Chipsmall

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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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PHŒNIX CONTACT

Safety relays - PSR-MC30-2NO-1DO-24DC-SP - 2700499

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Safety relay for emergency stop and safety doors up to SILCL 3, Cat. 4, PL e, 2-channel operation, automatic or manual, monitored start, cross-circuit detection, 2 enabling current paths, U_S = 24 V 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

☑ Low housing width of just 12.5 mm

☑ Two-channel control

☑ 2 enabling current paths, 1 digital signal output

☑ Manually monitored and automatic activation in a single device

☑ Cross-circuit detection

PL EN ISO 13849 **SILCL** IEC 62061

Key Commercial Data

Packing unit	1 STK
Weight per Piece (excluding packing)	160.000 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	12.5 mm
Height	116.6 mm

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Technical data

Dimensions

Depth	114.5 mm

Ambient conditions

Ambient temperature (operation)	-40 °C ... 55 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °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	$\leq$ 2000 m (Above sea level)

Input data

Rated control circuit supply voltage U_S	24 V DC -15 % / +10 %
Power consumption at U_S	typ. 1.56 W
Rated control supply current I_S	typ. 65 mA
Inrush current	4 A (Δt = 200 µs at U_s)
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 S34)
	> -5 mA (with U_s/I_x to S22/S21)
	< 10 mA (with U_s/I_x to S34)
Voltage at input/start and feedback circuit	24 V DC -15 % / +10 %
Typical response time	< 175 ms (automatic start)
	< 175 ms (manual, monitored start)
Typ. starting time with U_s	< 250 ms (when controlled via A1)
Typical release time	< 20 ms (when controlled via A1 or S12 and S22.)
Recovery time	< 500 ms
Status display	3 x green LED
Maximum switching frequency	0.5 Hz
Max. permissible overall conductor resistance	150 Ω
Filter time	1 ms (at A1 in the event of voltage dips at U_s)
	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

Output data

Contact type	2 enabling current paths
Contact material	$AgSnO_2$

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Technical data

Output data

Minimum switching voltage	12 V AC/DC
Maximum switching voltage	250 V AC/DC (Observe the load curve)
Limiting continuous current	6 A (observe derating)
Inrush current, minimum	3 mA
Maximum inrush current	6 A
Sq. Total current	72 A^2 (observe derating)
Switching capacity	min. 60 mW
Output fuse	6 A gL/gG (N/O contact)
	4 A gL/gG (for low-demand applications)

Alarm outputs

Number of outputs	1 (digital, PNP)
Voltage	22 V DC (U_s - 2 V)
Current	max. 100 mA
Maximum inrush current	500 mA (Δt = 1 ms at U_s)
Short-circuit protection	no

General

Relay type	Electromechanical relay with forcibly guided contacts in accordance with IEC/EN 61810-3 (EN 50205)
Mechanical service life	10 x 10^6 cycles
Nominal operating mode	100% operating factor
Net weight	156.8 g
Mounting type	DIN rail mounting
Assembly instructions	See derating curve
Mounting position	vertical or horizontal
Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Control	Two-channel
Housing material	PBT
Housing color	yellow

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
Conductor cross section flexible max.	1.5 mm²

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Technical data

Connection data

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 (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

Shock	15g
Designation	Air clearances and creepage distances between the power circuits
Standards/regulations	DIN EN 50178
Rated insulation voltage	250 V AC
Rated surge voltage/insulation	Safe isolation, reinforced insulation 6 kV between input circuit and enabling current path (13/14) and enabling current path (23/24) Basic insulation 4 kV between all current paths and housing
Degree of pollution	2
Overvoltage category	III
Vibration (operation)	10 Hz ...150 Hz, 2g

Drawings

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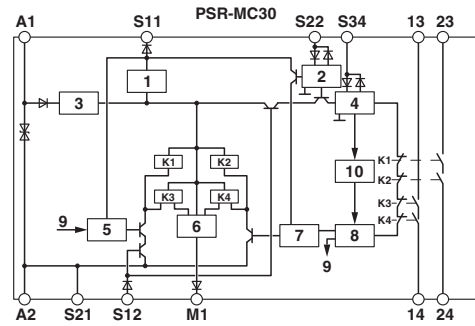
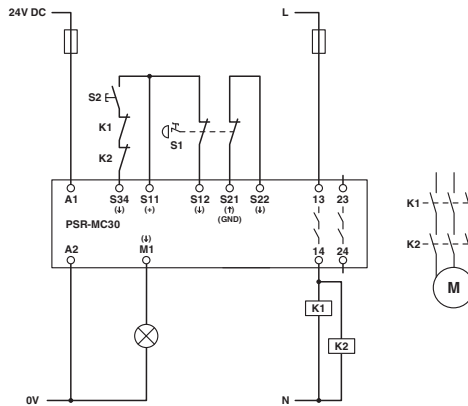# Safety relays - PSR-MC30-2NO-1DO-24DC-SP - 2700499

Block diagram
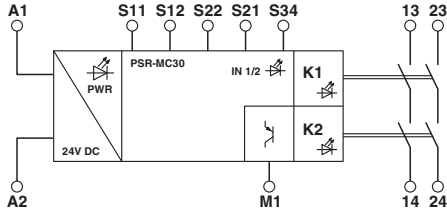
Block diagram

Key:
 1 = Current limitation
 2 = Input circuit
 3 = Voltage limitation
 4 = Start circuit
 5 = Control circuit channel 1
 6 = Control circuit signal output
 7 = Control circuit channel 2
 8 = Start channel 1 and 2
 9 = Channel 1
 10 = Diagnostics
K1, K2 ... K4 = Force-guided elementary relays

Circuit diagram

Classifications

eCl@ss

eCl@ss 5.1	27371901
eCl@ss 6.0	27371819
eCl@ss 8.0	27371819
eCl@ss 9.0	27371819

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Classifications

ETIM

ETIM 5.0	EC001449

Approvals

Approvals

Approvals

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

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Ex Approvals

Approval details

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

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

EAC   7500651.22.01.00244

Functional Safety   44-205-13755201

GL   http://www.gl-group.com/newbuilding/approvals/index.html 11253-14 HH

cULus Listed