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

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The figure shows a version with a screw connection

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 V DC, plug-in spring-cage 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 988360
GTIN	4046356988360

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
Depth	114.5 mm

Ambient conditions

Ambient temperature (operation)	-35 °C ... 60 °C (observe derating)

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Ambient conditions

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

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 (Δt = 10 µs 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 Ω
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	$AgSnO_2$ (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

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Alarm outputs

Output description	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 (Δt = 1 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
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	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
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

Safety-related characteristic data

Stop category	0
Type class	IIIA

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Safety-related characteristic data

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

Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

Approvals

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UL Listed / cUL Listed / Functional Safety / cULus Listed

Ex Approvals

Approval details

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Approvals

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
Functional Safety			01/205/5532.00/16
cULus Listed			

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