PSR-SCP- 24DC/FSP/1X1/1X2 - Coupling relay

2981978

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Safe coupling relay for SIL 3 high- and low-demand applications, couples digital output signals to the periphery, one enabling current path, one signal contact, module for safe state off applications, test pulse filter, fuse, plug-in screw connection, width: 17.5 mm

Your advantages

- Narrow 17.5 mm housing
- Up to SIL 3 in accordance with IEC 61508
- With built-in, replaceable fuse in the enabling current path
- Easy proof test according to IEC 61508 thanks to integrated signal contact
- Long service life thanks to filtering of controller test pulses
- Force-guided contacts in accordance with EN 50205
- 1 enabling current path
- Couples digital output signals from failsafe controllers to I/O devices (valves, etc.) for electrical isolation and power adaptation

ELEKTROGERÄTE RÜCKNAHME

Commercial data

Item number	2981978
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA161
GTIN	4046356448352
Weight per piece (including packing)	149 g
Weight per piece (excluding packing)	155 g
Customs tariff number	85364190

Country of origin	DE

Technical data

Product properties

Product type	Coupling relay
Product family	PSRclassic
Application	Safe switch off
	High demand
	Low demand
Control	1-channel
Mechanical service life	10x 10^6 cycles
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

Insulation characteristics

Overvoltage category	III
Degree of pollution	2

Times

Typ. starting time with U_s	50 ms (with U_s when controlled via A1)
Typical release time	50 ms (with U_s when controlled via A1)
Recovery time	1 s

Electrical properties

Maximum power dissipation for nominal condition	2.4 W
Nominal operating mode	100% operating factor
Rated insulation voltage	250 V AC
Rated surge voltage/insulation	Safe isolation, reinforced insulation 6 kV between the control circuits (A1/A2), (21/22), (13/14)

Supply

Designation	A1/A2
Rated control circuit supply voltage U_S	24 V DC -15 % / +10 %
Rated control supply current I_S	typ. 55 mA (at U_S)
Power consumption at U_S	typ. 1.32 W
Inrush current	max. 100 mA
Filter time	max. 5 ms (at A1 in the event of voltage dips at U_s)
	max. 2 ms (Test pulse width; high test pulse at A1/A2)
	≥ 100 ms (Test pulse width; high test pulse at A1/A2)
	Test pulse rate = 80 x Test pulse width
	max. 5 ms (Test pulse width; low test pulse at A1/A2)
	≥ 50 ms (Test pulse rate; low test pulse at A1/A2)
	Test pulse rate = 15 x Test pulse width
Protective circuit	Surge protection; Suppressor diode, 33 V (A1 - A2)

Output data

Relay: Enabling current path (13/14)

Output description	1 NO, undelayed
Number of outputs	1
Contact switching type	1 enabling current path
Contact material	AgCuNi, + 0.2 µm Au
Switching voltage	min. 15 V AC/DC
	max. 250 V AC/DC
Switching power	min. 75 mW
Inrush current	min. 5 mA
	max. 5 A
Switching capacity	5 A (24 V (DC13))
	5 A (230 V (AC15))
Limiting continuous current	5 A (N/O contact, pay attention to the derating)
Sq. Total current	25 A^2 (observe derating)
Switching frequency	max. 0.5 Hz
Interrupting rating (ohmic load) max.	see load limit curve
Maximum interrupting rating (inductive load)	see load limit curve
Output fuse	5 A T fuse

Relay: Confirmation current path (21/22)

Output description	1 N/C signal contact
Number of outputs	1
Contact switching type	1 confirmation current path
Contact material	AgCuNi, + 0.2 µm Au
Switching voltage	min. 15 V AC/DC
	max. 250 V AC/DC
Switching power	min. 75 mW
Inrush current	min. 5 mA
	max. 100 mA
Switching capacity	5 A (24 V (DC13))
	5 A (230 V (AC15))
Limiting continuous current	100 mA
Output fuse	150 mA Fast-blow

Connection data

Connection technology

pluggable	yes

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	0.5 Nm ... 0.6 Nm

Signaling

Operating voltage display	1 x yellow LED

Dimensions

Width	17.5 mm
Height	99 mm
Depth	114.5 mm

Material specifications

Color (Housing)	yellow (RAL 1018)
Housing material	PA

Characteristics

Safety data

Stop category (EN 60204-1)	0

Safety data: EN ISO 13849

Performance level (PL)	e (Diagnostic coverage (DC) of the control unit at A1/A2 must be ≥ 99%)

Safety data: EN 50156

Safety Integrity Level (SIL)	3

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be ≥ 90%)

Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	3 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be ≥ 90%)

Safety data: EN IEC 62061

Safety Integrity Level (SIL)	3 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be ≥ 90%)

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Ambient temperature (operation)	-20 °C ... 55 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 70 °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

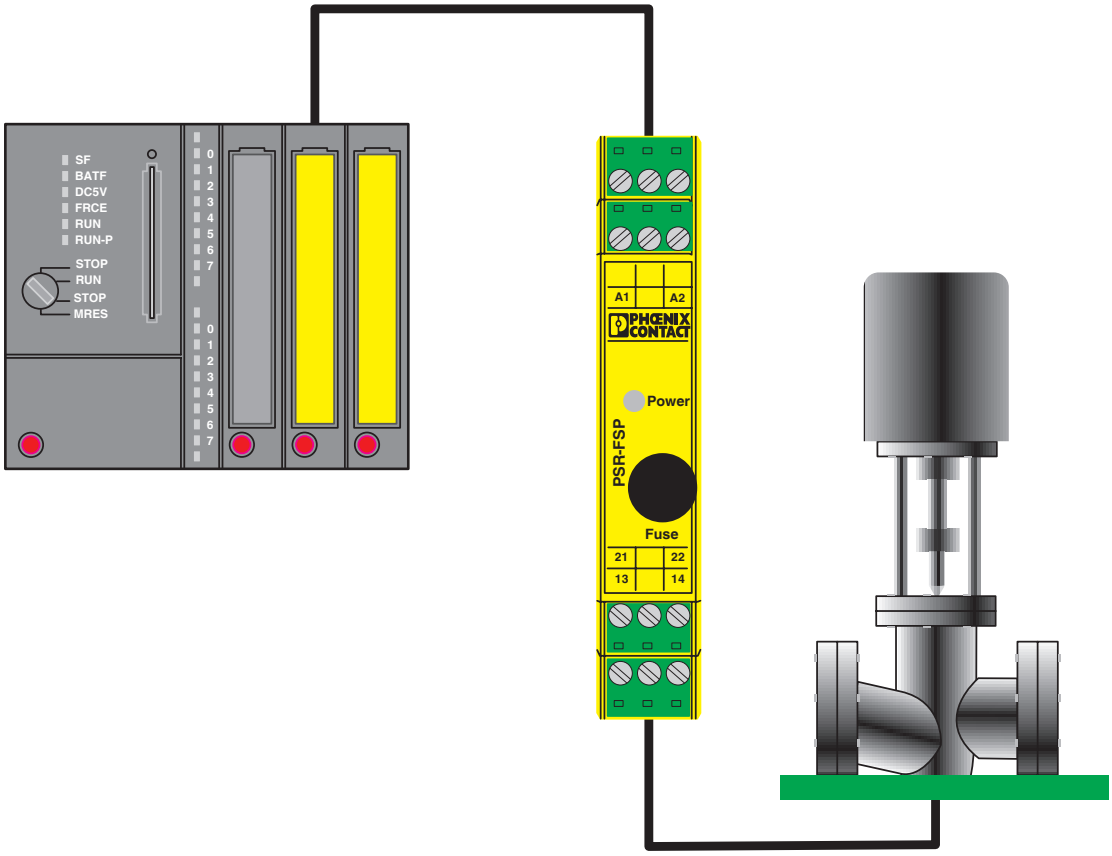
Certificate	CE-compliant

Mounting

Mounting type	DIN rail mounting
Mounting position	any

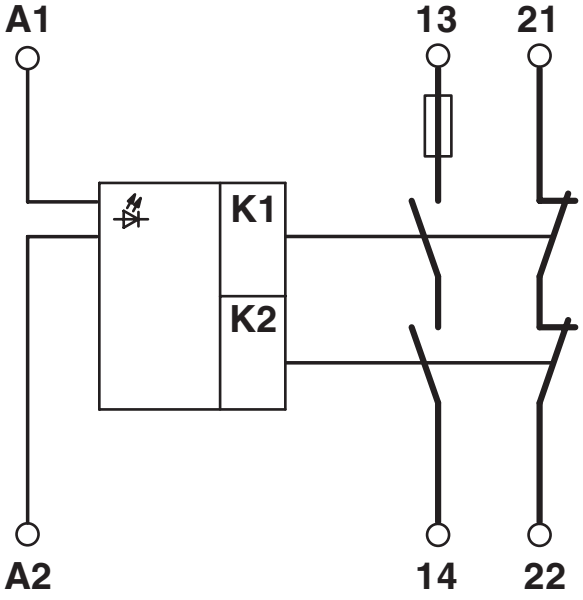
Drawings

Application drawing



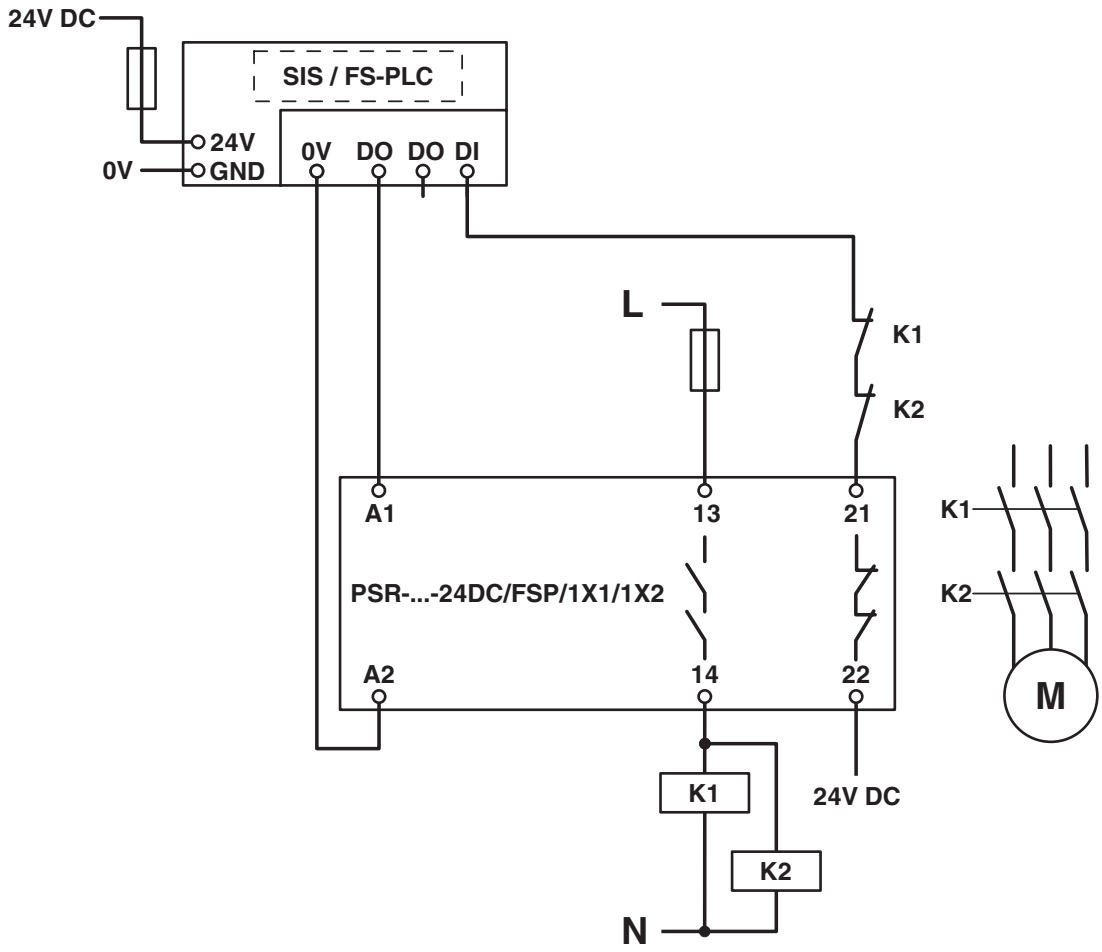
Example of electrical isolation of a safety PLC output from the field.

Circuit diagram



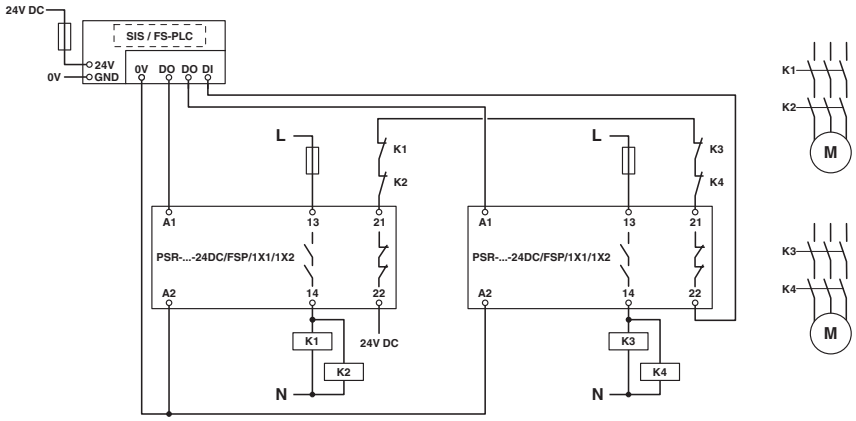
Block diagram

Circuit diagram



Single-channel connection with integration of the confirmation current path

Circuit diagram



Two-channel connection with integration of the confirmation current path

Approvals

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DNV GL
Approval ID: TAA00002UC

cULus Listed
Approval ID: E140324

Functional Safety
Approval ID: 968/EZ 365.12/24

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(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	3405ef31-df55-4383-9adf-0c3edb194e29

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