

PSR-PS23-1NO-1NC-24VDC-SC - Coupling relay



2702663

<https://www.phoenixcontact.com/us/products/2702663>

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

Your advantages

- Force-guided contacts in accordance with EN 50205
- Easy proof test according to IEC 61508
- Suitable for high and low-demand applications up to SIL 3 in accordance with IEC 61508, IEC 61511, and EN 50156
- Low housing width of just 6.8 mm
- Long service life thanks to filtering of controller test pulses
- 1 enabling current path, 1 diagnostic current path
- Integrated DCS test pulse filter
- Corrosion protection through protective coating on the PCB

Commercial data

Item number	2702663
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA172
GTIN	4055626280233
Weight per piece (including packing)	103.53 g
Weight per piece (excluding packing)	69.368 g
Customs tariff number	85364900
Country of origin	DE

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	PSRmini
Application	Safe switch off
	High demand
	Low demand
	Ex
Control	1 and 2 channel
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	< 70 ms (with U_s when controlled via A1)
Typical release time	< 10 ms (when controlled via A1)
Recovery time	500 ms

Electrical properties

Maximum power dissipation for nominal condition	3.49 W ($I_L^2 = 36 \text{ A}^2$)
Nominal operating mode	100% operating factor
Rated insulation voltage	250 V AC
Rated surge voltage/insulation	Basic insulation 4 kV between all current paths and housing
	Safe isolation, 6 kV reinforced insulation from the control circuit and confirmation current path to the enabling current path

Supply

Designation	A1/A2
Rated control circuit supply voltage U_s	19.2 V DC ... 30 V DC
Rated control circuit supply voltage U_s	24 V DC -20 % / +25 %
Rated control supply current I_s	typ. 45 mA
Power consumption at U_s	typ. 1.08 W
Inrush current	typ. 120 mA ($\Delta t < 10 \text{ ms}$ at U_s)
Filter time	max. 2 ms (at A1-A2 in the event of voltage dips at U_s)
	max. 2 ms (at A1-A2; low test pulse width)
	> 30 ms (at A1-A2; low test pulse rate)
	max. 2 ms (at A1-A2; high test pulse width)

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	> 1 s (at A1-A2; high test pulse rate)
Protective circuit	Serial protection against polarity reversal; 35 V suppressor diode

Output data

Relay: Enabling current path (13/14)

Output description	2 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
Switching voltage	min. 12 V AC/DC max. 250 V AC/DC
Switching power	min. 60 mW
Inrush current	min. 3 mA max. 6 A
Switching capacity	4 A (24 V (DC13)) 5 A (250 V (AC15))
Limiting continuous current	6 A (High demand) 4 A (Low demand)
Sq. Total current	36 A ² (observe derating)
Switching frequency	max. 0.1 Hz
Mechanical service life	10x 10 ⁶ cycles
Output fuse	6 A gL/gG 4 A gL/gG (for low-demand applications)

Relay: Confirmation current path (21/22)

Output description	2 N/C contacts in series, without delay, floating
Number of outputs	1 (safety-related)
Contact switching type	1 confirmation current path
Contact material	AgCuNi, + Au
Switching voltage	min. 5 V DC max. 30 V DC
Switching power	min. 20 mW
Inrush current	min. 1 mA max. 100 mA
Limiting continuous current	100 mA
Switching frequency	max. 0.1 Hz
Mechanical service life	10x 10 ⁶ cycles
Output fuse	150 mA Fast-blow

Connection data

Connection technology

pluggable	no
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Conductor connection

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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	26 ... 12
Stripping length	12 mm
Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm

Signaling

Status display	1 x LED (green)
Operating voltage display	1 x LED (yellow)

Dimensions

Width	6.8 mm
Height	93.1 mm
Depth	102.5 mm

Material specifications

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

Characteristics

Safety data

Stop category (EN 60204-1)	0
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Safety data: EN 50156-2

Safety Integrity Level (SIL)	3 (Reference IEC 61508)
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Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3
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Safety data: IEC 61508 - Low demand

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

ATEX

Identification	Ⓜ II 3G Ex ec nC IIC T4 Gc
Certificate	UL 22 ATEX 2912X

IECEX

Identification	Ex ec nC IIC T4 Gc
Certificate	IECEX UL 22.0037X

UL, USA/Canada

Identification	cULus
Certificate	E140324

UL Ex, USA / Canada

Identification	Class I, Zone 2, AEx ec nC IIC T4 / Ex ec nC IIC Gc T4 X
	Class I, Div. 2, Groups A, B, C, D, T4
Certificate	E360692

CE

Identification	CE-compliant
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Environmental simulation test

Identification	G3
Certificate	ISA-S71.04

CCC / China-Ex

Identification	Ex ec nC IIC T4 Gc
Certificate	2022122304115695

Mounting

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

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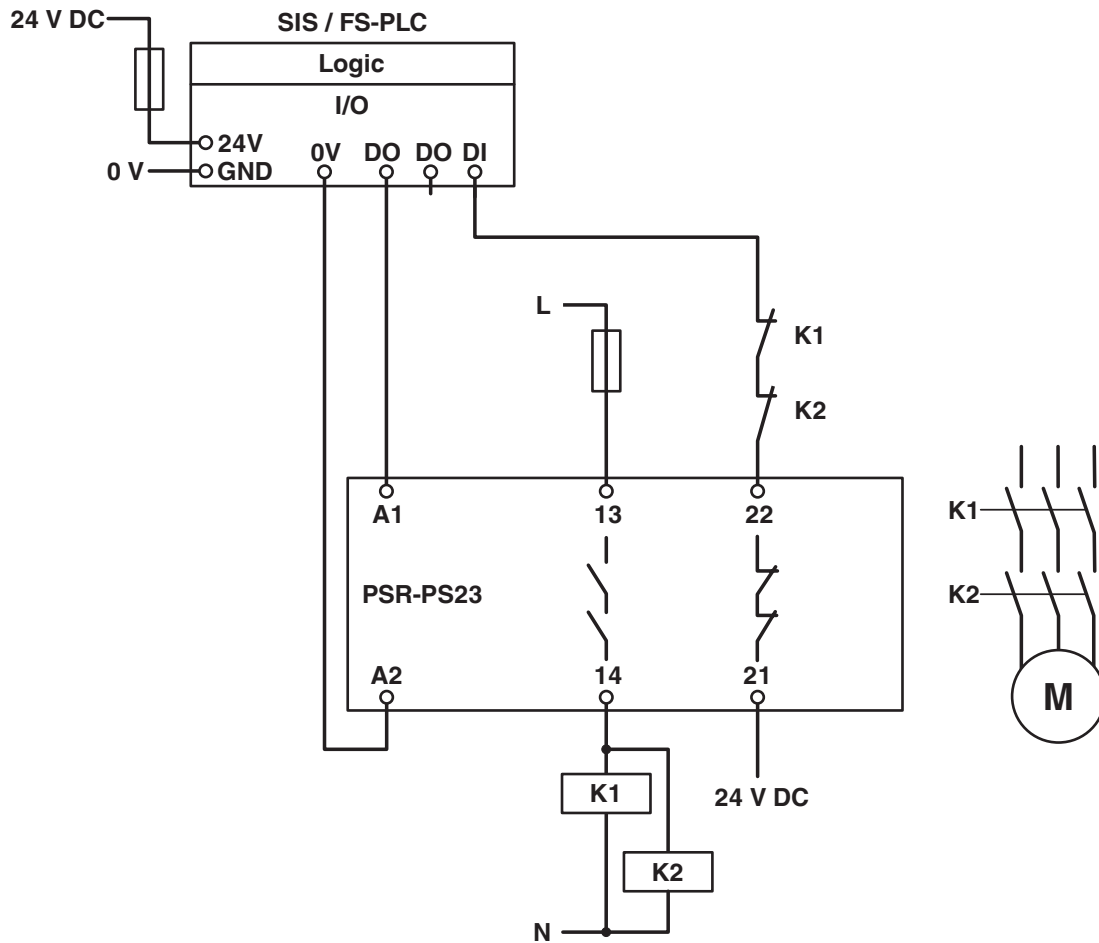


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Drawings

Circuit diagram



Example application

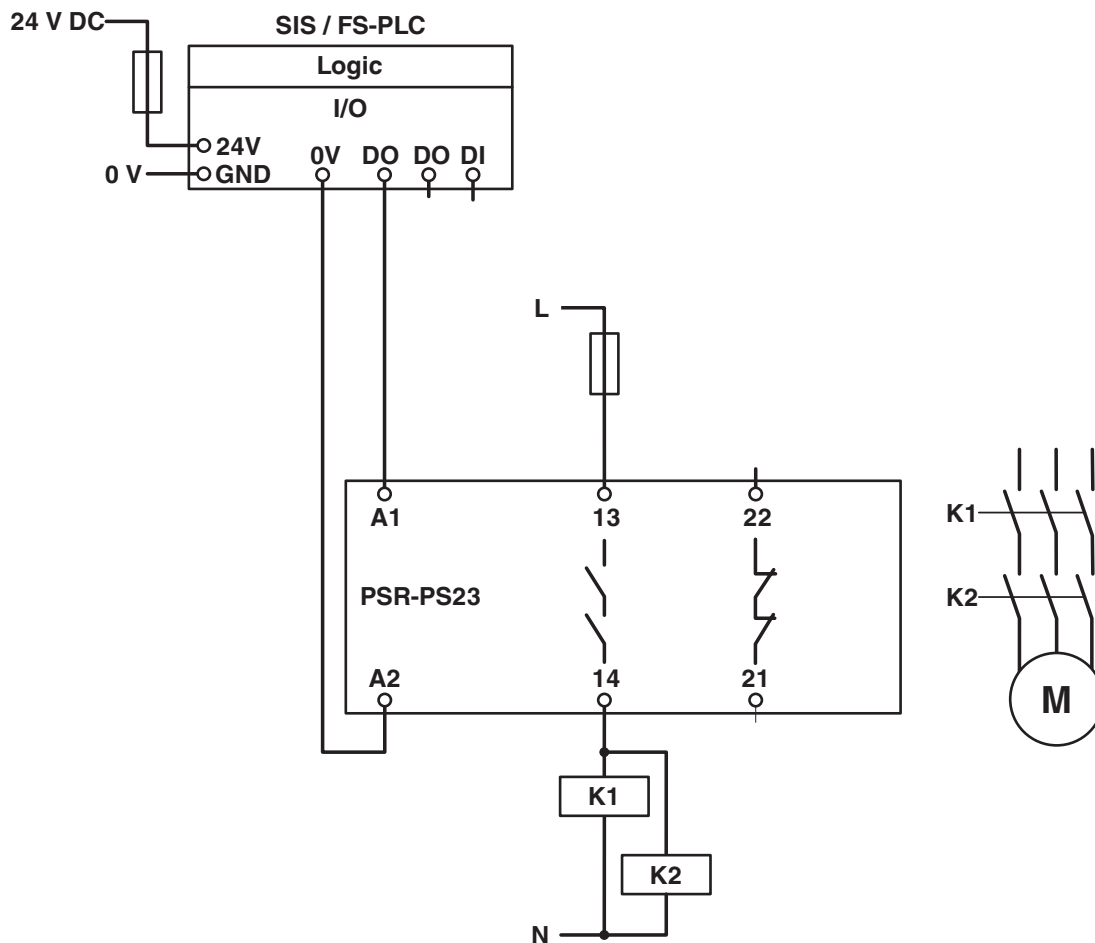
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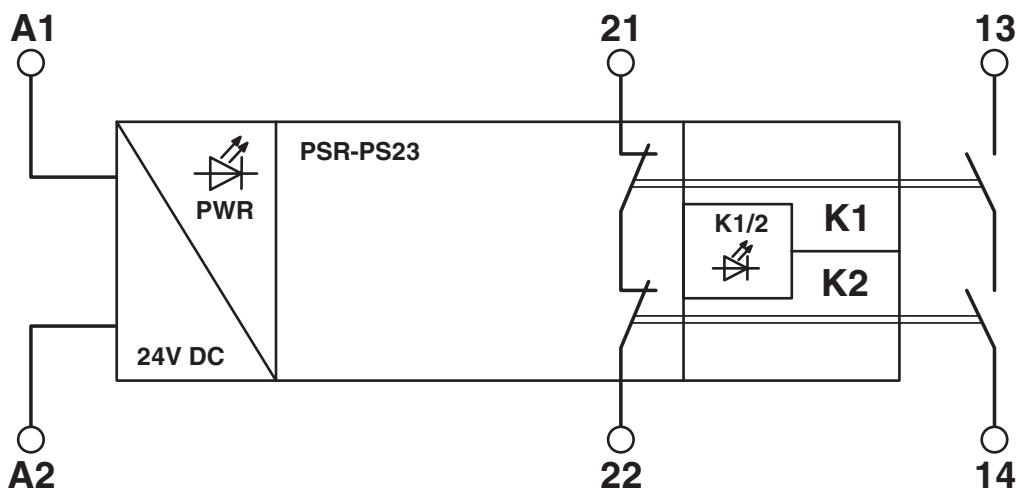
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Circuit diagram



Example application

Block diagram



Block diagram

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2702663>



Functional Safety

Approval ID: 44 780 15124307



cULus Listed

Approval ID: E140324



IECEX

Approval ID: IECEX ULD 22.0037X



ATEX

Approval ID: UL 22 ATEX 2912X



cULus Listed

Approval ID: E360692



CCC

Approval ID: 2022122304115695

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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	39122205
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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	9992fd73-714a-4a39-bf9e-3b269187e7e2

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Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com