

# REL-MR- 12DC/1ICT - Single relay



1081616

<https://www.phoenixcontact.com/us/products/1081616>

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Pluggable miniature power relay, with tungsten pre-contact for high switch-on currents up to 800 A peaks, 1 N/O contact, input voltage: 12 V DC

## Your advantages

- Safe isolation between coil and contact side
- High degree of protection up to RT III depending on type (wash-proof)
- Power contacts up to 16 A

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1081616                        |
| Packing unit                         | 10 pc                          |
| Minimum order quantity               | 10 pc                          |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | C460                           |
| Product key                          | DK6931                         |
| GTIN                                 | 4055626807881                  |
| Weight per piece (including packing) | 15.94 g                        |
| Weight per piece (excluding packing) | 15.94 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

|                      |                                       |
|----------------------|---------------------------------------|
| Insulation           | Safe isolation, reinforced insulation |
| Overvoltage category | III                                   |
| Pollution degree     | 3                                     |

### Data management status

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

### Electrical properties

|   |  |
|---|--|
| Maximum power dissipation for nominal condition | 0.4 W                                    |
| Test voltage (Winding/contact)                  | 5 kV AC (50 Hz, 1 min., winding/contact) |
| Rated insulation voltage                        | 250 V AC                                 |
| Rated surge voltage                             | 6 kV                                     |

### Input data

#### Coil side

|  |                      |
|--|----------------------|
| Nominal input voltage U <sub>N</sub>               | 12 V DC              |
| Input voltage range                                | 9.6 V DC ... 27 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                              | 8 ms                 |
| Typical release time                               | 3 ms                 |
| Coil resistance                                    | 360 Ω ±10 % (20 °C)  |

### Output data

#### Switching

|                             |                                 |
|-----------------------------|---------------------------------|
| Contact switching type      | 1 N/O contact                   |
| Type of switch contact      | Single contact                  |
| Contact material            | AgSnO                           |
| Maximum switching voltage   | 250 V AC/DC                     |
| Minimum switching voltage   | 12 V (100 mA)                   |
| Limiting continuous current | 16 A                            |
| Maximum inrush current      | 165 A (20 ms)<br>800 A (200 μs) |

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|                                       |                        |
|---------------------------------------|------------------------|
| Min. switching current                | 100 mA (at 12 V DC)    |
| 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 power min.                  | 1200 mW                |

## Connection data

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

## Dimensions

### Item dimensions

|        |         |
|--------|---------|
| 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 II            |
| Ambient temperature (operation)         | -40 °C ... 85 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Altitude                                | ≤ 2000 m         |

## Approvals

### Corrosive gas test

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

## Standards and regulations

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

## Mounting

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

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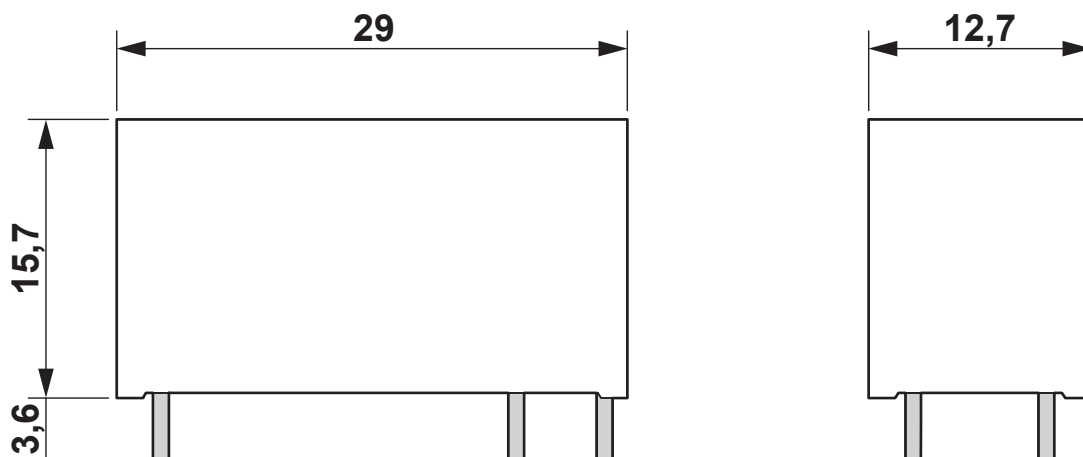


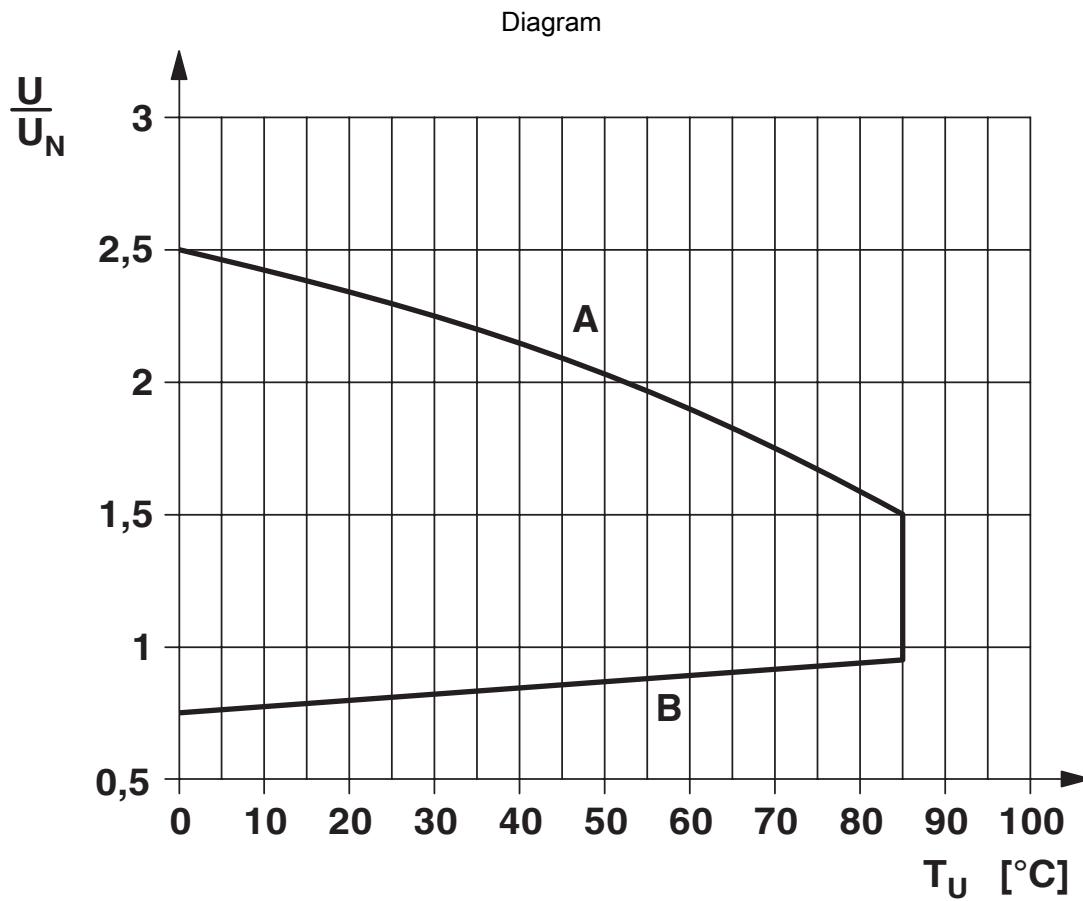
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## Drawings

Dimensional drawing





### Curve A

Maximum permissible continuous voltage  $U_{\max}$  with limiting continuous current on the contact side (see relevant technical data)

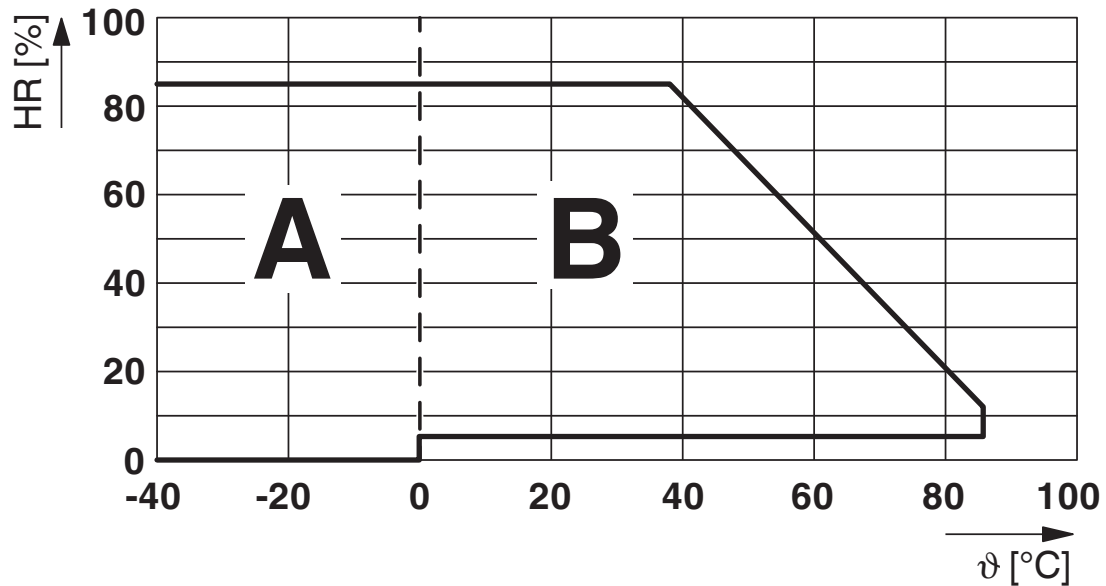
### Curve B

Minimum permissible operate voltage  $U_{\text{op}}$  after pre-excitation (see relevant technical data)

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Diagram



Permissible humidity for operation and storage.

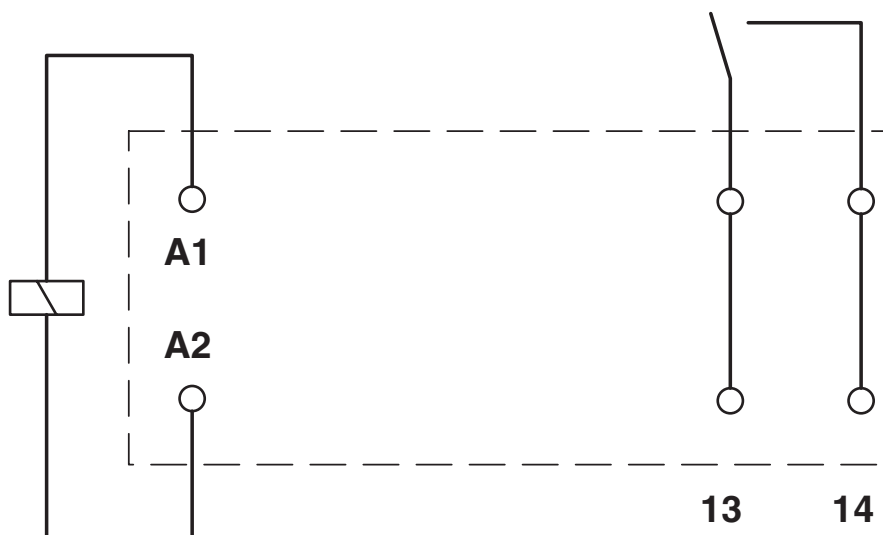
The maximum permissible ambient temperature as specified in the data sheet must be observed.

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



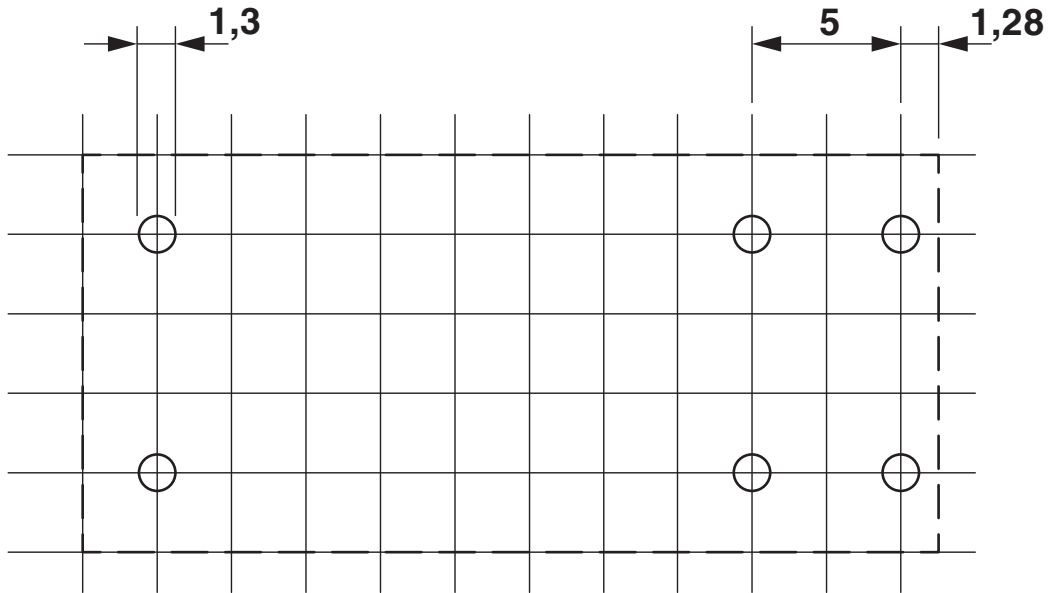
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Drilling plan/solder pad geometry



a = pitch division 2.5 mm

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1081616>



**cUL Recognized**

Approval ID: FILE E 228652



**UL Recognized**

Approval ID: FILE E 228652



**VDE approval of drawings**

Approval ID: 40007758

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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, 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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