

Safety relays - PSR-MC72-2NO-1DO-24DC-SC - 2702096

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Safety relay for emergency stop, safety doors, light grid up to SILCL 3, Cat. 4, PL e, 1- or 2-channel operation, cross-circuit detection, can be retriggered, fall back/tightening delay 0.2 s to 60 s, 2 enabling current paths, $U_s = 24 \text{ V DC}$, plug-in screw terminal block

Your advantages

- Up to Cat.4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061
- Low housing width of just 12.5 mm
- Single and two-channel control
- 2 enabling current paths, 1 digital signal output
- Manually monitored and automatic activation in a single device



Key commercial data

package_quantity	1
GTIN	4046356952484

Technical data

Note

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

Width	12.5 mm
Height	112.2 mm
Depth	114.5 mm

Ambient conditions

Ambient temperature (operation)	-35 °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)
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

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Input data

Rated control circuit supply voltage U_s	24 V DC -20 % / +25 %
Rated control supply current I_s	typ. 60 mA
Power consumption at U_s	typ. 1.44 W
Inrush current	25 A ($\Delta t = 10 \mu s$ at U_s)
Current consumption	< 4.1 mA (with U_s/I_x to S12/S22)
Current consumption	< 3.2 mA (with U_s/I_x to S34)
Voltage at input/start and feedback circuit	24 V DC -20 % / +25 %
Typical response time	< 35 ms (automatic start)
Typical response time	< 30 ms (manual, monitored start)
Typical release time	< 25 ms (when controlled via S12 (only for undelayed contact 13/14))
Typical release time	< 5 ms (when interrupted via A1; applicative deactivation via A1/A2 is not permitted)
Concurrence input 1/2	∞
Status display	5 x bi-color LED
Maximum switching frequency	1 Hz
Max. permissible overall conductor resistance	150 Ω
Filter time	10 ms (For the logic. At A1 in the event of voltage dips at U_s)
Filter time	max. 3 ms (at S12, S22, S34; test pulse width)
Filter time	min. 21 ms (at S12, S22, S34; test pulse rate)
Filter time	Test pulse rate = 7 x Test pulse width

Output data

Contact type	2 enabling current paths
Contact material	AgSnO ₂
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)
Output fuse	4 A gL/gG (for low-demand applications)

Alarm outputs

Number of outputs	1 (digital, PNP)
Voltage	23 V DC ($U_s - 1 V$)
Current	max. 100 mA
Maximum inrush current	500 mA ($\Delta t = 1 ms$ at U_s)
Short-circuit protection	Yes

General

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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	108.98 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	one and two channel
Housing material	PBT
Housing color	yellow

Connection data

Connection method	Screw connection
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
Stop category	1
Designation	IEC 61508 - High 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

Shock	15g
Designation	Air clearances and creepage distances between the power circuits
Standards/regulations	DIN EN 50178
Rated insulation voltage	250 V AC
Rated insulation voltage	250 V AC

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Standards and Regulations

Rated surge voltage/insulation	Basic insulation 4 kV: between all current paths and housing Safe isolation, reinforced insulation 6 kV: between (A1, A2, S11, S12, S21, S22, S34, M1) and enabling current path (13/14) between (A1, A2, S11, S12, S21, S22, S34, M1) and enabling current path (27/28) between enabling current paths
Degree of pollution	2
Overvoltage category	III
Vibration (operation)	10 Hz ... 150 Hz, 2g
Conformance	CE-compliant

Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50
China RoHS	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Classifications

eCl@ss

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

ETIM

ETIM 5.0	EC001449
ETIM 6.0	EC001449


UNSPSC


UNSPSC 13.2	39121501
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Approvals


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

Approval details

UL Listed 
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cUL Listed 

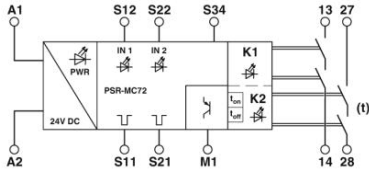
Functional Safety 
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cULus Listed 

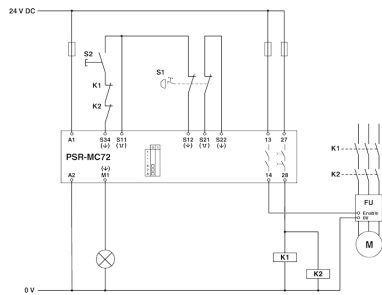
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Drawings

Block diagram



Circuit diagram



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