

# PSR-SCP- 24DC/FSP/1X1/1X2 - Coupling relay



2981978

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Safe coupling relay for SIL 3 high- and low-demand applications, couples digital output signals to the periphery, one enabling current path, one signal contact, module for safe state off applications, test pulse filter, fuse, plug-in screw connection, width: 17.5 mm

## Your advantages

- Narrow 17.5 mm housing
- Up to SIL 3 in accordance with IEC 61508
- With built-in, replaceable fuse in the enabling current path
- Easy proof test according to IEC 61508 thanks to integrated signal contact
- Long service life thanks to filtering of controller test pulses
- Force-guided contacts in accordance with EN 50205
- 1 enabling current path
- Couples digital output signals from failsafe controllers to I/O devices (valves, etc.) for electrical isolation and power adaptation

## Commercial data

Item number	2981978
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA161
Catalog page	Page 254 (C-6-2019)
GTIN	4046356448352
Weight per piece (including packing)	160 g
Weight per piece (excluding packing)	155 g
Customs tariff number	85364190
Country of origin	DE

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## Technical data

### Product properties

Product type	Coupling relay
Product family	PSRclassic
Application	Safe switch off
	High demand
	Low demand
Mechanical service life	10x 10 <sup>6</sup> cycles
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

### Electrical properties

Maximum power dissipation for nominal condition	2.4 W
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 kV between the control circuits (A1/A2), (21/22), (13/14)

### Input data

#### General

Rated control circuit supply voltage $U_S$	24 V DC -15 % / +10 %
Power consumption at $U_S$	typ. 1.32 W
Rated control supply current $I_S$	typ. 55 mA
Input voltage range	20.4 V DC ... 26.4 V DC
Inrush current	max. 100 mA
Filter time	max. 5 ms (at A1 in the event of voltage dips at $U_S$ )
	max. 2 ms (Test pulse width; high test pulse at A1/A2)
	≥ 100 ms (Test pulse width; high test pulse at A1/A2)
	Test pulse rate = 80 x Test pulse width
	max. 5 ms (Test pulse width; low test pulse at A1/A2)
	≥ 50 ms (Test pulse rate; low test pulse at A1/A2)
	Test pulse rate = 15 x Test pulse width
Typ. starting time with $U_S$	50 ms
Typical release time	50 ms
Recovery time	1 s
Maximum switching frequency	0.5 Hz
Protective circuit	Surge protection; Suppressor diode, 33 V (A1 - A2)
Operating voltage display	1 x yellow LED

### Output data

Contact switching type	1 enabling current path
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	1 confirmation current path
Contact material	AgCuNi, + 0.2 µm Au
Maximum switching voltage	250 V AC/DC (N/O contact / N/C contact, observe the load curve)
Minimum switching voltage	15 V AC/DC (N/O contact / N/C contact)
Limiting continuous current	5 A (N/O contact, pay attention to the derating) 100 mA (N/C contact)
Maximum inrush current	5 A (N/O contact) 100 mA (N/C contact)
Inrush current, minimum	5 mA (N/O contact / N/C contact)
Sq. Total current	25 A <sup>2</sup> (observe derating)
Interrupting rating (ohmic load) max.	120 W (24 V DC, τ = 0 ms, N/C contact: 2.4 W) 192 W (48 V DC, τ = 0 ms, N/C contact: 4.8 W) 162 W (60 V DC, τ = 0 ms, N/C contact: 6 W) 66 W (110 V DC, τ = 0 ms, N/C contact: 11 W) 60 W (220 V DC, τ = 0 ms, N/C contact: 22 W) 1250 VA (250 V AC, τ = 0 ms, N/C contact: 25 VA)
Maximum interrupting rating (inductive load)	72 W (24 V DC, τ = 40 ms, N/C contact: 2.4 W) 43 W (48 V DC, τ = 40 ms, N/C contact: 4.8 W) 41 W (60 V DC, τ = 40 ms, N/C contact: 6 W) 35 W (110 V DC, τ = 40 ms, N/C contact: 11 W) 48 W (220 V DC, τ = 40 ms, N/C contact: 22 W)
Switching capacity	min. 75 mW
Switching capacity (3600/h cycles)	5 A (24 V (DC13)) 5 A (230 V (AC15))
Output fuse	5 A T fuse (N/O contact) 150 mA Fast-blow (N/C contact)

## 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

## Dimensions

Width	17.5 mm
Height	99 mm
Depth	114.5 mm

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## Material specifications

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

## Characteristics

### Safety data

Stop category	0
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### Safety data: EN ISO 13849

Category	4 (Diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 99\%$ )
Performance level (PL)	e (Diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 99\%$ )

### Safety data: EN 50156

Safety Integrity Level (SIL)	3
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### Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 90\%$ )
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### Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	3 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 90\%$ )
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### Safety data: EN IEC 62061

Safety Integrity Level (SIL)	3 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 90\%$ )
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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)	-20 °C ... 55 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Maximum altitude	$\leq 2000$ 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

### CE

Certificate	CE-compliant
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## Standards and regulations

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Air clearances and creepage distances between the power circuits

Standards/regulations	IEC 60664-1
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### Mounting

Mounting type	DIN rail mounting
Mounting position	any

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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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