Safety relays - PSR-SCP-24-230UC/ESAM4/3X1/1X2 - 2981114

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

Why buy this product

- Up to Cat. 4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061, SIL 3 according to IEC 61508
- Single and two-channel control
- With inrush current reduction, therefore suitable for coupling to failsafe controllers (PSR-ESP4)
- With wide-range input (PSR-ESAM4/3X1)

Key Commercial Data

Packing unit	1 pc
GTIN	4 046356 051644
Weight per Piece (excluding packing)	305.48 g
Custom tariff number	85371099
Country of origin	Germany

Technical data

Note

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

Dimensions

Width	45 mm
Height	99 mm
Depth	114.5 mm

Ambient conditions

Ambient temperature (operation)	-20 °C ... 55 °C
Ambient temperature (storage/transport)	-25 °C ... 85 °C

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Ambient conditions

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	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 (for 120 V AC)
	10 mA (for 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)
Typical pick-up time	500 ms (when controlled via A1)
Typical release time	20 ms (when controlled via S11/S12 and S21/S22)
	50 ms (at 24 V DC)
	110 ms (for 120 V AC)
	280 ms (for 230 V AC)
Concurrence input 1/2	∞
Recovery time	1 s
Status display	2 x green LEDs
Maximum switching frequency	0.5 Hz
Max. permissible overall conductor resistance	11 Ω

Output data

Contact type	3 enabling current paths
	1 signaling current path
Contact material	$AgSnO_2$, + 0.2 µm Au
Minimum switching voltage	10 V AC/DC
Maximum switching voltage	250 V AC/DC
Limiting continuous current	6 A (N/O contact / N/C contact)
Inrush current, minimum	10 mA
Maximum inrush current	6 A
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)

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Output data

	48 W (110 V DC, τ = 40 ms)
	48 W (220 V DC, τ = 40 ms)
Switching capacity min.	360 mW
Output fuse	6 A gG NEOZED
	B6/C4A gL/gG automatic device

General

Relay type	Electromechanical relay with forcibly guided contacts in accordance with EN 50205
Mechanical service life	Approx. 10^7 cycles
Net weight	305.48 g
Mounting type	DIN rail mounting
Degree of protection	IP54
	IP20
Min. degree of protection of inst. location	IP54
Mounting position	any
Control	one and two channel
Parameters as per EN ISO 13849	4
Stop category	0
Parameters for IEC 61508	3

Connection data

Connection method	Screw connection
pluggable	Yes
Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	2.5 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	2.5 mm²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Stripping length	7 mm
Screw thread	M3

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	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).
Degree of pollution	2
Overvoltage category	III

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Standards and Regulations

Safety Integrity Level Claim Limit (SIL CL)	3

Classifications

eCl@ss

eCl@ss 4.0	27371102
eCl@ss 4.1	27371102
eCl@ss 5.0	27371901
eCl@ss 5.1	27371901
eCl@ss 6.0	27371819
eCl@ss 7.0	27371819
eCl@ss 8.0	27371819

ETIM

ETIM 2.0	EC001449
ETIM 3.0	EC001449
ETIM 4.0	EC001449
ETIM 5.0	EC001449

UNSPSC

UNSPSC 6.01	30211901
UNSPSC 7.0901	39121501
UNSPSC 11	39121501
UNSPSC 12.01	39121501
UNSPSC 13.2	39121501

Approvals

Approvals

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UL Listed / cUL Listed / Functional Safety / EAC / EAC / EAC / cULus Listed

Ex Approvals

Approvals submitted

Approval details

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Approvals

UL Listed

cUL Listed

Functional Safety

EAC

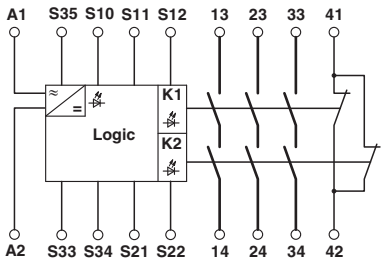
EAC

EAC

cULus Listed

Drawings

Circuit diagram



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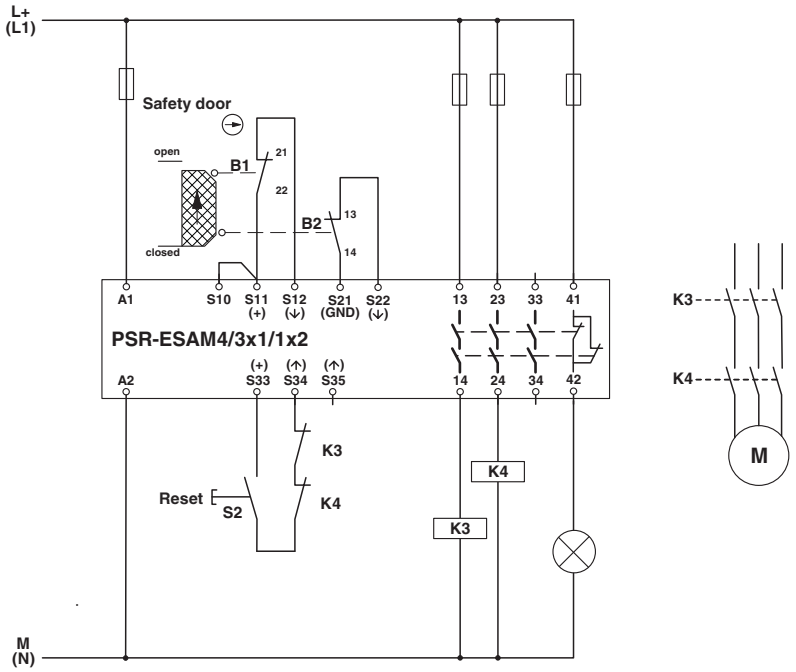
Circuit diagram



Two-channel safety door monitoring