

# Safety relays - PSR-SCP- 24UC/ESAM4/8X1/1X2 - 2963912

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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 screw terminal block

## Your advantages

- 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 pc
GTIN	 4 017918 899707
GTIN	4017918899707

## 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	99 mm
Depth	114.5 mm

### Ambient conditions

Ambient temperature (operation)	-20 °C ... 55 °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)

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## Technical data

### Ambient conditions

Maximum altitude	≤ 2000 m (Above sea level)
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### 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	$\infty$
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 $\Omega$ (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
	1 signaling current path
Contact material	AgSnO <sub>2</sub>

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### Technical data

#### Output data

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 <sup>2</sup> (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 <sup>6</sup> 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 force-guided contacts in accordance with IEC/EN 61810-3
Nominal operating mode	100% operating factor
Net weight	429 g
Mounting position	any
Mounting type	DIN rail mounting
Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Housing material	PBT
Housing color	yellow

#### Connection data

Connection method	Screw connection
pluggable	Yes
Conductor cross section solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 12
Stripping length	7 mm

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## Technical data

### Connection data

Screw thread	M3
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### 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

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Drawings



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## Classifications

### eCl@ss

eCl@ss 10.0.1	27371819
eCl@ss 11.0	27371819
eCl@ss 4.0	40020600
eCl@ss 4.1	40020600
eCl@ss 5.0	27371900
eCl@ss 5.1	27371900
eCl@ss 6.0	27371800
eCl@ss 7.0	27371819
eCl@ss 8.0	27371819
eCl@ss 9.0	27371819

### ETIM

ETIM 2.0	EC000196
ETIM 3.0	EC001449
ETIM 4.0	EC001449
ETIM 5.0	EC001449
ETIM 6.0	EC001449
ETIM 7.0	EC001449

### UNSPSC

UNSPSC 6.01	30211901
UNSPSC 7.0901	39121501
UNSPSC 11	39121501
UNSPSC 12.01	39121501
UNSPSC 13.2	39121501
UNSPSC 18.0	39122205
UNSPSC 19.0	39122205
UNSPSC 20.0	39122205
UNSPSC 21.0	39122205

## Approvals

### Approvals

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#### Approvals

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

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#### Ex Approvals

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### Approval details

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### Approvals

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

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