PHŒNIX CONTACT

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)

RoHS | D H W | PL EN ISO 13849 | SILCL IEC 62061

Key Commercial Data

Packing unit	1 STK
GTIN	4 046356 051644
GTIN	4046356051644
Weight per Piece (excluding packing)	420.000 g
Custom tariff number	85371098
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

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

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Dimensions

Depth	114.5 mm

Ambient conditions

Ambient temperature (operation)	-20 °C ... 55 °C
Ambient temperature (storage/transport)	-25 °C ... 85 °C
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	$\leq$ 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 (at 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)
Typ. starting time with U_s	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 (at 120 V AC)
	280 ms (for 230 V AC)
Concurrence input 1/2	∞
Recovery time	1 s
Operating voltage display	1 x green LED
Status display	2 x green LEDs
Protective circuit	Surge protection Suppressor diode and varistors
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
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

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

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Output data

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 capacity min.	360 mW
Mechanical service life	Approx. 10^7 cycles
Switching capacity (360/h cycles)	4 A (24 V (DC13))
	4 A (230 V (AC15))
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
Nominal operating mode	100% operating factor
Net weight	305.48 g
Mounting position	any
Mounting type	DIN rail mounting
Degree of protection	IP20
	IP54
Min. degree of protection of inst. location	IP54
Housing color	yellow

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

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

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Connection data

Conductor cross section AWG max.	12
Stripping length	7 mm
Screw thread	M3

Safety-related characteristic data

Stop category	0
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	3
Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	3
Designation	EN ISO 13849
Performance level (PL)	e
Category	4
Designation	EN 62061
Safety Integrity Level Claim Limit (SIL CL)	3

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

Environmental Product Compliance

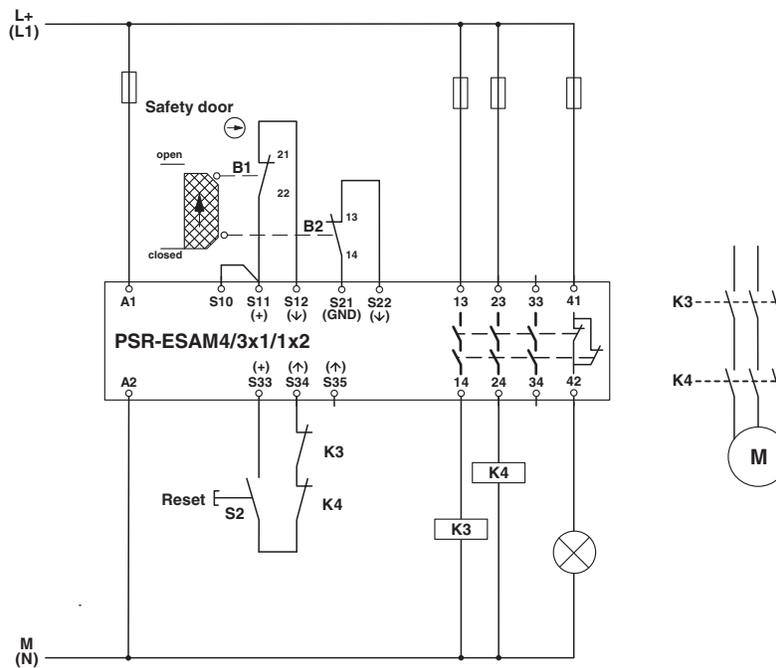|	
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

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Circuit diagram
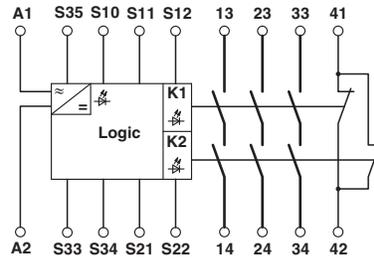
Circuit diagram

Two-channel safety door monitoring

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

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Classifications

eCl@ss

eCl@ss 9.0	27371819

ETIM

ETIM 2.0	EC001449
ETIM 3.0	EC001449
ETIM 4.0	EC001449
ETIM 5.0	EC001449
ETIM 6.0	EC001449

UNSPSC

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