



# RM85 for switching higher voltages


## miniature relays




- **Switching voltage 480 V AC**

- Contact gap: 0,6 mm
- CTI 250
- 5000 V / 10 mm reinforced insulation
- For PCB
- DC coils, insulation class F: 155 °C
- Compliance with standard EN 60335-1
- Recognitions, certifications, directives: RoHS,  

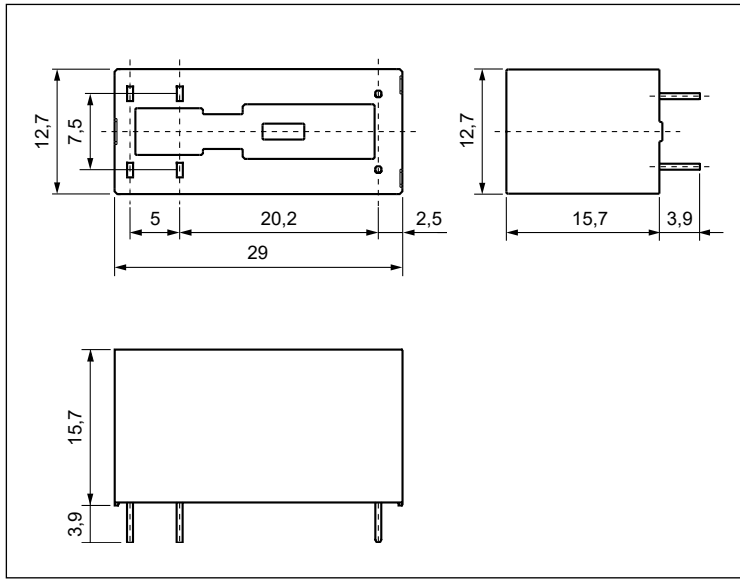
### Contact data

|   |                           |   |   |
|---|---------------------------|---|---|
| Number and type of contacts               |                           | 1 NO  |   |
| Contact material                          |                           | <b>AgSnO<sub>2</sub></b>                                  |   |
| Rated / max. switching voltage            | AC                        | 250 V / 480 V   |   |
| Min. switching voltage                    |                           | 10 V  |   |
| Rated load (capacity)                     | AC1                       | 5 A / 480 V AC  |   |
|   | AC15                      | 3 A / 120 V   | 1,5 A / 240 V (B300)  |
|   | DC1                       | 16 A / 24 V DC  |   |
|   | DC13                      | 0,22 A / 120 V  | 0,1 A / 250 V (R300)  |
| Motor load                                | acc. to UL 508            | 1/2 HP  | 240 V AC, 4,9 FLA, single-phase motor  |
|   | AC3 acc. to IEC 60947-4-1 | 0,5 kW  | 240 V AC, single-phase motor  |
| Min. switching current                    |                           | 10 mA   |   |
| Max. inrush current                       |                           | 30 A  |   |
| Rated current                             |                           | 16 A / 250 V AC   |   |
| Max. breaking capacity                    | AC1                       | 2 400 VA  |   |
| Min. breaking capacity                    |                           | 1 W   |   |
| Contact resistance                        |                           | ≤ 100 mΩ  | 100 mA, 24 V  |
| Max. operating frequency                  |                           |   |   |
| • at rated load                           | AC1                       | 360 cycles/hour   |   |
| • no load                                 |                           | 3 600 cycles/hour   |   |
| <b>Coil data</b>                          |                           |   |   |
| Rated voltage                             | DC                        | 3, 5, 6, 9, <b>12</b> , 18, <b>24</b> , 36, 48, 60, 110 V |   |
| Must release voltage                      |                           | ≥ 0,1 U <sub>n</sub>                                      |   |
| Operating range of supply voltage         |                           | see Table 1   |   |
| Rated power consumption                   | DC                        | 0,4 ... 0,48 W  |   |
| <b>Insulation according to EN 60664-1</b> |                           |   |   |
| Insulation rated voltage                  |                           | 480 V AC  |   |
| Rated surge voltage                       |                           | 4 000 V   | 1,2 / 50 μs   |
| Overvoltage category                      |                           | III   |   |
| Insulation pollution degree               |                           | 2   |   |
| Dielectric strength                       |                           |   |   |
| • between coil and contacts               |                           | 5 000 V AC  | type of insulation: reinforced  |
| • contact clearance                       |                           | 2 000 V AC  | type of clearance: micro-disconnection  |
| Contact - coil distance                   |                           |   |   |
| • clearance                               |                           | ≥ 10 mm   |   |
| • creepage                                |                           | ≥ 10 mm   |   |
| <b>General data</b>                       |                           |   |   |
| Operating / release time (typical values) |                           | 7 ms / 3 ms   |   |
| Electrical life (number of cycles)        |                           |   |   |
| • resistive AC1                           |                           | > 4 x 10 <sup>4</sup>                                     | 5 A, 480 V AC   |
| • motor load acc. to UL 508               |                           | 10 <sup>5</sup>   | 5 FLA / 7 LRA, 240 V AC, 65 °C  |
|   |                           | 10 <sup>5</sup>   | 5 FLA / 12 LRA, 24 V DC, 65 °C  |
| Mechanical life                           | 3 600 cycles/hour         | > 3 x 10 <sup>7</sup>                                     |   |
| Electromagnetic load according to UL 508  |                           | Heavy Pilot Duty 480 V AC, 15 A make / 1,5 A break        |   |
| Dimensions (L x W x H)                    |                           | 29 x 12,7 x 15,7 mm                                       |   |
| Weight                                    |                           | 14 g  |   |
| Ambient temperature                       | • storage                 | -40...+85 °C  |   |
| (non-condensation and/or icing)           | • operating               | -40...+85 °C  |   |
| Cover protection category                 |                           | IP 40 or <b>IP 67</b>                                     | EN 60529  |
| Environmental protection                  |                           | RTIII   | EN 61810-7  |
| Shock resistance                          |                           | 30 g  |   |
| Vibration resistance                      |                           | 10 g 10...150 Hz  |   |
| Solder bath temperature                   |                           | max. 270 °C   |   |
| Soldering time                            |                           | max. 5 s  |   |

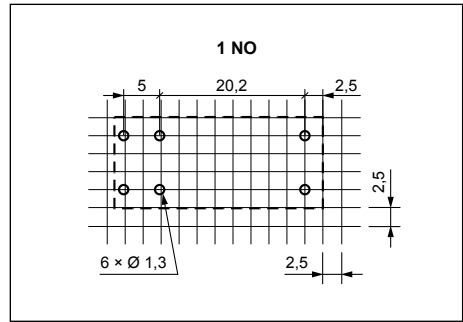
The data in bold type relate to the standard versions of the relays.  For single phase motors for 110-120 V AC do not use motors with higher FLA than given for 240 V AC.

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## Dimensions



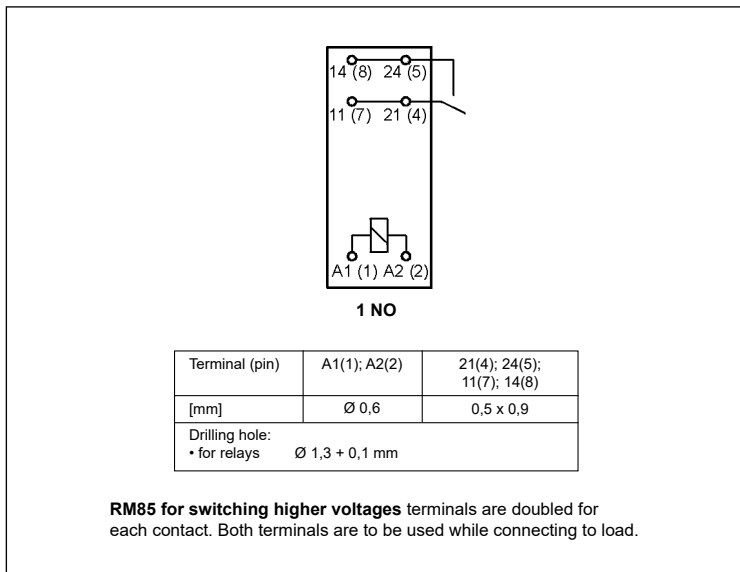
## Pinout (solder side view)



## Mounting

Relays **RM85 for switching higher voltages** are designed for direct PCB mounting.

## Connection diagram (pin side view)



# RM85 for switching higher voltages

## miniature relays

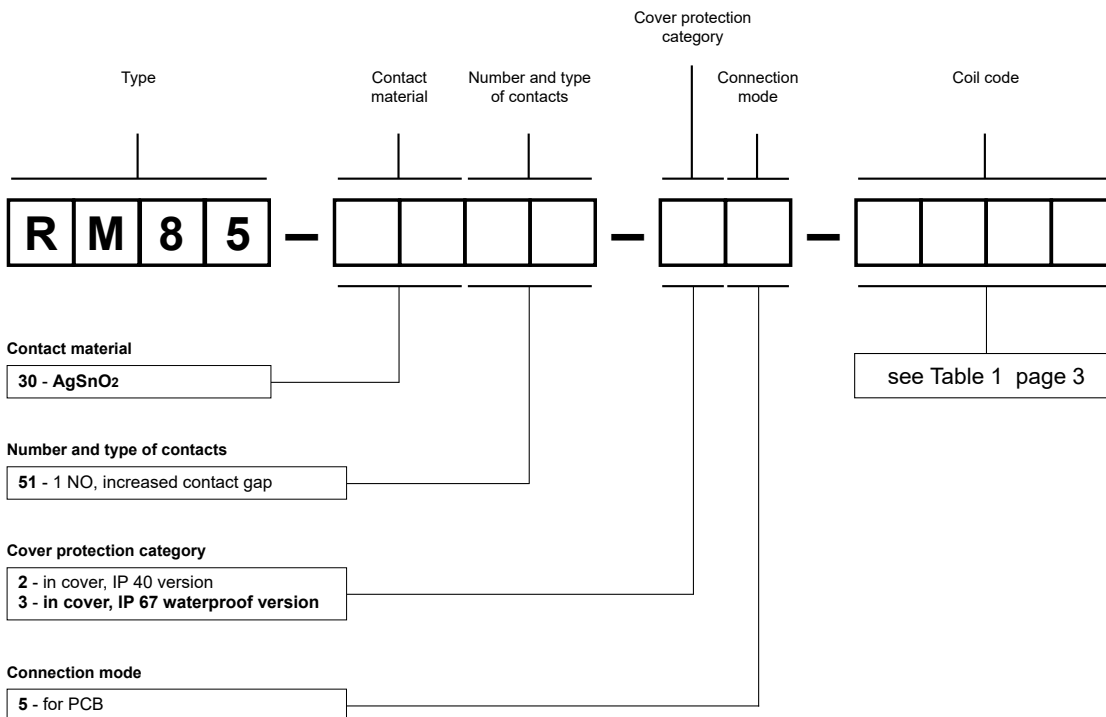
Coil data - DC voltage version

Table 1

| Coil code   | Rated voltage<br>V DC | Coil resistance<br>at 20 °C<br>$\Omega$ | Acceptable<br>resistance     | Coil operating range<br>V DC |                 |
|-------------|-----------------------|---|------------------------------|------------------------------|-----------------|
|             |                       |   |                              | min. (at 20 °C)              | max. (at 20 °C) |
| 1003        | 3                     | 22                                      | $\pm 10\%$                   | 2,1                          | 7,6             |
| 1005        | 5                     | 60                                      | $\pm 10\%$                   | 3,5                          | 12,7            |
| 1006        | 6                     | 90                                      | $\pm 10\%$                   | 4,2                          | 15,3            |
| 1009        | 9                     | 200                                     | $\pm 10\%$                   | 6,3                          | 22,9            |
| <b>1012</b> | <b>12</b>             | <b>360</b>                              | <b><math>\pm 10\%</math></b> | <b>8,4</b>                   | <b>30,6</b>     |
| 1018        | 18                    | 710                                     | $\pm 10\%$                   | 12,6                         | 45,9            |
| <b>1024</b> | <b>24</b>             | <b>1 440</b>                            | <b><math>\pm 10\%</math></b> | <b>16,8</b>                  | <b>61,2</b>     |
| 1036        | 36                    | 3 140                                   | $\pm 10\%$                   | 25,2                         | 91,8            |
| 1048        | 48                    | 5 700                                   | $\pm 10\%$                   | 33,6                         | 122,4           |
| 1060        | 60                    | 7 500                                   | $\pm 10\%$                   | 42,0                         | 153,0           |
| 1110        | 110                   | 25 200                                  | $\pm 10\%$                   | 77,0                         | 280,0           |

The data in bold type relate to the standard versions of the relays.

### Ordering codes



Example of ordering code:

**RM85-3051-35-1012**

relay **RM85**, with increased contact gap, for PCB, one normally open contact, contact material AgSnO<sub>2</sub>, coil voltage 12 V DC, in cover IP 67

#### PRECAUTIONS:

1. Ensure that the parameters of the product described in its specification provide a safety margin for the appropriate operation of the device or system and never use the product in circumstances which exceed the parameters of the product. 2. Never touch any live parts of the device. 3. Ensure that the product has been connected correctly. An incorrect connection may cause malfunction, excessive heating or risk of fire. 4. In case of any risk of any serious material loss or death or injuries of humans or animals, the devices or systems shall be designed so to equip them with double safety system to guarantee their reliable operation.