

# Coupling relay - PSR-SCP-120UC/URM/5X1/2X2

2981402

<https://www.phoenixcontact.com/us/products/2981402>



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Safe coupling relay with force-guided contacts, 5 N/O contacts, 2 N/C contacts, 1-channel, plug-in screw terminal block, width: 22.5 mm

## Your advantages

- Suitable up to category 1, PL c (EN ISO 13849-1), SIL 1 (EN 62061), SIL 1 (IEC 61508)
- Safe readback due to force-guided signal contact in accordance with EN 50205
- Easy proof test according to IEC 61508 thanks to integrated signal contact
- 1 or 2-channel control
- 5 enabling current paths, 2 confirmation current paths
- 120 V version

## Commercial Data

Item number	2981402
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	C18
Product Key	DNA162
Catalog Page	Page 245 (C-6-2019)
GTIN	4017918944179
Weight per Piece (including packing)	177.03 g
Weight per Piece (excluding packing)	150.18 g
Customs tariff number	85364900
Country of origin	DE

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## Technical Data

### Product properties

Product type	Coupling relay
Application	Safe switch off
	High demand
	Low demand
Mechanical service life	$10 \times 10^6$ cycles
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

### Insulation characteristics

Overvoltage category	III
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### Times

Restart time	< 1 s (Boot time)
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### Electrical properties

Maximum power dissipation for nominal condition	8.8 W (at $U_B = 132$ V DC, $U_S = 120$ V, $I_S = 11$ mA, $n = 1$ , $I_L^2 = 72$ A $^2$ , $R_{contact} = 0.1$ $\Omega$ )
Nominal operating mode	100% operating factor
Rated insulation voltage	250 V
Rated insulation voltage	250 V
Rated surge voltage/insulation	4 kV basic insulation (4 kV safe isolation, reinforced insulation between A1/A2, 13/14, 23/24, 33/34 to 43/44, 53/54, 61/62, 71/72)

### Input data

#### General

Rated control circuit supply voltage $U_S$	120 V AC/DC -20 % ... +10 %
Power consumption at $U_S$	typ. 1.32 W
Rated control supply current $I_S$	typ. 11 mA
Input voltage range	19.2 V AC/DC ... 26.4 V AC/DC
Inrush current	typ. 600 mA ( $\Delta t = 200$ $\mu$ s at $U_S$ )
Typ. starting time with $U_S$	typ. 20 ms (when controlled via A1)
Typical release time	typ. 20 ms (when controlled via A1)
Recovery time	< 500 ms
Maximum switching frequency	0.5 Hz
Protective circuit	Surge protection; Varistor
Operating voltage display	1 x green LED

### Output data

Contact type	5 enabling current paths
	2 confirmation current paths
Contact material	AgSnO <sub>2</sub>

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Maximum switching voltage	230 V AC/DC (Observe the load curve)
Minimum switching voltage	5 V AC/DC
Limiting continuous current	6 A (N/O contact) 3 A (N/C contact)
Maximum inrush current	6 A
Inrush current, minimum	10 mA
Sq. Total current	72 A <sup>2</sup>
Interrupting rating (ohmic load) max.	144 W (N/O contact, 24 V DC, $\tau = 0$ ms) 288 W (N/O contact, 48 V DC, $\tau = 0$ ms) 240 W (N/O contact, 60 V DC, $\tau = 0$ ms) 110 W (N/O contact, 110 V DC, $\tau = 0$ ms) 88 W (N/O contact, 220 V DC, $\tau = 0$ ms) 1380 VA (N/O contact, 230 V AC, $\tau = 0$ ms)
Maximum interrupting rating (inductive load)	42 W (N/O contact, 24 V DC, $\tau = 40$ ms) 42 W (N/O contact, 48 V DC, $\tau = 40$ ms) 42 W (N/O contact, 60 V DC, $\tau = 40$ ms) 42 W (N/O contact, 110 V DC, $\tau = 40$ ms) 42 W (N/O contact, 220 V DC, $\tau = 40$ ms)
Switching capacity	min. 50 mW
Switching capacity according to IEC 60947-5-1	3 A (24 V (DC13)) 3 A (230 V (AC 15))
Switching capacity (360/h cycles)	4 A (24 V (DC13)) 4 A (230 V (AC15))
Output fuse	10 A gL/gG (N/O contact) 4 A gL/gG (N/O contact, for low-demand applications) 6 A gL/gG (N/C contact)

## Connection data

Connection technology	
pluggable	yes
Conductor connection	
Connection method	Screw connection
Conductor cross section solid	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

## Dimensions

Width	22.5 mm
Height	114.5 mm
Depth	99 mm

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## Material specifications

Housing material	Polyamide
Housing color	yellow

## Characteristics

### Safety data

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

Category	1
Performance level (PL)	c

### Safety data: IEC 61508 - High demand

Equipment type	Type A
Safety Integrity Level (SIL)	1
Probability of a hazardous failure per hour (PFH <sub>D</sub> )	$1.00 \times 10^{-7}$ (3 A AC15; 8760 switching cycles/year; 5 % of the total SIL)
Proof test interval	240 Months
Duration of use	240 Months

### Safety data: IEC 61508 - Low demand

Equipment type	Type A
Safety Integrity Level (SIL)	1
Probability of a hazardous failure on demand (PFD <sub>AVG</sub> )	$4.05 \times 10^{-3}$
Proof test interval	56 Months
Duration of use	240 Months

## 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
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 (In the event of stress caused by shock, contact reactions are possible for up to 2 ms.)
Vibration (operation)	10 Hz ... 150 Hz, 2g (In the event of stress caused by vibration, contact reactions are possible for up to 1 ms.)

## Approval data

CE	
Certificate	CE-compliant

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## Standards and regulations

Air clearances and creepage distances between the power circuits

Standards/regulations	DIN EN 50178

## Mounting

Mounting type	DIN rail mounting
Mounting position	vertical or horizontal

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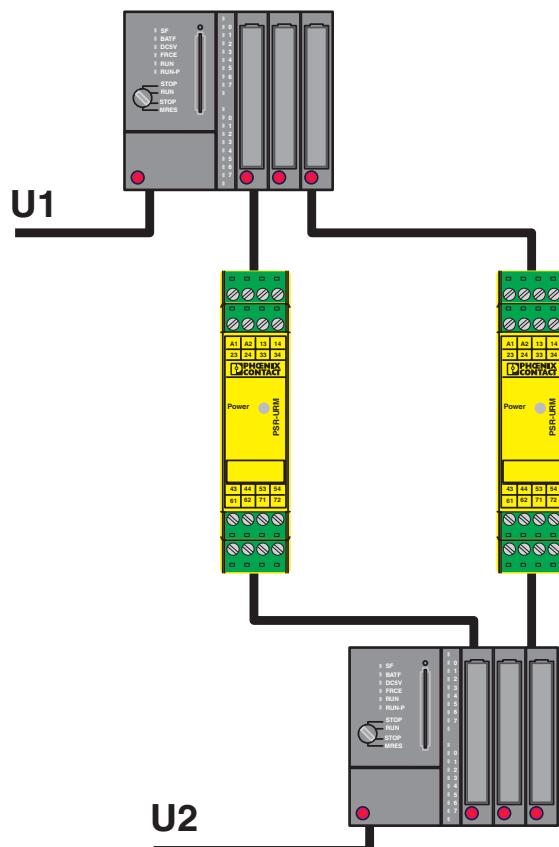
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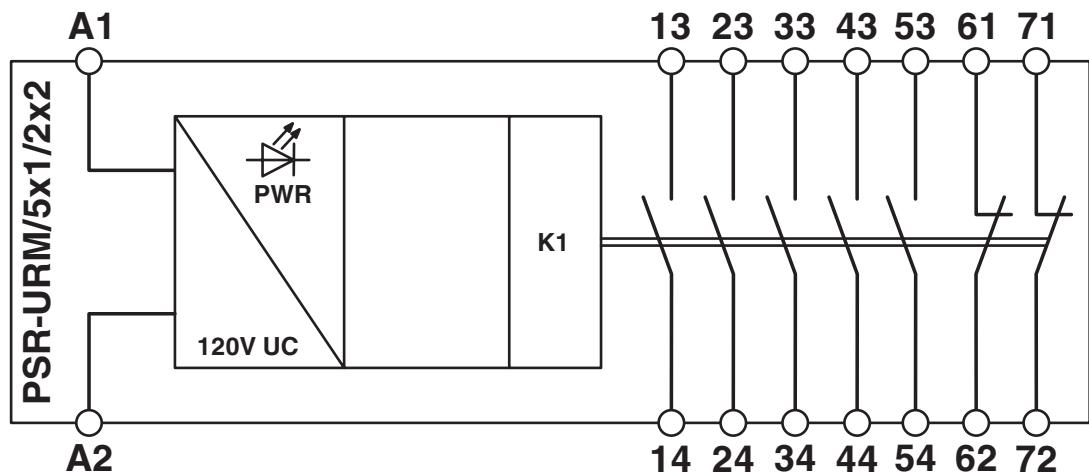
## Drawings

Application drawing



Reliable signal exchange between two systems with confirmation function.

Block diagram



Block diagram

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## Approvals



**EAC**

Approval ID: RU C-DE.A\*30.B.01082



**UL Listed**

Approval ID: FILE E 140324



**cUL Listed**

Approval ID: FILE E 140324



**Functional Safety**

Approval ID: 44-780-15124312



**Functional Safety**

Approval ID: 44-205-15124312

**cULus Listed**

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## Classifications

### ECLASS

ECLASS-9.0	27371601
ECLASS-10.0.1	27371601
ECLASS-11.0	27371819

### ETIM

ETIM 8.0	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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