

# PSR-PC50-1NO-1DO-24DC-SC - Coupling relay



2904664

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Coupling relay for SIL 3 low demand applications, couples digital output signals to the periphery, 1 enabling current path, module for F&G applications, test pulse filter, plug-in screw connection, 17.5 mm width

## Your advantages

- Up to SIL 3 in accordance with IEC 61508
- Easy proof test according to IEC 61508 thanks to integrated signal contact
- Installation in zone 2 permitted
- Couples digital output signals from failsafe controllers to I/O devices (valves, etc.) for electrical isolation and power adaptation

## Commercial data

Item number	2904664
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA182
GTIN	4046356919937
Weight per piece (including packing)	226.1 g
Weight per piece (excluding packing)	221.1 g
Customs tariff number	85364900
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	PSRmini
Application	Safe switch on
	Low demand
	Ex
Environment	IP 54
Control	1-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 $U_s$	30 ms (when controlled via A1)
Typical release time	30 ms (when controlled via A1)
Recovery time	1 s

### Electrical properties

Maximum power dissipation for nominal condition	1.56 W
Nominal operating mode	100% operating factor
Rated insulation voltage	250 V AC
Rated surge voltage/insulation	6 kV/safe isolation (through protective impedance)

#### Supply

Designation	A1/A2 (A1'/A2')
Rated control circuit supply voltage $U_s$	20.4 V DC ... 26.4 V DC
Rated control circuit supply voltage $U_s$	24 V DC -15 % / +10 %
Rated control supply current $I_s$	typ. 65 mA
Inrush current	≤ 200 mA
Filter time	< 2 ms (Test pulse duration)
	≥ 100 ms (Test pulse rate)
Protective circuit	Overload protection; Suppressor diode

#### Supply

Designation	24V/A2
Diagnostic supply voltage $U_D$	24 V DC -15 % / +10 %

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Input current at $U_D$	typ. 15 mA (24V/A2; depending on load M1 +100 mA)
Inrush current at $U_D$	2.5 A (24V/A2; for 10 $\mu$ s)
Protective circuit	Overload protection; Suppressor diode

## Input data

Digital: Test points for proof test (T1, T2, T3)

Number of inputs	3
Inrush current	200 mA (Inputs TP1, TP2 and TP3)
Current consumption	typ. 20 mA (Input TP1)
	typ. 18 mA (Input TP2)
	typ. 35 mA (Input TP3)

## Output data

Relay: Enabling current path (L-LO-NI-N / L'-LO'-NI'-N')

Output description	safety-related N/O contacts
Number of outputs	1 (undelayed)
Contact switching type	1 enabling current path
Contact material	AgNi, gold-flashed
Switching voltage	min. 15 V AC/DC (without diagnostics)
	min. 20 V AC/DC (with diagnostics)
	max. 250 V AC
	max. 125 V DC
Switching power	min. 1.5 W
Inrush current	min. 100 mA
	max. 5 A
Max. permissible overall conductor resistance	< 10 $\Omega$ (Max. line resistance in the event of a short circuit of the load between LO and NI (or LO' and NI'))
Limiting continuous current	5 A
Switching frequency	max. 0.5 Hz
Diagnostic threshold	20 $\Omega$ ... 18 k $\Omega$ (lower/upper)
Mechanical service life	approx. $5 \times 10^7$ cycles

Signal: M1

Output description	non-safety-related
Number of outputs	1 (digital)
Voltage	23 V DC
Current	max. 100 mA
Short-circuit protection	no
Output fuse	150 mA fast blow

## Connection data

Connection technology

pluggable	yes
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## Conductor connection

Connection method	Screw connection
Conductor cross-section rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 12
Stripping length	7 mm
Screw thread	M3

## Signaling

Status display	1 x LED (green)
Operating voltage display	1 x LED (yellow)
Error indication	1 x LED (red)

## Dimensions

Width	17.5 mm
Height	112.2 mm
Depth	114.5 mm

## Material specifications

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

## Characteristics

Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	3 (15 % of total SIL)
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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)	-20 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 65 °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)	2g

## Approvals

### ATEX

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

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## 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

## DNV

Identification	C, EMC2
Certificate	11253-14 HH

## Mounting

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

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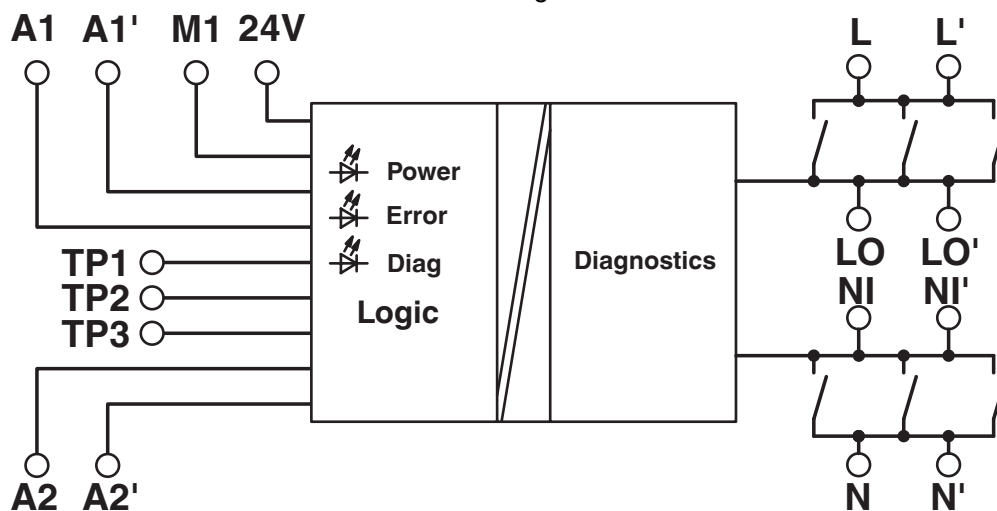


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## Drawings

Block diagram



Block diagram

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2904664>



**DNV GL**

Approval ID: TAA00002VZ



**cULus Listed**

Approval ID: E140324



**Functional Safety**

Approval ID: 968\_FSP\_1011\_03\_25



**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 9.0	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	d5d11f49-e6d4-45f7-aa82-2264fb92549f

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