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Safety relays - PSR-MS25-1NO-1DO-24DC-SC - 2904951

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Safety relay for emergency stop and safety doors up to SILCL 1, Cat. 1, PL c, depending on the application up to SILCL 3, Cat. 4, PL e, 1-channel operation, manual, monitored start, 1 enabling current path, $U_s = 24 \text{ V DC}$, fixed screw terminal block

Why buy this product

- Up to Cat. 1/PL c according to ISO 13849-1, SILCL 1 according to IEC 62061
- Depending on the application, up to Cat. 4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061
- Low housing width of just 6.8 mm
- Single-channel control
- 1 enabling current path, 1 digital signal output
- Manual and monitored activation



Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 904995

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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Dimensions

Width	6.8 mm
Height	93.1 mm
Depth	102.5 mm

Ambient conditions

Ambient temperature (operation)	-40 °C ... 60 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °C

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Ambient conditions

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	max. 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. 1 W
Rated control supply current I_s	typ. 42 mA
Typical inrush current	4.5 A ($\Delta t = 120 \mu s$ at U_s)
Current consumption	< 5 mA (with U_s/I_x to S12)
	< 10 mA (with U_s/I_x at the start circuit)
Voltage at input/start and feedback circuit	24 V DC -15 % / +10 %
Typical response time	< 175 ms
Typical release time	< 20 ms (when controlled via A1 or S12)
Recovery time	< 500 ms
Status display	2 x green LEDs
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; test pulse width)
	min. 7.5 ms (at S12; test pulse rate)
	Test pulse rate = 5 x Test pulse width

Output data

Contact type	1 enabling current path
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	36 A ² (observe derating)
Switching capacity	min. 60 mW
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

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Alarm outputs

Maximum inrush current	500 mA ($\Delta t = 1 \text{ ms at } U_s$)
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	10×10^6 cycles
Net weight	69 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	single-channel
Housing material	PBT

Connection data

Connection method	Screw connection
pluggable	no
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section AWG min.	26
Conductor cross section AWG max.	12
Stripping length	12 mm
Screw thread	M3

Safety-related characteristic data

Stop category	0
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	1 (up to SIL 3 depending on the application)
Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	1 (up to SIL 3 depending on the application)
Designation	EN ISO 13849
Performance level (PL)	c (up to PL e depending on the application)
Category	1 (up to Cat. 4 depending on the application)
Designation	EN 62061
Safety Integrity Level Claim Limit (SIL CL)	1 (up to SILCL 3 depending on the application)

Standards and Regulations

Shock	15g
Designation	Air clearances and creepage distances between the power circuits

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Standards and Regulations

Standards/regulations	DIN EN 50178
Rated insulation voltage	250 V AC
Rated surge voltage/insulation	Safe isolation, reinforced insulation 6 kV between input circuit and enabling current path Basic insulation 4 kV between all current paths and housing
Degree of pollution	2
Overvoltage category	III
Vibration (operation)	10 Hz ...150 Hz, 2g
Conformance	CE-compliant

Classifications

eCl@ss

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

ETIM

ETIM 5.0	EC001449
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Approvals

Approvals

Approvals

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

Ex Approvals

Approvals submitted

Approval details

UL Listed 

cUL Listed 
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Approvals

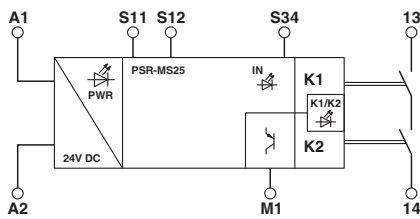
Functional Safety

EAC

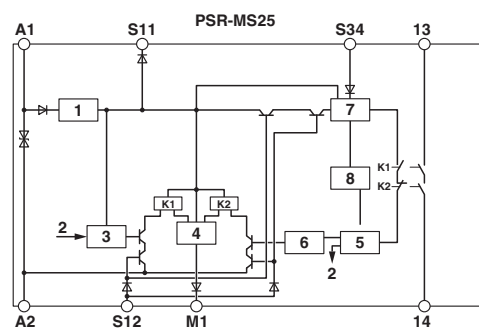
cULus Listed

Drawings

Block diagram



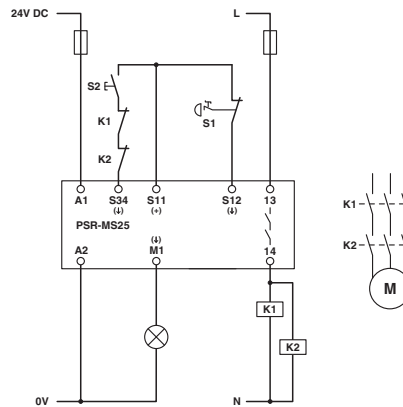
Block diagram



Key:

- 1 = Voltage limitation
- 2 = Channel 1
- 3 = Control circuit channel 1
- 4 = Control circuit signal output
- 5 = Start channel 1 and 2
- 6 = Control circuit channel 2
- 7 = Start circuit
- 8 = Diagnostics
- K1, K2 = Force-guided elementary relays

Application drawing



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PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstr. 8
32825 Blomberg
Germany
Tel. +49 5235 300
Fax +49 5235 3 41200
<http://www.phoenixcontact.com>



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Product	Code	Reference	Product link
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