

PSR-SCP- 24DC/FSP2/2X1/1X2 - Coupling relay



2986575

<https://www.phoenixcontact.com/us/products/2986575>

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Safe coupling relay for SIL 2 high- and low-demand applications, couples digital output signals to the periphery, two enabling current paths, one signal contact, module for safe state off applications, integrated test pulse filter, plug-in screw connection, width: 17.5 mm

Your advantages

- Narrow 17.5 mm housing
- Up to SIL 2 in accordance with EN 61508
- Easy proof test according to IEC 61508 thanks to integrated signal contact
- Long service life thanks to filtering of controller test pulses
- Force-guided contacts in accordance with EN 50205
- 2 enabling current paths
- Couples digital output signals from failsafe controllers to I/O devices (valves, etc.) for electrical isolation and power adaptation

Commercial data

| | |
|--------------------------------------|---------------------|
| Item number | 2986575 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DN01 |
| Product key | DNA161 |
| Catalog page | Page 255 (C-6-2019) |
| GTIN | 4046356553322 |
| Weight per piece (including packing) | 141.05 g |
| Weight per piece (excluding packing) | 136.3 g |
| Customs tariff number | 85364190 |
| Country of origin | DE |

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Technical data

Product properties

| | |
|-------------------------|--------------------------------------------------------------------------------------|
| Product type | Coupling relay |
| Product family | PSRclassic |
| 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 |

Electrical properties

| | |
|-------------------------------------------------|-----------------------|
| Maximum power dissipation for nominal condition | 2.4 W |
| 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 | Safe isolation, reinforced insulation 6 kV between the control circuits (A1/A2), (31/32), (13/14, 23/24) |

Input data

General

| | |
|--------------------------------------------|----------------------------------------------------------|
| Rated control circuit supply voltage U_S | 24 V DC -15 % / +10 % |
| Power consumption at U_S | typ. 1.32 W |
| Rated control supply current I_S | typ. 55 mA |
| Input voltage range | 20.4 V DC ... 26.4 V DC |
| Inrush current | max. 100 mA |
| Filter time | max. 5 ms (at A1 in the event of voltage dips at U_S) |
| | max. 2 ms (Test pulse width; high test pulse at A1/A2) |
| | ≥ 100 ms (Test pulse width; high test pulse at A1/A2) |
| | Test pulse rate = 80 x Test pulse width |
| | max. 5 ms (Test pulse width; low test pulse at A1/A2) |
| | ≥ 50 ms (Test pulse rate; low test pulse at A1/A2) |
| Test pulse rate = 15 x Test pulse width | |
| Typ. starting time with U_S | 50 ms |
| Typical release time | 50 ms |
| Recovery time | 1 s |
| Maximum switching frequency | 0.5 Hz |
| Protective circuit | Surge protection; Suppressor diode, 33 V (A1 - A2) |
| Operating voltage display | 1 x yellow LED |

Output data

| | |
|------------------------|--------------------------|
| Contact switching type | 2 enabling current paths |
|------------------------|--------------------------|

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| | |
|----------------------------------------------|-----------------------------------------------------------------|
| | 1 confirmation current path |
| Contact material | AgCuNi, + 0.2 µm Au |
| Maximum switching voltage | 250 V AC/DC (N/O contact / N/C contact, observe the load curve) |
| Minimum switching voltage | 15 V AC/DC (N/O contact / N/C contact) |
| Limiting continuous current | 5 A (N/O contact, pay attention to the derating) |
| | 100 mA (N/C contact) |
| Maximum inrush current | 5 A (N/O contact) |
| | 100 mA (N/C contact) |
| Inrush current, minimum | 5 mA (N/O contact / N/C contact) |
| Sq. Total current | 50 A ² (observe derating) |
| Interrupting rating (ohmic load) max. | 120 W (24 V DC, τ = 0 ms, N/C contact: 2.4 W) |
| | 192 W (48 V DC, τ = 0 ms, N/C contact: 4.8 W) |
| | 162 W (60 V DC, τ = 0 ms, N/C contact: 6 W) |
| | 66 W (110 V DC, τ = 0 ms, N/C contact: 11 W) |
| | 60 W (220 V DC, τ = 0 ms, N/C contact: 22 W) |
| | 1250 VA (250 V AC, τ = 0 ms, N/C contact: 25 VA) |
| Maximum interrupting rating (inductive load) | 72 W (24 V DC, τ = 40 ms, N/C contact: 2.4 W) |
| | 43 W (48 V DC, τ = 40 ms, N/C contact: 4.8 W) |
| | 41 W (60 V DC, τ = 40 ms, N/C contact: 6 W) |
| | 35 W (110 V DC, τ = 40 ms, N/C contact: 11 W) |
| | 48 W (220 V DC, τ = 40 ms, N/C contact: 22 W) |
| Switching capacity | min. 75 mW |
| Switching capacity (3600/h cycles) | 5 A (24 V (DC13)) |
| | 5 A (230 V (AC15)) |
| Output fuse | 10 A gL/gG (N/O contact) |
| | 4 A gL/gG (for low-demand applications) |
| | 150 mA Fast-blow (N/C contact) |

Connection data

Connection technology

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

Conductor connection

| | |
|----------------------------------|---------------------------------------------|
| Connection method | Screw connection |
| Conductor cross section rigid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross section flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section AWG | 24 ... 12 |
| Stripping length | 7 mm |
| Screw thread | M3 |

Dimensions

| | |
|--------|----------|
| Width | 17.5 mm |
| Height | 99 mm |
| Depth | 114.5 mm |

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Material specifications

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

Characteristics

Safety data

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

Safety data: EN ISO 13849

| | |
|------------------------|--------------------------------------------------------------------------------|
| Category | 1 (Diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 90\%$) |
| Performance level (PL) | c (Diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 90\%$) |

Safety data: EN 50156

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

Safety data: IEC 61508 - High demand

| | |
|------------------------------|------------------------------------------------------------------------------------------------------------|
| Safety Integrity Level (SIL) | 2 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 90\%$) |
|------------------------------|------------------------------------------------------------------------------------------------------------|

Safety data: IEC 61508 - Low demand

| | |
|------------------------------|------------------------------------------------------------------------------------------------------------|
| Safety Integrity Level (SIL) | 2 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 90\%$) |
|------------------------------|------------------------------------------------------------------------------------------------------------|

Safety data: EN IEC 62061

| | |
|------------------------------|------------------------------------------------------------------------------------------------------------|
| Safety Integrity Level (SIL) | 1 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 90\%$) |
|------------------------------|------------------------------------------------------------------------------------------------------------|

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 (observe derating) |
| Ambient temperature (storage/transport) | -40 °C ... 70 °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

CE

| | |
|-------------|--------------|
| Certificate | CE-compliant |
|-------------|--------------|

Standards and regulations

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Air clearances and creepage distances between the power circuits

| | |
|-----------------------|-------------|
| Standards/regulations | IEC 60664-1 |
|-----------------------|-------------|

Mounting

| | |
|-------------------|-------------------|
| Mounting type | DIN rail mounting |
| Mounting position | any |

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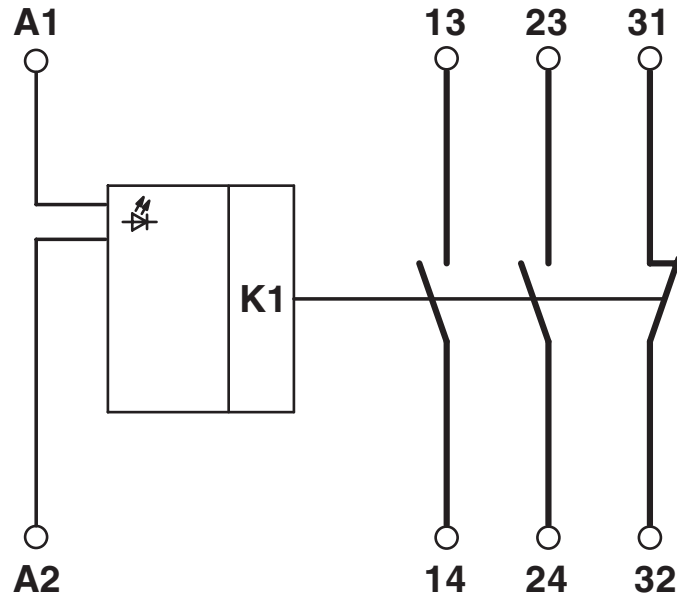


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Drawings

Circuit diagram

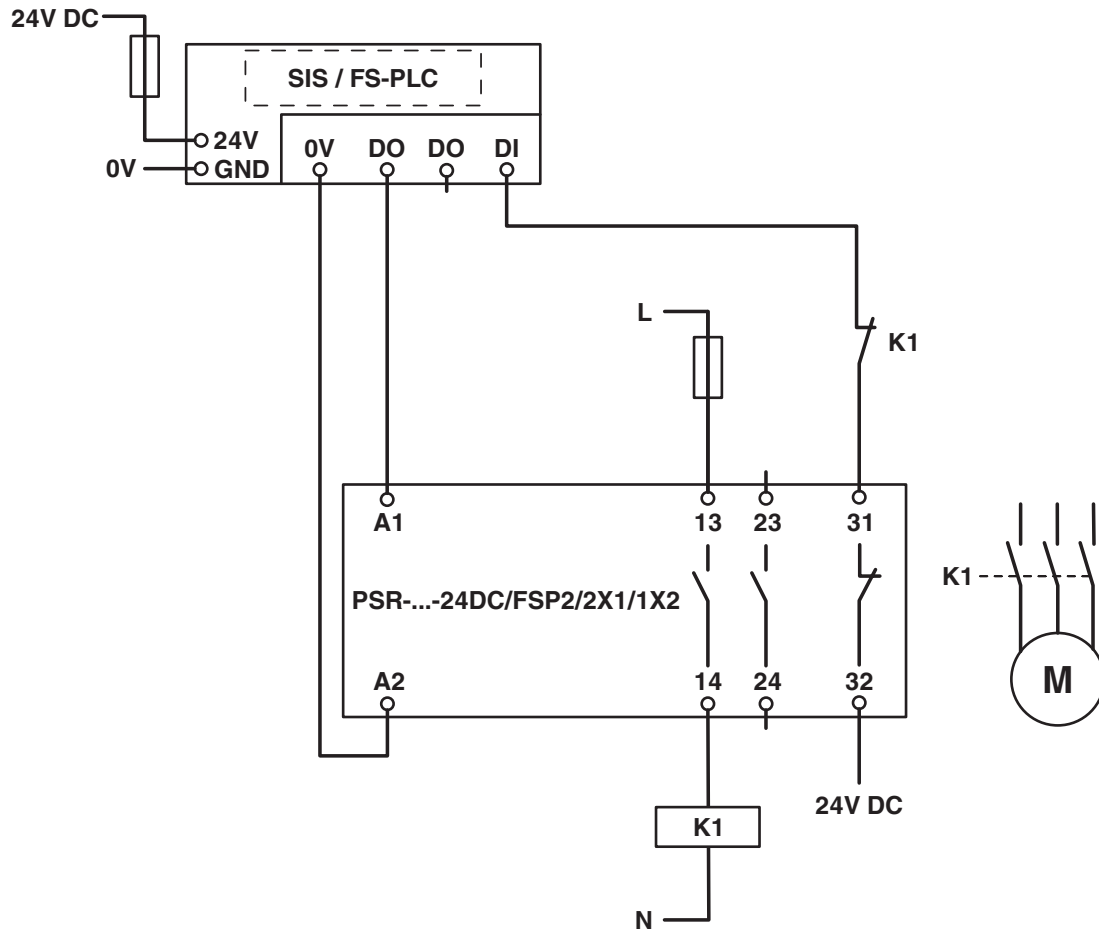


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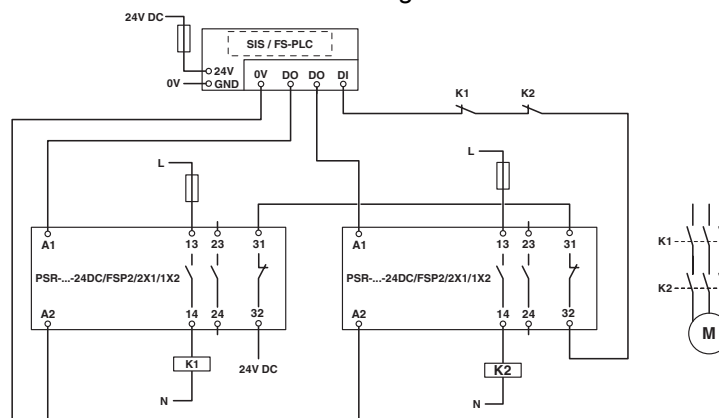
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Circuit diagram



Circuit diagram



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Approvals

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EAC

Approval ID: TR_TS_D_00573_c



DNV GL

Approval ID: TAA00002UC



UL Listed

Approval ID: FILE E 140324



cUL Listed

Approval ID: FILE E 140324



Functional Safety

Approval ID: 968/EZ 365.09/22

cULus Listed

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Classifications

ECLASS

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

ETIM

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

UNSPSC

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

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Environmental product compliance

| | |
|------------|--------------------------------------------------------------------------------------------------------------|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 50 years |
| | For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads" |

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