

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



2981839

<https://www.phoenixcontact.com/us/products/2981839>

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

## 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                          | 2981839       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | DN01          |
| Product key                          | DNA162        |
| GTIN                                 | 4046356138604 |
| Weight per piece (including packing) | 153.7 g       |
| Weight per piece (excluding packing) | 126.9 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 | 10x 10 <sup>6</sup> 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) |
|--------------|-------------------|

### 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 <sup>2</sup> , $R_{\text{contact}} = 0.1 \Omega$  ) |
| 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 |
|--------------------------------------------|-------------------------------|

### 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 capacity                           | 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)                              |

## Relay

|                   |   |
|-------------------|---|
| Number of outputs | 3 |
|-------------------|---|

## Connection data

### Connection technology

|           |     |
|-----------|-----|
| pluggable | yes |
|-----------|-----|

### 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                                      |

## Dimensions

|       |         |
|-------|---------|
| Width | 22.5 mm |
|-------|---------|

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|        |          |
|--------|----------|
| Height | 114.5 mm |
| Depth  | 99 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 |

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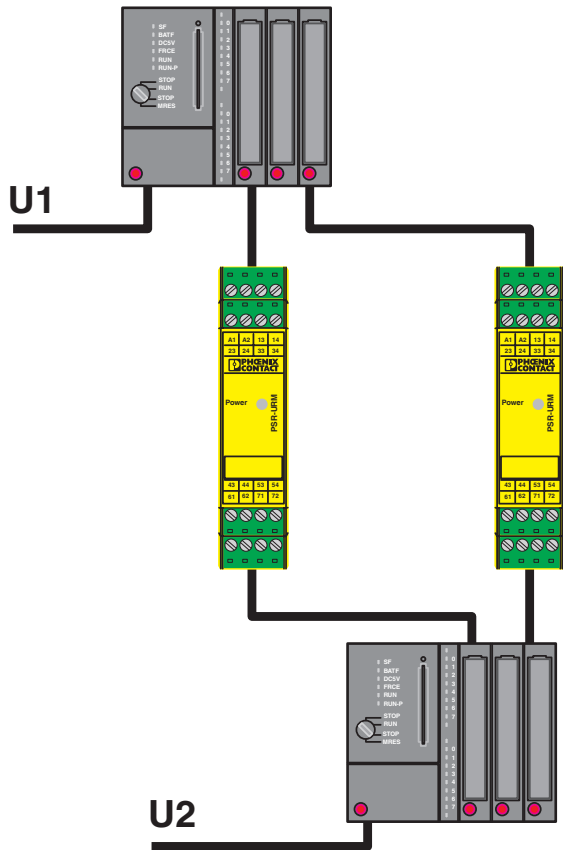


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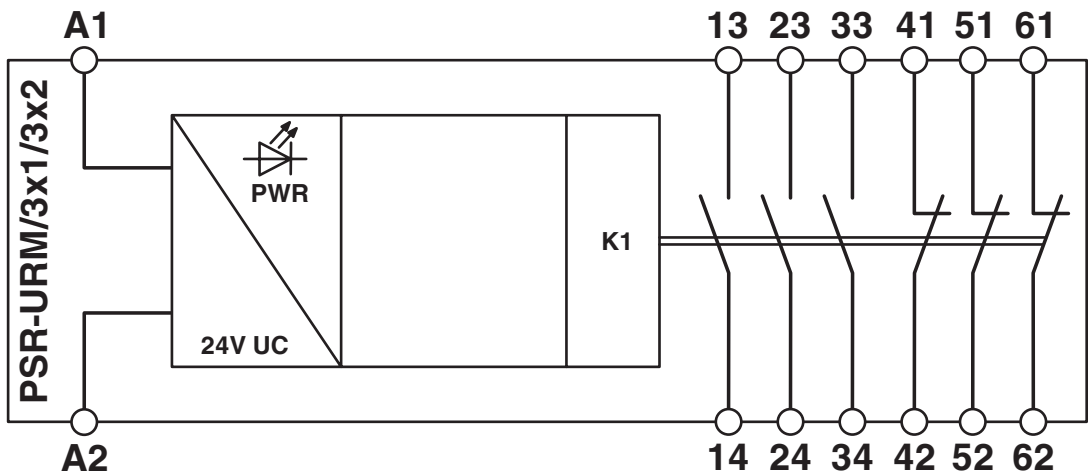
Drawings

Application drawing



Reliable signal exchange between two systems with confirmation function.

Block diagram



Block diagram

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## Approvals

 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2981839>



### Functional Safety

Approval ID: 3535 2399



### Functional Safety

Approval ID: 4478015124312



### cULus Listed

Approval ID: E140324

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27371819 |
| ECLASS-15.0 | 27371819 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001449 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39122200 |
|-------------|----------|

## Environmental product compliance

### EU RoHS

|                                         |      |
|-----------------------------------------|------|
| Fulfills EU RoHS substance requirements | Yes  |
| Exemption                               | 7(a) |

### China RoHS

|                                        |                                                                                                                                                                                                                                   |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environment friendly use period (EFUP) | EFUP-50                                                                                                                                                                                                                           |
|                                        | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

### EU REACH SVHC

|                                     |                                             |
|-------------------------------------|---------------------------------------------|
| REACH candidate substance (CAS No.) | Hexahydromethylphthalic anhydride(CAS: n/a) |
|                                     | Lead(CAS: n/a)                              |
| SCIP                                | 5041cc60-3446-4624-b4dc-2d798efd9a11        |