

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



2901429

<https://www.phoenixcontact.com/us/products/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, 2-channel operation, 3 enabling current paths, nominal input voltage: 230 V AC/DC, pluggable Push-in terminal block

The figure shows the 230 V version.

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	2-channel
Mechanical service life	approx. 10^7 cycles
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

Insulation characteristics

Degree of pollution	2
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Times

Typical response time	300 ms (automatic start)
	40 ms (manual, monitored start)
Typ. starting time with U_s	330 ms (when controlled via A1)
Typical release time	20 ms (when controlled via S11/S12 and S21/S22)
	150 ms (when controlled via A1)
Recovery time	1 s

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)

Supply

Designation	A1/A2
Rated control circuit supply voltage U_S	230 V AC -15 % / +10 %
Rated control supply current I_S	typ. 22 mA (at U_N)
Apparent power	typ. 4.5 VA (at U_N)
Protective circuit	Surge protection
	Varistor

Input data

Digital: Sensor circuit (S12, S22)

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Description of the input	safety-related
Concurrence	∞
Max. permissible overall conductor resistance	50 Ω
Protective circuit	Surge protection
	Suppressor diode

Digital: Start circuit (S34)

Description of the input	non-safety-related
Concurrence	∞
Max. permissible overall conductor resistance	50 Ω
Protective circuit	Surge protection
	Suppressor diode

Output data

Relay: Enabling current paths (13/14, 23/24, 33/34)

Number of outputs	3 (undelayed)
Contact switching type	3 enabling current paths
Contact material	AgSnO ₂ , + 0.2 μ m Au
Switching voltage	min. 10 V AC/DC
	max. 250 V AC/DC
Switching power	min. 100 mW
Inrush current	min. 10 mA
	max. 6 A
Switching capacity	6 A (24 V (DC13))
	5 A (230 V (AC15))
Limiting continuous current	6 A (observe derating)
Sq. Total current	72 A ² (observe derating)
Switching frequency	max. 0.5 Hz
Mechanical service life	10x 10 ⁶ cycles
Interrupting rating (ohmic load) max.	see load limit curve
Output fuse	10 A gL/gG NEOZED

Relay: Signaling current path (41/42)

Number of outputs	1 (undelayed)
Contact switching type	1 signaling current path
Contact material	AgSnO ₂ , + 0.2 μ m Au
Switching voltage	min. 10 V AC/DC
	max. 250 V AC/DC
Switching power	min. 100 mW
Inrush current	min. 10 mA
	max. 6 A
Limiting continuous current	5 A
Sq. Total current	72 A ² (observe derating)
Switching frequency	max. 0.5 Hz

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Output fuse	6 A gL/gG NEOZED
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Connection data

Connection technology

pluggable	yes
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Conductor connection

Connection method	Push-in connection
Conductor cross-section rigid	0.2 mm ² ... 1.5 mm ²
Conductor cross-section flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)
Conductor cross-section AWG	24 ... 16
Stripping length	8 mm

Signaling

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

Dimensions

Width	22.5 mm
Height	112 mm
Depth	114.5 mm

Material specifications

Color	yellow (RAL 1018)
Housing material	PA

Characteristics

Safety data

Stop category (EN 60204-1)	0
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Safety data: EN ISO 13849

Performance level (PL)	e (5 A DC13; 8760 switching cycles/year)
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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

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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
Mounting position	any

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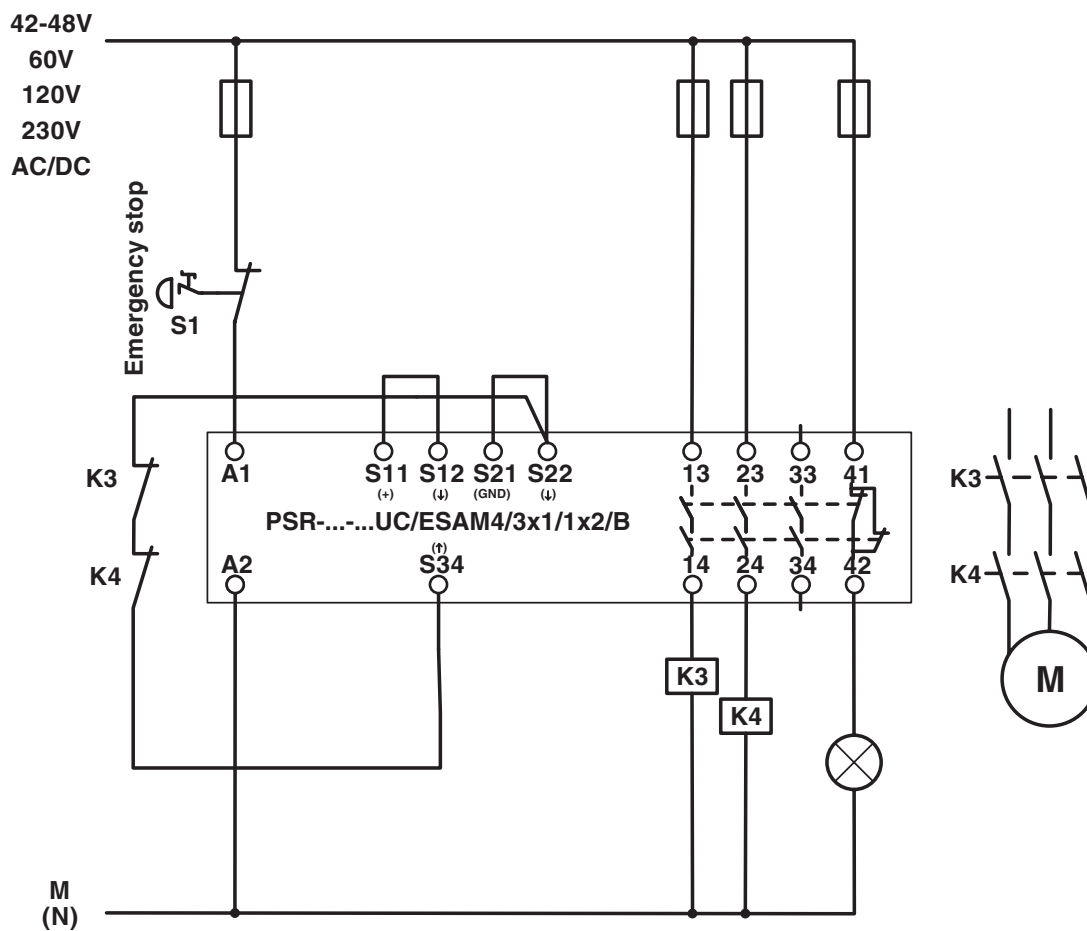


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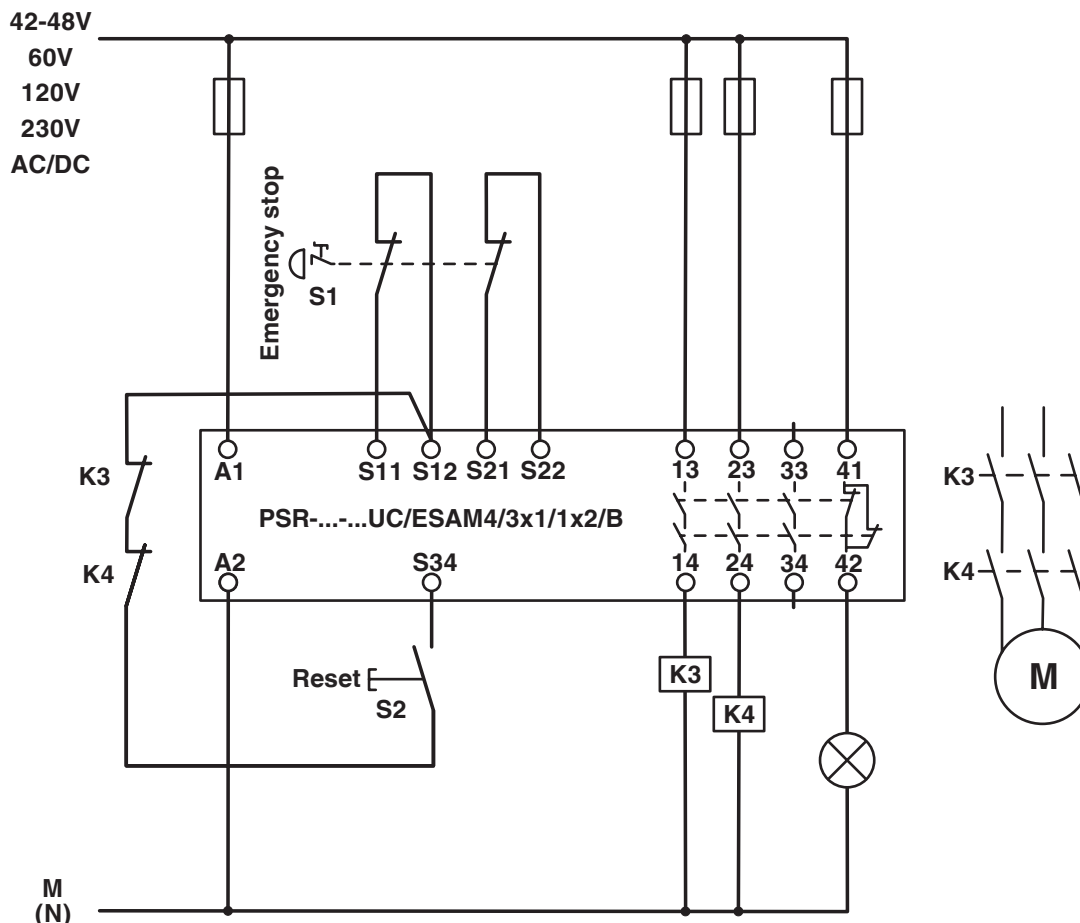
Drawings

Application drawing



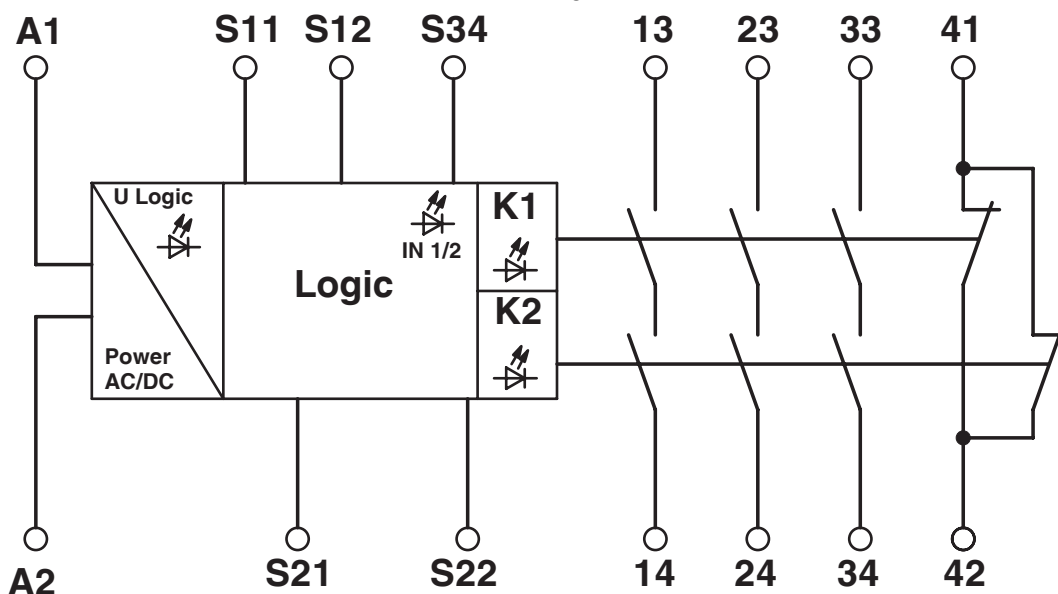
Single-channel emergency stop monitoring

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 10.0	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

EF3.1 Climate Change

CO2e kg	6.367 kg CO2e
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