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

Country of origin	DE

Technical data

Notes

Note on application

Note on application	Only for industrial use

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, $R_{contact}$ = 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 (Δt = 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 mm² ... 2.5 mm²
Conductor cross-section flexible	0.2 mm² ... 2.5 mm²
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)

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

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

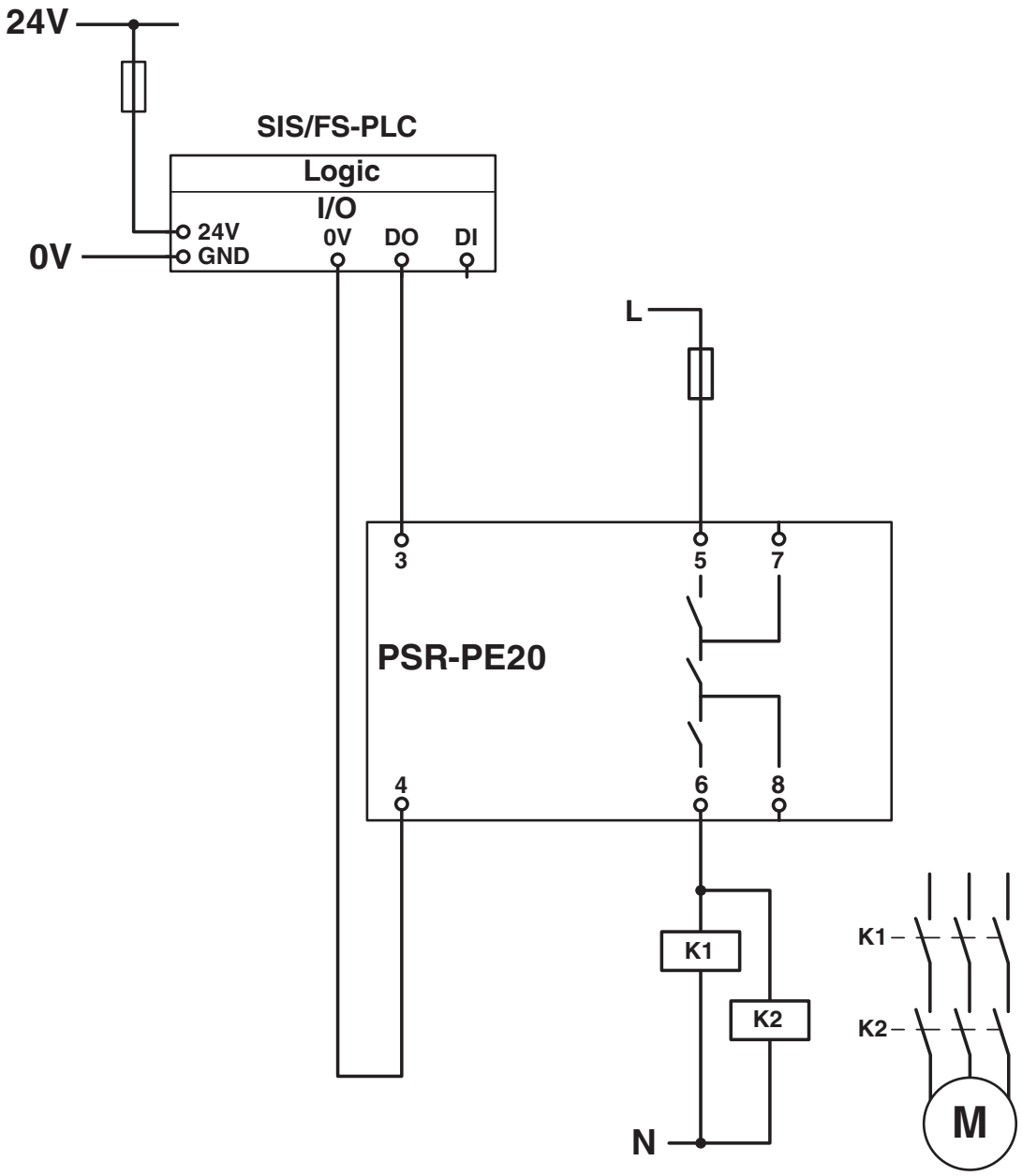
Identification	CE-compliant

Mounting

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

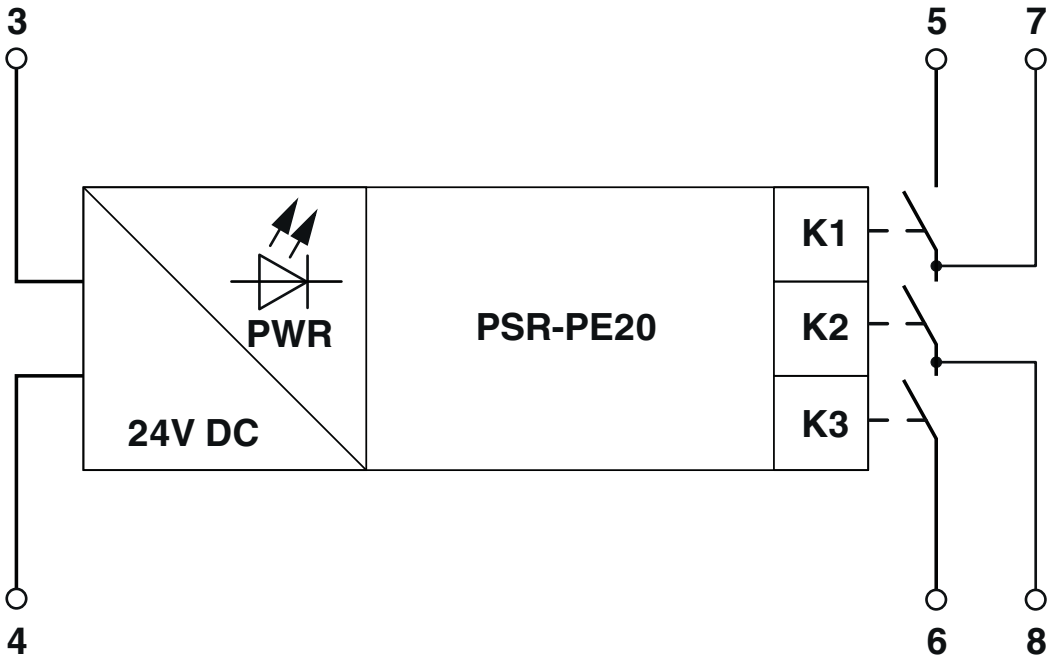
Drawings

Circuit diagram



Example application

Block diagram



Block diagram

Approvals

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Functional Safety
Approval ID: 4478015124320

cULus Listed
Approval ID: E140324

Classifications

ECLASS

ECLASS-13.0	27371819
ECLASS-15.0	27371819

ETIM

ETIM 10.0	EC001449

UNSPSC

UNSPSC 21.0	39122200

Environmental product compliance

EU RoHS

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