

PSR-PC32-2NO-1NC-24-230UC-SP - Coupling relay



2700582

<https://www.phoenixcontact.com/us/products/2700582>

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Coupling relay for SIL 3 high and low-demand applications, couples digital signals to the I/O, 24 V ... 230 V wide-range input, 2 enabling current paths (1x up to 60 V, 1x up to 250 V) 1 confirmation current path, safe state off applications, pluggable Push-in terminal block

Your advantages

- Up to SIL 3 in accordance with IEC 61508
- Force-guided contacts in accordance with EN 50205
- Easy proof test according to IEC 61508
- Slim design
- Wide-range input
- Corrosion protection through protective coating on the PCB

Commercial data

| | |
|--------------------------------------|---------------------|
| Item number | 2700582 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DN01 |
| Product key | DNA182 |
| Catalog page | Page 252 (C-6-2019) |
| GTIN | 4046356916370 |
| Weight per piece (including packing) | 251.6 g |
| Weight per piece (excluding packing) | 226.5 g |
| Customs tariff number | 85364900 |
| Country of origin | DE |

Technical data

Notes

Utilization restriction

| | |
|------------|---|
| CCCex note | Use in potentially explosive areas is not permitted in China. |
|------------|---|

Product properties

| | |
|----------------|--|
| Product type | Coupling relay |
| Product family | PSRmini |
| Application | Safe switch off |
| | High demand |
| | Low demand |
| | Ex |
| Relay type | Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3 |

Times

| | |
|-----------------------|--|
| Typical response time | < 100 ms (with U_S when controlled via A1) |
| Typical release time | < 200 ms (with U_S when controlled via A1) |
| Recovery time | < 500 ms |

Electrical properties

| | |
|---|--|
| Maximum power dissipation for nominal condition | 5.7 W (at $U_S = 42$ V AC, $I_L^2 = 72$ A ²) |
| 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 |
| | Safe isolation, reinforced insulation 2.5 kV between (93/94) and (31/32, 24V/GND) |
| | Safe isolation, reinforced insulation 6 kV: between (A1/A2) and (13/14) and (31/32, 24V/GND) between (A1/A2) and (93/94) between (13/14) and (93/94) |

Supply

| | |
|--|--|
| Designation | A1/A2 |
| Rated control circuit supply voltage U_S | 24 V AC/DC ... 230 V AC/DC -15 % ... +10 % |
| Rated control supply current I_S | 75 mA (24 V DC) |
| | 34 mA (48 V DC) |
| | 97 mA (42 V AC) |
| | 28 mA (120 V AC) |
| | 16 mA (230 V AC) |
| | |
| Power consumption at U_S | 1.8 W (with DC) |
| | 2.1 W (with AC) |
| Apparent power | typ. 4.1 VA |

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|--------------------|--|
| Inrush current | typ. 16 A ($\Delta t < 100 \mu s$ at U_s) |
| | < 5 mA (at terminal blocks 24V/GND at U_D) |
| Filter time | 10 ms (24 V DC, A1 in the event of voltage dips at U_s) |
| | max. 1.5 ms (at A1-A2; test pulse width; at 24 V DC) |
| | 7.5 ms (at A1-A2; test pulse rate; at 24 V DC) |
| | Test pulse rate = 5 x Test pulse width |
| Protective circuit | Surge protection; Varistor 275 V |

Supply

| | |
|---------------------------------|---|
| Designation | 24V/GND |
| Diagnostic supply voltage U_D | 24 V DC -15 % / +10 % |
| Input current at U_D | < 5 mA (at terminal blocks 24V/GND at U_D) |
| Protective circuit | Surge protection; 33 V suppressor diode |
| | Reverse polarity protection |

Output data

Relay: Enabling current path

| | |
|-----------------------------------|--|
| Output description | safety-related N/O contacts |
| Number of outputs | 2 (undelayed) |
| Contact switching type | 2 enabling current paths |
| Contact material | AgSnO ₂ |
| Switching voltage | min. 12 V AC/DC |
| | max. 250 V AC/DC (13/14, observe the load curve) |
| | max. 60 V AC/DC (93/94, observe the load curve) |
| Switching capacity | min. 60 mW |
| Inrush current | min. 3 mA |
| | max. 6 A |
| Switching capacity (360/h cycles) | 4 A (24 V (DC13)) |
| | 5 A (230 V (AC 15)) |
| Limiting continuous current | 6 A (observe derating) |
| Sq. Total current | 72 A ² (observe derating) |
| Switching frequency | max. 1 Hz |
| Mechanical service life | 10x 10 ⁶ cycles |
| Output fuse | 6 A gL/gG |
| | 4 A gL/gG (for low-demand applications) |

Relay: Confirmation current path

| | |
|------------------------|-----------------------------|
| Output description | Safety-related N/C contacts |
| Number of outputs | 1 (undelayed) |
| Contact switching type | 1 confirmation current path |
| Contact material | AgCuNi, + Au |
| Switching voltage | min. 3.3 V AC/DC |
| | max. 26.4 V DC |
| Switching capacity | min. 3.3 mW |

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| | |
|-----------------------------|------------------|
| Inrush current | min. 1 mA |
| | max. 100 mA |
| Limiting continuous current | 100 mA |
| Output fuse | 150 mA fast blow |

Connection data

Connection technology

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

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, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6) |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6) |
| Conductor cross-section AWG | 24 ... 16 |
| Stripping length | 8 mm |

Signaling

| | |
|---------------------------|-------------------------------|
| Status display | 1 x green LED, 1 x yellow LED |
| Operating voltage display | 1 x yellow LED |

Dimensions

| | |
|--------|----------|
| Width | 17.5 mm |
| Height | 117.4 mm |
| Depth | 114.5 mm |

Material specifications

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

Characteristics

Safety data

| | |
|---------------|---|
| Stop category | 0 |
|---------------|---|

Safety data: EN 50156-2

| | |
|------------------------------|-------------------------|
| Safety Integrity Level (SIL) | 3 (Reference IEC 61508) |
|------------------------------|-------------------------|

Safety data: IEC 61508 - High demand

| | |
|------------------------------|------------------------------|
| Safety Integrity Level (SIL) | 3 (< 15% of the overall SIL) |
|------------------------------|------------------------------|

Safety data: IEC 61508 - Low demand

| | |
|------------------------------|------------------------------|
| Safety Integrity Level (SIL) | 3 (< 15% of the overall SIL) |
|------------------------------|------------------------------|

Environmental and real-life conditions

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Ambient conditions

| | |
|--|---|
| Degree of protection | IP20 |
| Min. degree of protection of inst. location | IP54 |
| Ambient temperature (operation) | -40 °C ... 70 °C (observe derating) |
| 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 |
| Vibration (operation) | 10 Hz ... 150 Hz, 2g |

Approvals

ATEX

| | |
|----------------|----------------------------|
| Identification | ⊕ II 3G Ex ec nC IIC T4 Gc |
| Certificate | UL 22 ATEX 2912X |

IECEX

| | |
|----------------|--------------------|
| Identification | Ex ec nC IIC T4 Gc |
| Certificate | IECEX UL 22.0037X |

UL, USA/Canada

| | |
|----------------|---------|
| Identification | cULus |
| Certificate | E140324 |

UL Ex, USA / Canada

| | |
|----------------|--|
| Identification | Class I, Zone 2, AEx nA nC IIC T4 / Ex nA nC IIC Gc T4 X Class I, Div. 2, Groups A, B, C, D, T4 |
| Certificate | E360692 |

CE

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

Environmental simulation test

| | |
|----------------|------------|
| Identification | G3 |
| Certificate | ISA-S71.04 |

CCC / China-Ex

| | |
|----------------|--------------------|
| Identification | Ex ec nC IIC T4 Gc |
| Certificate | 2022122304115695 |

Standards and regulations

Air clearances and creepage distances between the power circuits

| | |
|-----------------------|-------------------------------------|
| Standards/regulations | EN 60664-1, EN 60079-7, EN 60079-15 |
|-----------------------|-------------------------------------|

Mounting

| | |
|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

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| | |
|-----------------------|------------------------|
| Assembly instructions | See derating curve |
| Mounting position | vertical or horizontal |

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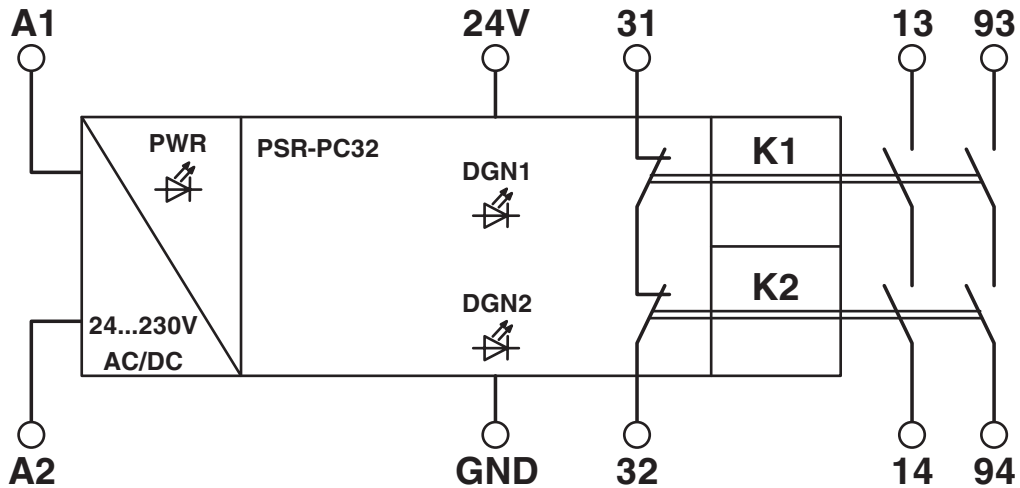


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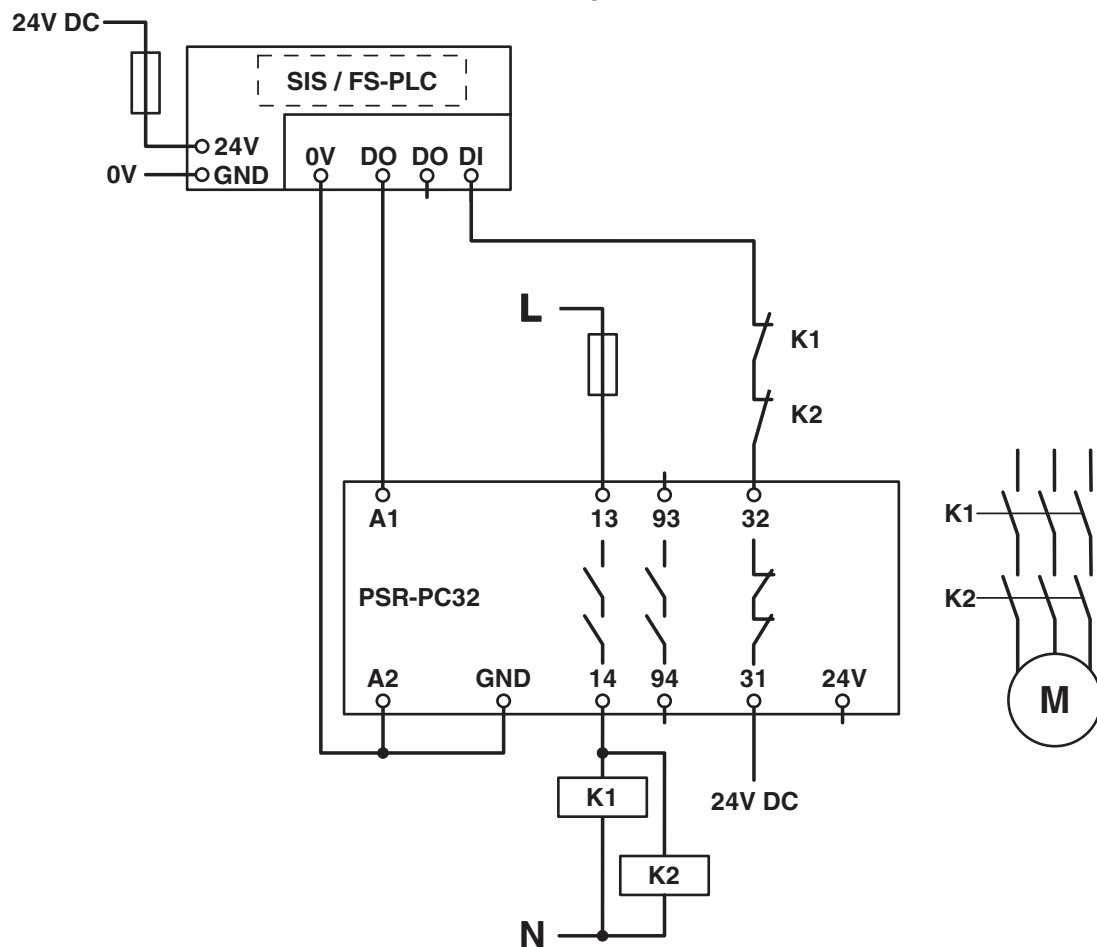
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Drawings

Block diagram



Circuit diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2700582>



UL Listed

Approval ID: FILE E 140324



cUL Listed

Approval ID: FILE E 140324



Functional Safety

Approval ID: 44-780-15124308



Functional Safety

Approval ID: 44-205-15124302



IECEX

Approval ID: IECEX ULD 14.0003 X



cUL Listed

Approval ID: File E 360692



UL Listed

Approval ID: File E 360692



ATEX

Approval ID: DEMKO 14 ATEX 1284 X

cULus Listed

cULus Listed

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-11.0 | 27371819 |
| ECLASS-13.0 | 27371819 |
| ECLASS-12.0 | 27371819 |

ETIM

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

UNSPSC

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

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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 | bd9a471c-8f09-4942-9e6f-a14a5c8fb63d |

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Accessories

CRIMPFOX 6 - Crimping pliers

1212034

<https://www.phoenixcontact.com/us/products/1212034>



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm² ... 6.0 mm², lateral entry, trapezoidal crimp

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