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Safe coupling relay with force-guided contacts, 5 N/O contacts, 1 N/C contact, 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
- 5 enabling current paths, 1 confirmation current path

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2981952 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DN01 |
| Product key | DNA162 |
| GTIN | 4046356343343 |
| Weight per piece (including packing) | 171.8 g |
| Weight per piece (excluding packing) | 142 g |
| Customs tariff number | 85364900 |
| Country of origin | DE |

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 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) |
|--------------|-------------------|

Electrical properties

| | |
|---|--|
| Maximum power dissipation for nominal condition | 8.56 W (at $U_B = 26.4$ V DC, $U_S = 24$ V, $I_S = 47$ mA, $n = 1$, $I_L^2 = 72$ A ² , $R_{\text{contact}} = 0.1 \Omega$ ) |
| Nominal operating mode | 100% operating factor |
| Rated insulation voltage | 250 V |
| Rated surge voltage/insulation | 4 kV / basic isolation (safe isolation, reinforced isolation and 6 kV between A1/A2, 53/54, 71/72 and 13/14, 23/24, 33/34, 43/44.) |

Input data

General

| | |
|--|--|
| Rated control circuit supply voltage U_S | 24 V AC/DC -15 % / +10 % |
| Power consumption at U_S | typ. 1.2 W |
| Rated control supply current I_S | typ. 47 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. 20 ms (when controlled via A1) |
| Typical release time | typ. 20 ms (when controlled via A1) |
| Recovery time | < 500 ms |
| Maximum switching frequency | 0.5 Hz |

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| | |
|---------------------------|----------------------------|
| Protective circuit | Surge protection; Varistor |
| Operating voltage display | 1 x LED (green) |

Output data

| | |
|--|--|
| Contact switching type | 5 enabling current paths |
| | 1 confirmation current path |
| Contact material | AgSnO ₂ |
| 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 | 6 A |
| Inrush current, minimum | 10 mA |
| Sq. Total current | 72 A ² |
| Interrupting rating (ohmic load) max. | 144 W (N/O contact, 24 V DC, $\tau = 0$ ms) |
| | 288 W (N/O contact, 48 V DC, $\tau = 0$ ms) |
| | 240 W (N/O contact, 60 V DC, $\tau = 0$ ms) |
| | 110 W (N/O contact, 110 V DC, $\tau = 0$ ms) |
| | 88 W (N/O contact, 220 V DC, $\tau = 0$ ms) |
| | 1380 VA (N/O contact, 230 V AC, $\tau = 0$ ms) |
| Maximum interrupting rating (inductive load) | 42 W (N/O contact, 24 V DC, $\tau = 40$ ms) |
| | 42 W (N/O contact, 48 V DC, $\tau = 40$ ms) |
| | 42 W (N/O contact, 60 V DC, $\tau = 40$ ms) |
| | 42 W (N/O contact, 110 V DC, $\tau = 40$ ms) |
| | 42 W (N/O contact, 220 V DC, $\tau = 40$ ms) |
| Switching capacity | min. 50 mW |
| Switching capacity (360/h cycles) | 4 A (24 V (DC13)) |
| | 4 A (230 V (AC15)) |
| 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 | 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 |
| Tightening torque | 0.6 Nm |

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Dimensions

| | |
|--------|----------|
| Width | 22.5 mm |
| 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 ... 85 °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

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| | |
|-------------------|------------------------|
| Mounting type | DIN rail mounting |
| Mounting position | vertical or horizontal |

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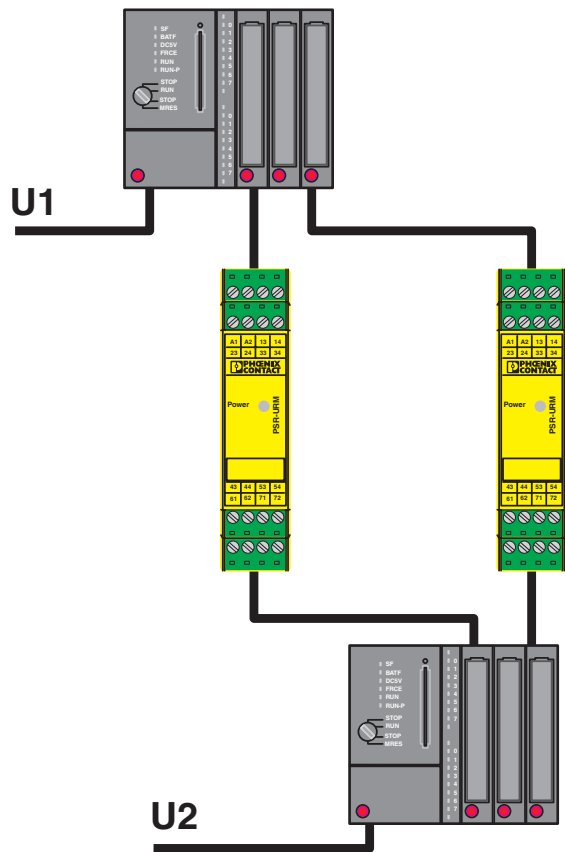


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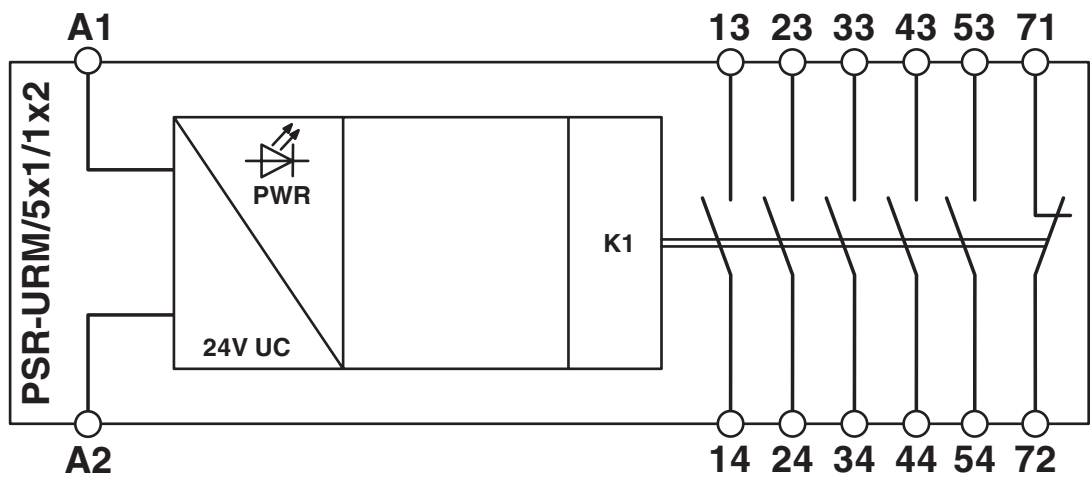
Drawings

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/2981952>



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 |
|-------------|----------|

ETIM

| | |
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| 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), 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 | 003ff684-57d0-4e3e-87ba-5bd5dc623931 |

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