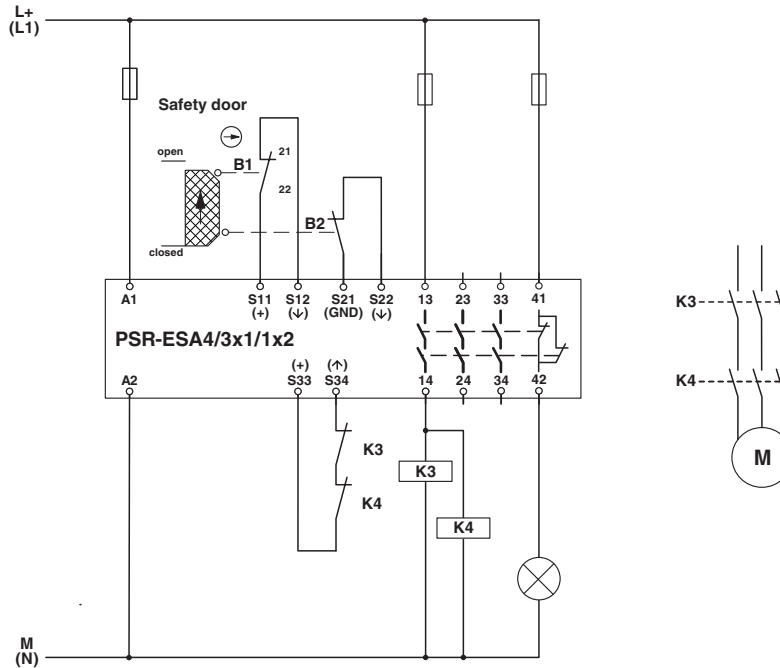
Circuit diagram



Single-channel safety door monitoring

# Safety relays - PSR-SPP- 24UC/ESA4/3X1/1X2/B - 2963941

Circuit diagram



Two-channel safety door monitoring

## Classifications

eCl@ss

eCl@ss 4.0	27371102
eCl@ss 4.1	27371102
eCl@ss 5.0	27371901
eCl@ss 5.1	27371901
eCl@ss 6.0	27371819
eCl@ss 7.0	27371819
eCl@ss 8.0	27371819
eCl@ss 9.0	27371819

ETIM

ETIM 2.0	EC000196
ETIM 3.0	EC001449
ETIM 4.0	EC001449
ETIM 5.0	EC001449
ETIM 6.0	EC001449

# Safety relays - PSR-SPP- 24UC/ESA4/3X1/1X2/B - 2963941

## Classifications

### UNSPSC

UNSPSC 6.01	30211901
UNSPSC 7.0901	39121501
UNSPSC 11	39121501
UNSPSC 12.01	39121501
UNSPSC 13.2	39121501

## Approvals


### Approvals


#### Approvals

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


#### Ex Approvals

### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
-----------	---	---	---------------

cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
------------	---	---	---------------

Functional Safety			01/205/0652.01/15
-------------------	---	--	-------------------

EAC			RU C-DE.A*30.B.01082
-----	---	--	----------------------


EAC			EAC-Zulassung
-----	---	--	---------------

## Safety relays - PSR-SPP- 24UC/ESA4/3X1/1X2/B - 2963941

### Approvals

Functional Safety		968/EZ 404.02/15
-------------------	---	------------------

Functional Safety		968/EZ 404.02/15
-------------------	---	------------------

cULus Listed		
--------------	---	--