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Safety relays - PSR-MS30-1NO-24DC-SC - 2904952

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Safety relay for emergency stop and safety doors up to SILCL 3, Cat. 4, PL e, 1 or 2-channel operation, automatic start, cross-circuit detection, 1 enabling current path, U_S = 24 V DC, fixed screw terminal block

Your advantages

☑ Up to Cat.4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061

☑ Low housing width of just 6.8 mm

☑ Two-channel control

☑ 1 enabling current path

☑ Automatic activation

☑ Cross-circuit detection

RoHS

Key Commercial Data

Packing unit	1 pc
GTIN	4 046356 905008
GTIN	4046356905008

Technical data

Note

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

Dimensions

Width	6.8 mm
Height	93.1 mm
Depth	102.5 mm

Ambient conditions

Ambient temperature (operation)	-40 °C ... 60 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)

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Ambient conditions

Max. permissible humidity (storage/transport)	75 % (on average, 85% infrequently, non-condensing)
Maximum altitude	≤ 2000 m (Above sea level)

Power supply

Designation	A1/A2
Rated control circuit supply voltage U_S	24 V DC -15 % / +10 %
	20.4 V DC ... 26.4 V DC
Rated control supply current I_S	typ. 42 mA
Power consumption at U_S	typ. 1 W
Inrush current	4.5 A (Δt < 120 μs at U_s)
Filter time	1 ms (at A1 in the event of voltage dips at U_s)
Protective circuit	Surge protection Suppressor diode
	Protection against polarity reversal for rated control circuit supply voltage

Digital inputs

Input name	Sensor circuit
	S11, S12, S22
Description of the input	safety-related sensor inputs
Input voltage range "0" signal	0 V DC ... 5 V DC (for safe Off; at S12)
Input current range "0" signal	0 mA ... 2 mA (for safe Off; at S12)
Inrush current	< 20 mA (with U_s/I_x to S12)
	< 5 mA (with U_s/I_x to S22)
	> -15 mA (with U_s/I_x to S22/0V)
Current consumption	< 5 mA (with U_s/I_x to S12)
	< 5 mA (with U_s/I_x to S22)
	> -5 mA (with U_s/I_x to S22/0V)
Filter time	max. 1.5 ms (at S12, S22; test pulse width)
	min. 7.5 ms (at S12, S22; test pulse rate)
	Test pulse rate = 5 x Test pulse width
Max. permissible overall conductor resistance	150 Ω
Input name	Start circuit
	S35
Description of the input	non-safety-related
Number of inputs	1
Input voltage range "1" signal	20.4 V DC ... 26.4 V DC
Inrush current	< 10 mA
Current consumption	< 10 mA
Max. permissible overall conductor resistance	150 Ω
Protective circuit/component	Suppressor diode

Relay outputs: enabling current path

Output name	Enabling current path

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Relay outputs: enabling current path

	13/14
Output description	safety-related N/O contacts
Number of outputs	1 (undelayed)
Contact type	1 enabling current path
Contact material	$AgSnO_2$
Switching voltage	min. 12 V AC/DC
	max. 250 V AC/DC (Observe the load curve)
Limiting continuous current	6 A (observe derating)
Inrush current	min. 3 mA
	max. 6 A
Sq. Total current	$36\ A^2$ (observe derating)
Switching capacity	min. 60 mW
Switching frequency	max. 0.5 Hz
Mechanical service life	$10\text{x}\ 10^6$ cycles
Output fuse	6 A gL/gG (N/O contact)
	4 A gL/gG (for low-demand applications)

Times

Typical pickup time at US	< 250 ms (when controlled via A1)
Typical response time at US	< 175 ms
Typical release time at US	< 20 ms (when controlled via A1 or S12 and S22.)
Recovery time	< 500 ms

General

Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3
Nominal operating mode	100% operating factor
Net weight	69 g
Mounting position	vertical or horizontal
Mounting type	DIN rail mounting
Assembly instructions	See derating curve
Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Housing material	PBT
Housing color	yellow
Operating voltage display	1 x green LED
Status display	2 x green LEDs

Connection data

Connection method	Screw connection
pluggable	no
Conductor cross section solid	0.2 mm² ... 2.5 mm²

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Technical data

Connection data

Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section AWG	24 ... 12
Stripping length	12 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 (4 A DC13; 5 A AC15; 8760 switching cycles/year)
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
Rated insulation voltage	250 V AC
	250 V AC
Rated surge voltage/insulation	Safe isolation, reinforced insulation 6 kV between input circuit and enabling current path Basic insulation 4 kV between all current paths and housing
Degree of pollution	2
Overvoltage category	III
Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g
Conformance	CE-compliant

Environmental Product Compliance

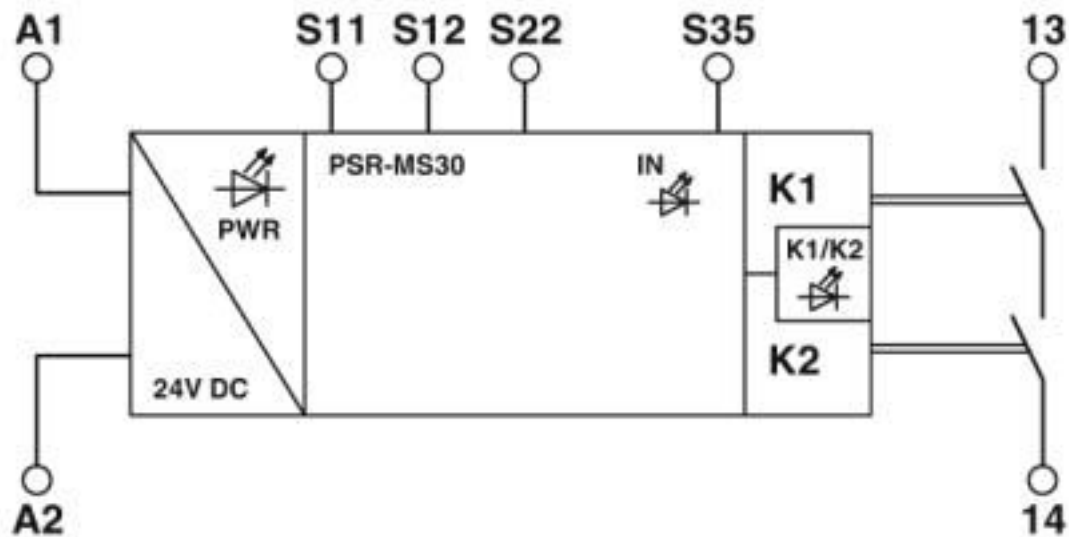|	
REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

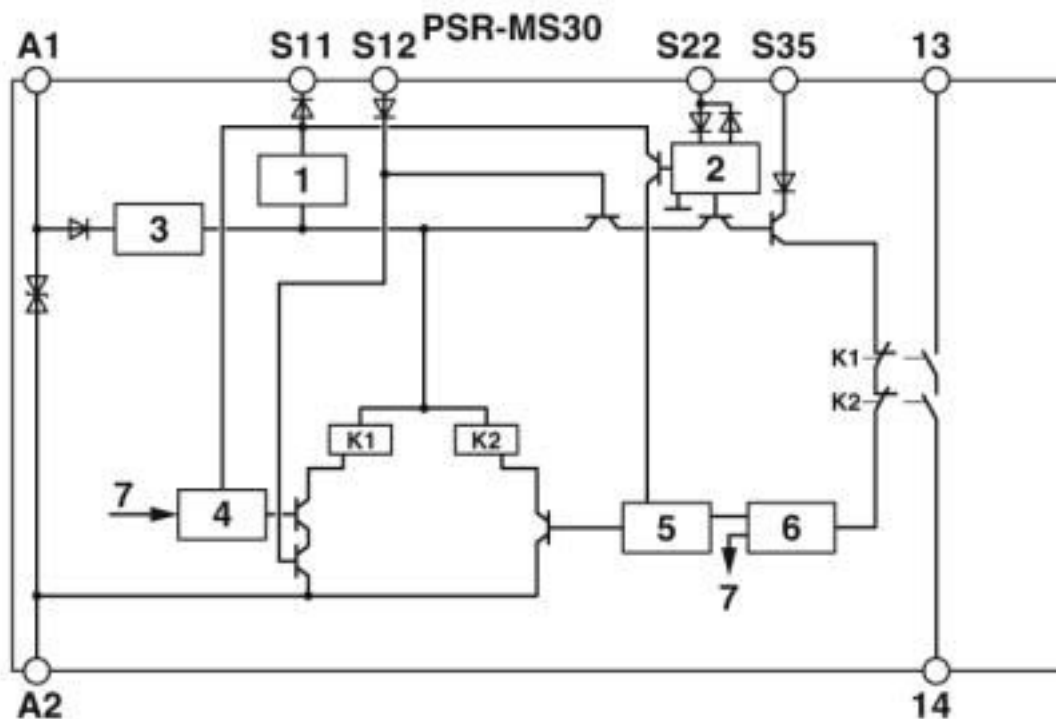# Safety relays - PSR-MS30-1NO-24DC-SC - 2904952

Application drawing
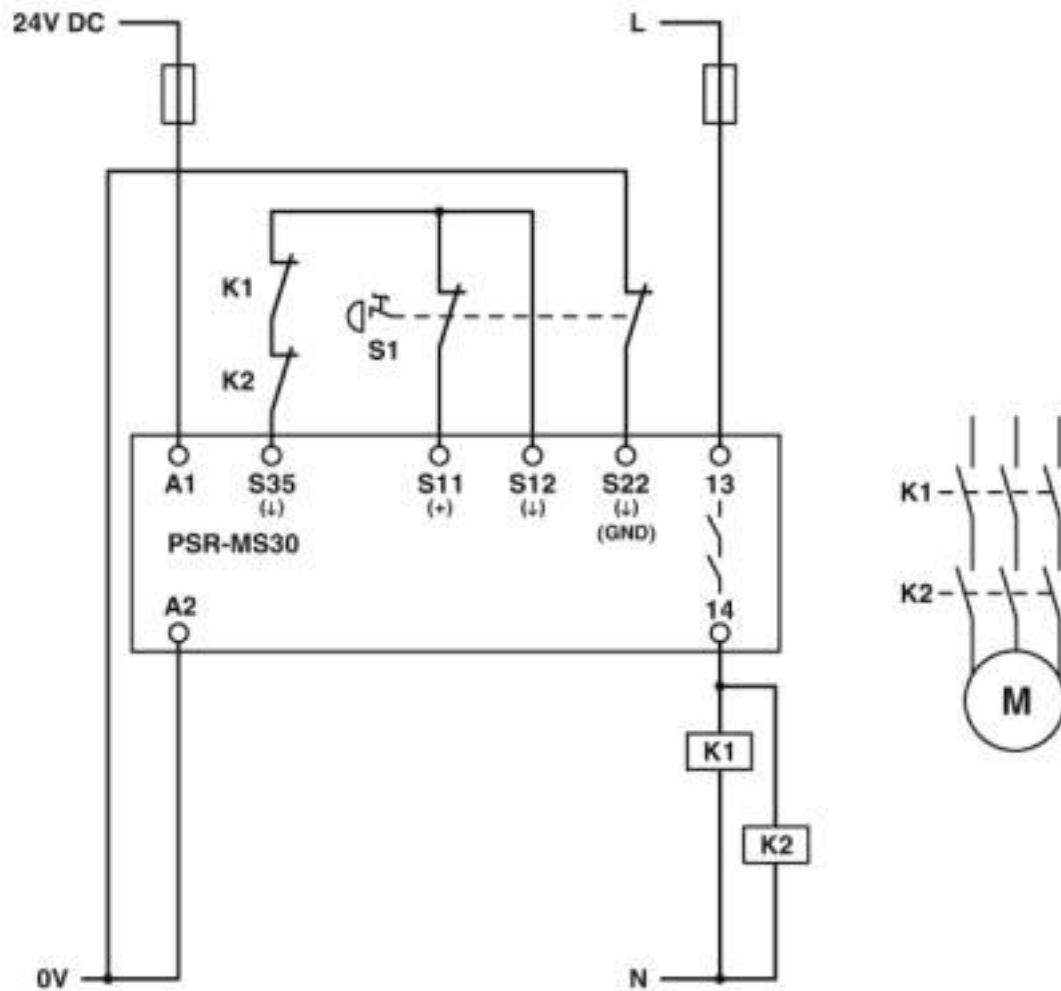
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Block diagram

Block diagram

Key:
1 = Current limitation
2 = Input circuit
3 = Voltage limitation
4 = Control circuit channel 1
5 = Control circuit channel 2
6 = Start channel 1 and 2
7 = Channel 1

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K1, K2 = Force-guided elementary relays

Classifications

eCl@ss

eCl@ss 10.0.1	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 5.0	EC001449
ETIM 6.0	EC001449
ETIM 7.0	EC001449

UNSPSC

UNSPSC 13.2	39121501
UNSPSC 18.0	39122205
UNSPSC 19.0	39122205
UNSPSC 20.0	39122205
UNSPSC 21.0	39122205

Approvals

Approvals

Approvals

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

Ex Approvals

Approval details

UL Listed	UL LISTED	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324

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Approvals

cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324

Functional Safety		44-205-13755202

EAC		RU C-DE.A*30.B.01082

Functional Safety		44-780-13755207

cULus Listed	

Accessories

Accessories

Terminal marking

Zack Marker strip, flat - ZBF 6:UNBEDRUCKT - 0808710

Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm, Number of individual labels: 10

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