

PSR-PE20-1NO-24DC-SC - Coupling relay



1119573

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Coupling relay for SIL 3 low-demand applications, couples digital output signals to the I/O, 1 undelayed enabling current path, safe state off applications, test pulse filter, plug-in screw terminal block

Product description

The safe coupling relay couples digital output signals from failsafe controllers to I/O devices and is used for power adaptation and electrical isolation. The safe coupling relay can be used in low-demand applications. The safe coupling relay safely interrupts circuits.

Your advantages

- Up to SIL 3 in accordance with IEC 61508, IEC 61511, and IEC 50156
- Low housing width of just 12.5 mm
- Long service life thanks to filtering of controller test pulses
- 1 enabling current path



Commercial data

Item number	1119573
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DN1121
GTIN	4063151049638
Weight per piece (including packing)	115.9 g
Weight per piece (excluding packing)	93.23 g
Customs tariff number	85371098

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Country of origin	DE
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Technical data

Notes

Note on application

Note on application	Only for industrial use
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Product properties

Product type	Coupling relay
Product family	PSRclassic
Application	Safe switch off Low demand
Set comprises	1272930 PSR-PE20-1NO-24DC-SC-SET60
Control	1-channel
Mechanical service life	10x 10 ⁶ cycles
Relay type	Electromechanical relay in accordance with IEC/EN 61810

Insulation characteristics

Overvoltage category	III
Degree of pollution	2

Times

Typ. starting time with U_S	< 70 ms (when controlled via A3 at U_S)
Typical release time	< 50 ms (on demand via A3 at U_S)
Recovery time	500 ms

Electrical properties

Maximum power dissipation for nominal condition	2.36 W ($U_B = 26.4$ V, $U_S = 24$ V, $I_S = 40$ mA, $I_L^2 = 16$ A, $R_{\text{contact}} = 0.075$ Ω)
Nominal operating mode	100% operating factor
Rated insulation voltage	250 V AC
Rated surge voltage/insulation	Safe isolation, reinforced insulation 6.4 kV between 250 V load current paths and 24 V logic paths Basic insulation 4 kV between all current paths and housing

Supply

Designation	3/4
Rated control circuit supply voltage U_S	21.6 V DC ... 26.4 V DC
Rated control circuit supply voltage U_S	24 V DC -10 % ... +10 %
Rated control supply current I_S	40 mA
Power consumption at U_S	960 mW
Inrush current	typ. 100 mA ($\Delta t = 10$ ms at U_S)
Filter time	1 ms (in the event of voltage dips at U_S)
Protective circuit	Serial protection against polarity reversal; Suppressor diode, 38.6 V/600 W (connections 3/4)

Output data

Relay: Enabling current path (5/6)

Output description	3 N/O contacts in series, without delay, floating
Number of outputs	1 (safety-related)
Contact switching type	1 enabling current path
Contact material	AgSnO ₂ , gold-plated
Switching voltage	min. 12 V DC max. 250 V AC/DC (Observe the load curve)
Switching power	min. 120 mW
Inrush current	min. 10 mA max. 4 A
Limiting continuous current	4 A (Low demand)
Sq. Total current	16 A ² (Low-demand, observe derating)
Switching frequency	1 Hz
Mechanical service life	10x 10 ⁶ cycles
Output fuse	4 A gL/gG (for low-demand applications)

Connection data

Conductor connection

Connection method	Screw connection
Conductor cross-section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross-section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross-section AWG	24 ... 12
Stripping length	7 mm
Screw thread	M3
Tightening torque	0.6 Nm

Signaling

Status display	1 x LED (green)
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Dimensions

Width	12.5 mm
Height	99 mm
Depth	114.5 mm

Material specifications

Color (Housing)	traffic gray B (RAL 7043)
Housing material	PA

Characteristics

Safety data: IEC 61508 - Low-demand for 1-channel wiring (1oo3 structure without diagnostics)

Safety Integrity Level (SIL)	3
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Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Ambient temperature (operation)	-40 °C ... 70 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 2000 m (Above sea level)
Max. permissible humidity (storage/transport)	75 % (on average, 85% infrequently, non-condensing)
Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)
Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g

Approvals

CE

Identification	CE-compliant
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Mounting

Mounting type	DIN rail mounting
Assembly note	See derating curve
Mounting position	vertical or horizontal

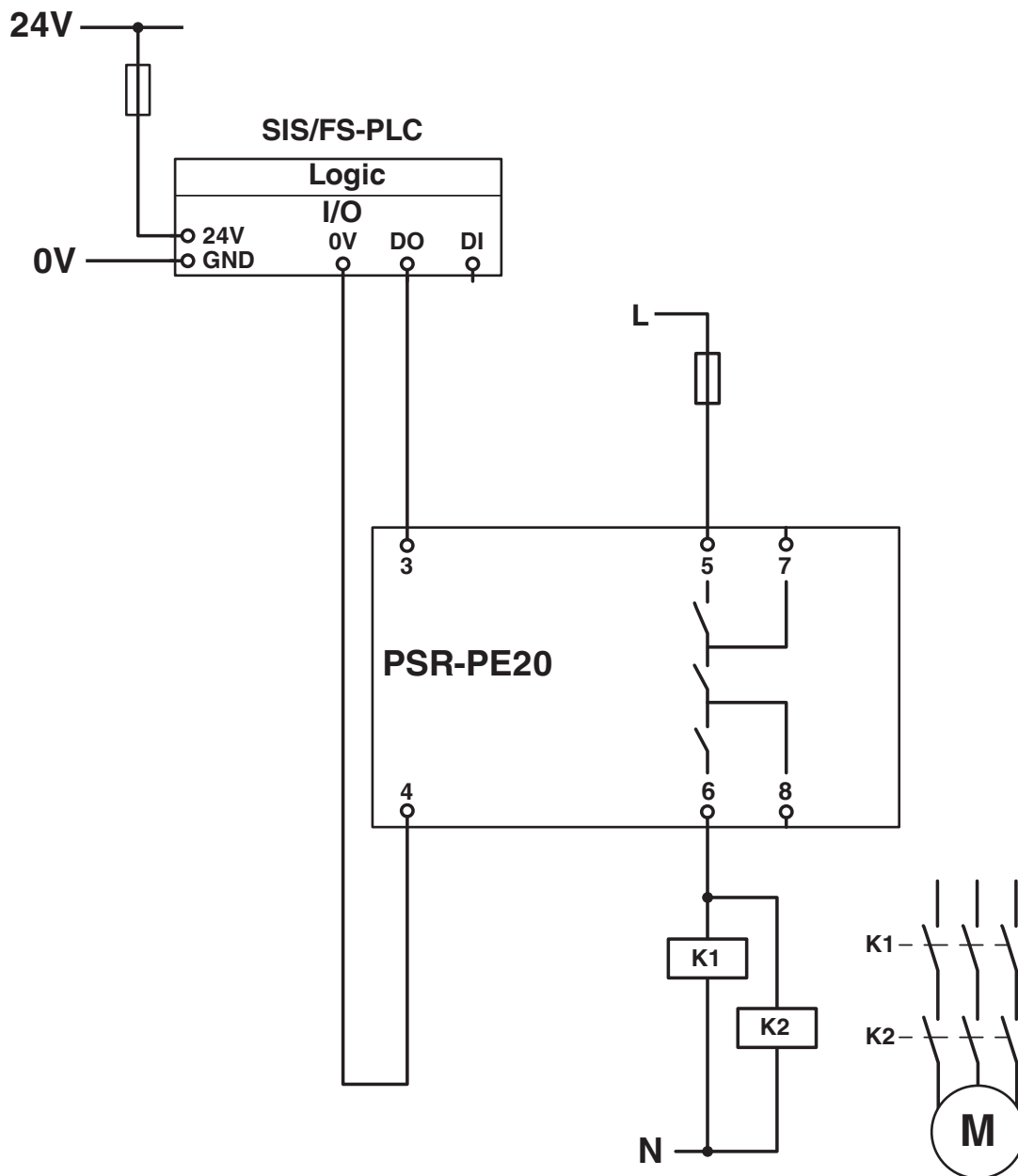
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Drawings

Circuit diagram



Example application

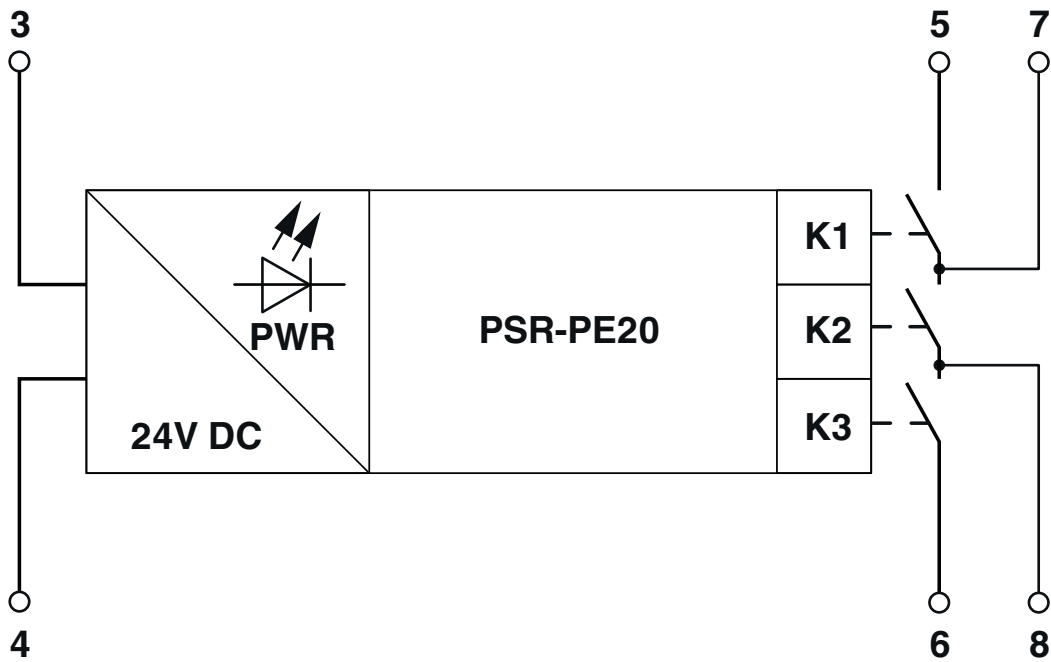
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Block diagram



Block diagram

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Approvals

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Functional Safety

Approval ID: 44-780-15124320



cULus Listed

Approval ID: E140324

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Classifications

ECLASS

ECLASS-13.0	27371819
ECLASS-15.0	27371819

ETIM

ETIM 10.0	EC001449
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UNSPSC

UNSPSC 21.0	39122200
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	22cfc7d0-5b14-45ac-b944-1240cb05b142

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