

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, $U_S = 24$ 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

Packing unit	1 pc
GTIN	 4 0 4 6 3 5 6 9 5 2 4 8 4
GTIN	4046356952484
Weight per Piece (excluding packing)	300.000 g
Custom tariff number	85371098
Country of origin	Germany

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

Technical data

Dimensions

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)
Maximum altitude	≤ 2000 m (Above sea level)

Power supply

Designation	A1/A2
Rated control circuit supply voltage U_s	24 V DC -20 % / +25 %
	19.2 V DC ... 30 V DC
Rated control supply current I_s	typ. 60 mA
Power consumption at U_s	typ. 1.44 W
Inrush current	typ. 25 A ($\Delta t = 10 \mu s$ at U_s)
Filter time	10 ms (For the logic. 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
	S12, S22
Description of the input	safety-related sensor inputs
Number of inputs	2
Input voltage range "0" signal	0 V DC ... 5 V DC
Input current range "0" signal	0 mA ... 2 mA
Inrush current	< 11 mA (typically with U_s)
Current consumption	< 4.1 mA (typically with U_s)
Filter time	max. 3 ms (Test pulse width of low test pulses)
	min. 21 ms (Test pulse rate for low test pulse)
	Test pulse rate = 7 x Test pulse width
Max. permissible overall conductor resistance	150 Ω
Concurrence	∞
Limit frequency	min. 0 Hz
	max. 1 Hz

2. Digital inputs

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

Technical data

2. Digital inputs

Input name	Start circuit
	S34
Description of the input	non-safety-related
Number of inputs	1
Inrush current	< 8.6 mA (typically with U_s)
Current consumption	< 3.2 mA (typically with U_s)
Filter time	max. 3 ms (Test pulse width of low test pulses) min. 21 ms (Test pulse rate for low test pulse)
	Test pulse rate = 7 x Test pulse width
Max. permissible overall conductor resistance	150 Ω

Relay outputs: enabling current path

Output name	Enabling current paths
	13/14, 27/28
Output description	safety-related N/O contacts
Number of outputs	1 (undelayed) 1 (delayed)
Contact type	2 enabling current paths
Contact material	AgSnO ₂
Switching voltage	min. 12 V AC/DC max. 250 V AC (Observe the load curve)
Limiting continuous current	6 A (observe derating)
Inrush current	min. 3 mA max. 6 A
Sq. Total current	72 A ² (observe derating)
Switching capacity	min. 60 mW
Mechanical service life	10x 10 ⁶ cycles
Output fuse	6 A gL/gG (N/O contact) 4 A gL/gG (for low-demand applications)

Alarm outputs

Designation	M1
Output description	PNP
	non-safety-related
Number of outputs	1
Voltage	approx. 23 V DC (U_s - 1 V)
Current	max. 100 mA
Maximum inrush current	500 mA ($\Delta t = 1$ ms at U_s)

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

Technical data

Alarm outputs

Short-circuit protection	Yes
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Times

Typical response time at US	< 35 ms (automatic start)
	< 30 ms (manual, monitored start)
Typical release time at US	< 25 ms (when controlled via S12 (only for undelayed contact 13/14))
	< 5 ms (when interrupted via A1; applicative deactivation via A1/A2 is not permitted)
Delay time range	0.2 s ... 60 s ±5 % (can be set for 27/28)
Restart time	< 1 s (Boot time)

General

Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3
Nominal operating mode	100% operating factor
Net weight	108.98 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
Status display	5 x bi-color LED

Connection data

Connection method	Screw connection
pluggable	Yes
Conductor cross section solid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross-section AWG	24 ... 12
Stripping length	7 mm
Screw thread	M3

Safety-related characteristic data

Stop category in accordance with IEC 60204	0
	1
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	3
Designation	EN ISO 13849

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

Technical data

Safety-related characteristic data

Performance level (PL)	e
Category	4
Designation	EN 62061
Safety Integrity Level Claim Limit (SIL CL)	3

Standards and Regulations

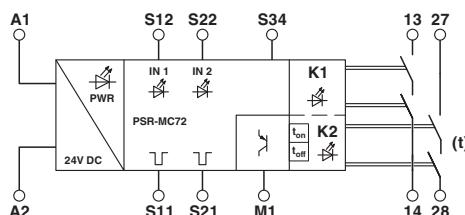
Designation	Air clearances and creepage distances between the power circuits
Standards/regulations	DIN EN 50178
Rated insulation voltage	250 V AC
	250 V AC
Rated surge voltage/insulation	Basic insulation 4 kV: between all current paths and housing Safe isolation, reinforced insulation 6 kV: between (A1, A2, 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
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"

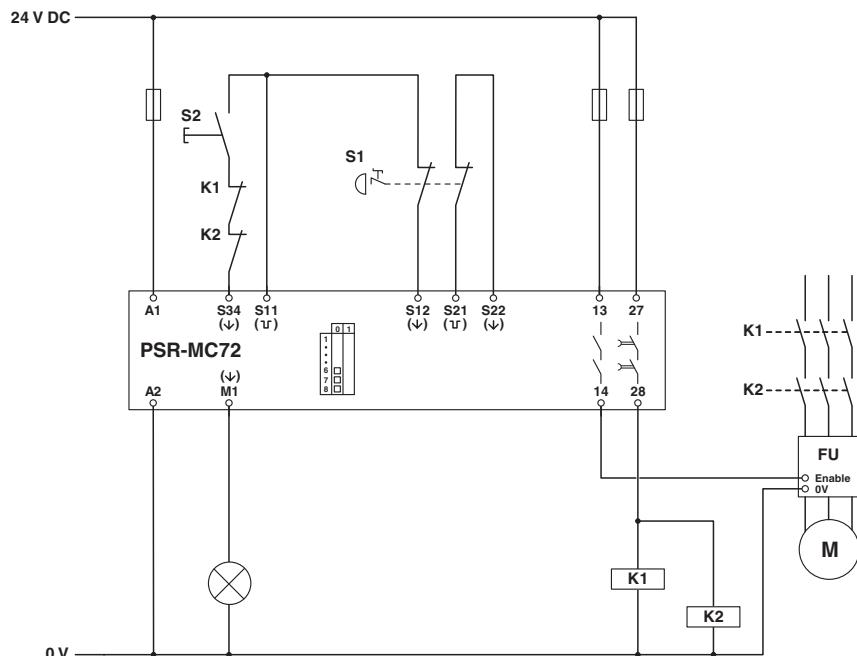
Drawings

Block diagram



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

Circuit diagram



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 9.0	27371819

ETIM

ETIM 6.0	EC001449
ETIM 7.0	EC001449

UNSPSC

UNSPSC 13.2	39121501
UNSPSC 18.0	39122205
UNSPSC 19.0	39122205

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

Classifications

UNSPSC

UNSPSC 20.0	39122205
UNSPSC 21.0	39122205

Approvals

Approvals

Approvals

UL Listed / cUL Listed / Functional Safety / cULus Listed

Ex Approvals

Approval details

UL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 140324

cUL Listed



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FILE E 140324

Functional Safety



01/205/5486.00/16

cULus Listed

