

# REL-MR- 12DC/21-21 - Single relay



2961257

<https://www.phoenixcontact.com/gb/products/2961257>

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Plug-in miniature power relay, with power contact, 2 changeover contacts, input voltage 12 V DC

## Your advantages

- RT III-proof (wash-proof)
- Switching current of up to 8 A

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 2961257             |
| Packing unit                         | 10 pc               |
| Minimum order quantity               | 10 pc               |
| Sales key                            | CK6195              |
| Product key                          | CK6195              |
| Catalog page                         | Page 290 (C-5-2019) |
| GTIN                                 | 4017918163525       |
| Weight per piece (including packing) | 16.24 g             |
| Weight per piece (excluding packing) | 15.43 g             |
| Customs tariff number                | 85364190            |
| 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

|            |                  |
|------------|------------------|
| Insulation | Basic insulation |
|------------|------------------|

### Insulation characteristics

|                      |                  |
|----------------------|------------------|
| Insulation           | Basic insulation |
| Overvoltage category | III              |
| Pollution degree     | 3                |

### Electrical properties

|                                                 |                                            |
|-------------------------------------------------|--------------------------------------------|
| Service life electrical                         | see diagram                                |
| Maximum power dissipation for nominal condition | 0.4 W                                      |
| Test voltage (Winding/contact)                  | 5 kV AC (50 Hz, 1 min., winding/contact)   |
| Test voltage (Contact/contact)                  | 2.5 kV AC (50 Hz, 1 min., contact/contact) |

### Input data

#### Coil side

|                                                    |                         |
|----------------------------------------------------|-------------------------|
| Nominal input voltage U <sub>N</sub>               | 12 V DC                 |
| Input voltage range                                | 7.8 V DC ... 29.76 V DC |
| Input voltage range in reference to U <sub>N</sub> | see diagram             |
| Drive and function                                 | monostable              |
| Drive (polarity)                                   | non-polarized           |
| Typical input current at U <sub>N</sub>            | 33 mA                   |
| Typical response time                              | 7 ms                    |
| Typical release time                               | 3 ms                    |
| Coil resistance                                    | 360 Ω ±10 % (at 20 °C)  |

### Output data

#### Switching

|                             |                       |
|-----------------------------|-----------------------|
| Contact switching type      | 2 changeover contacts |
| Type of switch contact      | Single contact        |
| Contact material            | AgNi                  |
| Maximum switching voltage   | 250 V AC/DC           |
| Minimum switching voltage   | 5 V (at 10 mA)        |
| Limiting continuous current | 8 A                   |
| Maximum inrush current      | 25 A (20 ms)          |
| Min. switching current      | 10 mA (At 5 V)        |

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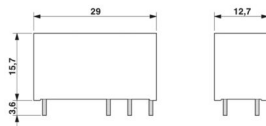
<https://www.phoenixcontact.com/gb/products/2961257>

|                                       |                        |
|---------------------------------------|------------------------|
| Interrupting rating (ohmic load) max. | 190 W (at 24 V DC)     |
|                                       | 85 W (at 48 V DC)      |
|                                       | 60 W (at 60 V DC)      |
|                                       | 44 W (at 110 V DC)     |
|                                       | 60 W (at 220 V DC)     |
|                                       | 2000 VA (for 250 V AC) |
| Switching capacity                    | 2 A (at 24 V, DC13)    |
|                                       | 0.2 A (at 250 V, DC13) |
|                                       | 3 A (at 24 V, AC15)    |
|                                       | 3 A (at 120 V, AC15)   |
|                                       | 3 A (at 250 V, AC15)   |
| Motor load according to UL 508        | 1/4 HP, 120 V AC       |
|                                       | 1/2 HP, 240 V AC       |

## 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

|                                         |                  |
|-----------------------------------------|------------------|
| Degree of protection                    | RT III           |
| Ambient temperature (operation)         | -40 °C ... 85 °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 | IEC 60664 |
|                       | EN 50178  |

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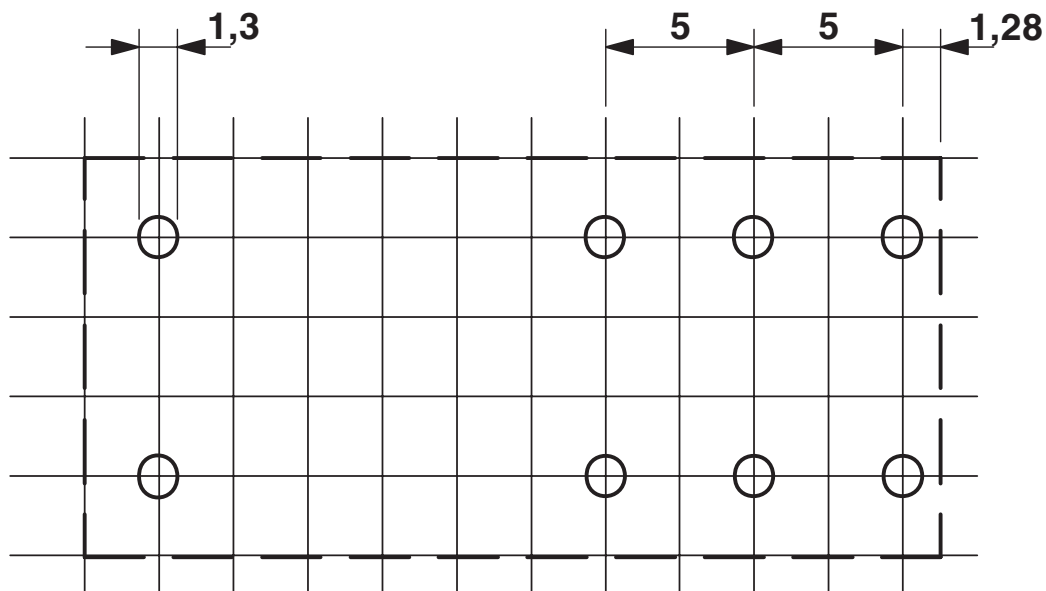
|  |            |
|--|------------|
|  | EN 61810-1 |
|--|------------|

## Mounting

|                       |                                                                        |
|-----------------------|------------------------------------------------------------------------|
| Assembly instructions | Can be aligned without spacing ( $> 70\text{ °C} \geq 2.5\text{ mm}$ ) |
| Mounting position     | any                                                                    |

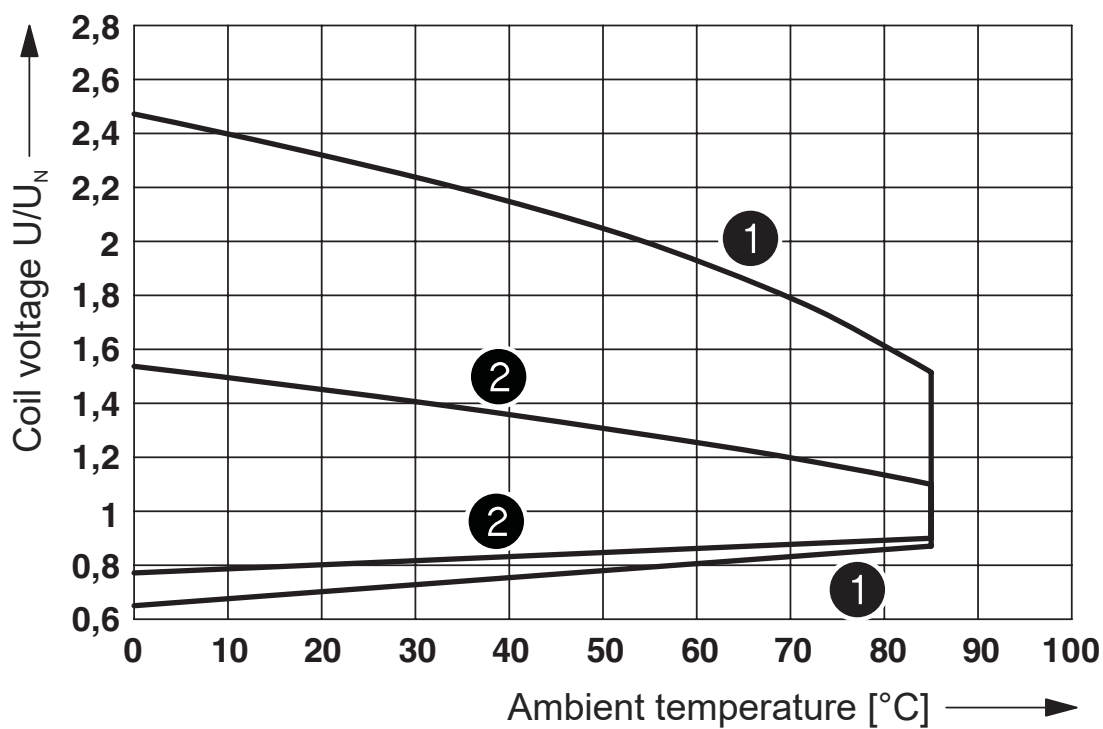
## Drawings

Drilling plan/solder pad geometry



a = pitch division 2.5 mm

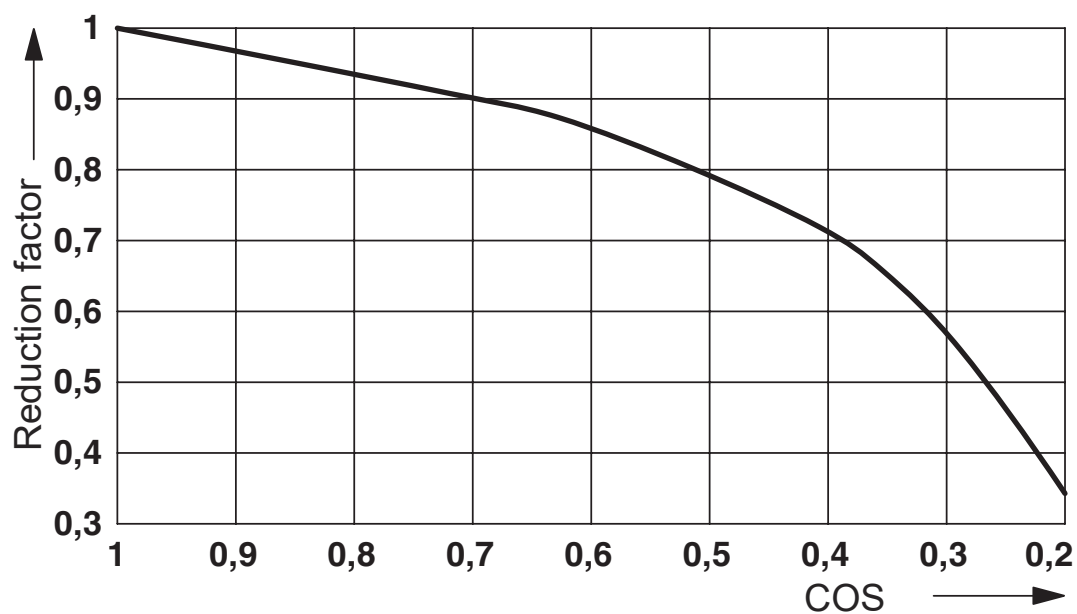
Diagram



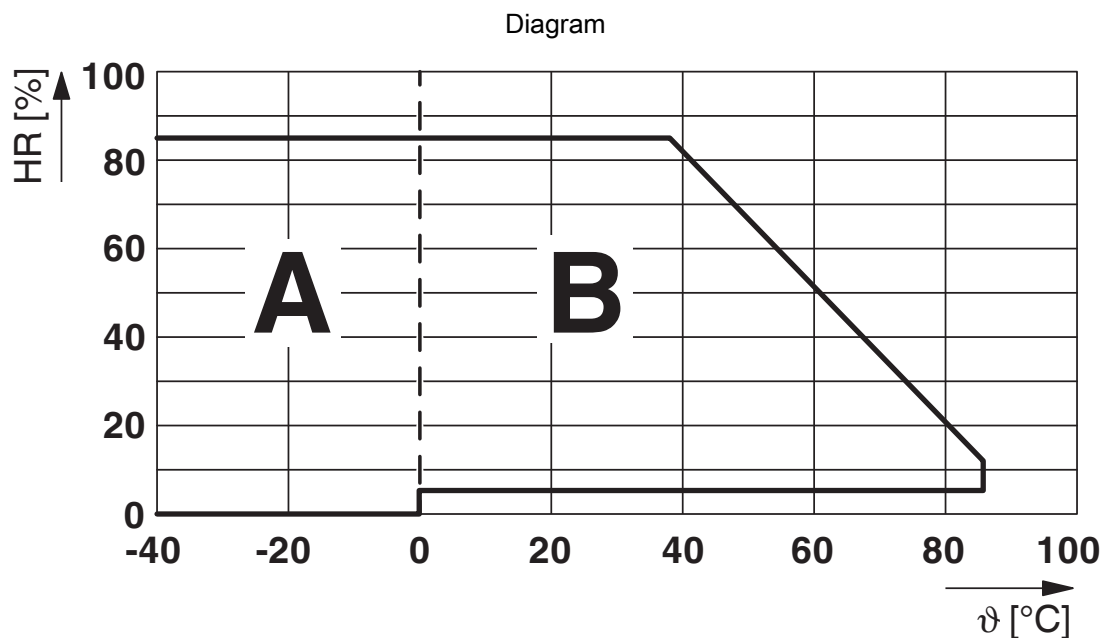
- ① DC coils
- ② AC coils

Operating voltage range

Diagram



Service life reduction factor with various cos phi



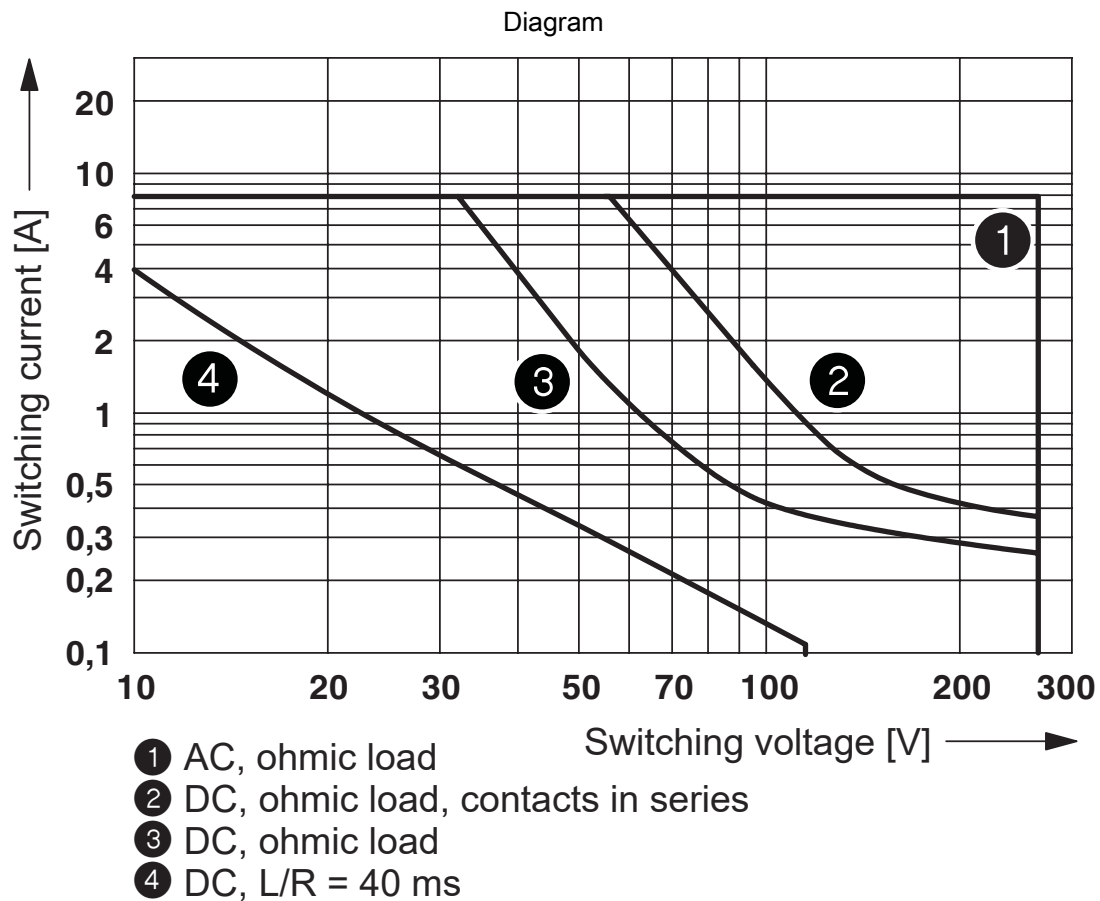
Permissible humidity for operation and storage.

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

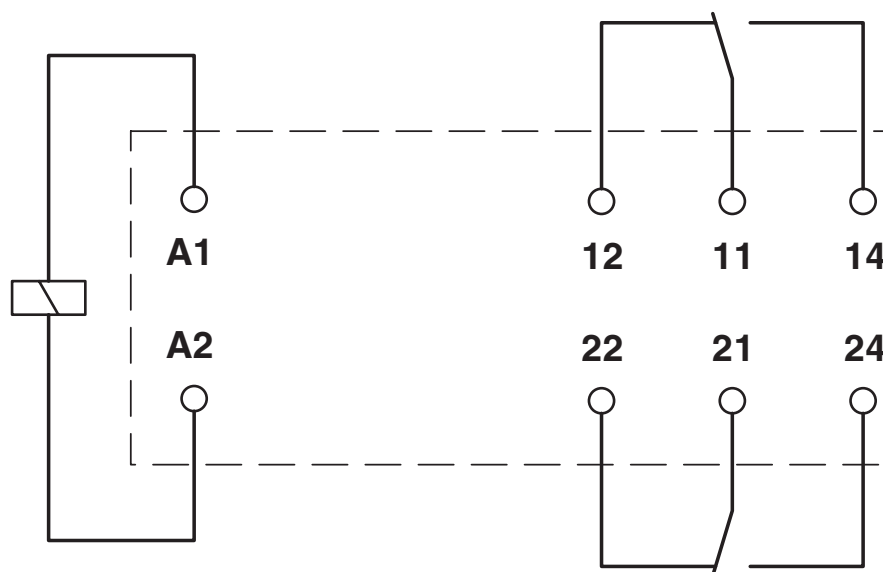
Area B: Condensation at ambient temperatures  $> 0^{\circ}\text{C}$  must be prevented

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



Interrupting rating

Circuit diagram





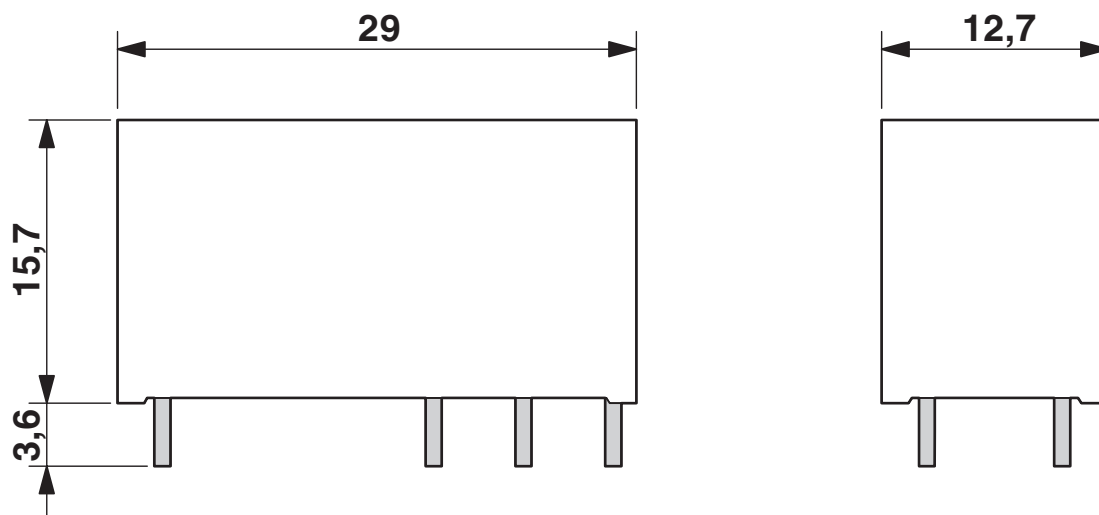
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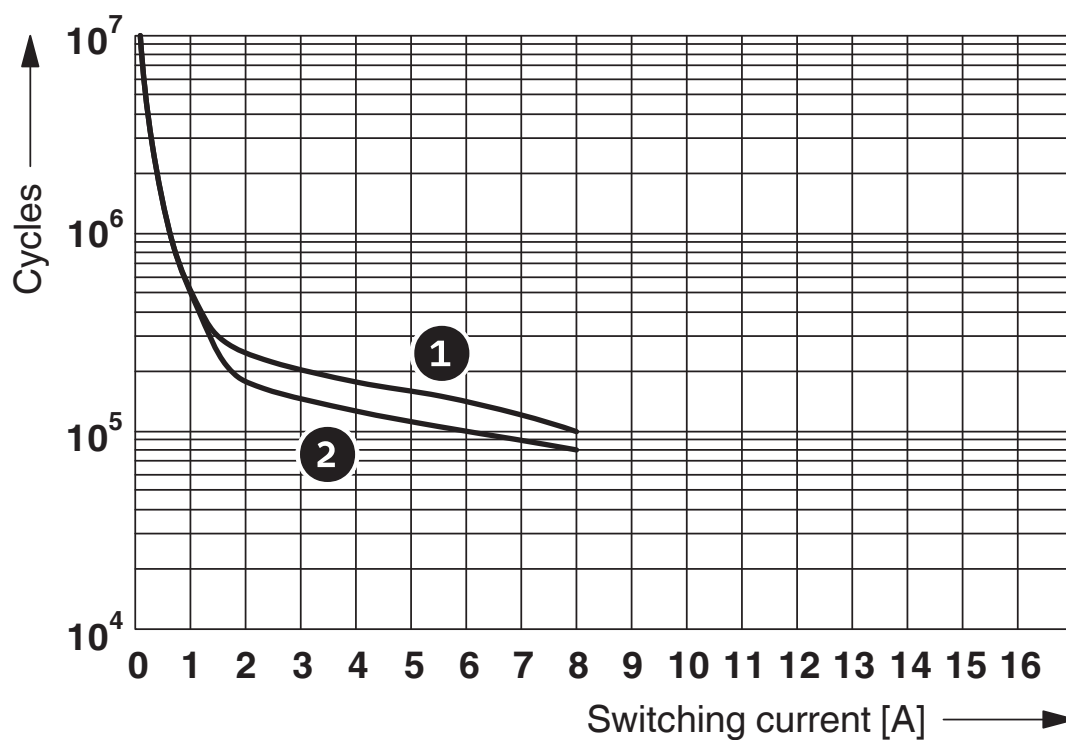
<https://www.phoenixcontact.com/gb/products/2961257>



Dimensional drawing



Diagram



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

Electrical service life

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/gb/products/2961257>



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



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



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



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



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



**VDE Zeichengenehmigung**  
Approval ID: 40007758



**VDE Zeichengenehmigung**  
Approval ID: 40048281



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



**cUL Recognized**  
Approval ID: FILE E 172140



**UL Recognized**  
Approval ID: FILE E 172140

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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

|            |                                                         |
|------------|---------------------------------------------------------|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

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## Mandatory accessories

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

2900931

<https://www.phoenixcontact.com/gb/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/interference suppression modules, for mounting on NS 35/7,5

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

2900930

<https://www.phoenixcontact.com/gb/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/interference suppression modules, for mounting on NS 35/7,5

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