

# 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	CK6931
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	$3 \times 10^7$ cycles

### Data management status

Date of last data management	25.06.2024
Article revision	00

### Insulation characteristics

Insulation	Safe isolation, reinforced insulation
Oversupply category	III
Pollution degree	3

### 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 $U_N$	12 V DC
Input voltage range	9.6 V DC ... 27 V DC
Input voltage range in reference to $U_N$	see diagram
Drive and function	monostable
Drive (polarity)	non-polarized
Typical input current at $U_N$	33 mA
Typical response time	8 ms
Typical release time	3 ms
Coil resistance	$360 \Omega \pm 10\% (20^\circ\text{C})$

### 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)

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	800 A (200 $\mu$ s)
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 capacity min.	1200 mW

## Connection data

Connection method	Plug / solder connection
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## Dimensions

Dimensional drawing	
Width	12.7 mm
Height	29 mm
Depth	15.7 mm

## Material specifications

Color	white (RAL 9010)
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## 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
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Assembly note	Can be aligned without spacing ( $> 70^{\circ}\text{C} \geq 2.5\text{ mm}$ )
Mounting position	any

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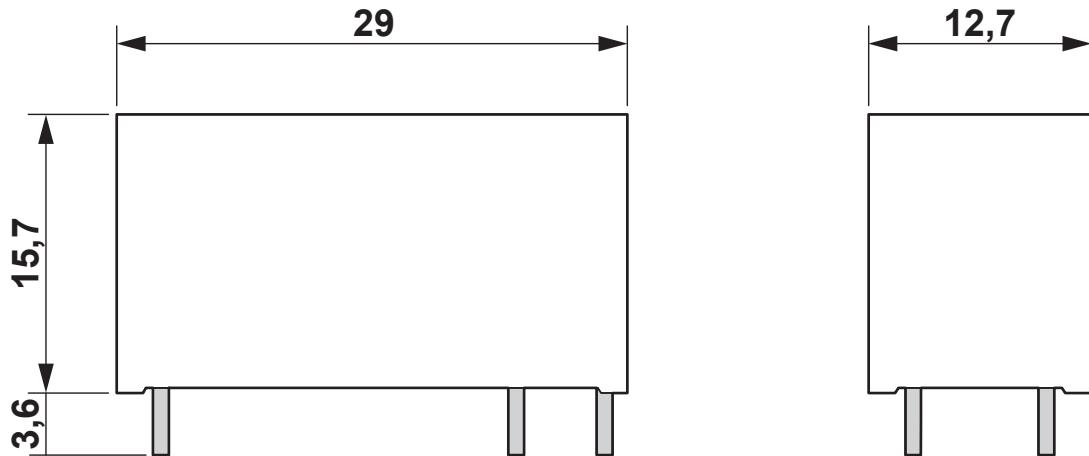


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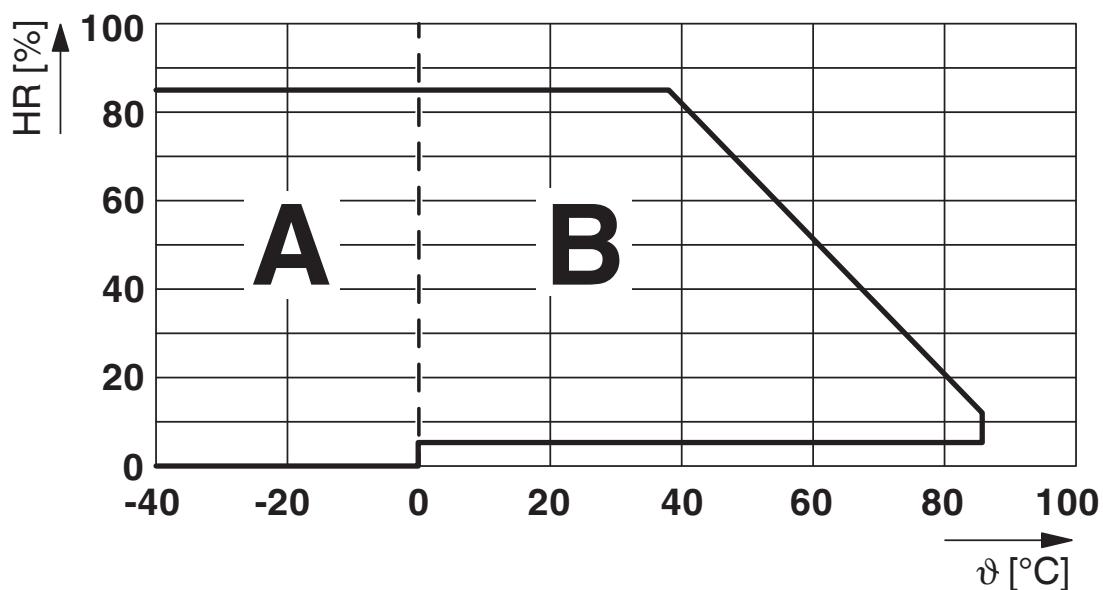
<https://www.phoenixcontact.com/us/products/1081616>

## Drawings

Dimensional drawing



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

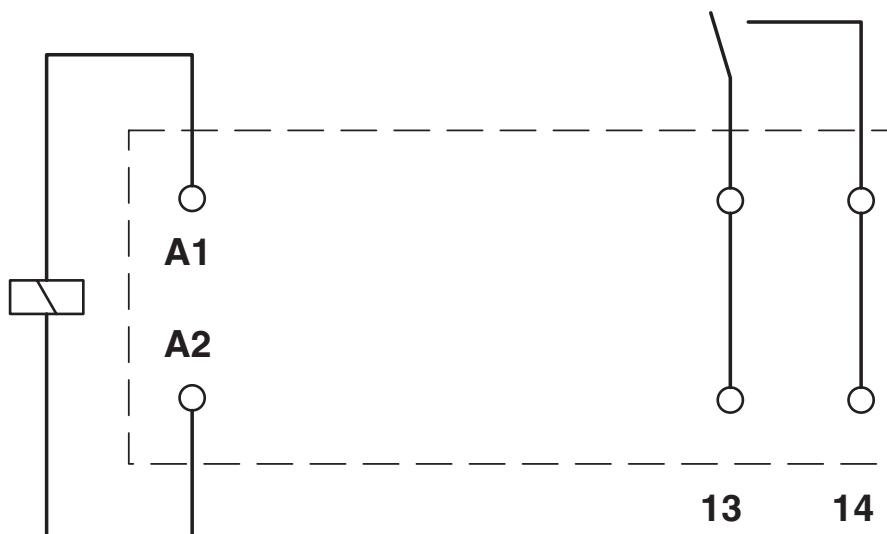
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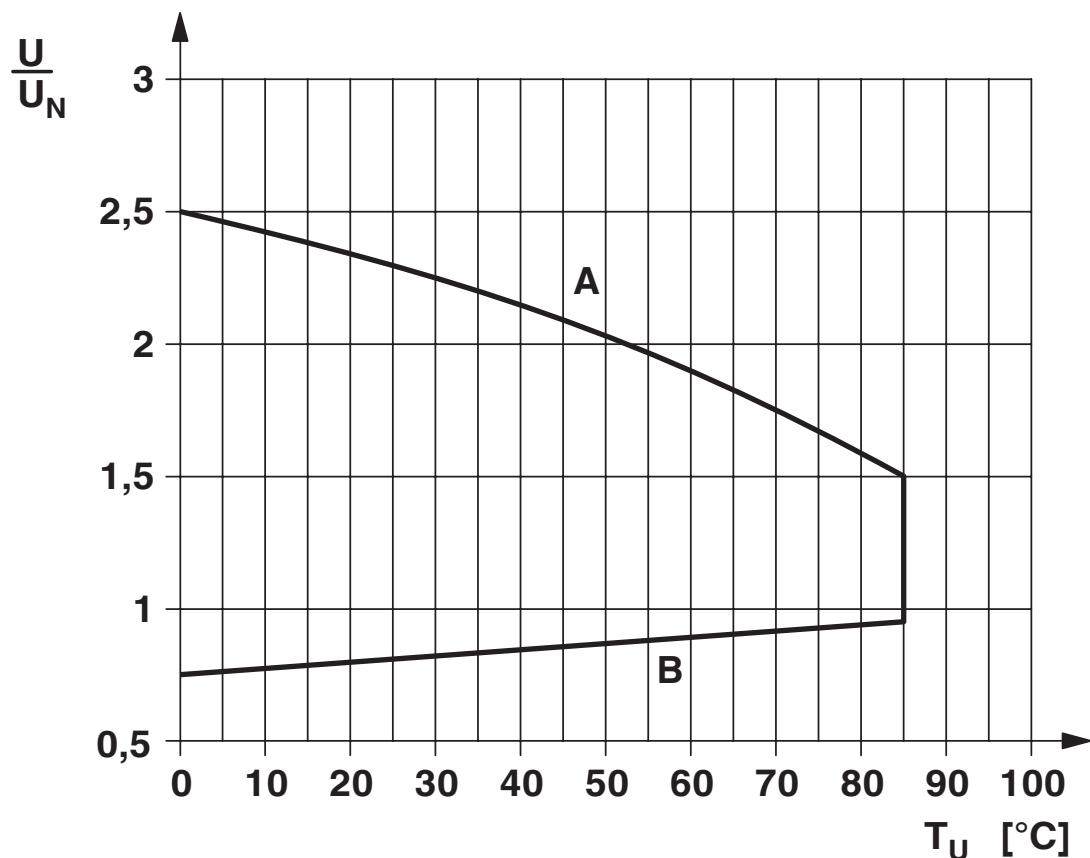
<https://www.phoenixcontact.com/us/products/1081616>



Circuit diagram



Diagram



## 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  $U_{op}$  after pre-excitation (see relevant technical data)

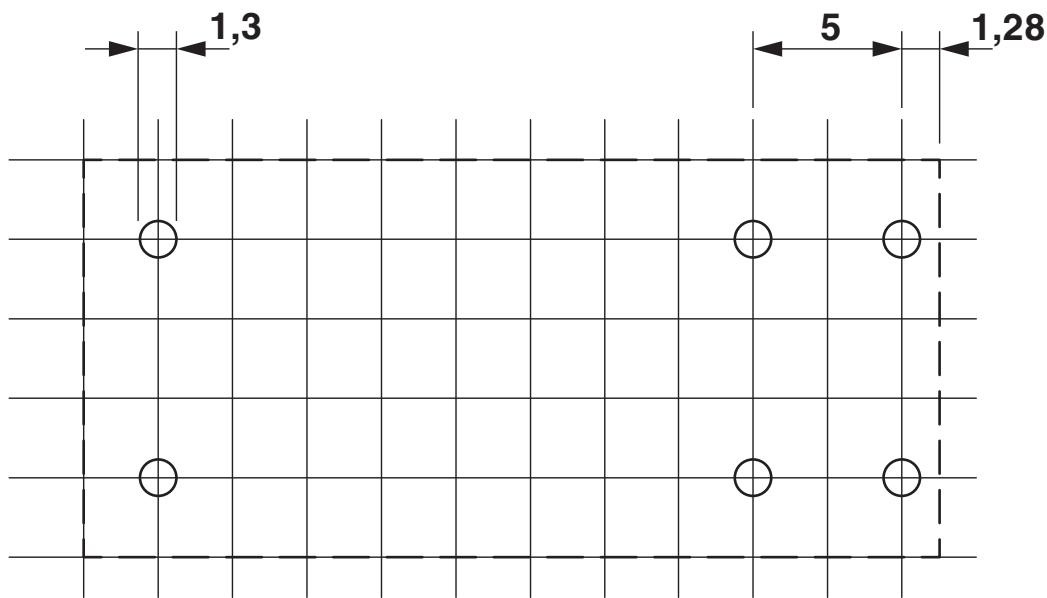
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Drilling plan/solder pad geometry



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 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
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### UNSPSC

UNSPSC 21.0	39122300
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### 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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