

# PSR-SPP-230UC/ESAM4/3X1/1X2/B - Safety relays



2901429

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Safety relay for emergency stop and safety door monitoring up to SIL 3 or Cat. 4, PL e in accordance with EN ISO 13849, 1- or 2-channel operation, 3 enabling current paths, nominal input voltage: 230 V AC/DC, pluggable 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
- Manually monitored and automatic activation in a single device
- Basic insulation
- 1- and 2-channel control
- 3 enabling current paths, 1 signaling current path

## Commercial data

Item number	2901429
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA114
GTIN	4046356592208
Weight per piece (including packing)	236.41 g
Weight per piece (excluding packing)	175.68 g
Customs tariff number	85371098
Country of origin	DE

## Technical data

### Notes

#### Note on application

Note on application	Only for industrial use
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### Product properties

Product type	Safety relays
Product family	PSRclassic
Application	Emergency stop
	Safety door
Control	1 and 2 channel
Mechanical service life	approx. 10 <sup>7</sup> cycles
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

#### Insulation characteristics

Overvoltage category	III
Degree of pollution	2

### Electrical properties

Maximum power dissipation for nominal condition	2.88 W
Nominal operating mode	100% operating factor
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)

### Input data

#### General

Rated control circuit supply voltage $U_S$	230 V AC/DC -15 % / +10 %
Power consumption at $U_S$	2 W
Rated control supply current $I_S$	22 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	150 ms (when controlled via A1)
	20 ms (when controlled via S11/S12 and S21/S22)
Concurrence	$\infty$
Recovery time	1 s
Maximum switching frequency	0.5 Hz
Protective circuit	Surge protection; Varistor 275 V <sub>RMS</sub> (A1-A2)
	Surge protection; Varistor
Max. permissible overall conductor resistance	50 $\Omega$

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## Output data

Contact switching 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 (Enabling current paths)
	5 A (Signaling current path)
Maximum inrush current	6 A
Inrush current, minimum	10 mA
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, $\tau = 0 \text{ ms}$ )
	230 W (48 V DC, $\tau = 0 \text{ ms}$ )
	68 W (110 V DC, $\tau = 0 \text{ ms}$ )
	88 W (220 V DC, $\tau = 0 \text{ ms}$ )
	2000 VA (250 V AC, $\tau = 0 \text{ ms}$ )
Maximum interrupting rating (inductive load)	48 W (24 V DC, $\tau = 40 \text{ ms}$ )
	40 W (48 V DC, $\tau = 40 \text{ ms}$ )
	35 W (110 V DC, $\tau = 40 \text{ ms}$ )
	33 W (220 V DC, $\tau = 40 \text{ ms}$ )
Switching capacity min.	100 mW
Switching capacity (360/h cycles)	6 A (24 V DC)
	5 A (230 V AC)
Switching capacity (3600/h cycles)	3 A (24 V (DC13))
	3 A (230 V (AC 15))
Output fuse	10 A gL/gG NEOZED (Enabling current paths)
	6 A gL/gG NEOZED (Signaling current path)

## Connection data

### Connection technology

pluggable	yes
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### 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

## Signaling

Status display	3 x LED (green)
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Operating voltage display	1 x LED (green)
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## Dimensions

Width	22.5 mm
Height	112 mm
Depth	114.5 mm

## Material specifications

Housing material	PA
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## Characteristics

### Safety data

Stop category	0
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### Safety data: EN ISO 13849

Category	4
Performance level (PL)	e

### Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3
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### Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	3
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### Safety data: EN IEC 62061

Safety Integrity Level (SIL)	3
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## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Ambient temperature (operation)	-25 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °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

### Conformity/Approvals

Conformance	CE-compliant
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## Mounting

Mounting type	DIN rail mounting
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Mounting position	any
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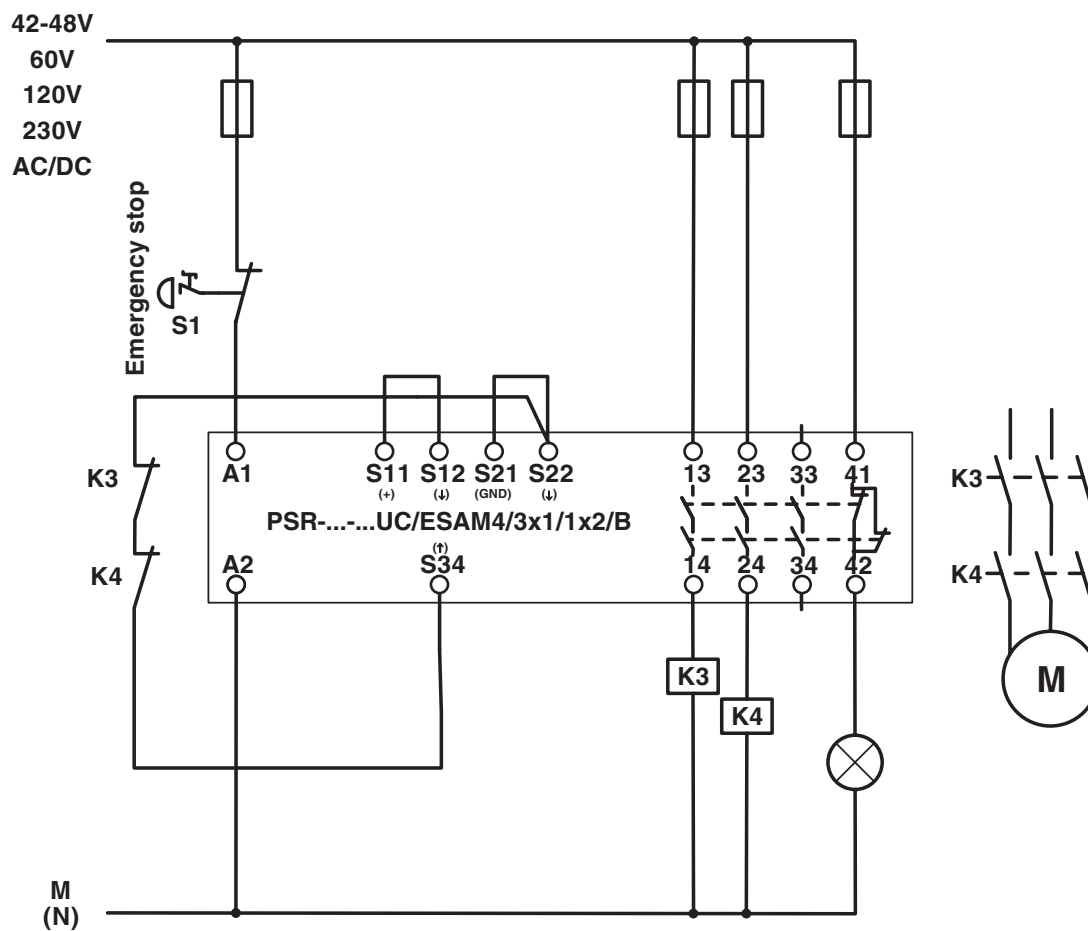
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## Drawings

Application drawing



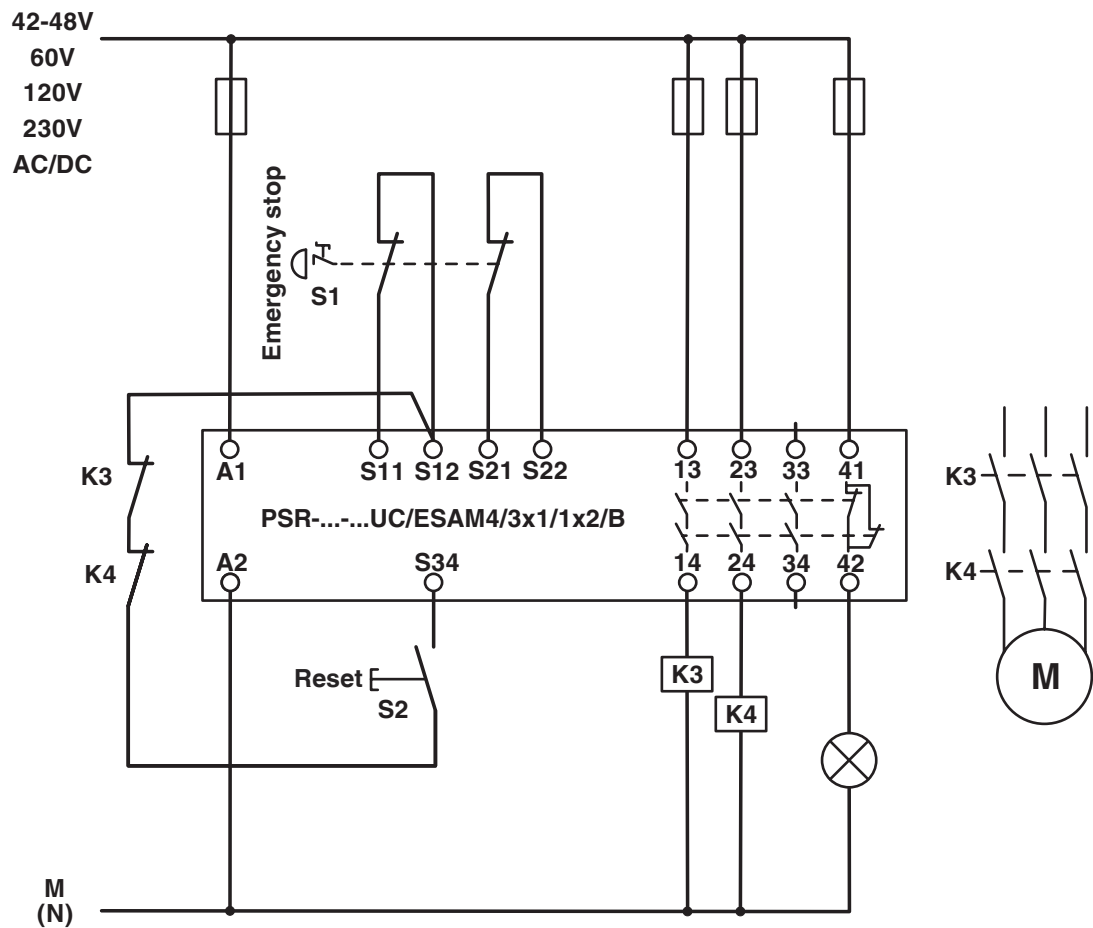
Single-channel emergency stop monitoring

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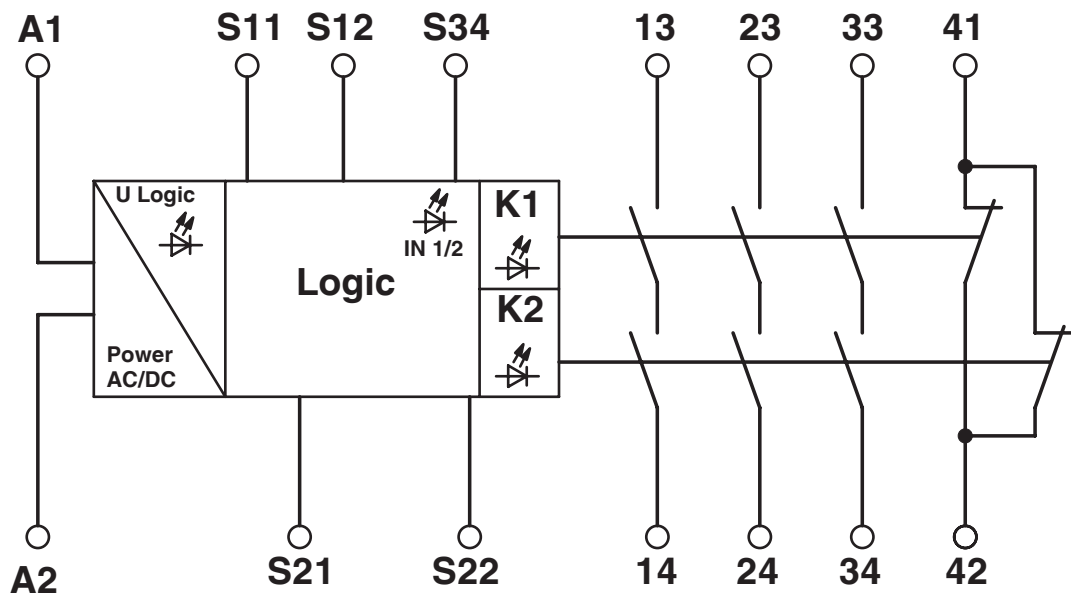
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Application drawing



2-channel emergency stop monitoring

Circuit diagram



Block diagram

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## Approvals

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**cULus Listed**

Approval ID: E140324



**Functional Safety**

Approval ID: 01/205/5117.04/23



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## Classifications

### ECLASS

ECLASS-13.0	27371819
ECLASS-15.0	27371819
ECLASS-15.0 ASSET	27250101

### ETIM

ETIM 9.0	EC001449
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### UNSPSC

UNSPSC 21.0	39122200
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Environmental product compliance

EU RoHS	
Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I
China RoHS	
Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.
EU REACH SVHC	
REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	10fb3e6d-c1d6-477c-8df9-41a53a4f6877

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## Accessories

### CRIMPFOX 6 - Crimping pliers

1212034

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Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm<sup>2</sup> ... 6.0 mm<sup>2</sup>, lateral entry, trapezoidal crimp

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