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Safety relays - PSR-MC34-3NO-1DO-24DC-SP - 2700548

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The figure shows a version with a screw connection

Safety relay for emergency stop and safety doors up to SILCL 3, Cat. 4, PL e, 2-channel operation, automatic or manual, monitored start, cross-circuit detection, 3 enabling current paths, U_S = 24 V DC, plug-in spring-cage terminal block

Why buy this product

- 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
- Two-channel control
- 3 enabling current paths, 1 digital signal output
- Manually monitored and automatic activation in a single device
- Cross-circuit detection

Key Commercial Data

Packing unit	1 STK
GTIN	4 046356 912686

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)	-40 °C ... 55 °C (observe derating)

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Technical data

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)
Shock	15g
Vibration (operation)	10 Hz ...150 Hz, 2g
Maximum altitude	≤ 2000 m (Above sea level)

Input data

Rated control circuit supply voltage U_S	24 V DC -15 % / +10 %
Power consumption at U_S	typ. 2 W
Rated control supply current I_S	typ. 84 mA
Typical inrush current	5 A (Δt = 200 µs at U_s)
Current consumption	< 5 mA (with U_s/I_x to S12)
	< 5 mA (with U_s/I_x to S22)
	> -5 mA (with U_s/I_x to S22/0V)
	> -5 mA (with U_s/I_x to S34)
	< 10 mA (with U_s/I_x to S34)
Voltage at input/start and feedback circuit	24 V DC -15 % / +10 %
Typical response time	< 175 ms (automatic start)
	< 175 ms (manual, monitored start)
Typical pick-up time	< 250 ms (when controlled via A1)
Typical release time	< 20 ms (when controlled via A1 or S12 and S22.)
Recovery time	< 500 ms
Status display	3 x green LED
Maximum switching frequency	0.5 Hz
Max. permissible overall conductor resistance	150 Ω
Filter time	1 ms (at A1 in the event of voltage dips at U_s)
	max. 1.5 ms (at S12, S22; test pulse width)
	min. 7.5 ms (at S12, S22; test pulse rate)
	Test pulse rate = 5 x Test pulse width

Output data

Contact type	3 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

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Output data

Output fuse	6 A gL/gG (N/O contact)
	4 A gL/gG (for low-demand applications)

Alarm outputs

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	no

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
Net weight	173.7 g
Mounting type	DIN rail mounting
Assembly instructions	See derating curve
Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Mounting position	vertical or horizontal
Control	Two-channel
Housing material	PBT

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
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	3
Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	3
Designation	EN ISO 13849
Performance level (PL)	e (4 A DC13; 5 A AC15; 8760 switching cycles/year)
Category	4

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Technical data

Safety-related characteristic data

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 surge voltage/insulation	Basic insulation 4 kV: Between input circuit and enabling current path (23/24/34) Between all current paths and housing Safe isolation, reinforced insulation 6 kV: Between input circuit and enabling current path (13/14) Between enabling current path (13/14) and enabling current path (23/24/34)
Degree of pollution	2
Overvoltage category	III
Vibration (operation)	10 Hz ...150 Hz, 2g

Classifications

eCl@ss

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

ETIM

ETIM 5.0	EC001449

Approvals

Approvals

Approvals

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

Ex Approvals

Approvals submitted

Approval details

Safety relays - PSR-MC34-3NO-1DO-24DC-SP - 2700548

Approvals

UL Listed

cUL Listed

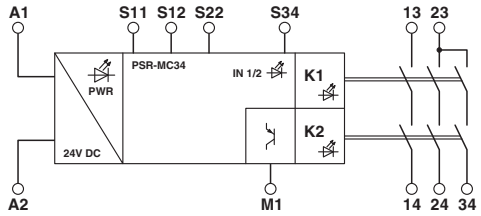
EAC

Functional Safety

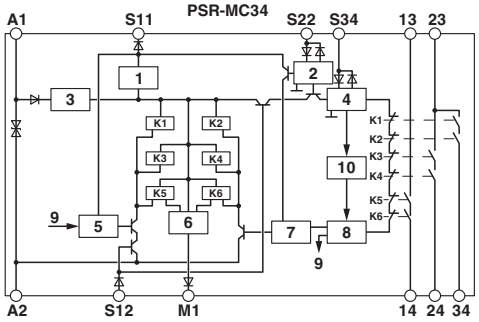
cULus Listed

Drawings

Block diagram



Block diagram



Key:
1 = Current limitation
2 = Input circuit
3 = Voltage limitation
4 = Start circuit
5 = Control circuit channel 1
6 = Control circuit signal output
7 = Control circuit channel 2
8 = Start channel 1 and 2
9 = Channel 1
10 = Diagnostics
K1, K2 ... K6 = Force-guided elementary relays

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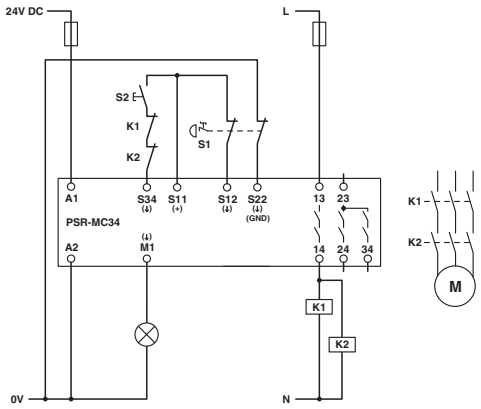
Circuit diagram



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Product	Code	Reference	Product link
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