

REL-MR- 24DC/21-21AU/MS - Single relay



2987985

<https://www.phoenixcontact.com/us/products/2987985>

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Plug-in miniature relay, with multi-layer contact with hard gold coating, 2 changeover contacts, test button, mechanical switching position indicator, status LED, freewheeling diode, polarity A1+, A2-, input voltage 24 V DC

Your advantages

- With detectable manual operation
- DC types with integrated freewheeling diode
- Integrated status LED
- Mechanical switch position indicator

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2987985 |
| Packing unit | 10 pc |
| Minimum order quantity | 10 pc |
| Sales key | C460 |
| Product key | DK6938 |
| GTIN | 4046356480994 |
| Weight per piece (including packing) | 19.68 g |
| Weight per piece (excluding packing) | 18.41 g |
| Customs tariff number | 85364190 |
| Country of origin | CN |

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Technical data

Product properties

| | |
|-------------------------|---------------------------|
| Product type | Single relay |
| Mechanical service life | 5x 10 ⁶ cycles |

Data management status

| | |
|------------------------------|------------|
| Date of last data management | 01.04.2026 |
|------------------------------|------------|

Electrical properties

| | |
|---|---------------------------|
| Service life electrical | see diagram |
| Maximum power dissipation for nominal condition | 0.43 W |
| Test voltage (Winding/contact) | 5 kV AC (50 Hz, 1 min.) |
| Test voltage (Contact/contact) | 2.5 kV AC (50 Hz, 1 min.) |
| Test voltage (open contact) | 1 kV (50 Hz, 1 min.) |

Input data

Coil side

| | |
|--------------------------------|-------------------------|
| Nominal input voltage U_N | 24 V DC |
| Input voltage range | 19.2 V DC ... 52.8 V DC |
| Drive and function | monostable |
| Drive (polarity) | non-polarized |
| Typical input current at U_N | 18 mA |
| Typical response time | 9 ms |
| Typical release time | 6 ms |

Output data

Switching

| | |
|--------------------------------|--|
| Contact switching type | 2 changeover contacts |
| Type of switch contact | Single contact |
| Contact material | AgNi, hard gold-plated |
| Maximum switching voltage | 30 V AC 36 V DC |
| Minimum switching voltage | 12 V (At 1 mA) |
| Limiting continuous current | 50 mA |
| Maximum inrush current | 50 mA |
| Min. switching current | 1 mA (at 12 V) |
| Switching capacity | 1.5 A (at 240 V, AC15) |
| Motor load according to UL 508 | 1/4 HP, 120 V AC (N/O contact) 1/2 HP, 240 V AC (N/O contact) |

Switching: when the gold layer is destroyed

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| | |
|---------------------------------------|--|
| Note | the following values are applicable if a gold layer is destroyed |
| Contact material | AgNi |
| Maximum switching voltage | 250 V AC/DC |
| Minimum switching voltage | 12 V (at 10 mA) |
| Limiting continuous current | 8 A |
| Maximum inrush current | 16 A (20 ms) |
| Min. switching current | 10 mA (at 12 V) |
| Interrupting rating (ohmic load) max. | 2000 VA (for 250 V AC) |
| Switching capacity | 1 A (at 24 V, DC13) |
| | 1.5 A (at 24 V, AC15) |
| | 1.5 A (at 120 V, AC15) |
| | 1.5 A (at 240 V, AC15) |

Connection data

| | |
|-------------------|--------------------------|
| Connection method | Plug / solder connection |
|-------------------|--------------------------|

Dimensions

Item dimensions

| | |
|--------|---------|
| Width | 12.7 mm |
| Height | 29 mm |
| Depth | 25 mm |

Environmental and real-life conditions

Ambient conditions

| | |
|---|------------------|
| Ambient temperature (operation) | -40 °C ... 70 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |

Approvals

Corrosive gas test

| | |
|----------------|----------------------------|
| Identification | ISA-S71.04. G3 Harsh Group |
| | EN 60068-2-60 |

Standards and regulations

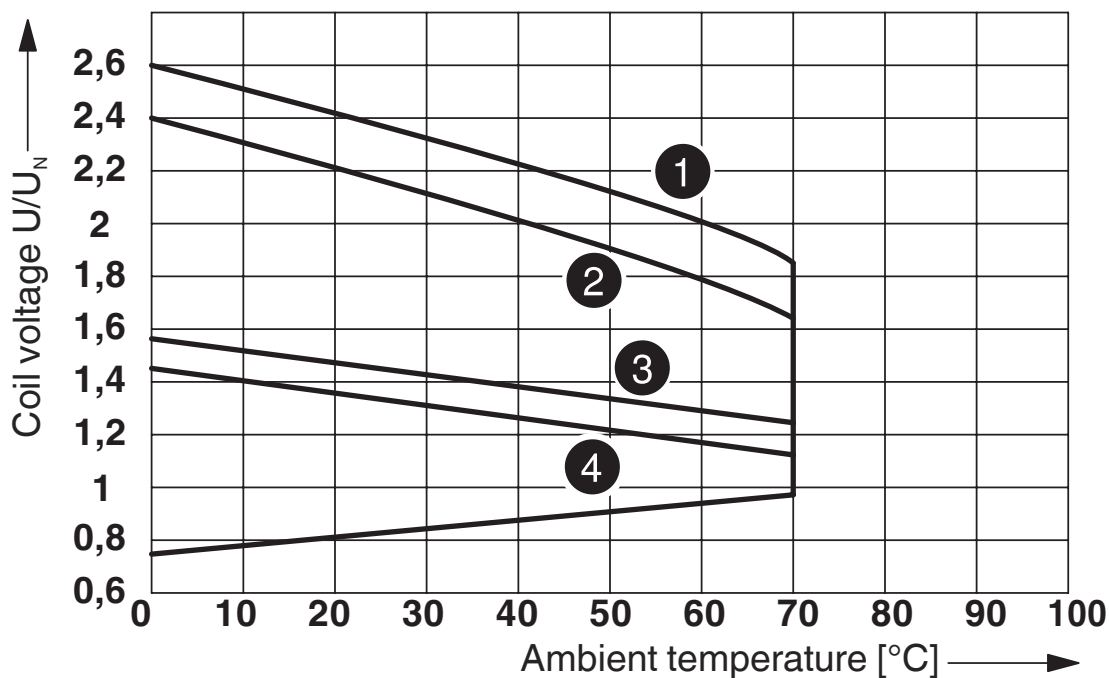
| | |
|-----------------------|--------------|
| Standards/regulations | EN 61810-1 |
| | VDE 0435-201 |
| | EN 50178 |

Drawings

Dimensional drawing



Diagram



- ① DC coils, 0 A contact current
- ② DC coils, 8 A contact current
- ③ AC coils, 0 A contact current
- ④ AC coils, 8 A contact current

Operating voltage range



Interrupting rating

Diagram



Electrical service life

Diagram



Service life reduction factor with various cos phi

Diagram



Permissible humidity for operation and storage.

The maximum permissible ambient temperature as specified in the data sheet must be observed.

Area A: Ice buildup at ambient temperatures $\leq 0^\circ\text{C}$ must be prevented

Area B: Condensation at ambient temperatures $> 0^\circ\text{C}$ must be prevented

On 30 full days that are naturally distributed across an entire year, a humidity level of 95% is permissible at an ambient temperature $\leq 25^\circ\text{C}$.

Circuit diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2987985>



cUL Recognized

Approval ID: FILE E 195083



UL Recognized

Approval ID: FILE E 195083



EAC

Approval ID: RU*C-DE.*08.B.00010



VDE approval of drawings

Approval ID: 40027210

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27371601 |
| ECLASS-15.0 | 27371601 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC001437 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 39122300 |
|-------------|----------|

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Environmental product compliance

EU RoHS

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

China RoHS

| | |
|--|--|
| Environment friendly use period (EFUP) | EFUP-E |
| | No hazardous substances above the limits |

EU REACH SVHC

| | |
|-------------------------------------|----------------------------|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

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