

## Coupling relay - PSR-PC50-1NO-1DO-24DC-SP - 2904665

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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

The figure shows a version with a screw connection

### Your advantages

- ✓ Up to SIL 3 according to 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



### Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4046356919920

### Technical data

#### Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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#### Dimensions

Width	17.5 mm
Height	117.4 mm
Depth	114.5 mm

#### Ambient conditions

Ambient temperature (operation)	-20 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 65 °C
Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)

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## Technical data

### Ambient conditions

Max. permissible humidity (storage/transport)	75 % (on average, 85% infrequently, non-condensing)
Maximum altitude	≤ 2000 m (Above sea level)

### Power supply

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

### Digital inputs

Number of inputs	3 (Test point for proof test)
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)

### Relay outputs: enabling current path

Output name	Enabling current path
Output description	safety-related N/O contacts
Number of outputs	1 (undelayed)
Contact 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
Limiting continuous current	5 A
Inrush current	min. 100 mA
	max. 5 A
Switching capacity	min. 1.5 W
Switching frequency	max. 0.5 Hz
Diagnostic threshold	20 Ω ... 18 kΩ (lower/upper)
Max. permissible overall conductor resistance	< 10 Ω (LO/LO' and NI/NI' and load resistance in the event of a short circuit)
Mechanical service life	approx. $5 \times 10^7$ cycles

### Alarm outputs

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### Alarm outputs

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

### Times

Typical pickup time at US	30 ms (when controlled via A1)
Typical release time at US	30 ms (when controlled via A1)
Recovery time	1 s

### General

Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3
Nominal operating mode	100% operating factor
Net weight	212.4 g
Mounting position	vertical or horizontal
Mounting type	DIN rail mounting
Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Housing material	PBT
Housing color	yellow
Operating voltage display	Yellow LED
Status display	Green LED
Indication	Red LED

### Connection data

Connection method	Push-in connection
pluggable	Yes
Conductor cross section solid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 16
Conductor cross-section flexible with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (only together with CRIMPFOX 6)
Conductor cross-section flexible with ferrule and plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (only together with CRIMPFOX 6)
Stripping length	8 mm

### Safety-related characteristic data

Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	3 (15 % of total SIL)

### Standards and Regulations

Designation	Air clearances and creepage distances between the power circuits
Standards/regulations	DIN EN 50178

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## Technical data

### Standards and Regulations

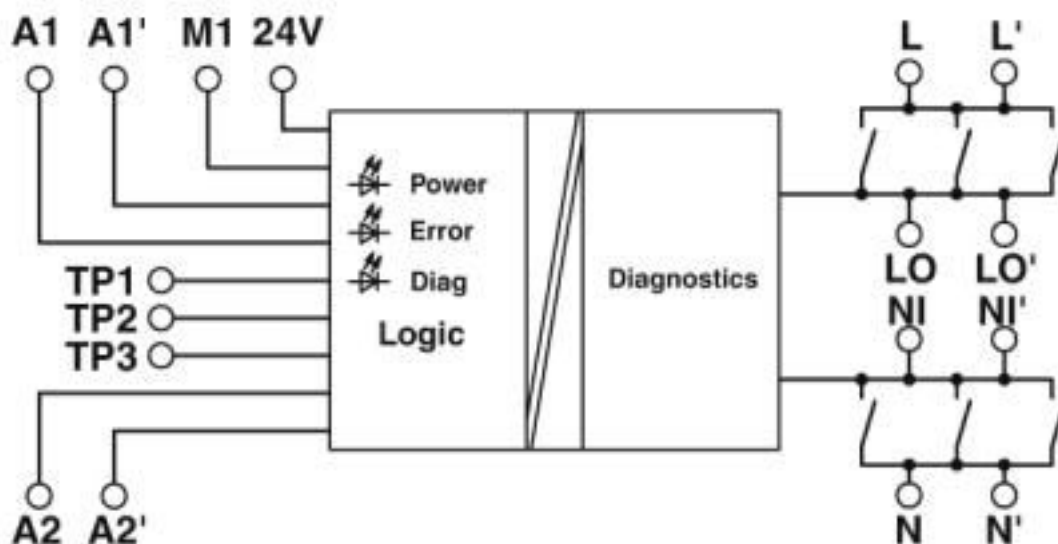
Rated insulation voltage	250 V AC
Rated surge voltage/insulation	6 kV/safe isolation (through protective impedance)
Degree of pollution	2
Overvoltage category	III
Shock	15g
Vibration (operation)	2g
Conformance	CE-compliant
ATEX	# II 3 G Ex nA nC IIC T4 Gc
IECEX	Ex nA nC IIC T4 Gc
UL, USA/Canada	cULus
	Class I, Zone 2, AEx nA nC IIC T4 / Ex nA nC IIC Gc T4 X
	Class I, Div. 2, Groups A, B, C, D, T4
GL	C, EMC2
Environmental simulation test	ISA-S71.04 (G3)

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Drawings

Block diagram



# Coupling relay - PSR-PC50-1NO-1DO-24DC-SP - 2904665

## Classifications

### eCl@ss

eCl@ss 10.0.1	27371819
eCl@ss 4.0	40020600
eCl@ss 4.1	40020600
eCl@ss 5.0	27371900
eCl@ss 5.1	27371900
eCl@ss 6.0	27371800
eCl@ss 7.0	27371819
eCl@ss 8.0	27371819
eCl@ss 9.0	27371819

### ETIM

ETIM 4.0	EC001449
ETIM 5.0	EC001449
ETIM 6.0	EC001449
ETIM 7.0	EC001449

## Approvals

### Approvals

#### Approvals

GL / EAC / UL Listed / cUL Listed / Functional Safety / Functional Safety / cULus Listed

#### Ex Approvals

IECEx / ATEX / UL Listed / cUL Listed / cULus Listed

### Approval details


GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	11253-14 HH
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EAC			RU C- DE.A*30.B.01082
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UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
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## Approvals

cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
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Functional Safety			968/FSP 1011.02/20
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Functional Safety			968/FSP 1011.02/20
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cULus Listed			
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