

# Safety relays - PSR-MC60-2NO-1DO-24DC-SC - 2700571

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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,  $U_S = 24 \text{ V DC}$ , plug-in screw terminal block

## 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



## Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 988353
GTIN	4046356988353

## 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)

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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

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

Inrush current	< 5.5 mA (with $U_s/I_x$ at S12/S35)
	> -5.5 mA (with $U_s/I_x$ to S22)
Current consumption	< 5.1 mA (with $U_s/I_x$ at S12/S35)
	> -5.1 mA (with $U_s/I_x$ to S22)
Voltage at input/start and feedback circuit	24 V DC -20 % / +25 %
Max. permissible overall conductor resistance	150 $\Omega$
Concurrence input 1/2	< 0.5 s

### Relay outputs: enabling current path

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

### Alarm outputs

Output description	non-safety-related
Number of outputs	1 (digital, PNP)

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### Alarm outputs

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	147.3 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 min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
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
Type class	IIIA
Designation	IEC 61508 - High demand

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### Safety-related characteristic data

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

### Environmental Product Compliance

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

## Approvals

### Approvals

Approvals


UL Listed / cUL Listed / Functional Safety / cULus Listed


Ex Approvals


### Approval details


## Safety relays - PSR-MC60-2NO-1DO-24DC-SC - 2700571

### Approvals

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
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cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
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Functional Safety			01/205/5532.00/16
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cULus Listed			
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