

Safety relays - PSR-MC60-2NO-1DO-24DC-SP - 2700572

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Safety relay for two-hand control devices according to EN 574 type IIIA, up to SILCL 1, Cat. 1, PL c, synchronous activation monitoring < 0.5 s, 2 enabling current paths, $U_S = 24 \text{ V DC}$, pluggable Push-in terminal block

The figure shows a version with a screw connection

Your advantages

- ✓ Up to Cat. 1/PL c according to ISO 13849-1, SILCL 1 according to IEC 62061
- ✓ Type IIIA according to EN 574
- ✓ Low housing width of just 12.5 mm
- ✓ 2 enabling current paths, 1 digital signal output
- ✓ Automatic activation
- ✓ Time saving push-in connection, tools not required
- ✓ Potentials can be easily looped through – ideal for BUS applications
- ✓ Intuitive use through colour coded actuation lever
- ✓ Can be combined with the MSTB 2,5 range
- ✓ Quick and convenient testing using integrated test option



Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 988360
GTIN	4046356988360
Weight per Piece (excluding packing)	111.280 g
Custom tariff number	85371098
Country of origin	Germany
Note	Made to Order (non-returnable)

Technical data

Note

Safety relays - PSR-MC60-2NO-1DO-24DC-SP - 2700572

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	116.6 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. 35 mA
Power consumption at U_s	typ. 0.9 W
Inrush current	typ. 20 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
Inrush current	< 5.5 mA (with U_s/I_x at S12)
	> -5.5 mA (with U_s/I_x to S22)
Current consumption	< 5.1 mA (with U_s/I_x at S12)
	> -5.1 mA (with U_s/I_x to S22)
Max. permissible overall conductor resistance	150 Ω
Concurrence input 1/2	< 0.5 s
	S35
Description of the input	non-safety-related
Number of inputs	1
Inrush current	< 5.5 mA (typically with U_s)
Current consumption	< 5.1 mA (typically with U_s)
Max. permissible overall conductor resistance	150 Ω

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Relay outputs: enabling current path

Output name	Enabling current paths
	13/14, 23/24
Output description	safety-related N/O contacts
Number of outputs	2 (undelayed)
Contact type	2 enabling current paths
Contact material	AgSnO ₂ (enabling current path)
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	72 A ² (observe derating)
Switching capacity	min. 60 mW
Switching frequency	1 Hz
Mechanical service life	10x 10 ⁶ cycles
Output fuse	6 A gL/gG (N/O contact)

Alarm outputs

Designation	M1
Output description	PNP
	non-safety-related
Number of outputs	1 (digital, PNP)
Voltage	22 V DC (U _s - 2 V)
Current	max. 100 mA
Maximum inrush current	500 mA ($\Delta t = 1 \text{ ms}$ at U _s)
Short-circuit protection	Yes

Times

Typical response time at US	< 40 ms
Typical release time at US	< 10 ms (when controlled via S12/S22)
	< 5 ms (when interrupted via A1; applicative deactivation via A1/A2 is not permitted)
Restart time	< 2 s (Boot time)
Recovery time	< 500 ms

General

Relay type	Electromechanical relay with forcibly guided contacts in accordance with IEC/EN 61810-3 (EN 50205)
Nominal operating mode	100% operating factor
Net weight	111.28 g
Mounting position	vertical or horizontal
Mounting type	DIN rail mounting
Assembly instructions	See derating curve

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General

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 capacity

Connection method	Push-in spring connection
pluggable	Yes
Conductor cross section solid	0.2 mm ² ... 1.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross section AWG / kcmil	24 ... 16
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)
Stripping length	8 mm

Safety-related characteristic data

Stop category	0
Type class	IIIA
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	1 (4 A DC13; 5 A AC15; 8760 switching cycles/year)
Designation	EN ISO 13849
Performance level (PL)	c (4 A DC13; 5 A AC15; 8760 switching cycles/year)
Category	1 (4 A DC13; 5 A AC15; 8760 switching cycles/year)
Designation	EN 62061
Safety Integrity Level Claim Limit (SIL CL)	1 (4 A DC13; 5 A AC15; 8760 switching cycles/year)

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, S35, M1) and enabling current path (13/14) between (A1, A2, S11, S12, S21, S22, S35, M1) and enabling current path (23/24) between enabling current paths
Degree of pollution	2
Overvoltage category	III
Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g
Conformance	CE-compliant

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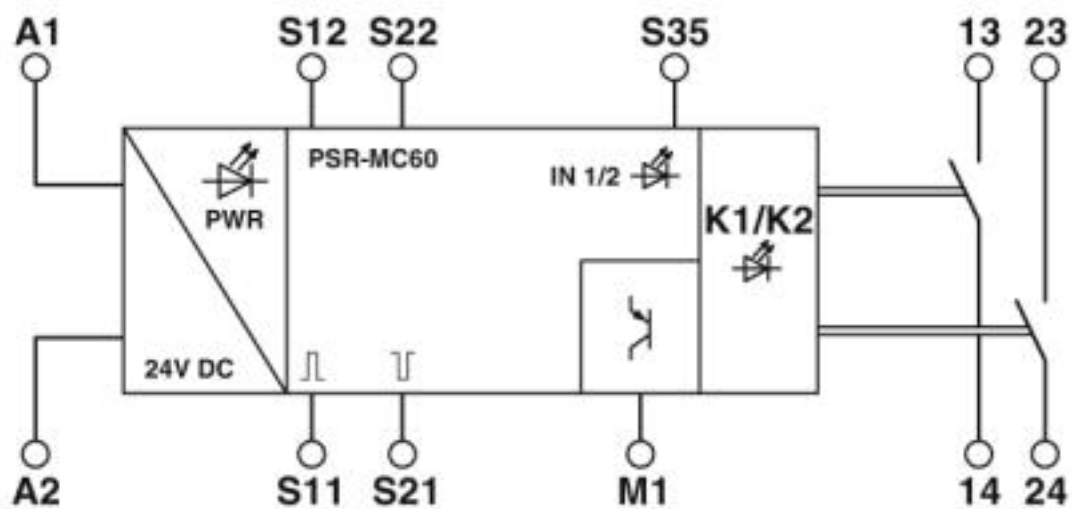
Technical data

Environmental Product Compliance

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

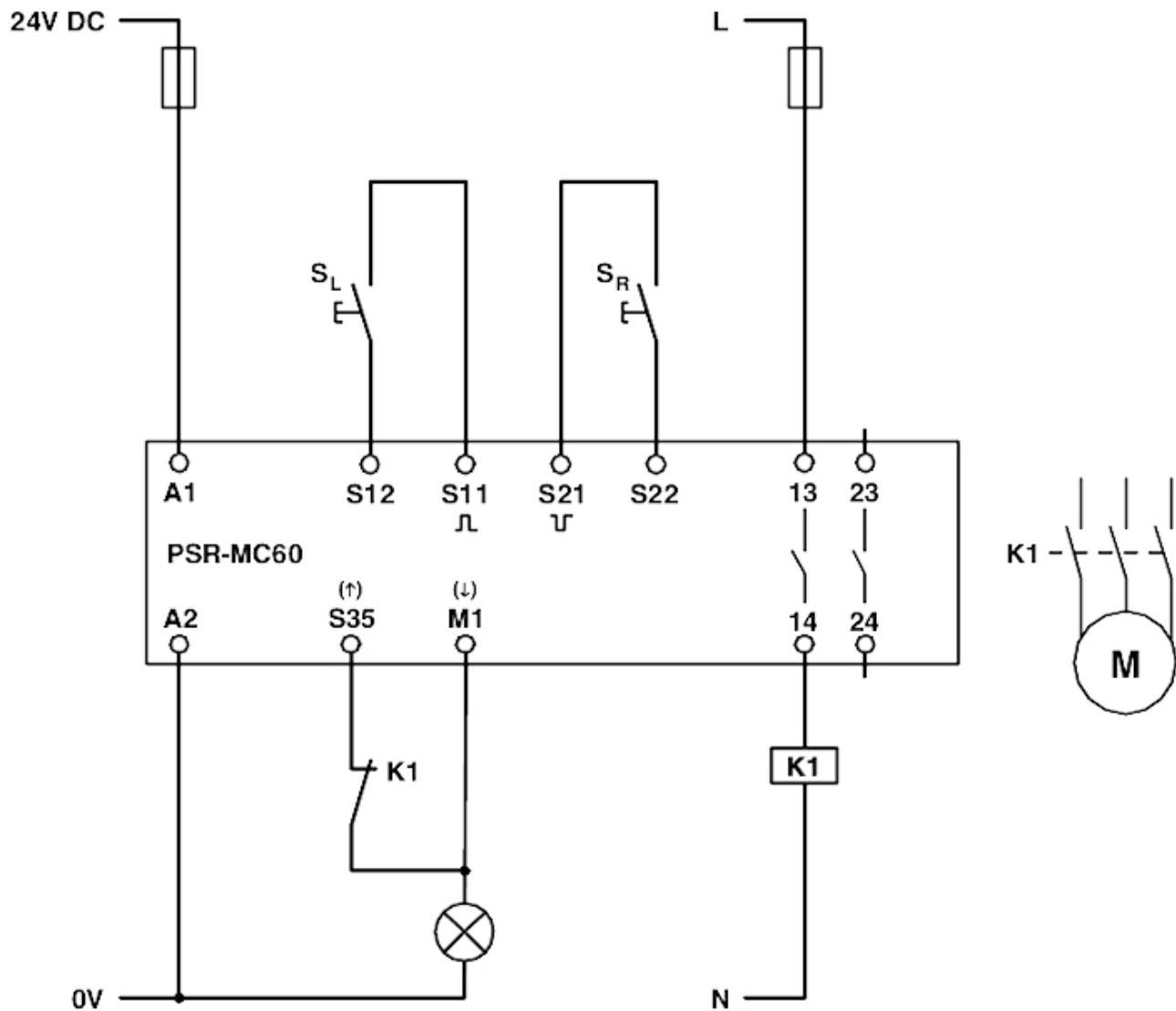
Drawings

Block diagram



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Circuit diagram



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Classifications

eCl@ss

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	27371821
eCl@ss 9.0	27371821

ETIM

ETIM 5.0	EC001452
ETIM 6.0	EC001452
ETIM 7.0	EC001452

UNSPSC

UNSPSC 13.2	39121501
UNSPSC 18.0	39121105
UNSPSC 19.0	39121105
UNSPSC 20.0	39121105
UNSPSC 21.0	39121105

Approvals

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

Functional Safety



01/205/5532.00/16

cULus Listed

