

PSR-SCP-230AC/ESAM2/3X1/1X2/B - Safety relays



2901430

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Safety relay for emergency stop and safety door up to SIL 1, Cat. 1, PL c, depending on the application up to SIL 3, Cat. 4, PL e, single-channel operation, 3 enabling current paths, nominal input voltage of 230 V AC, plug-in screw terminal blocks

Your advantages

- Up to Cat. 1/PL c in accordance with ISO 13849-1, SIL 1 in accordance with EN IEC 62061, SIL 1 in accordance with IEC 61508
- Depending on the application, up to Cat. 4/PL e in accordance with ISO 13849-1, SIL 3 in accordance with EN IEC 62061, SIL 3 in accordance with IEC 61508
- 1-channel control
- Basic insulation



Commercial data

Item number	2901430
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	DNA111
GTIN	4046356592185
Weight per piece (including packing)	199 g
Weight per piece (excluding packing)	165.8 g
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-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

Overvoltage category	II, III (See the section "Insulation coordination")
Degree of pollution	2

Times

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

Electrical properties

Maximum power dissipation for nominal condition	16.4 W (At $I_L^2 = 72 \text{ A}^2$, $P_{\text{Total max}} = 2 \text{ W} + 14.4 \text{ W}$)
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

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; Suppressor diode

Input data

Digital: Sensor circuit (S12)

Description of the input	safety-related
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Max. permissible overall conductor resistance	50 Ω
Digital: Start circuit (S34, S35)	
Description of the input	non-safety-related
Max. permissible overall conductor resistance	50 Ω

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
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
Switching frequency	max. 0.5 Hz
Output fuse	6 A gL/gG NEOZED

Connection data

Connection technology

pluggable	yes
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Conductor connection

Connection method	Screw connection
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Conductor cross-section rigid	0.2 mm² ... 2.5 mm²
Conductor cross-section flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section AWG	24 ... 12
Stripping length	7 mm
Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm

Signaling

Status display	2 x LED (green)
Operating voltage display	1 x LED (green)

Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

Material specifications

Color	yellow (RAL 1018)
Housing material	PA

Characteristics

Safety data

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

Performance level (PL)	c (up to PL e depending on the application)
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Safety data

Safety Integrity Level (SIL)	1 (up to SIL 3 depending on the application)
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Safety data

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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)

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Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g

Approvals

CE

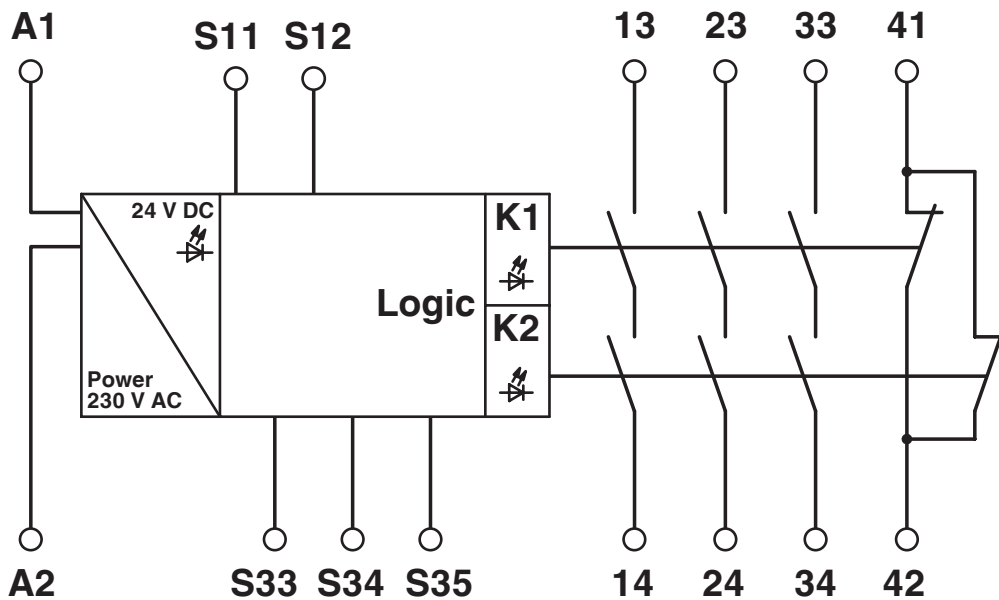
Identification	CE-compliant
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Mounting

Mounting type	DIN rail mounting
Mounting position	any

Drawings

Circuit diagram



Block diagram

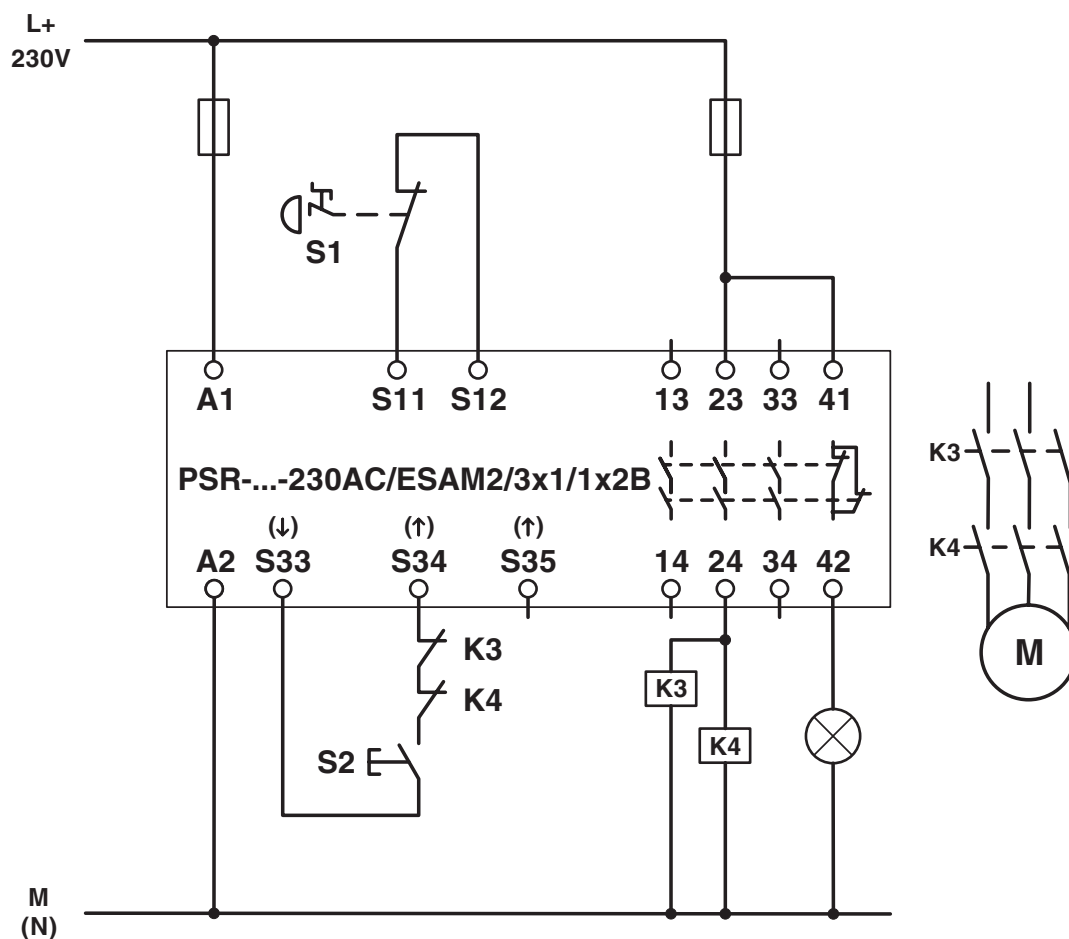
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Circuit diagram



Single-channel emergency stop monitoring

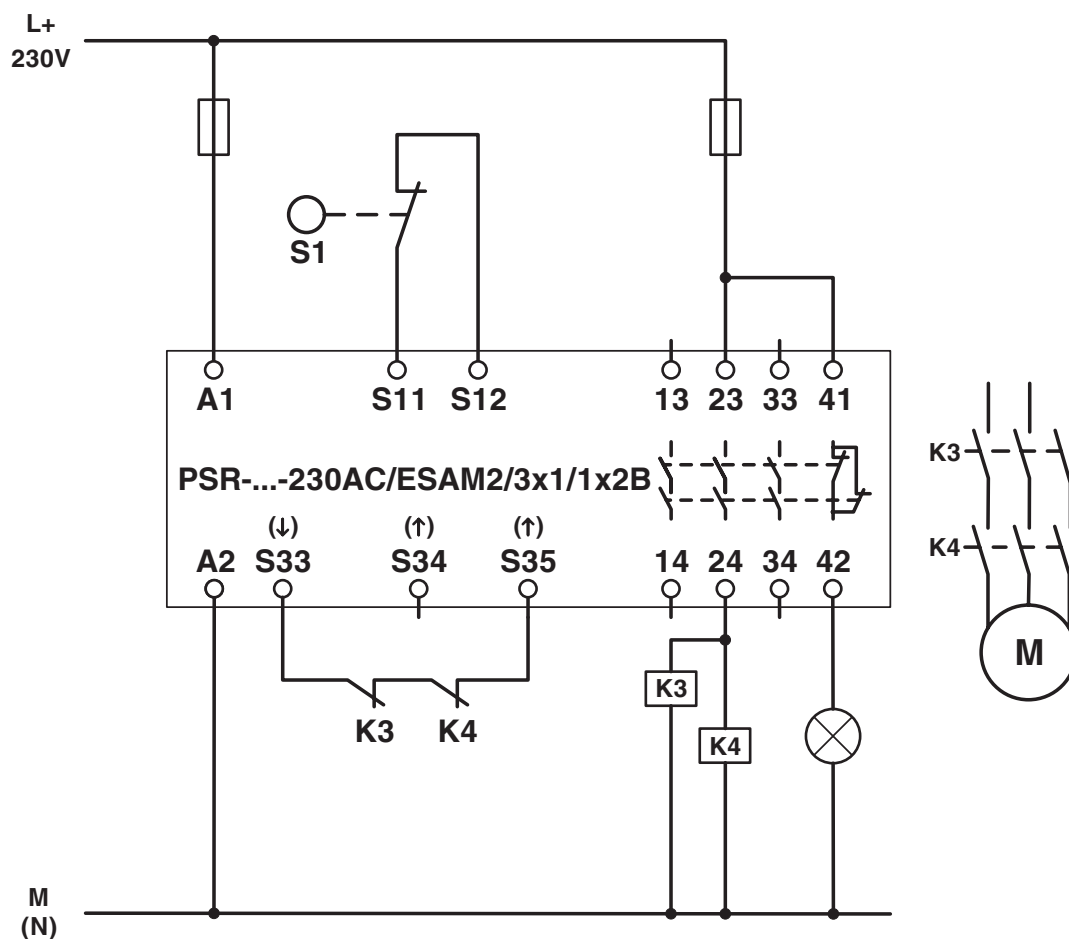
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Circuit diagram



Single-channel safety door monitoring

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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

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(a)-I, 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	cbf8e95b-357e-4ac2-94f3-67f3e3279f4e