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# Safety relays - PSR-SCP-42-48UC/ESAM4/3X1/1X2B - 2901416

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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 42 ... 48 V AC/DC, plug-in screw terminal blocks.

The figure shows 48 V AC/DC

## 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
- Manually monitored and automatic activation in a single device
- Basic insulation
- Single and two-channel control
- 3 enabling current paths, 1 signaling current path



## Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 591997

## Technical data

### Note

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

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

### Ambient conditions

Ambient temperature (operation)	-25 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)

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## Technical data

### Ambient conditions

Max. permissible humidity (storage/transport)	75 % (on average, 85% infrequently, non-condensing)
Maximum altitude	≤ 2000 m (Above sea level)

### Input data

Input voltage range	42 V AC/DC ... 48 V AC/DC
Input voltage range in reference to $U_N$	0.85 ... 1.1
Typical input current at $U_N$	95 mA
Voltage at input/start and feedback circuit	~ 24 V DC
Typical response time	40 ms (man. start)
Typical pick-up time	330 ms (when controlled via A1)
Typical release time	90 ms (when controlled via A1)
	20 ms (when controlled via S11/S12 and S21/S22)
Concurrence input 1/2	∞
Recovery time	1 s
Status display	Green LED
Maximum switching frequency	0.5 Hz
Max. permissible overall conductor resistance	50 Ω

### 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	10 V AC/DC
Maximum switching voltage	250 V AC/DC
Limiting continuous current	6 A (N/O contact)
	5 A (N/C contact)
Inrush current, minimum	10 mA
Maximum inrush current	6 A
Sq. Total current	$72 \text{ A}^2 (I_{TH}^2 = I_1^2 + I_2^2 + I_3^2)$
Interrupting rating (ohmic load) max.	144 W (24 V DC, τ = 0 ms)
	230 W (48 V DC, τ = 0 ms)
	68 W (110 V DC, τ = 0 ms)
	88 W (220 V DC, τ = 0 ms)
	2000 VA (250 V AC, τ = 0 ms)
Maximum interrupting rating (inductive load)	48 W (24 V DC, τ = 40 ms)
	40 W (48 V DC, τ = 40 ms)
	35 W (110 V DC, τ = 40 ms)
	33 W (220 V DC, τ = 40 ms)
Switching capacity min.	100 mW
Output fuse	10 A gL/gG NEOZED (N/O contact)
	6 A gL/gG NEOZED (N/C contact)

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## Technical data

### General

Relay type	Electromechanical relay with forcibly guided contacts in accordance with EN 50205
Mechanical service life	Approx. 10 <sup>7</sup> cycles
Net weight	238.7 g
Mounting type	DIN rail mounting
Degree of protection	IP54
	IP20
Min. degree of protection of inst. location	IP54
Mounting position	any
Control	one and two channel

### Connection data

Connection method	Screw connection
pluggable	Yes
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 flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12

### Safety-related characteristic data

Stop category	0
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	3
Designation	IEC 61508 - Low demand
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
Designation	IEC 50156
Safety Integrity Level (SIL)	3

### Standards and Regulations

Designation	Air clearances and creepage distances between the power circuits
Standards/regulations	DIN EN 50178/VDE 0160
Rated insulation voltage	250 V AC
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

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## Technical data

### Standards and Regulations

Overvoltage category	III
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## 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

### ETIM

ETIM 3.0	EC001449
ETIM 4.0	EC001449
ETIM 5.0	EC001449

### UNSPSC

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

## Approvals

### Approvals

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#### Approvals

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

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#### Ex Approvals

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#### Approvals submitted

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### Approval details

# Safety relays - PSR-SCP-42-48UC/ESAM4/3X1/1X2B - 2901416

## Approvals

UL Listed

cUL Listed

Functional Safety

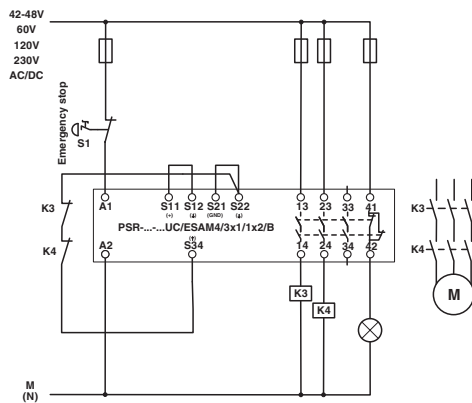
EAC

EAC

cULus Listed

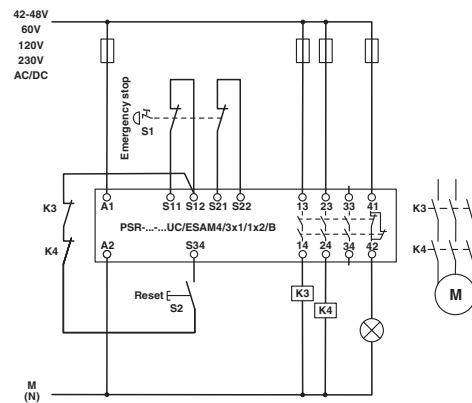
## Drawings

Application drawing



Single-channel emergency stop monitoring

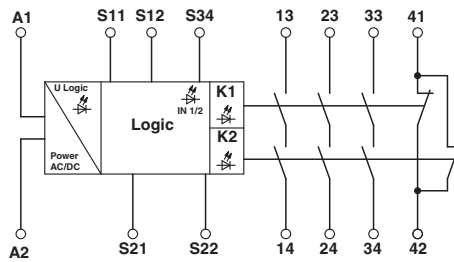
Application drawing



Two-channel emergency stop monitoring

## Safety relays - PSR-SCP-42-48UC/ESAM4/3X1/1X2B - 2901416

Circuit diagram



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