

Safety relays - PSR-SCP- 24UC/ESA2/4X1/1X2/B - 2963802

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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, $U_S = 24 \text{ V AC/DC}$, plug-in screw terminal blocks

Why buy this product

- 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
- Basic insulation
- Single-channel control



Key Commercial Data

Packing unit	1 STK
GTIN	 4 017918 892661
GTIN	4017918892661
Weight per Piece (excluding packing)	280.000 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
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Dimensions

Width	22.5 mm
Height	99 mm

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Dimensions

Depth	114.5 mm
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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 %
Rated control supply current I_s	typ. 140 mA AC
	typ. 65 mA DC
Power consumption at U_s	typ. 3.36 W (AC)
	typ. 1.56 W (DC)
Inrush current	2 A ($\Delta t = 10$ 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)
Typ. starting time with U_s	< 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

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Output data

Contact material	AgSnO ₂
Minimum switching voltage	5 V AC/DC
Maximum switching voltage	250 V AC/DC (Observe the load curve)
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, $\tau = 0$ ms)
	288 W (48 V DC, $\tau = 0$ ms)
	110 W (110 V DC, $\tau = 0$ ms)
	88 W (220 V DC, $\tau = 0$ ms)
	1500 VA (250 V AC, $\tau = 0$ ms)
Maximum interrupting rating (inductive load)	42 W (24 V DC, $\tau = 40$ ms)
	42 W (48 V DC, $\tau = 40$ ms)
	42 W (110 V DC, $\tau = 40$ ms)
	42 W (220 V DC, $\tau = 40$ 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
Nominal operating mode	100% operating factor
Net weight	210.5 g
Mounting type	DIN rail mounting
Assembly instructions	See derating curve
Mounting position	vertical or horizontal
Degree of protection	IP54
	IP20
Min. degree of protection of inst. location	IP54
Housing material	PBT
Housing color	yellow

Connection data

Connection method	Screw connection
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Connection data

pluggable	Yes
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section AWG min.	24
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)	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

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
Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g
Conformance	CE-compliant

Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50
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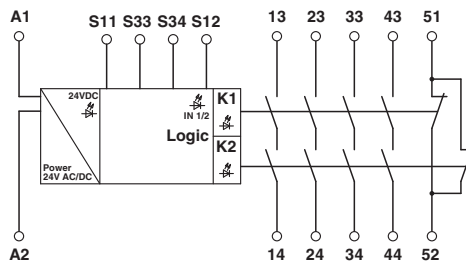
Technical data

Environmental Product Compliance

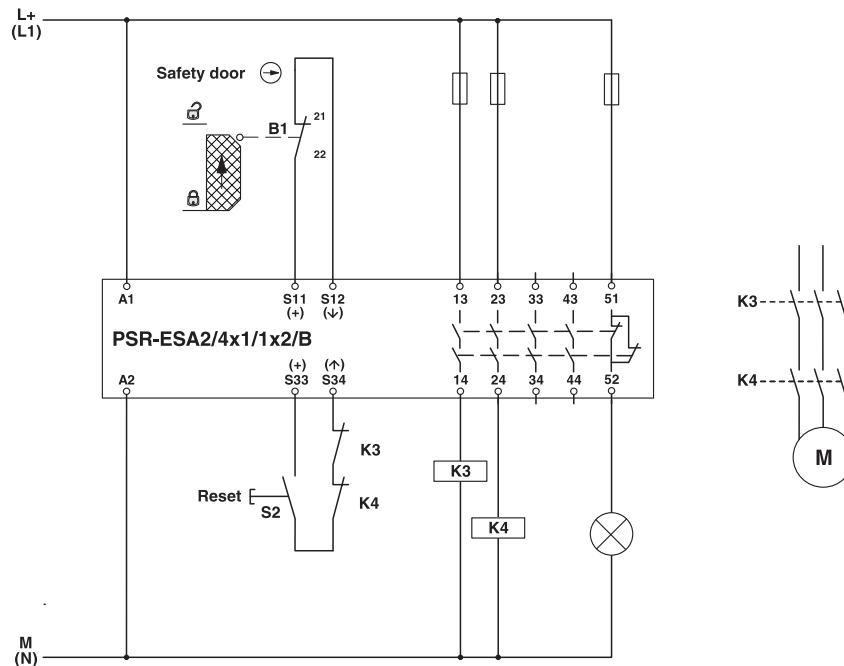
For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

Circuit diagram



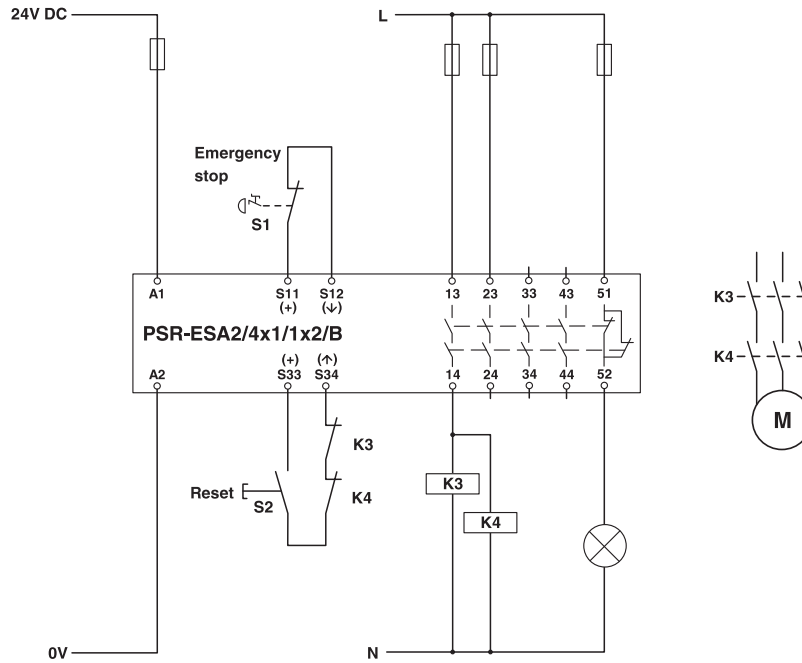
Circuit diagram



Single-channel safety door monitoring

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Circuit diagram



Single-channel emergency stop monitoring