

# PSR-PLC21-2CO-24DC-SC - Coupling relay



1480226

<https://www.phoenixcontact.com/gb/products/1480226>

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Safe coupling relay with force-guided contacts, electrically isolated, 2 changeover contacts, 1-channel, fixed screw terminal block, width: 14 mm

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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          | PLC-INTERFACE   |
| Application             | Forcibly guided contacts                                |
| Mechanical service life | approx. $10^7$ cycles                                   |
| Relay type              | Electromechanical relay in accordance with IEC/EN 61810 |

#### Insulation characteristics: Air clearances and creepage distances between the power circuits

|                      |     |
|----------------------|-----|
| Overvoltage category | III |
| Pollution degree     | 2   |

#### Times

|                               |  |
|-------------------------------|--|
| Typ. starting time with $U_S$ | < 70 ms (when controlled via A1)                 |
| Typical release time          | < 50 ms (on demand via A1)                       |
| Recovery time                 | 500 ms (following demand of the safety function) |

### Electrical properties

|   |  |
|---|--|
| Maximum power dissipation for nominal condition | 4.825 W ( $U_B = 30$ V, $U_S = 24$ V, $I_S = 30$ mA, $I_L^2 = 37$ A, $R_{\text{contact}} = 0.1 \Omega$ ) |
| 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 | Basic insulation 4 kV between all current paths and housing<br>Safe isolation, reinforced insulation 6 kV between 250 V load current paths and 24 V logic paths |

### Supply

|  |  |
|--|--|
| Designation                                | A1/A2  |
| Rated control circuit supply voltage $U_S$ | 21.6 V DC ... 28.8 V DC  |
| Rated control circuit supply voltage $U_S$ | 24 V DC -10 % / +20 %  |
| Rated control supply current $I_S$         | 30 mA  |
| Inrush current                             | typ. 100 mA ( $\Delta t = 10$ ms at $U_S$ )  |
| Filter time                                | 1 ms (Test pulse width, high test pulse and low test pulse)<br>1 s (Test pulse rate, high test pulse and low test pulse) |
| Power consumption at $U_D$                 | 650 mW (to $U_S$ )   |
| Protective circuit                         | Serial protection against polarity reversal; Suppressor diode, 38.6 V/600 W  |
| Status display                             | 1 x green LED (PWR)  |

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## Output data

Relay: Relay outputs (11/12/14, 21/22/24)

|   |  |
|---|--|
| Output description                                  | safety-related   |
| Number of outputs                                   | 2  |
| Contact switching type                              | 2 changeover contacts  |
| Contact material                                    | AgNi   |
| Switching capacity                                  | min. 150 mW (N/O contact / N/C contact)  |
| Inrush current                                      | max. 6 A (N/O contact)<br>max. 4 A (N/C contact)   |
| Switching capacity in accordance with IEC 60947-5-1 | 6 A (AC1, 230 V)<br>3 A (AC15, 230 V)<br>6 A (DC1, 24 V, N/O contact)<br>4 A (DC1, 24 V, N/C contact)<br>3 A (DC13, 24 V, N/O contact) |
| Limiting continuous current                         | 6 A (N/O contact, high demand)<br>4 A (N/O contact, low demand)<br>4 A (N/C contact, high-demand)<br>2.4 A (N/C contact, low-demand)   |
| Sq. Total current                                   | 37 A <sup>2</sup> (N/O contact, high-demand, observe derating)<br>16 A <sup>2</sup> (N/C contact, high-demand, observe derating)       |
| Switching frequency                                 | max. 1 Hz  |
| Mechanical service life                             | 10 <sup>7</sup> cycles   |
| Output fuse   | 6 A gL/gG<br>4 A gL/gG (for low-demand applications)   |

## Connection data

Conductor connection

|   |  |
|---|--|
| Connection method   | Screw connection                             |
| Conductor cross section rigid   | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross section flexible                                      | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>  |
| Conductor cross-section AWG   | 26 ... 14                                    |
| Stripping length  | 8 mm   |
| Screw thread  | M3   |
| Tightening torque   | 0.5 Nm                                       |

## Signaling

|                           |                     |
|---------------------------|---------------------|
| Operating voltage display | 1 x green LED (PWR) |
|---------------------------|---------------------|

## Dimensions

|        |       |
|--------|-------|
| Width  | 14 mm |
| Height | 80 mm |

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|       |        |
|-------|--------|
| Depth | 104 mm |
|-------|--------|

## Material specifications

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

## Characteristics

Safety data: EN ISO 13849

|                        |   |
|------------------------|---|
| Category               | 1 |
| Performance level (PL) | c |

Safety data: IEC 61508 – High-demand for 1-channel wiring (1oo1 structure)

|                              |   |
|------------------------------|---|
| Safety Integrity Level (SIL) | 1 |
|------------------------------|---|

Safety data: IEC 61508 – Low-demand for 1-channel wiring (1oo1 structure)

|                              |   |
|------------------------------|---|
| Safety Integrity Level (SIL) | 1 |
|------------------------------|---|

Safety data: EN IEC 62061

|                              |   |
|------------------------------|---|
| Safety Integrity Level (SIL) | 2 |
|------------------------------|---|

## Environmental and real-life conditions

Ambient conditions

|  |  |
|--|--|
| Degree of protection                           | IP20   |
| Min. degree of protection of inst. location    | IP54   |
| Ambient temperature (operation)                | -20 °C ... 60 °C (observe derating)                                      |
| Ambient temperature (storage/transport)        | -20 °C ... 85 °C   |
| Maximum altitude                               | ≤ 2000 m (Above sea level)   |
| Max. permissible humidity (storage/transport)  | 75 % (on average; 95% occasionally, non-condensing)                      |
| Max. permissible relative humidity (operation) | 75 % (on average; 95% occasionally, non-condensing)                      |
| Shock  | 10g for $\Delta t = 11$ ms (continuous shock: 5g for $\Delta t = 16$ ms) |
| Vibration (operation)                          | 10 Hz ... 150 Hz, amplitude 0.75 mm, 1g                                  |

## Approvals

CE

|                |              |
|----------------|--------------|
| Identification | CE-compliant |
|----------------|--------------|

## Standards and regulations

Air clearances and creepage distances between the power circuits

|                       |             |
|-----------------------|-------------|
| Standards/regulations | IEC 60947-1 |
|-----------------------|-------------|

## Mounting

|                   |                        |
|-------------------|------------------------|
| Mounting type     | DIN rail mounting      |
| Assembly note     | See derating curve     |
| Mounting position | vertical or horizontal |

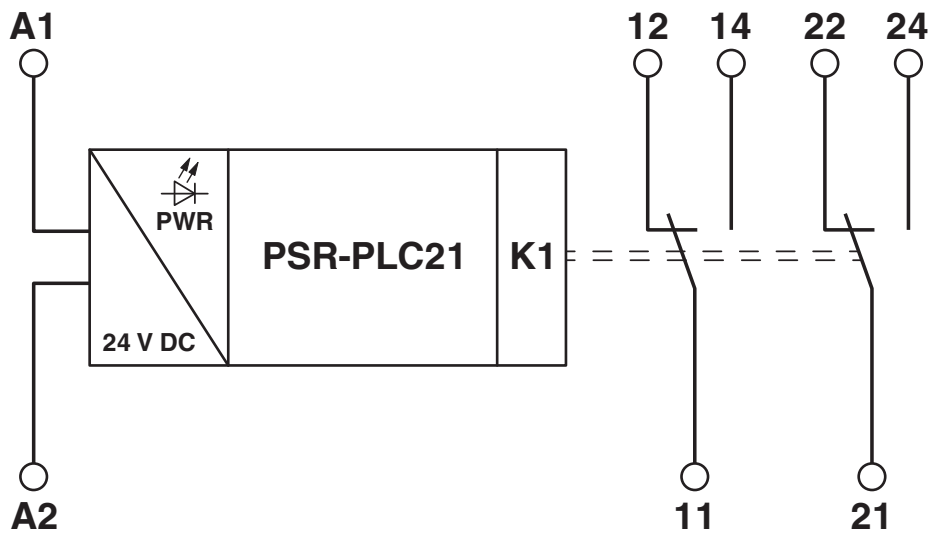
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## Drawings

Block diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/gb/products/1480226>



### Functional Safety

Approval ID: 44-780-15124326



### cULus Listed

Approval ID: E140324

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27371601 |
| ECLASS-12.0 | 27371601 |
| ECLASS-13.0 | 27371601 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001437 |
|----------|----------|

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## Environmental product compliance

### EU RoHS

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

### 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.) | Lead(CAS: 7439-92-1)                 |
| SCIP                                | 51d1e278-3deb-43ec-9dbd-c5c8e6cae076 |

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