

Safety relays - PSR-SPP-24UC/ESAM4/8X1/1X2 - 2963996

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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, 8 enabling current paths, $U_s = 24 \text{ V AC/DC}$, plug-in spring-cage terminal block


The figure shows a version with a screw connection

Why buy this product

- Up to Cat.4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061
- Manually monitored and automatic activation in a single device
- Single and two-channel control
- 8 enabling current paths, 1 signaling current path



Key Commercial Data

Packing unit	1 STK
GTIN	 4 017918 904814
GTIN	4017918904814

Technical data

Note

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

Width	45 mm
Height	112 mm
Depth	114.5 mm

Ambient conditions

Ambient temperature (operation)	-20 °C ... 55 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 70 °C

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Technical data

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

Rated control circuit supply voltage U_s	24 V AC/DC -15 % / +10 %
Rated control supply current I_s	typ. 177 mA AC
	typ. 93 mA DC
Power consumption at U_s	typ. 4.25 W (AC)
	typ. 2.23 W (DC)
Inrush current	2 A ($\Delta t = 10$ ms at U_s)
	< 60 mA (with U_s/I_x to S10)
	< 110 mA (with U_s/I_x to S12)
	> -110 mA (with U_s/I_x to S22)
	< 60 mA (with U_s/I_x to S34)
	< 60 mA (with U_s/I_x to S35)
Current consumption	< 50 mA (with U_s/I_x to S10)
	< 50 mA (with U_s/I_x to S12)
	> -50 mA (with U_s/I_x to S22)
	0 mA (with U_s/I_x to S34)
	0 mA (with U_s/I_x to S35)
Voltage at input/start and feedback circuit	24 V DC -15 % / +10 %
Typical response time	< 380 ms (automatic start)
	< 60 ms (manual 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 (when controlled via A1)
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	approx. 11 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 S10, S12; test pulse width)
	7.5 ms (at S10, S12; test pulse rate)
	Test pulse rate = 5 x Test pulse width

Output data

Contact type	8 enabling current paths
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Output data

	1 signaling current path
Contact material	AgSnO ₂
Maximum switching voltage	250 V AC/DC (Observe the load curve)
Minimum switching voltage	5 V AC/DC
Limiting continuous current	6 A (N/O contact, pay attention to the derating)
	6 A (N/C contact)
Maximum inrush current	20 A ($\Delta t \# 100 \text{ ms}$)
Inrush current, minimum	10 mA
Sq. Total current	50 A ² (observe derating)
Interrupting rating (ohmic load) max.	144 W (24 V DC, $\tau = 0 \text{ ms}$)
	288 W (48 V DC, $\tau = 0 \text{ ms}$)
	110 W (110 V DC, $\tau = 0 \text{ ms}$)
	88 W (220 V DC, $\tau = 0 \text{ ms}$)
	1500 VA (250 V AC, $\tau = 0 \text{ ms}$)
Maximum interrupting rating (inductive load)	42 W (24 V DC, $\tau = 40 \text{ ms}$)
	42 W (48 V DC, $\tau = 40 \text{ ms}$)
	42 W (110 V DC, $\tau = 40 \text{ ms}$)
	42 W (220 V DC, $\tau = 40 \text{ ms}$)
Switching capacity min.	50 mW
Mechanical service life	10x 10 ⁶ cycles
Switching capacity (360/h cycles)	4 A (24 V DC)
	4 A (230 V AC)
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
Nominal operating mode	100% operating factor
Net weight	426.1 g
Mounting position	any
Mounting type	DIN rail mounting
Degree of protection	IP20
	IP54
Min. degree of protection of inst. location	IP54
Housing material	PBT
Housing color	yellow

Connection data

Connection method	Spring-cage connection
pluggable	Yes
Conductor cross section solid min.	0.2 mm ²

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Connection data

Conductor cross section solid max.	1.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	1.5 mm ²
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)	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	Basic insulation 4 kV: between all current paths and housing Safe isolation, reinforced insulation 6 kV: between A1/A2 and 63/64, 73/74, 83/84 between S10/S11/S12/S33/S34/S35 and 63/64, 73/74, 83/84 between 63/64, 73/74, 83/84 among one another
Degree of pollution	2
Overvoltage category	III
Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g
Conformance	CE-compliant

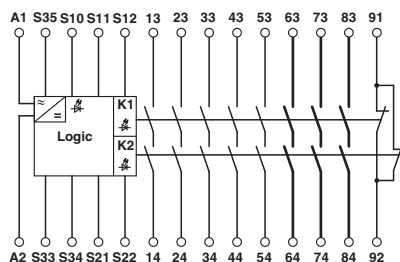
Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

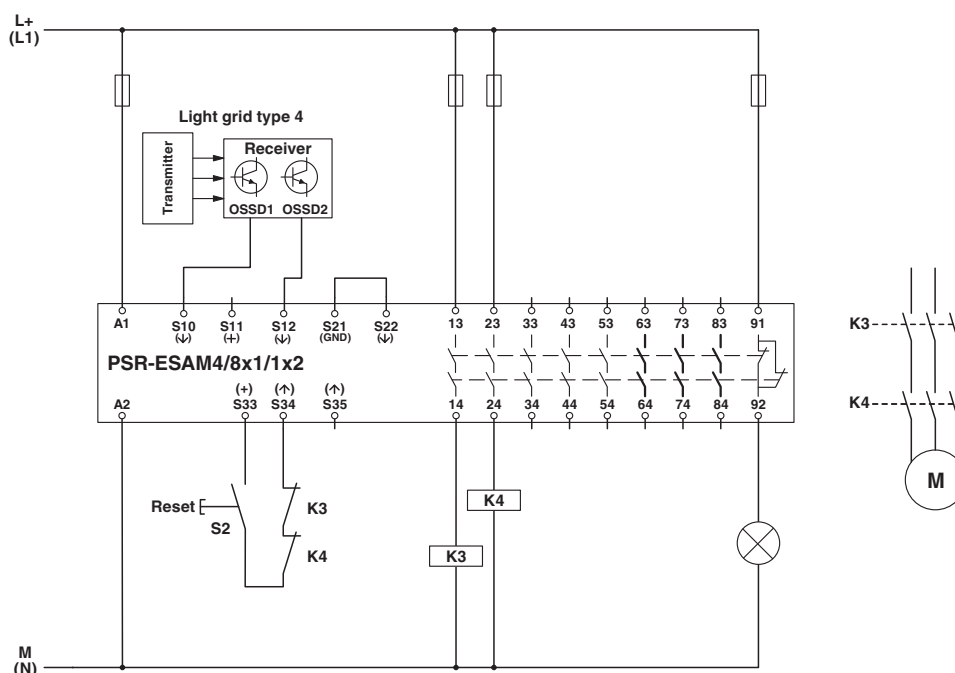
Drawings

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Circuit diagram



Circuit diagram



Light grid monitoring

Approvals

Approvals

Approvals

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

Ex Approvals

Approval details

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Approvals

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
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cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
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Functional Safety			01/205/5363.01/16
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EAC			EAC-Zulassung
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EAC			RU C- DE.A*30.B.01082
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cULus Listed			
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