Safety relays - PSR-SPP- 24UC/ESA2/4X1/1X2/B - 2963954

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The figure shows a version with a screw connection

Safety relay for emergency stop and safety door up to SIL 1, SIL CL 1, Cat. 1, PL c, depending on the application up to SIL 3, SIL CL 3, Cat. 4, PL e, single-channel operation, 4 enabling current paths, U_S = 24 V AC/DC, plug-in spring-cage terminal block

Product Features

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

Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	246.7 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	22.5 mm
Height	112 mm
Depth	114.5 mm

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Technical data

Ambient conditions

Ambient temperature (operation)	-20 °C ... 65 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 70 °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)
Shock	15g
Vibration (operation)	10 Hz ...150 Hz, 2g
Maximum altitude	≤ 2000 m (Above sea level)

Input data

Rated control circuit supply voltage U_S	24 V AC/DC -15 % / +10 %
Power consumption at U_S	typ. 3.36 W (AC)
	typ. 1.56 W (DC)
Rated control supply current I_S	typ. 140 mA AC
	typ. 65 mA DC
Typical inrush current	2 A (Δt = 10 ms at U_s)
Current consumption	< 50 mA (with U_s/I_x to S12)
	0 mA (with U_s/I_x to S34)
Voltage at input/start and feedback circuit	24 V DC -15 % / +10 %
Typical response time	< 65 ms (automatic start)
	< 40 ms (manual start)
Typical pick-up time	< 65 ms (when controlled via A1)
Typical release time	< 45 ms (when controlled via S12)
	< 200 ms (when controlled via A1)
Recovery time	< 1 s
Status display	2 x green LEDs
Maximum switching frequency	1 Hz
Max. permissible overall conductor resistance	approx. 22 Ω (Input and start circuits at U_S)
Filter time	2 ms (at A1 in the event of voltage dips at U_s)
	max. 1.5 ms (at S12; test pulse width)
	7.5 ms (at S12; test pulse rate)
	Test pulse rate = 5 x Test pulse width

Output data

Contact type	4 enabling current paths
	1 signaling current path
Contact material	$AgSnO_2$
Minimum switching voltage	5 V AC/DC
Maximum switching voltage	250 V AC/DC (Observe the load curve)

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Output data

Limiting continuous current	6 A (N/O contact, pay attention to the derating)
	6 A (N/C contact)
Inrush current, minimum	10 mA
Maximum inrush current	20 A (Δt # 100 ms)
Sq. Total current	72 A^2 (observe derating)
Interrupting rating (ohmic load) max.	144 W (24 V DC, τ = 0 ms)
	288 W (48 V DC, τ = 0 ms)
	110 W (110 V DC, τ = 0 ms)
	88 W (220 V DC, τ = 0 ms)
	1500 VA (250 V AC, τ = 0 ms)
Maximum interrupting rating (inductive load)	42 W (24 V DC, τ = 40 ms)
	42 W (48 V DC, τ = 40 ms)
	42 W (110 V DC, τ = 40 ms)
	42 W (220 V DC, τ = 40 ms)
Switching capacity min.	50 mW
Output fuse	10 A gL/gG (N/O contact)
	6 A gL/gG (N/C contact)

General

Relay type	Electromechanical relay with forcibly guided contacts in accordance with EN 50205
Mechanical service life	10 x 10^6 cycles
Net weight	194.38 g
Mounting type	DIN rail mounting
Assembly instructions	See derating curve
Degree of protection	IP54
	IP20
Min. degree of protection of inst. location	IP54
Mounting position	vertical or horizontal
Control	single-channel
Housing material	PBT

Connection data

Connection method	Spring-cage connection
pluggable	Yes
Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	1.5 mm²
Conductor cross section flexible min.	0.2 mm²

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Connection data

Conductor cross section flexible max.	1.5 mm²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

Safety-related characteristic data

Stop category	0
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	1 (up to SIL 3 depending on the application)
Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	1 (up to SIL 3 depending on the application)
Designation	EN ISO 13849
Performance level (PL)	c (up to PL e depending on the application)
Category	1 (up to Cat. 4 depending on the application)
Designation	EN 62061
Safety Integrity Level Claim Limit (SIL CL)	1 (up to SILCL 3 depending on the application)

Standards and Regulations

Shock	15g
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	Basic insulation 4 kV: between all current paths and housing Safe isolation, reinforced insulation 6 kV: between A1/A2 and 13/14, 23/24, 33/34, 43/44 between S11/S12/S33/S34 and 13/14, 23/24, 33/34, 43/44 between 51/52 and 13/14, 23/24, 33/34, 43/44
Degree of pollution	2
Overvoltage category	III
Vibration (operation)	10 Hz ...150 Hz, 2g
Conformance	CE-compliant

Classifications

eCl@ss

eCl@ss 4.0	27371102
eCl@ss 4.1	27371102
eCl@ss 5.0	27371901
eCl@ss 5.1	27371901

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Classifications

eCl@ss

eCl@ss 6.0	27371819
eCl@ss 7.0	27371819
eCl@ss 8.0	27371819

ETIM

ETIM 2.0	EC000196
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

Approvals

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

Ex Approvals

Approvals submitted

Approval details

UL Listed

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Approvals

cUL Listed

Functional Safety

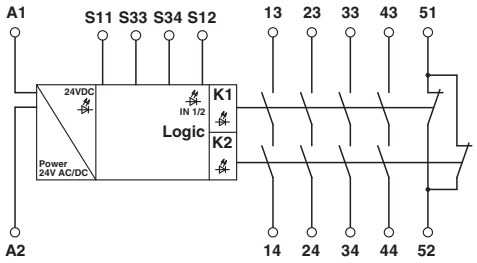
EAC

EAC

cULus Listed

Drawings

Circuit diagram



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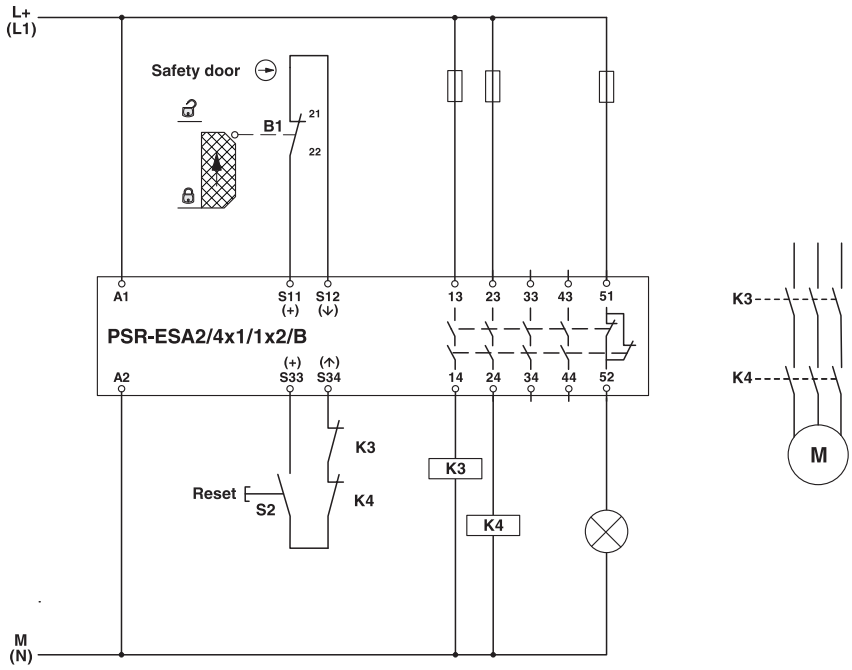

Single-channel safety door monitoring

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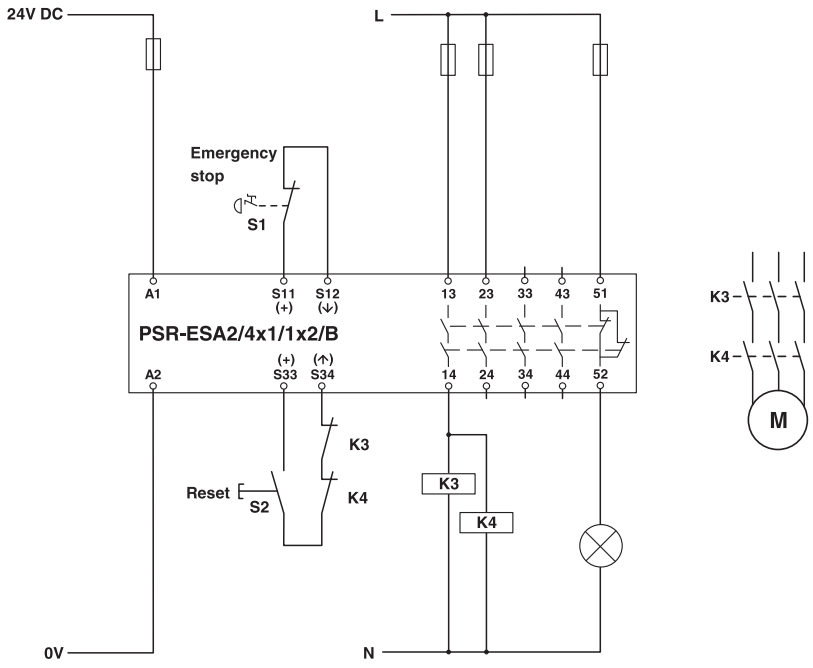
Circuit diagram



Single-channel emergency stop monitoring