

# Safety relays - PSR-SCP- 24UC/ESA2/4X1/1X2/B - 2963802

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://download.phoenixcontact.com>)



Safety relay for emergency stop and safety door up to SIL 1, SIL CL 1, Cat. 1, PL c, depending on the application up to SIL 3, SIL CL 3, Cat. 4, PL e, single-channel operation, 4 enabling current paths, nominal input voltage of 24 V AC/DC, plug-in screw terminal blocks

## Product Features

- Up to Cat. 1/PL d according to ISO 13849-1, SIL CL 1 according to IEC 62061, SIL 1 according to IEC 61508
- Depending on the application, up to Cat. 4/PL e according to ISO 13849-1, SIL CL 3 according to IEC 62061, SIL 3 according to IEC 61508
- Basic insulation
- Single-channel control



## Key commercial data

package_quantity	1
GTIN	4017918892661

## Technical data

### Note

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

### Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

### Ambient conditions

Ambient temperature (operation)	-20 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C

### 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
Typical input current at $U_N$	65 mA DC
Voltage at input/start and feedback circuit	approx. 24 V DC
Typical response time	65 ms

# Safety relays - PSR-SCP- 24UC/ESA2/4X1/1X2/B - 2963802

## Technical data

### Input data

Typical release time	45 ms
Recovery time	1 s
Status display	Green LED
Max. permissible overall conductor resistance	approx. 22 Ω (Input and start circuits at U <sub>N</sub> )

### Output data

Contact type	4 enabling current paths
Contact type	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)
Limiting continuous current	3 A (N/C contact)
Inrush current, minimum	25 mA
Maximum inrush current	6 A
Sq. Total current	$72 \text{ A}^2 (I_{TH}^2 = I_1^2 + I_2^2 + I_3^2 + I_4^2)$
Interrupting rating (ohmic load) max.	144 W (24 V DC, τ = 0 ms, N/C contact 51/52: 72 W)
Interrupting rating (ohmic load) max.	288 W (48 V DC, τ = 0 ms, N/C contact 51/52: 144 W)
Interrupting rating (ohmic load) max.	110 W (110 V DC, τ = 0 ms)
Interrupting rating (ohmic load) max.	88 W (220 V DC, τ = 0 ms)
Interrupting rating (ohmic load) max.	1500 VA (250 V AC, τ = 0 ms, N/C contact 51/52: 750 VA)
Maximum interrupting rating (inductive load)	42 W (24 V DC, τ = 40 ms)
Maximum interrupting rating (inductive load)	42 W (48 V DC, τ = 40 ms)
Maximum interrupting rating (inductive load)	42 W (110 V DC, τ = 40 ms)
Maximum interrupting rating (inductive load)	42 W (220 V DC, τ = 40 ms)
Switching capacity min.	0.4 W
Output fuse	6 A fast blow
Output fuse	C6 (24 V AC/DC) automatic device

### General

Relay type	Electromechanically forcibly guided, dust-proof relay.
Mechanical service life	Approx. 10 <sup>7</sup> cycles
Mounting type	DIN rail mounting
Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Mounting position	any
Category according to EN 13849-1	1 (up to Cat. 4 depending on the application)
Stop category	0
Designation	Air and creepage distances between the power circuits
Standards/regulations	DIN EN 50178/VDE 0160
Rated surge voltage / insulation	4 kV / basic isolation (safe isolation, reinforced insulation and 6 kV between input circuit/N/C contacts and enabling current paths).

# Safety relays - PSR-SCP- 24UC/ESA2/4X1/1X2/B - 2963802

## Technical data

### General

Rated insulation voltage	250 V
Pollution degree	2
Surge voltage category	III

### Connection data

Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded max.	2.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	12
Stripping length	7 mm
Screw thread	M3
Connection method	Screw connection

### Safety-related characteristic data

Stop category	0
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	1 (up to SIL 3 depending on the application)
SFF <sub>Single-channel</sub>	99.9 %
SFF <sub>Two-channel</sub>	99.82 %
Mean time to a hazardous failure (MTTF <sub>d</sub> )	281413 Years
Probability of a hazardous failure per hour (PFH <sub>D</sub> )	4.05 x 10 <sup>-10</sup>
Proof test interval	240 Months
Note	The details apply assuming the following calculation basis:dop: 365.25 days (assumption)hop: 24 hours (assumption)tcycle: 3600 seconds (assumption)B10d for AC-15 6A: 230 000 (manufacturer's value)Data only applies if the safety function is demanded at least once a year. Only applies if signal contact is left in position!
Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	1 (up to SIL 3 depending on the application)
SFF <sub>Single-channel</sub>	99.9 %
SFF <sub>Two-channel</sub>	93.29 %
Mean time to a hazardous failure (MTTF <sub>d</sub> )	43713 Years
Probability of a hazardous failure on demand (PFD <sub>AVG</sub> )	1,49 x 10 <sup>-4</sup>
Proof test interval	167 Months
Designation	EN ISO 13849
Performance level (PL)	c (up to PL e depending on the application)
Category	1 (up to Cat. 4 depending on the application)
Diagnostic coverage (DC <sub>avg</sub> )	96.26 %
T <sub>10d</sub>	25 Years
Note	The details apply assuming the following calculation basis:dop: 365.25 days (assumption)hop: 24 hours (assumption)tcycle: 3600 seconds (assumption)B10d for AC-15 6A: 230 000 (manufacturer's

# Safety relays - PSR-SCP- 24UC/ESA2/4X1/1X2/B - 2963802

## Technical data

### Safety-related characteristic data

	value)Data only applies if the safety function is demanded at least once a year. Only applies if signal contact is left in position!
<b>Designation</b>	EN 62061
<b>Safety Integrity Level Claim Limit (SIL CL)</b>	1 (up to SIL CL 3 depending on the application)
<b>PFH<sub>b</sub></b>	4,05 x 10 <sup>-10</sup>
<b>Note</b>	The details apply assuming the following calculation basis:dop: 365.25 days (assumption)hop: 24 hours (assumption)cycle: 3600 seconds (assumption)B10d for AC-15 6A: 230 000 (manufacturer's value)Data only applies if the safety function is demanded at least once a year. Only applies if signal contact is left in position!

## 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>	EC000196
<b>ETIM 3.0</b>	EC001449
<b>ETIM 4.0</b>	EC001449
<b>ETIM 5.0</b>	EC001449

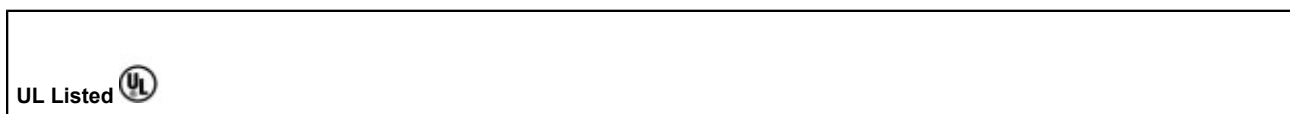
### UNSPSC

<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

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

### Approval details

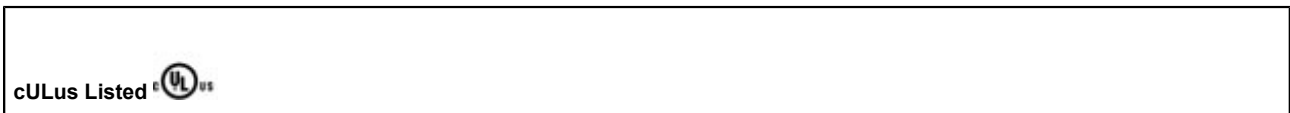


# Safety relays - PSR-SCP- 24UC/ESA2/4X1/1X2/B - 2963802

approvals



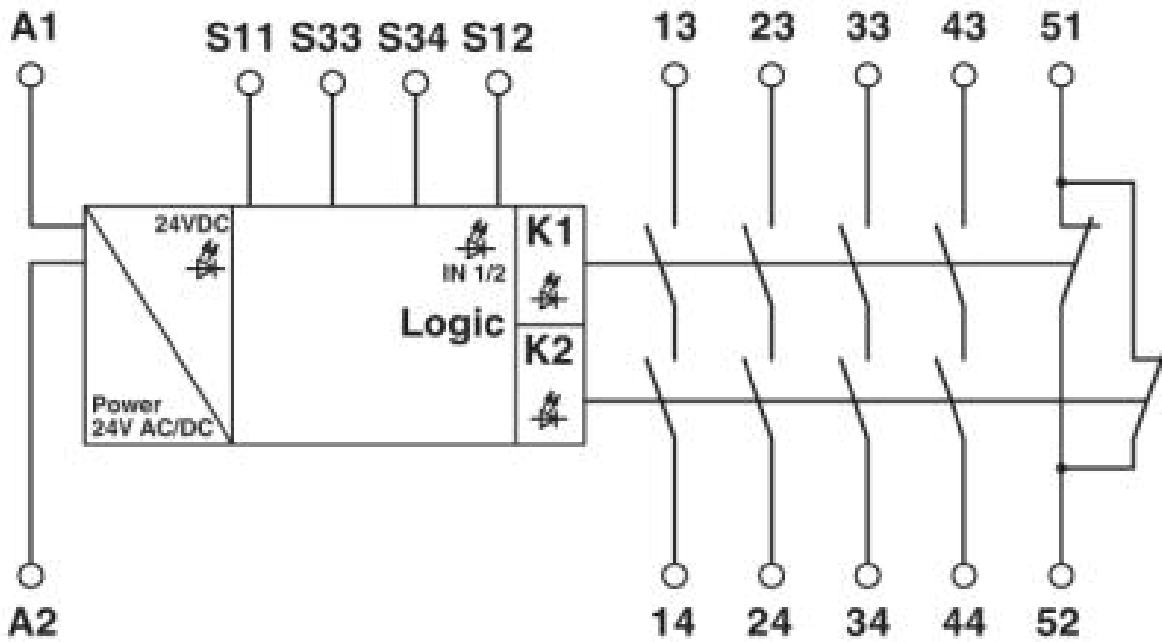
Functional Safety



Drawings

# Safety relays - PSR-SCP- 24UC/ESA2/4X1/1X2/B - 2963802

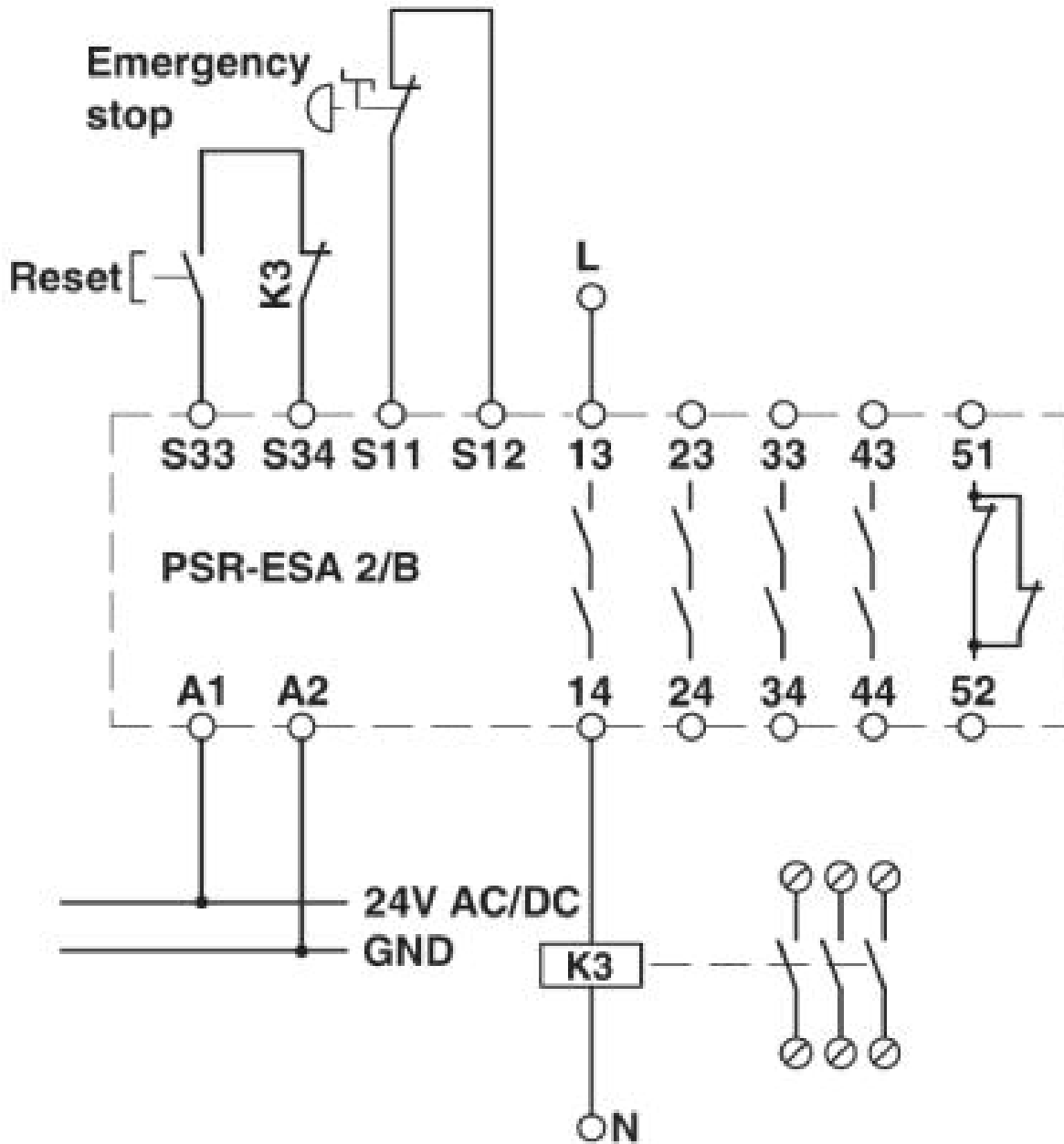
Circuit diagram



1 = logics

# Safety relays - PSR-SCP- 24UC/ESA2/4X1/1X2/B - 2963802

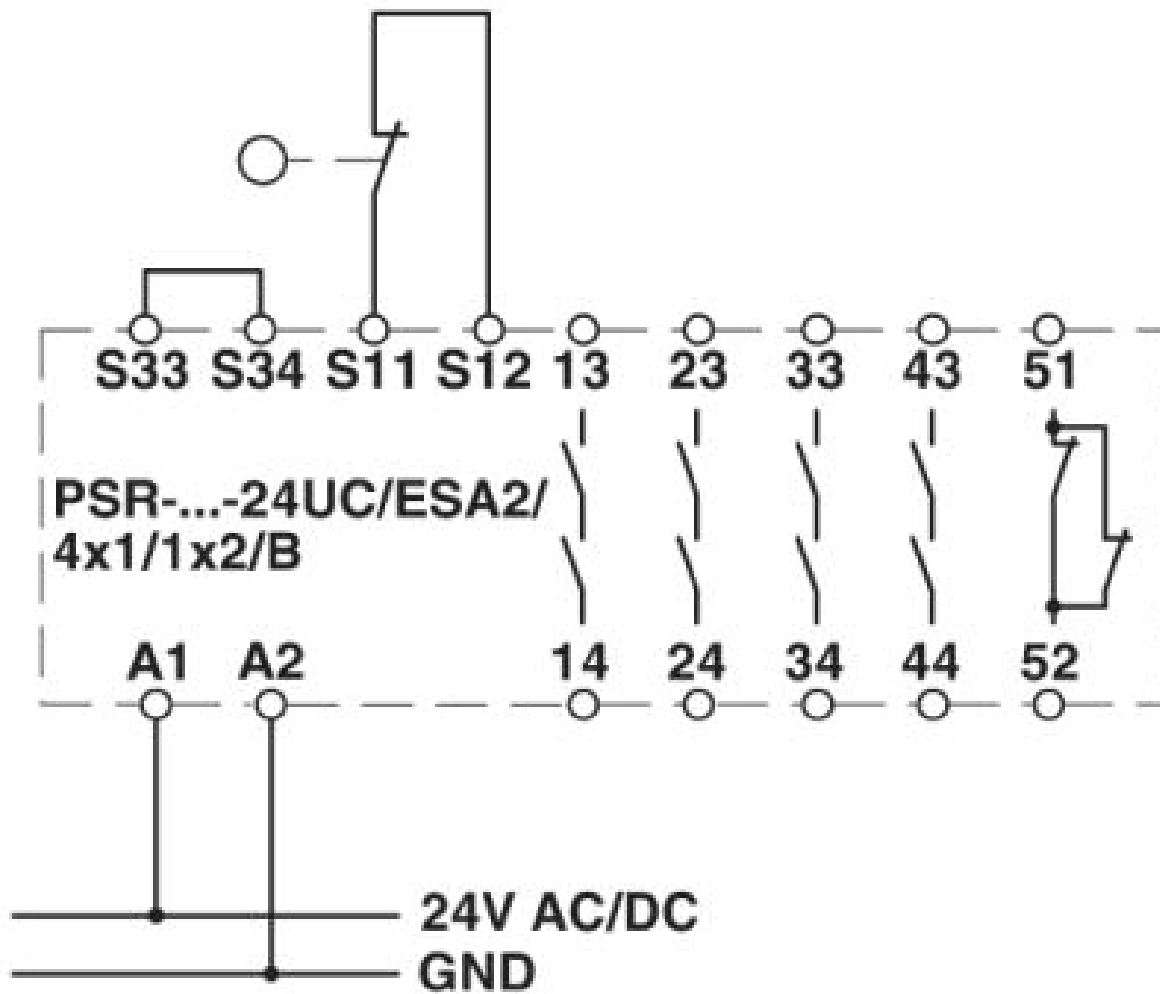
Circuit diagram



a = RESET  
b = Emergency stop  
One-channel emergency stop circuit with manual activation and monitored contact expansion, suitable up to safety category 2.

# Safety relays - PSR-SCP- 24UC/ESA2/4X1/1X2/B - 2963802

Circuit diagram



One-channel safety door monitoring with automatic activation, suitable up to safety category 1.



# Safety relays - PSR-SCP- 24UC/ESA2/4X1/1X2/B - 2963802

Circuit diagram

