

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



2981415

<https://www.phoenixcontact.com/us/products/2981415>

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

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	2981415
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to Order (non-returnable)
Sales Key	C18
Product Key	DNA162
Catalog Page	Page 277 (C-6-2017)
GTIN	4046356051675
Weight per Piece (including packing)	196.2 g
Weight per Piece (excluding packing)	135.88 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	10x 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 , $R_{\text{contact}} = 0.1 \text{ } \square$)
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 ($\Delta t = 200 \text{ } \mu\text{s}$ 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 ₂

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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 ²
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
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Conductor connection

Connection method	Push-in connection
Conductor cross section, rigid	0.2 mm ² ... 1.5 mm ²
Conductor cross section, flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross section AWG	24 ... 16
Stripping length	8 mm
Tightening torque	0.6 Nm

Dimensions

Width	22.5 mm
Height	114.5 mm
Depth	112 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 _D)	1.00 x 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 _{AVG})	4.05 x 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
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Mounting

Mounting type	DIN rail mounting
Mounting position	vertical or horizontal

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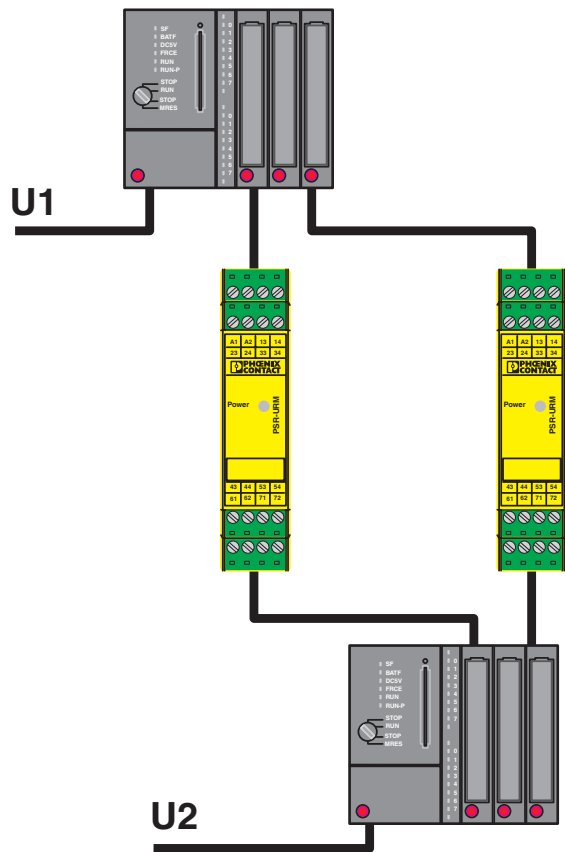
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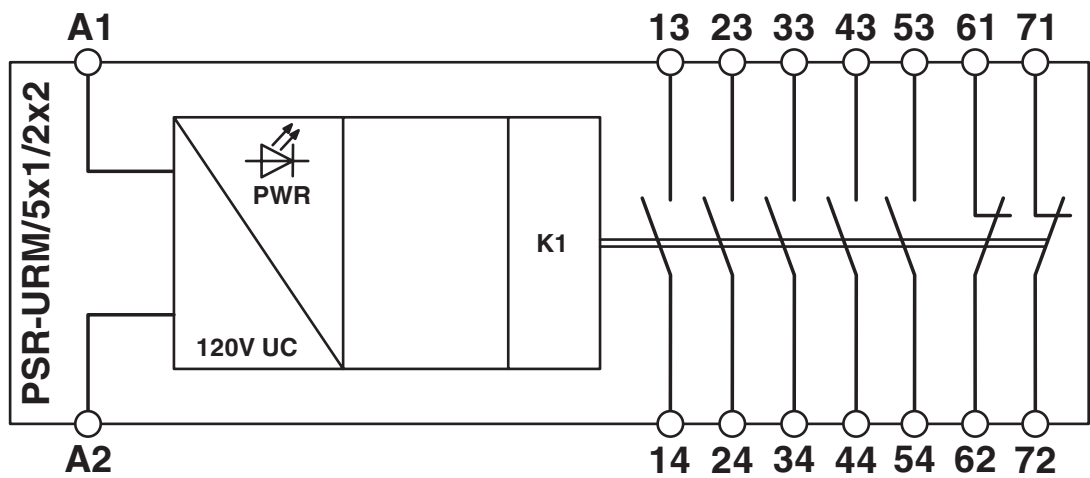
Drawings

Application drawing



Reliable signal exchange between two systems with confirmation function.

Block diagram



Block diagram

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Classifications

ECLASS

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

ETIM

ETIM 7.0	EC001437
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UNSPSC

UNSPSC 21.0	39122334
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Environmental Product Compliance

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

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Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com