

# PSR-SPP- 24UC/URM/3X1/3X2 - Coupling relay



2981842

<https://www.phoenixcontact.com/us/products/2981842>

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Safe coupling relay with force-guided contacts, 3 N/O contacts, 3 N/C contacts, width: 22.5 mm, pluggable Push-in terminal block

## Your advantages

- Up to Cat. 1/PL c in accordance with EN ISO 13849-1, SIL 1 in accordance with 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
- 3 enabling current paths, 3 confirmation current paths

## Commercial data

Item number	2981842
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA162
GTIN	4046356138611
Weight per piece (including packing)	160 g
Weight per piece (excluding packing)	153 g
Customs tariff number	85364900
Country of origin	DE

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## Technical data

### Notes

#### Note on application

Note on application

Only for industrial use

### Product properties

Product type	Coupling relay
Product family	PSRclassic
Application	Safe switch off
	High demand
	Low demand
Control	1 and 2 channel
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
Degree of pollution	2

### Times

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

Maximum power dissipation for nominal condition	6.11 W (at $U_B = 26.4$ V DC, $U_S = 24$ V, $I_S = 45$ mA, $n = 1$ , $I_L^2 = 48$ A $^2$ , $R_{contact} = 0.1 \Omega$ <small>IEC 60947-5-2</small> )
Nominal operating mode	100% operating factor
Rated insulation voltage	250 V
Rated surge voltage/insulation	4 kV / Basic isolation, (safe isolation, reinforced insulation and 6 kV between input circuit and enabling current paths.)

### Supply

Rated control circuit supply voltage $U_S$	20.4 V AC/DC ... 26.4 V AC/DC
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### Input data

#### General

Rated control circuit supply voltage $U_S$	24 V AC/DC -15 % / +10 %
Power consumption at $U_S$	typ. 1.08 W
Rated control supply current $I_S$	typ. 45 mA
Input voltage range	20.4 V AC/DC ... 26.4 V AC/DC
Inrush current	typ. 350 mA DC ( $\Delta t < 1 \mu s$ at $U_S$ ) typ. 350 mA AC ( $\Delta t = 2$ ms at $U_S$ )
Typ. starting time with $U_S$	typ. 15 ms (when controlled via A1)
Typical release time	typ. 15 ms (when controlled via A1)

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Recovery time	< 500 ms
Maximum switching frequency	0.5 Hz
Protective circuit	Surge protection; Suppressor diode
Operating voltage display	1 x LED (green)

## Output data

Contact switching type	3 enabling current paths 3 confirmation current paths
Contact material	AgSnO <sub>2</sub>
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) 6 A (N/C contact)
Maximum inrush current	8 A
Inrush current, minimum	10 mA
Sq. Total current	48 A <sup>2</sup>
Interrupting rating (ohmic load) max.	For additional values, see load curve
Maximum interrupting rating (inductive load)	48 W (N/O contact, 24 V DC, $\tau = 40$ ms) 40 W (N/O contact, 48 V DC, $\tau = 40$ ms) 36 W (N/O contact, 60 V DC, $\tau = 40$ ms) 35 W (N/O contact, 110 V DC, $\tau = 40$ ms) 33 W (N/O contact, 220 V DC, $\tau = 40$ ms)
Switching power	min. 50 mW
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	Push-in connection
Conductor cross-section rigid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (only together with CRIMPFOX 6)
Conductor cross-section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (only together with CRIMPFOX 6)
Conductor cross-section AWG	24 ... 16
Stripping length	8 mm
Tightening torque	0.6 Nm

## Dimensions

Width	22.5 mm
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Height	114.5 mm
Depth	112 mm

## Material specifications

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

## Characteristics

Safety data	
Stop category	0

Safety data: EN ISO 13849	
Category	1
Performance level (PL)	c

Safety data: IEC 61508 - High demand	
Safety Integrity Level (SIL)	1

Safety data: IEC 61508 - Low demand	
Safety Integrity Level (SIL)	1

Safety data	
Safety Integrity Level (SIL)	1

## 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 ... 70 °C
Maximum altitude	max. 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.)

## Approvals

CE	
Certificate	CE-compliant

## Mounting

Mounting type	DIN rail mounting
Mounting position	vertical or horizontal

## PSR-SPP- 24UC/URM/3X1/3X2 - Coupling relay

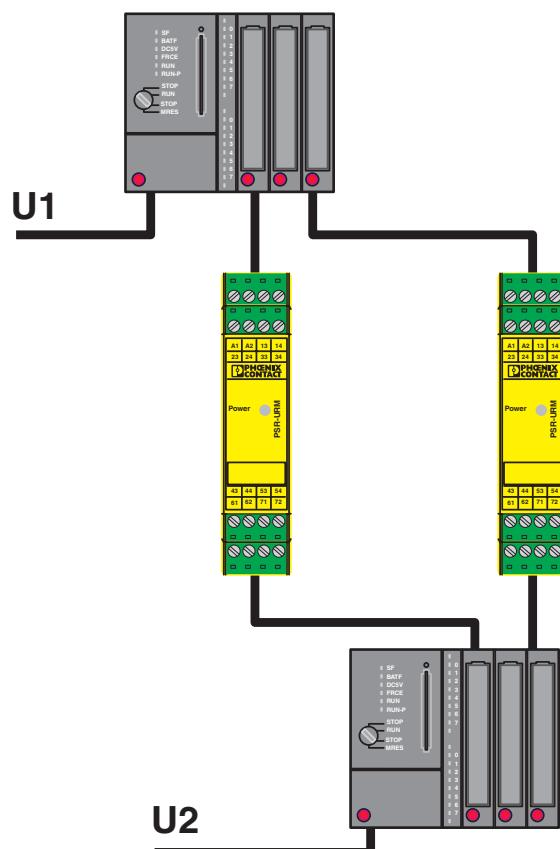
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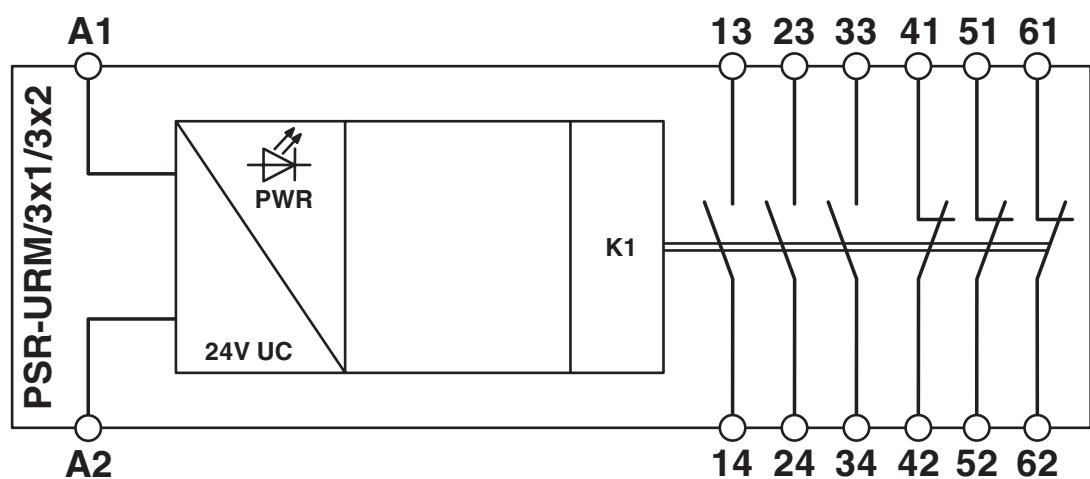
## Drawings

## Application drawing



Reliable signal exchange between two systems with confirmation function.

## Block diagram



## Block diagram

## Approvals

ⓘ To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2981842>



### Functional Safety

Approval ID: 3535 2399



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Approval ID: 3535 2399



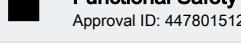
### cULus Listed

Approval ID: E140324



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Approval ID: E140324



### Functional Safety

Approval ID: 4478015124312



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## Classifications

### ECLASS

ECLASS-13.0	27371819
ECLASS-15.0	27371819
ECLASS-15.0 ASSET	27250101

### ETIM

ETIM 9.0	EC001449
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### UNSPSC

UNSPSC 21.0	39122200
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a)

### China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

### EU REACH SVHC

REACH candidate substance (CAS No.)	Hexahydromethylphthalic anhydride(CAS: n/a)
	Lead(CAS: 7439-92-1)
SCIP	fea6b4af-8451-4859-8e52-22898f8b4115

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