

# REL-MR-110DC/21HC AU - Single relay



2961561

<https://www.phoenixcontact.com/us/products/2961561>

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Plug-in miniature power relay, with multi-layer gold contact for high continuous currents, 1 changeover contact, input voltage 110 V DC

## Your advantages

- RT III-proof (wash-proof)
- Switching current of up to 16 A

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 2961561                        |
| Packing unit                         | 10 pc                          |
| Minimum order quantity               | 10 pc                          |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | C460                           |
| Product key                          | CK6932                         |
| Catalog page                         | Page 290 (C-5-2019)            |
| GTIN                                 | 4017918937959                  |
| Weight per piece (including packing) | 17.23 g                        |
| Weight per piece (excluding packing) | 15.56 g                        |
| Customs tariff number                | 85364900                       |
| Country of origin                    | AT                             |

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## Technical data

### Product properties

|                         |                           |
|-------------------------|---------------------------|
| Product type            | Single relay              |
| Operating mode          | 100% operating factor     |
| Mechanical service life | 3x 10 <sup>7</sup> cycles |

### Insulation characteristics

|                      |     |
|----------------------|-----|
| Overvoltage category | III |
| Pollution degree     | 3   |

### Electrical properties

|                                                 |                                          |
|-------------------------------------------------|------------------------------------------|
| Service life electrical                         | see diagram                              |
| Maximum power dissipation for nominal condition | 0.45 W                                   |
| Test voltage (Winding/contact)                  | 5 kV AC (50 Hz, 1 min., winding/contact) |

### Input data

#### Coil side

|                                         |                          |
|-----------------------------------------|--------------------------|
| Nominal input voltage U <sub>N</sub>    | 110 V DC                 |
| Input voltage range                     | 71.5 V DC ... 264 V DC   |
| Drive and function                      | monostable               |
| Drive (polarity)                        | non-polarized            |
| Typical input current at U <sub>N</sub> | 4.1 mA                   |
| Typical response time                   | 7 ms                     |
| Typical release time                    | 3 ms                     |
| Coil resistance                         | 26600 Ω ±15 % (at 20 °C) |

### Output data

#### Switching

|                                       |                        |
|---------------------------------------|------------------------|
| Contact switching type                | 1 changeover contact   |
| Type of switch contact                | Single contact         |
| Contact material                      | AgNi, hard gold-plated |
| Maximum switching voltage             | 30 V AC                |
|                                       | 36 V DC                |
| Minimum switching voltage             | 100 mV (at 10 mA)      |
| Limiting continuous current           | 50 mA                  |
| Maximum inrush current                | 50 mA                  |
| Min. switching current                | 1 mA (at 24 V)         |
| Interrupting rating (ohmic load) max. | 1.2 W (at 24 V DC)     |
| Switching capacity                    | 2 A (at 24 V, AC15)    |

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                                                            |
| Minimum switching voltage             | 12 V (at 10 mA)                                                  |
| Limiting continuous current           | 16 A                                                             |
| Maximum inrush current                | 50 A (20 ms)                                                     |
| Min. switching current                | 10 mA (at 12 V)                                                  |
| Interrupting rating (ohmic load) max. | 384 W (at 24 V DC)                                               |
|                                       | 58 W (at 48 V DC)                                                |
|                                       | 48 W (at 60 V DC)                                                |
|                                       | 50 W (at 110 V DC)                                               |
|                                       | 80 W (at 220 V DC)                                               |
|                                       | 4000 VA (for 250 V AC)                                           |
| Switching capacity                    | 2 A (at 24 V, DC13)                                              |
|                                       | 0.2 A (at 110 V, DC13)                                           |
|                                       | 0.2 A (at 250 V, DC13)                                           |
|                                       | 2 A (at 24 V, AC15)                                              |
|                                       | 2 A (at 120 V, AC15)                                             |
|                                       | 2 A (at 250 V, AC15)                                             |

Connection data

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

Dimensions

|                     |         |
|---------------------|---------|
| Dimensional drawing |         |
| Width               | 12.7 mm |
| Height              | 29 mm   |
| Depth               | 15.7 mm |

Material specifications

|       |                  |
|-------|------------------|
| Color | white (RAL 9010) |
|-------|------------------|

Environmental and real-life conditions

|                                 |                  |
|---------------------------------|------------------|
| Ambient conditions              |                  |
| Ambient temperature (operation) | -40 °C ... 85 °C |

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

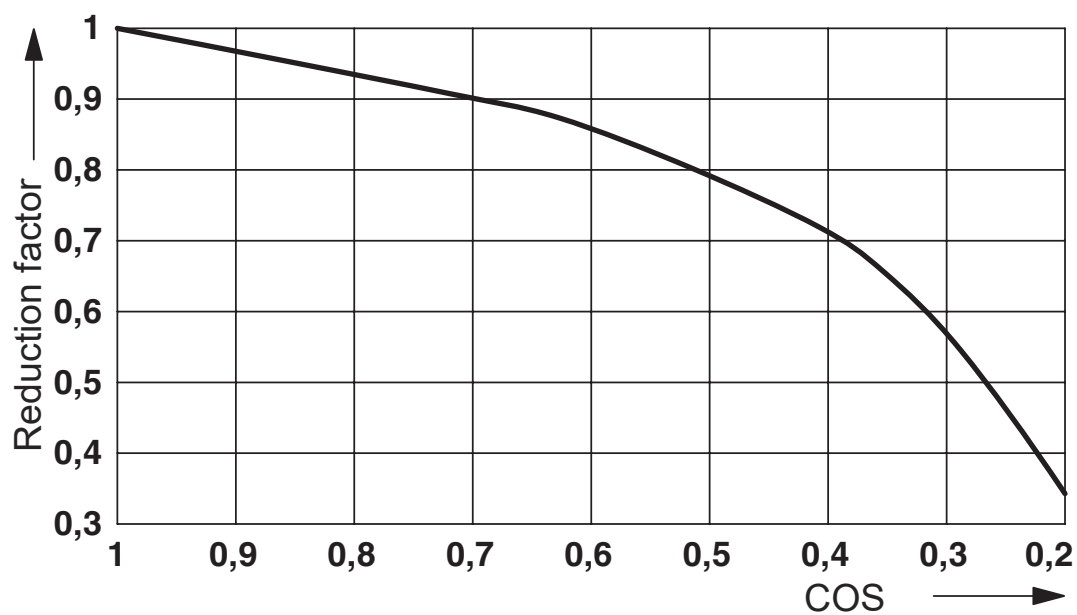
|                       |            |
|-----------------------|------------|
| Standards/regulations | IEC 60664  |
|                       | EN 50178   |
|                       | EN 61810-1 |

## Mounting

|                   |                                                   |
|-------------------|---------------------------------------------------|
| Assembly note     | Can be aligned without spacing (> 70 °C ≥ 2.5 mm) |
| Mounting position | any                                               |

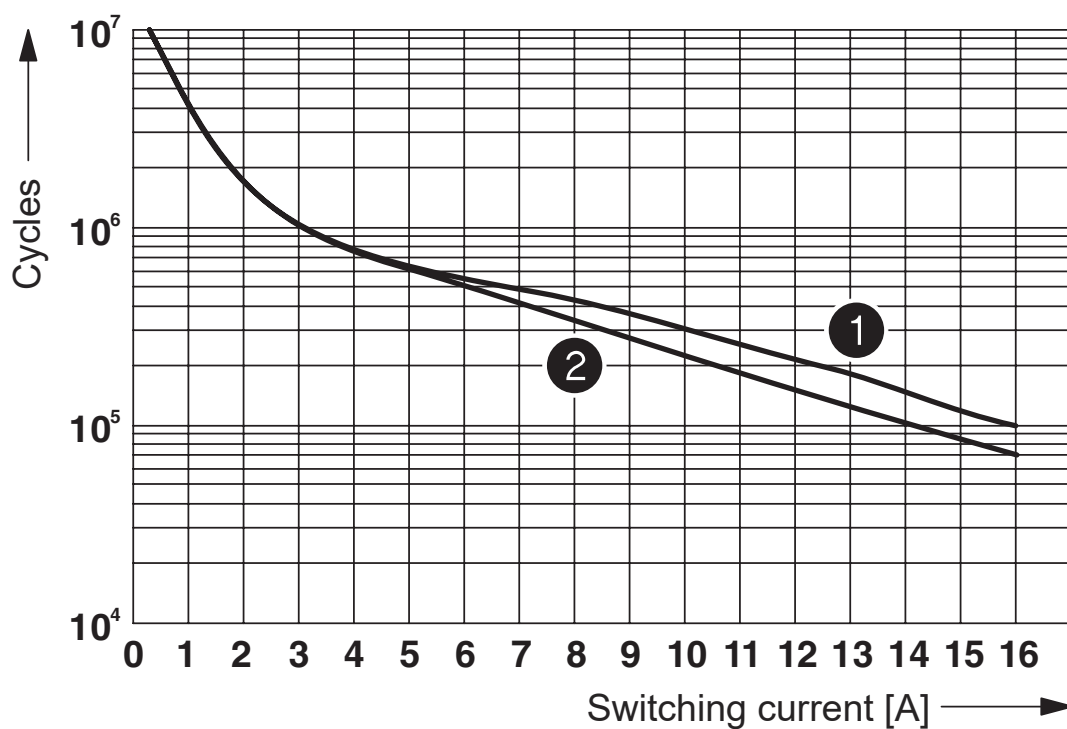
## Drawings

Diagram



Service life reduction factor with various cos phi

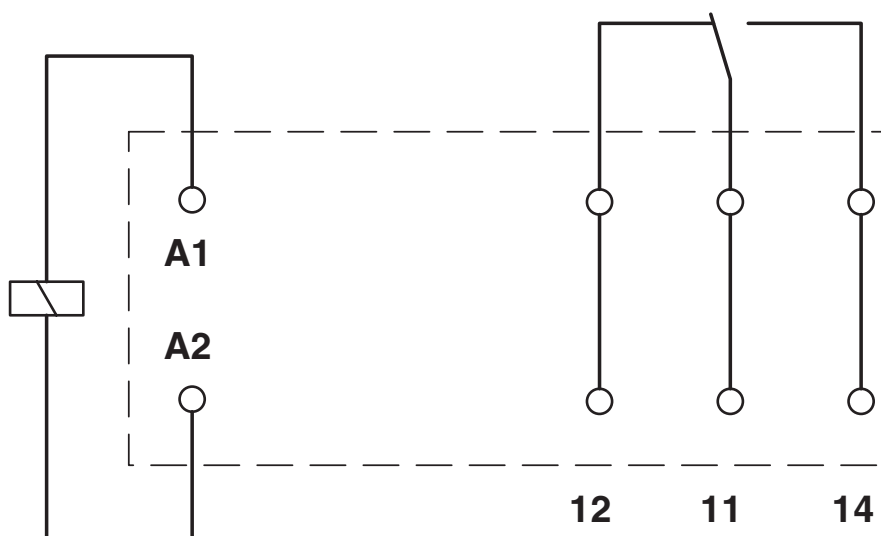
Diagram



- ① 250 V AC, ohmic load (DC coils)
- ② 250 V AC, ohmic load (AC coils)

Electrical service life

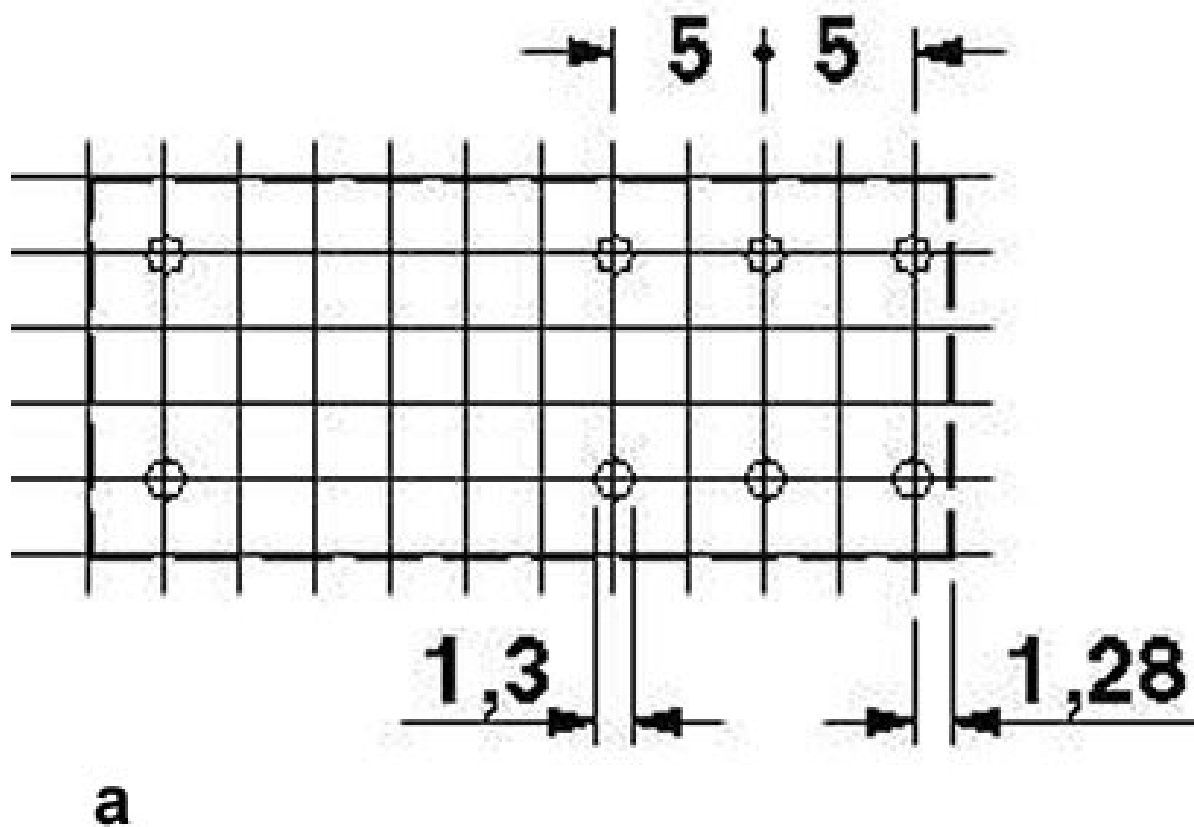
Circuit diagram



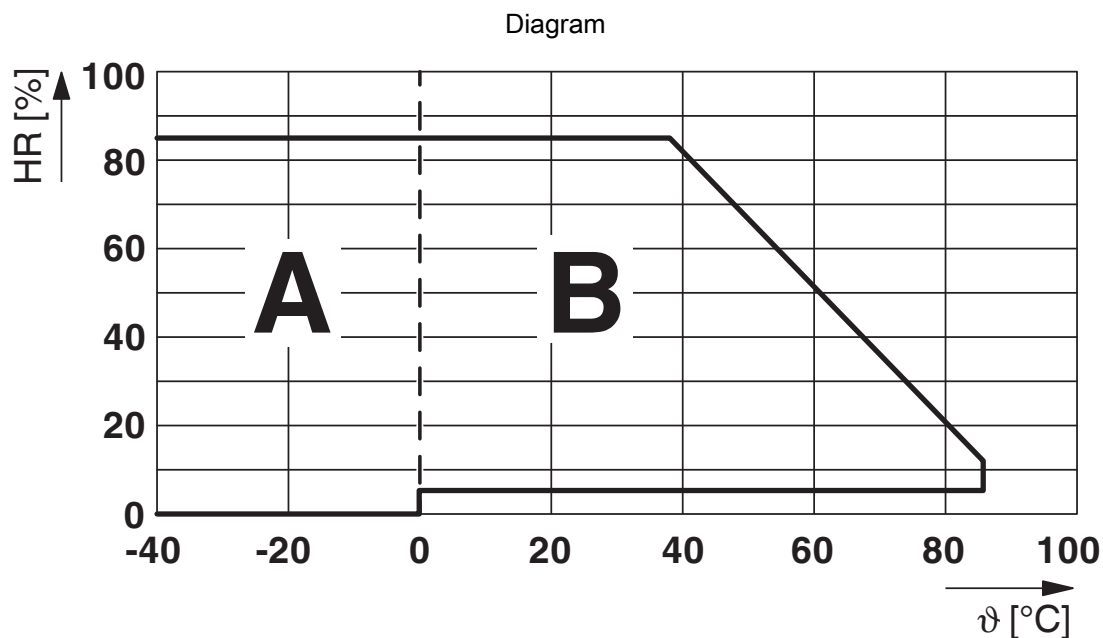
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## Drilling plan/solder pad geometry



a = pitch division 2.5 mm



Permissible humidity for operation and storage.

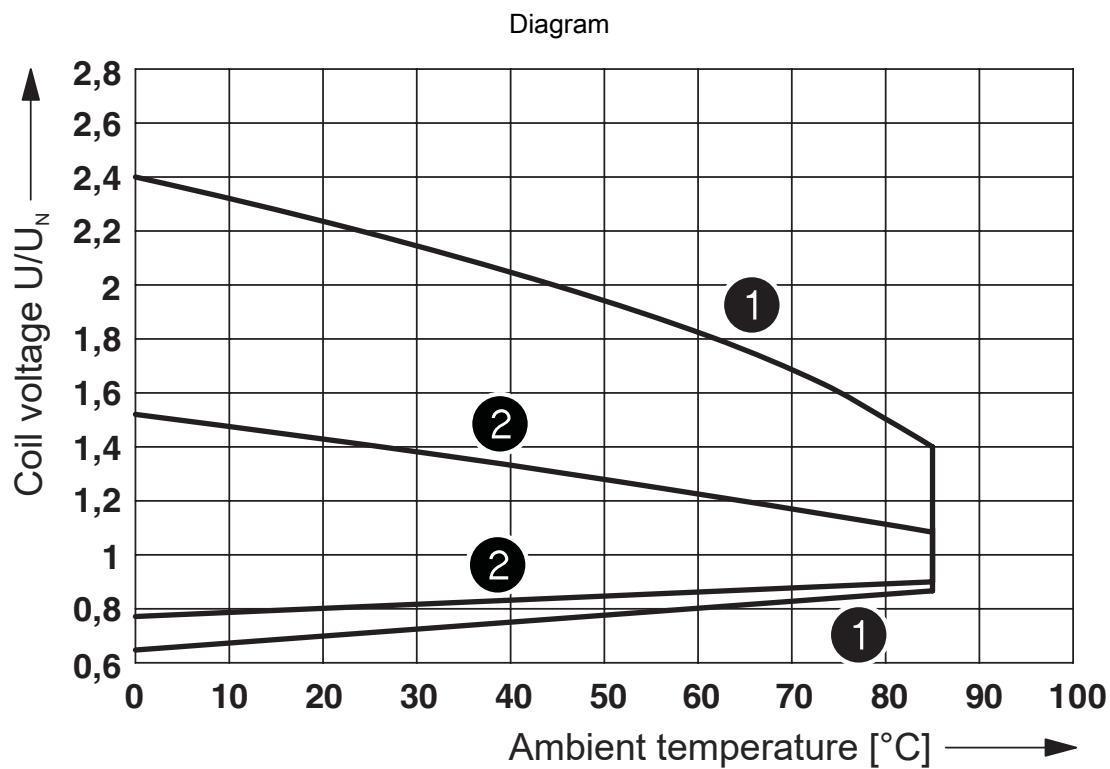
The maximum permissible ambient temperature as specified in the data sheet must be observed.

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  $\leq 25^{\circ}\text{C}$ .





- ① DC coils
- ② AC coils

Operating voltage range

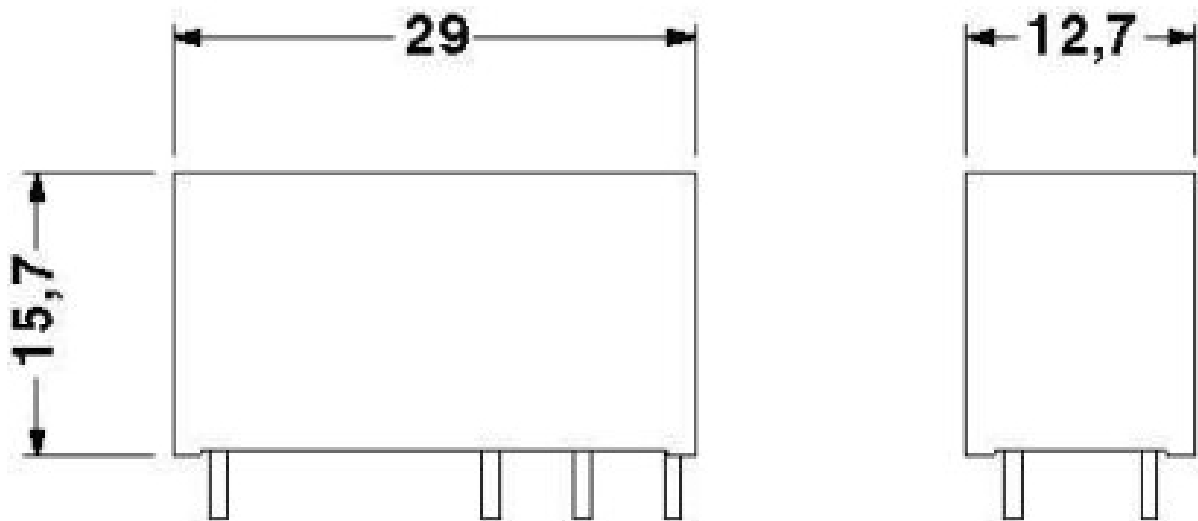
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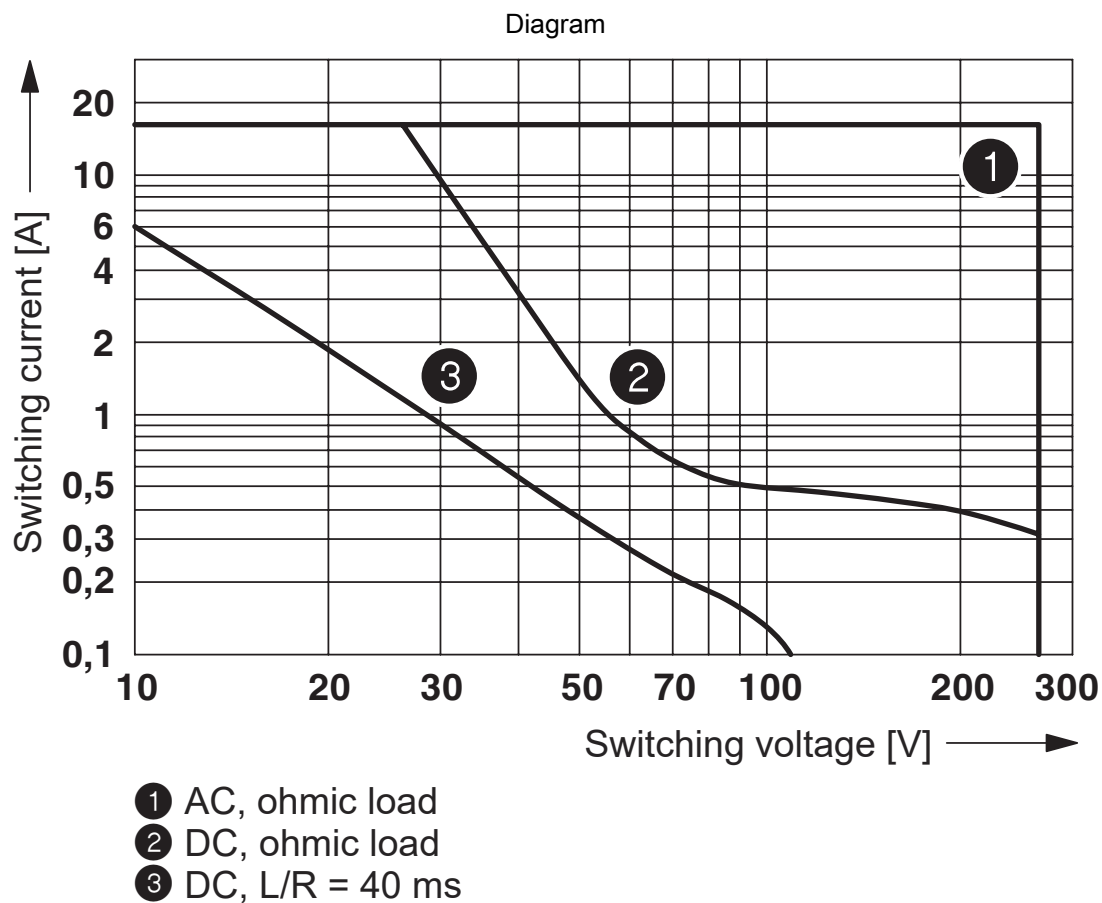
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Dimensional drawing





Interrupting rating

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2961561>



**cUL Recognized**  
Approval ID: FILE E 228652



**UL Recognized**  
Approval ID: FILE E 228652



**EAC**  
Approval ID: TR\_TS\_D\_00573\_c



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



**VDE Zeichengenehmigung**  
Approval ID: 40007758

**cULus Recognized**

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## Classifications

### ECLASS

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

### ETIM

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

### UNSPSC

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

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## Environmental product compliance

### EU RoHS

|                                         |                    |
|-----------------------------------------|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|-----------------------------------------|--------------------|

### 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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## Mandatory accessories

### RIF-1-BPT/2X21 - Relay base

2900931

<https://www.phoenixcontact.com/us/products/2900931>



Relay base RIF-1..., for miniature power relay with 1 or 2 changeover contacts or solid-state relays of the same design, Push-in connection, plug-in option for input/output interference suppression modules, for mounting on NS 35/7,5

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### RIF-1-BSC/2X21 - Relay base

2900930

<https://www.phoenixcontact.com/us/products/2900930>



RIF-1... relay base, for miniature power relay with 1 or 2 changeover contacts or identical solid-state relays, screw connection, plug-in option for input/output interference suppression modules, for mounting on NS 35/7,5

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