PSR-PC50-1NO-1DO-24DC-SP - Coupling relay

2904665

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The figure shows a version with a screw connection

Coupling relay for SIL 3 low-demand applications, couples digital output signals to the I/O, 1 enabling current path, module for F&G applications, test pulse filter, width: 17.5 mm, pluggable Push-in terminal block

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	2904665
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA182
GTIN	4046356919920
Weight per piece (including packing)	221.2 g
Weight per piece (excluding packing)	212.4 g
Customs tariff number	85364900
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	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 %

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 µs)
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 Ω (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 Ω ... 18 kΩ (lower/upper)
Mechanical service life	approx. 5x 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

Conductor connection

Connection method	Push-in connection
Conductor cross-section rigid	0.2 mm² ... 1.5 mm²
Conductor cross-section flexible	0.2 mm² ... 1.5 mm²
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm² ... 1.5 mm² (only together with CRIMPFOX 6)
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.25 mm² ... 1.5 mm² (only together with CRIMPFOX 6)
Conductor cross-section AWG	24 ... 16
Stripping length	8 mm

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	117.4 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)

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	Ⓔx 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

Environmental simulation test

Identification	G3
Certificate	ISA-S71.04

CCC / China-Ex

Identification	Ex ec nC IIC T4 Gc
Certificate	2022122304115695

DNV

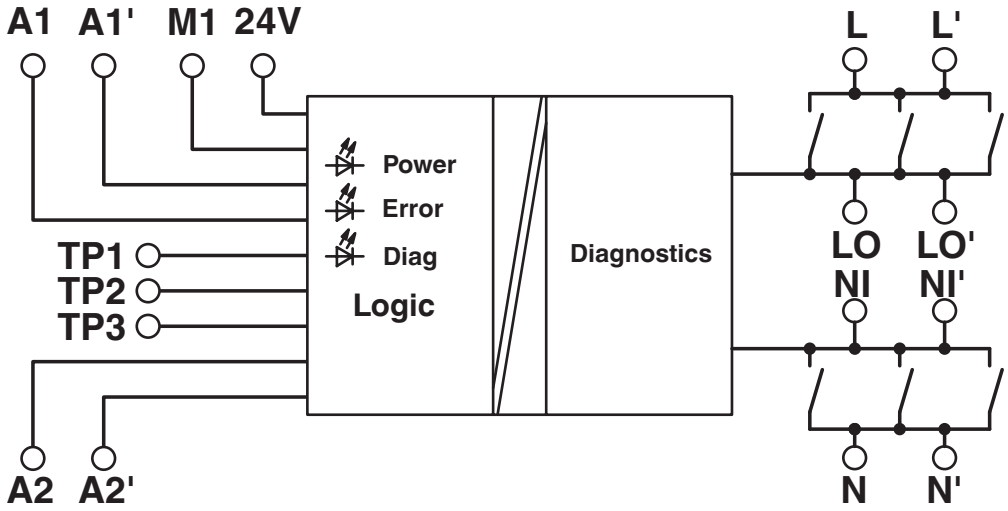
Identification	C, EMC2
Certificate	11253-14 HH

Mounting

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

Drawings

Block diagram



Block diagram

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2904665

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

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	e290d4ea-d549-4e8a-a18e-568b46b2bf05

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