

## 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

### Your advantages

- 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 pc
GTIN	 4 046356 591997
GTIN	4046356591997
Weight per Piece (excluding packing)	240.000 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
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#### Dimensions

Width	22.5 mm
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## Technical data

### Dimensions

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)
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)
Typ. starting time with $U_s$	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	∞
Recovery time	1 s
Operating voltage display	Green LED
Status display	Green LED
Protective circuit	Surge protection Varistor 275 V <sub>RMS</sub> (A1-A2)
	Surge protection Varistor
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
Maximum switching voltage	250 V AC/DC
Minimum switching voltage	10 V AC/DC
Limiting continuous current	6 A (N/O contact)
	5 A (N/C contact)
Maximum inrush current	6 A
Inrush current, minimum	10 mA

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#### Output data

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, $\tau = 0$ ms)
	230 W (48 V DC, $\tau = 0$ ms)
	68 W (110 V DC, $\tau = 0$ ms)
	88 W (220 V DC, $\tau = 0$ ms)
	2000 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.	100 mW
Mechanical service life	approx. $10^7$ cycles
Switching capacity (360/h cycles)	6 A (24 V DC)
	5 A (230 V AC)
Output fuse	10 A gL/gG NEOZED (N/O contact)
	6 A gL/gG NEOZED (N/C contact)

#### General

Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3
Nominal operating mode	100% operating factor
Net weight	177.75 g
Mounting position	any
Mounting type	DIN rail mounting
Degree of protection	IP20
Min. degree of protection of inst. location	IP54

#### Connection data

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

#### Safety-related characteristic data

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

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### 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
Designation	EN 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
Overvoltage category	III
Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g

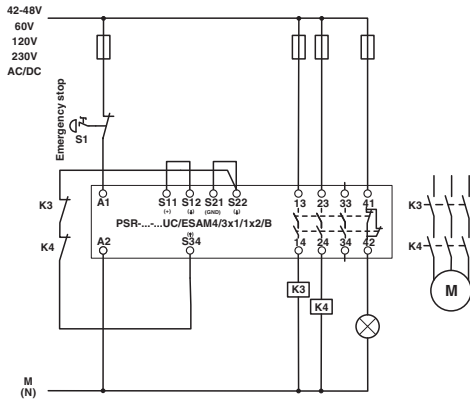
#### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

### Drawings

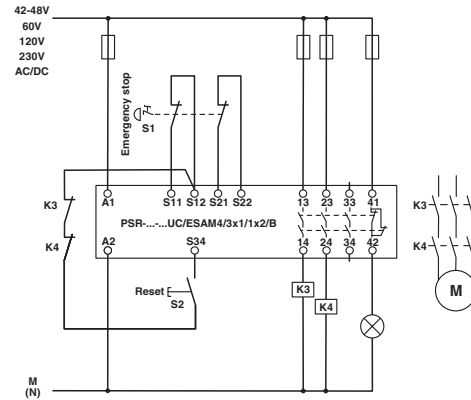
# Safety relays - PSR-SCP-42-48UC/ESAM4/3X1/1X2B - 2901416

Application drawing



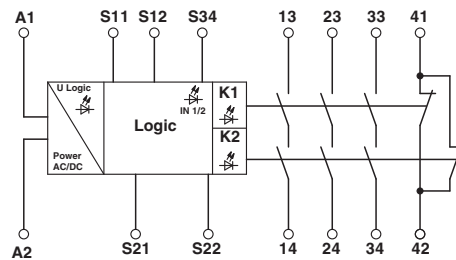
Single-channel emergency stop monitoring

Application drawing



Two-channel emergency stop monitoring

Circuit diagram



## Classifications

eCl@ss

eCl@ss 10.0.1	27371819
eCl@ss 11.0	27371819
eCl@ss 4.0	40020600
eCl@ss 4.1	40020600
eCl@ss 5.0	27371900
eCl@ss 5.1	27371900
eCl@ss 6.0	27371800
eCl@ss 7.0	27371819
eCl@ss 9.0	27371819

ETIM

ETIM 3.0	EC001449
ETIM 4.0	EC001449
ETIM 6.0	EC001449

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## Classifications

### ETIM

ETIM 7.0	EC001449
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### UNSPSC

UNSPSC 6.01	30211901
UNSPSC 7.0901	39121501
UNSPSC 11	39121501
UNSPSC 12.01	39121501
UNSPSC 13.2	39121501
UNSPSC 18.0	39122205
UNSPSC 19.0	39122205
UNSPSC 20.0	39122205
UNSPSC 21.0	39122205

## Approvals

### Approvals

#### Approvals

UL Listed / cUL Listed / Functional Safety / EAC / EAC / 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
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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
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Functional Safety		01/205/5117.01/16
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### Approvals

EAC		EAC-Zulassung
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EAC		RU C- DE.A*30.B.01082
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cULus Listed		
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