

# PSR-PE20-1NO-24DC-SC - Coupling relay



1119573

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Coupling relay for SIL 3 low-demand applications, couples digital output signals to the I/O, 1 independently controllable enabling current path, safe state off applications, test pulse filter, plug-in screw terminal block

## Product description

The safe coupling relay couples digital output signals from failsafe controllers to I/O devices and is used for power adaptation and electrical isolation. The safe coupling relay can be used in low-demand applications. The safe coupling relay safely interrupts circuits.

## Your advantages

- Up to SIL 3 in accordance with IEC 61508, IEC 61511, and IEC 50156
- Low housing width of just 12.5 mm
- Long service life thanks to filtering of controller test pulses
- 1 enabling current path

## Commercial data

Item number	1119573
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA161
GTIN	4063151049638
Weight per piece (including packing)	129.2 g
Weight per piece (excluding packing)	93.19 g
Customs tariff number	85371098
Country of origin	DE

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## Technical data

### Product properties

Product type	Coupling relay
Product family	PSRclassic
Set comprises	1272930 PSR-PE20-1NO-24DC-SC-SET60
Application	Safe switch off
	Low demand
Mechanical service life	10x 10 <sup>6</sup> cycles
Relay type	Electromechanical relay in accordance with IEC/EN 61810

### Times

Typ. starting time with U <sub>s</sub>	< 70 ms (when controlled via A3 at U <sub>s</sub> )
Typical release time	< 50 ms (on demand via A3 at U <sub>s</sub> )
Recovery time	500 ms

### Electrical properties

Maximum power dissipation for nominal condition	2.36 W (U <sub>B</sub> = 26.4 V, U <sub>S</sub> = 24 V, I <sub>S</sub> = 40 mA, I <sub>L</sub> <sup>2</sup> = 16 A, R <sub>contact</sub> = 0.075 Ω)
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	Safe isolation, reinforced insulation 6.4 kV between 250 V load current paths and 24 V logic paths
	Basic insulation 4 kV between all current paths and housing

### Supply

Designation	3/4
Rated control circuit supply voltage U <sub>S</sub>	21.6 V DC ... 26.4 V DC
Rated control circuit supply voltage U <sub>S</sub>	24 V DC -10 % ... +10 %
Rated control supply current I <sub>S</sub>	40 mA
Power consumption at U <sub>S</sub>	960 mW
Inrush current	typ. 100 mA (Δt = 10 ms at U <sub>s</sub> )
Filter time	1 ms (in the event of voltage dips at U <sub>s</sub> )
Protective circuit	Serial protection against polarity reversal; Suppressor diode, 38.6 V/600 W (connections 3/4)

### Output data

#### Relay: Enabling current path (5/6)

Output description	1 NO
Number of outputs	1 (safety-related)
Contact switching type	1 enabling current path
Contact material	AgSnO <sub>2</sub> , gold-plated
Switching voltage	min. 12 V DC

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	max. 250 V AC/DC (Observe the load curve)
Switching capacity	min. 120 mW
Inrush current	min. 10 mA
	max. 4 A
Limiting continuous current	4 A (Low demand)
Sq. Total current	16 A <sup>2</sup> (Low-demand, observe derating)
Switching frequency	1 Hz
Mechanical service life	10x 10 <sup>6</sup> cycles
Output fuse	4 A gL/gG (for low-demand applications)

## Connection data

### 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
Tightening torque	0.6 Nm

## Signaling

Status display	1 x green LED
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## Dimensions

Width	12.5 mm
Height	99 mm
Depth	114.5 mm

## Material specifications

Color (Housing)	traffic grey B (RAL 7043)
Housing material	Polyamide

## Characteristics

Safety data: IEC 61508 - Low-demand for 1-channel wiring (1oo3 structure without diagnostics)

Safety Integrity Level (SIL)	3
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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)	-40 °C ... 70 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 2000 m (Above sea level)

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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

CE

Identification	CE-compliant
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## Standards and regulations

Air clearances and creepage distances between the power circuits

Standards/regulations	EN 61010-1, EN 60947-1, EN 60079-15
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## Mounting

Mounting type	DIN rail mounting
Assembly instructions	See derating curve
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
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