

# PSR-PC32-2NO-1NC-24-230UC-SC - Coupling relay



2700581

<https://www.phoenixcontact.com/us/products/2700581>

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Coupling relay for SIL 3 high and low-demand applications, couples digital signals to the I/O, 24 V ... 230 V wide-range input, 2 enabling current paths (1x up to 60 V, 1x up to 250 V) 1 confirmation current path, safe state off applications, plug-in screw terminal block

## Your advantages

- Up to SIL 3 in accordance with IEC 61508
- Force-guided contacts in accordance with EN 50205
- Easy proof test according to IEC 61508
- Slim design
- Wide-range input
- Corrosion protection through protective coating on the PCB

## Commercial data

Item number	2700581
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA182
Catalog page	Page 252 (C-6-2019)
GTIN	4046356916066
Weight per piece (including packing)	258.69 g
Weight per piece (excluding packing)	157.28 g
Customs tariff number	85364900
Country of origin	DE

## Technical data

### Notes

#### Utilization restriction

CCCex note	Use in potentially explosive areas is not permitted in China.
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### Product properties

Product type	Coupling relay
Product family	PSRmini
Application	Safe switch off
	High demand
	Low demand
	Ex
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

### Times

Typical response time	< 100 ms (with $U_s$ when controlled via A1)
Typical release time	< 200 ms (with $U_s$ when controlled via A1)
Recovery time	< 500 ms

### Electrical properties

Maximum power dissipation for nominal condition	5.7 W (at $I_L^2 = 72 A^2$ )
Nominal operating mode	100% operating factor

### Air clearances and creepage distances between the power circuits

Rated insulation voltage	250 V AC
Rated surge voltage/insulation	Basic insulation 4 kV between all current paths and housing
	Safe isolation, reinforced insulation 2.5 kV between (93/94) and (31/32, 24V/GND)
	Safe isolation, reinforced insulation 6 kV: between (A1/A2) and (13/14) and (31/32, 24V/GND) between (A1/A2) and (93/94) between (13/14) and (93/94)

### Supply

Designation	A1/A2
Rated control circuit supply voltage $U_S$	24 V AC/DC ... 230 V AC/DC -15 % ... +10 %
Rated control supply current $I_S$	75 mA (24 V DC)
	34 mA (48 V DC)
	97 mA (42 V AC)
	28 mA (120 V AC)
	16 mA (230 V AC)
Power consumption at $U_S$	1.8 W (with DC)
	2.1 W (with AC)
Apparent power	typ. 4.1 VA

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Inrush current	typ. 16 A ( $\Delta t < 100 \mu s$ at $U_s$ )
	< 5 mA (at terminal blocks 24V/GND at $U_D$ )
Filter time	10 ms (24 V DC, A1 in the event of voltage dips at $U_s$ )
	max. 1.5 ms (at A1-A2; test pulse width; at 24 V DC)
	7.5 ms (at A1-A2; test pulse rate; at 24 V DC)
	Test pulse rate = 5 x Test pulse width
Protective circuit	Surge protection; Varistor 275 V

## Supply

Designation	24V/GND
Diagnostic supply voltage $U_D$	24 V DC -15 % / +10 %
Input current at $U_D$	< 5 mA (at terminal blocks 24V/GND at $U_D$ )
Protective circuit	Surge protection; 33 V suppressor diode
	Reverse polarity protection

## Output data

### Relay: Enabling current path

Output description	safety-related N/O contacts
Number of outputs	2 (undelayed)
Contact switching type	2 enabling current paths
Contact material	AgSnO <sub>2</sub>
Switching voltage	min. 12 V AC/DC
	max. 250 V AC/DC (13/14, observe the load curve)
	max. 60 V AC/DC (93/94, observe the load curve)
Switching capacity	min. 60 mW
Inrush current	min. 3 mA
	max. 6 A
Switching capacity (360/h cycles)	4 A (24 V (DC13))
	5 A (230 V (AC 15))
Limiting continuous current	6 A (observe derating)
Sq. Total current	72 A <sup>2</sup> (observe derating)
Switching frequency	max. 1 Hz
Mechanical service life	10x 10 <sup>6</sup> cycles
Output fuse	6 A gL/gG
	4 A gL/gG (for low-demand applications)

### Relay: Confirmation current path

Output description	Safety-related N/C contacts
Number of outputs	1 (undelayed)
Contact switching type	1 confirmation current path
Contact material	AgCuNi, + Au
Switching voltage	min. 3.3 V AC/DC
	max. 26.4 V DC
Switching capacity	min. 3.3 mW

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Inrush current	min. 1 mA
	max. 100 mA
Limiting continuous current	100 mA
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 green LED, 1 x yellow LED
Operating voltage display	1 x yellow LED

## Dimensions

Width	17.5 mm
Height	112.2 mm
Depth	114.5 mm

## Material specifications

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

## Characteristics

### Safety data

Stop category	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 (< 15% of the overall SIL)
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### Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	3 (< 15% of the overall SIL)
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## Environmental and real-life conditions

### Ambient conditions

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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 nA nC IIC T4 / Ex nA 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

## Standards and regulations

### Air clearances and creepage distances between the power circuits

Standards/regulations	EN 60664-1, EN 60079-7, EN 60079-15
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## Mounting

Mounting type	DIN rail mounting
Assembly instructions	See derating curve

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Mounting position

vertical or horizontal

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## Classifications

### ECLASS

ECLASS-11.0	27371819
ECLASS-13.0	27371819
ECLASS-12.0	27371819

### ETIM

ETIM 9.0	EC001449
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### UNSPSC

UNSPSC 21.0	39122200
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## Environmental product compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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