

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, plug-in spring-cage terminal block, width: 17.5 mm


The figure shows a version with a screw connection

Why buy this product

- 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 STK
GTIN	 4 046356 919920
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

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Ambient conditions

Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)
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 #s)
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. 5×10^7 cycles

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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 forcibly guided contacts in accordance with EN 50205
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	Spring-cage connection
pluggable	Yes
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	1.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	1.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
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
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Technical data

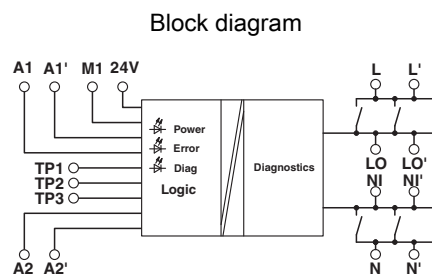
Standards and Regulations

Standards/regulations	DIN EN 50178
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
GL	C, EMC2
Environmental simulation test	ISA-S71.04 (G3)

Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

Drawings



Approvals

Approvals

Approvals

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

Ex Approvals

IECEX / UL Listed / cUL Listed / ATEX / cULus Listed

Approval details

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

Approvals

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
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cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
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EAC			RU C- DE.A*30.B.01082
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GL		http://exchange.dnv.com/tari/	11253-14 HH
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Functional Safety			968/FSP 1011.00/14
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cULus Listed			
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