PSR-SCP-24-230UC/ESAM4/3X1/1X2 - Safety relays

2981114

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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: 24 V AC/DC ... 230 V AC/DC, plug-in screw terminal blocks

Your advantages

- With wide-range input (PSR-ESAM4/3X1)
- With inrush current reduction, therefore suitable for coupling to failsafe controllers (PSR-ESP4)
- 1- and 2-channel control

Commercial data

Item number	2981114
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	DN01
Product key	DNA114
GTIN	4046356051644
Weight per piece (including packing)	416.4 g
Weight per piece (excluding packing)	305.48 g
Customs tariff number	85371098
Country of origin	DE

Technical data

Notes

Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area

Product properties

Product type	Safety relays
Product family	PSRclassic
Application	Emergency stop
	Safety door
	Light grid
Control	1 and 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: Air clearances and creepage distances between the power circuits

Overvoltage category	III
Degree of pollution	2

Electrical properties

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

Air clearances and creepage distances between the power circuits

Rated insulation voltage	250 V AC
Rated surge voltage/insulation	6 kV/safe isolation, reinforced insulation and 6 kV between input circuits and output contact current paths (13/14, 23/24, 33/34), as well as between output contact current paths (13/14, 23/24, 33/34).

Input data

General

Input voltage range	24 V AC/DC ... 230 V AC/DC
Input voltage range in reference to U_N	0.85 ... 1.1
Typical input current at U_N	120 mA (at 24 V DC)
	20 mA (at 120 V AC)
	10 mA (at 230 V AC)
Voltage at input/start and feedback circuit	approx. 24 V DC
Typical response time	50 ms (manual start)
	60 ms (automatic start)
Typ. starting time with U_s	500 ms (when controlled via A1)
	20 ms (when controlled via S11/S12 and S21/S22)

Typical release time	50 ms (at 24 V DC)
	110 ms (at 120 V AC)
	280 ms (at 230 V AC)
Concurrence	∞
Recovery time	1 s
Maximum switching frequency	0.5 Hz
Protective circuit	Surge protection; Suppressor diode and varistors
Max. permissible overall conductor resistance	11 Ω
Operating voltage display	1 x LED (green)
Status display	2 x LED (green)

Output data

Contact switching type	3 enabling current paths
	1 signaling current path
Contact material	$AgSnO_2$, + 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 / N/C contact)
Maximum inrush current	6 A
Inrush current, minimum	10 mA
Sq. Total current	50 A^2 ($I_{TH}^2 = I_1^2 + I_2^2 + ... + I_N^2$)
Interrupting rating (ohmic load) max.	192 W (24 V DC, τ = 0 ms)
	384 W (48 V DC, τ = 0 ms)
	80 W (110 V DC, τ = 0 ms)
	66 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)
	48 W (48 V DC, τ = 40 ms)
	48 W (110 V DC, τ = 40 ms)
	48 W (220 V DC, τ = 40 ms)
Switching power min.	360 mW
Switching capacity (360/h cycles)	4 A (24 V (DC13))
	4 A (230 V (AC15))
Switching capacity (3600/h cycles)	2.5 A (24 V (DC13))
	3 A (230 V (AC15))
Output fuse	6 A gG NEOZED
	B6/C4A gL/gG automatic device

Connection data

Connection technology

pluggable	yes

Conductor connection

Connection method	Screw connection

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

Dimensions

Width	45 mm
Height	99 mm
Depth	114.5 mm

Material specifications

Color	yellow

Characteristics

Safety data

Stop category (EN 60204-1)	0

Safety data: EN ISO 13849

Performance level (PL)	e

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3

Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	3

Safety data: EN IEC 62061

Safety Integrity Level (SIL)	3

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP54
	IP20
Min. degree of protection of inst. location	IP54
Ambient temperature (operation)	-20 °C ... 55 °C
Ambient temperature (storage/transport)	-25 °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

Standards and regulations

Air clearances and creepage distances between the power circuits

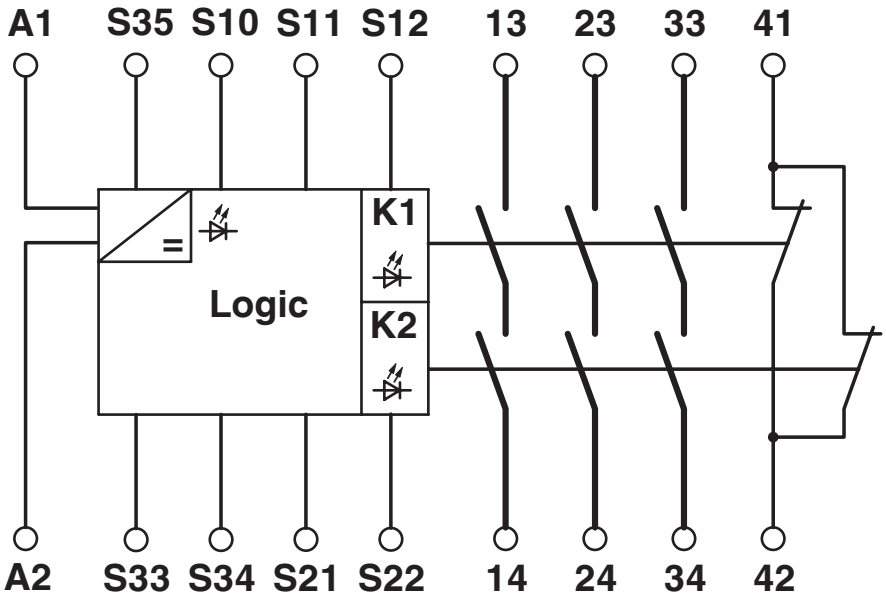
Standards/regulations	DIN EN 50178/VDE 0160

Mounting

Mounting type	DIN rail mounting
Mounting position	any

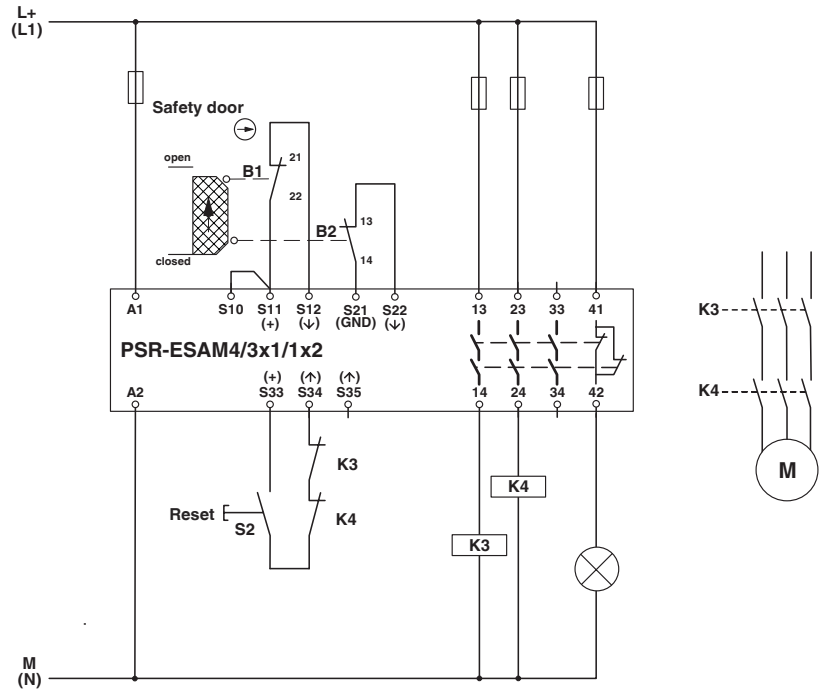
Drawings

Circuit diagram



Block diagram

Circuit diagram



Two-channel safety door monitoring

Environmental product compliance

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.)	No substance above 0.1 wt%

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