

RM12




miniature relays

62

RM12 1 CO

RM12 1 NO / 1 NC



- DC coils - of up to 60 V DC, insulation class F: 155 °C
- CTI 250 • 5000 V / 8 mm reinforced insulation
- For PCB
- Terminals: 3,2 mm for version 1 CO, 5,04 mm for version 1 NO and 1 NC
- Compliance with standards: EN 61810-1, EN 60730-1, EN 60335-1, UL 508, CSA 22.2 No.14-95
- Recognitions, certifications, directives: RoHS,   

Contact data

| | | |
|--------------------------------|----------------------------------|--|
| Number and type of contacts | | 1 CO, 1 NO, 1 NC |
| Contact material | | AgNi , AgNi/Au hard gold plating, AgSnO ₂ , AgSnO ₂ /Au hard gold plating |
| Rated / max. switching voltage | AC | 250 V / 400 V |
| Min. switching voltage | | 5 V AgNi, 5 V AgNi/Au hard gold plating 10 V AgSnO ₂ , 5 V AgSnO ₂ /Au hard gold plating |
| Rated load (capacity) | AC1 DC1 | 8 A / 250 V AC 8 A / 24 V DC |
| Motor load | acc. to UL 508 | 1/2 HP 240 V AC, 4,9 FLA, single-phase motor ① |
| Min. switching current | | 5 mA AgNi, 2 mA AgNi/Au hard gold plating 10 mA AgSnO ₂ , 2 mA AgSnO ₂ /Au hard gold plating |
| Max. inrush current | | 10 A |
| Rated current | | 8 A |
| Max. breaking capacity | AC1 | 2000 VA |
| Min. breaking capacity | | 0,3 W AgNi, 0,05 W AgNi/Au hard gold plating 1 W AgSnO ₂ , 0,05 W AgSnO ₂ /Au hard gold plating |
| Contact resistance | | ≤ 100 mΩ 100 mA, 24 V |
| Max. operating frequency | • at rated load AC1 • no load | 360 cycles/hour 18 000 cycles/hour |

Coil data

| | | |
|-----------------------------------|----|-------------------------------|
| Rated voltage | DC | 5, 6, 9, 12, 18, 24, 48, 60 V |
| Must release voltage | | DC: ≥ 0,1 U _n |
| Operating range of supply voltage | | see Table 1 |
| Rated power consumption | DC | 0,25 W |

Insulation according to EN 60664-1

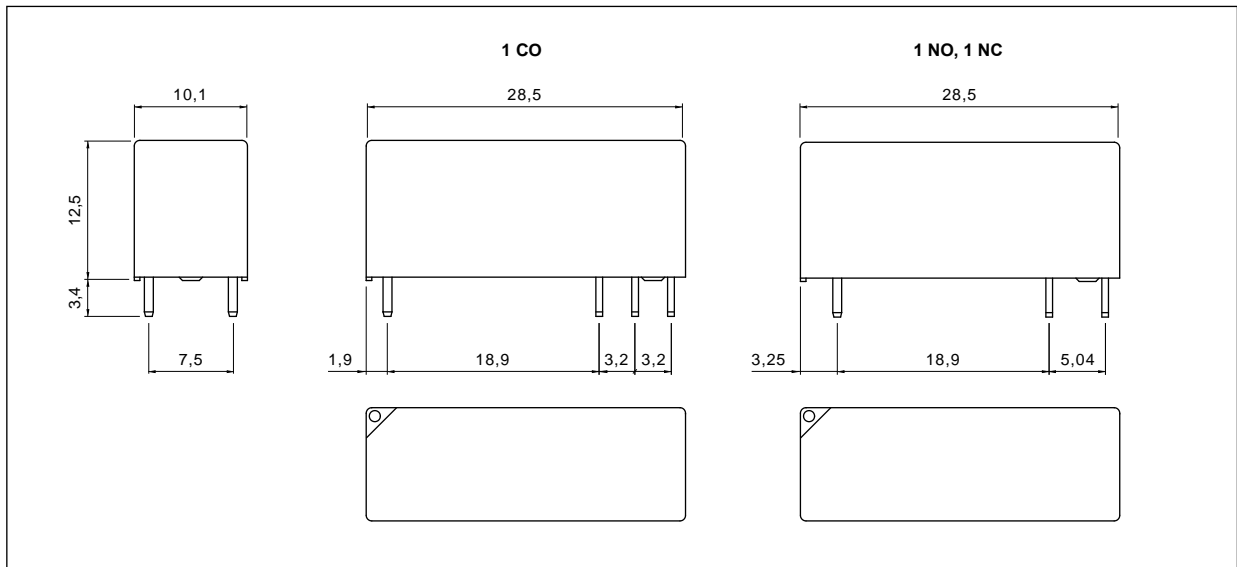
| | | |
|----------------------------------|--|--|
| Insulation rated voltage | | 400 V AC |
| Rated surge voltage | | 4 000 V 1,2 / 50 μs |
| Overvoltage category | | III IEC 61810-5 |
| Insulation pollution degree | | 3 |
| Flammability class | | V-0 UL 94 |
| Insulation group (contact plate) | | IIIa |
| Tracking resistance category | | 2 UL 508 |
| Dielectric strength | • between coil and contacts • contact clearance | 5 000 V AC 1 min., type of insulation: reinforced 1 000 V AC 1 min., type of clearance: micro-disconnection |
| Contact - coil distance | • clearance • creepage | ≥ 8 mm ≥ 8 mm |

General data

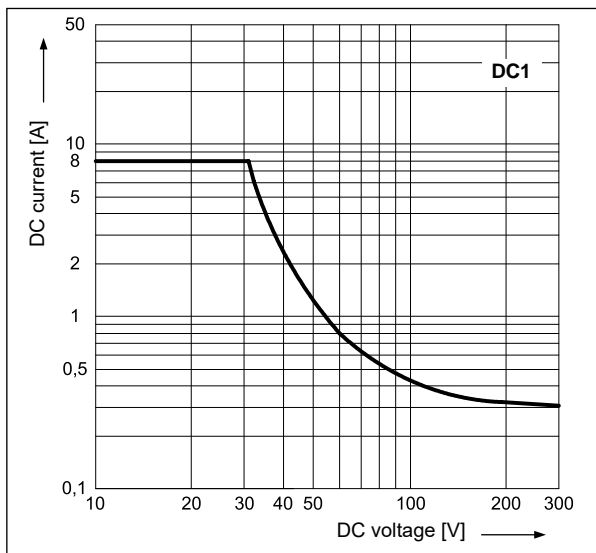
| | | |
|---|------------------------------------|--|
| Operating / release time (typical values) | | 10 ms / 5 ms |
| Electrical life (number of cycles) | • resistive AC1 • resistive DC1 | 10 ⁵ 1 NO, 8 A, 250 V AC, 70 °C (VDE) 6,5 x 10 ⁴ 1 CO (NO side), 8 A, 250 V AC, 70 °C (VDE) 5 x 10 ⁴ 1 NO, 8 A, 250 V AC, 85 °C (VDE) > 10 ⁵ 8 A, 24 V DC |
| Mechanical life | 18 000 cycles/hour | 10 ⁷ |
| Load according to UL 508 | | 10 A 277 V AC, general purpose B300 inductive load (Pilot Duty) |
| Dimensions (L x W x H) | | 28,5 x 10,1 x 12,5 mm |
| Weight | | 8 g |
| Ambient temperature (non-condensation and/or icing) | • storage • operating | -40...+85 °C -40...+85 °C |
| Cover protection category | | IP 40 or IP 67 EN 60529 |
| Environmental protection | | RTII EN 61810-7 |
| Shock resistance | (NO/NC) | 10 g / 5 g EN 60068-2-27, Test Ea |
| Vibration resistance | (NO/NC) | 10 g / 5 g 10...150 Hz EN 60068-2-6, Test Fc |

The data in bold type relate to the standard versions of the relays. ① For single phase motors for 110-120 V AC do not use motors with higher FLA than given for 240 V AC.

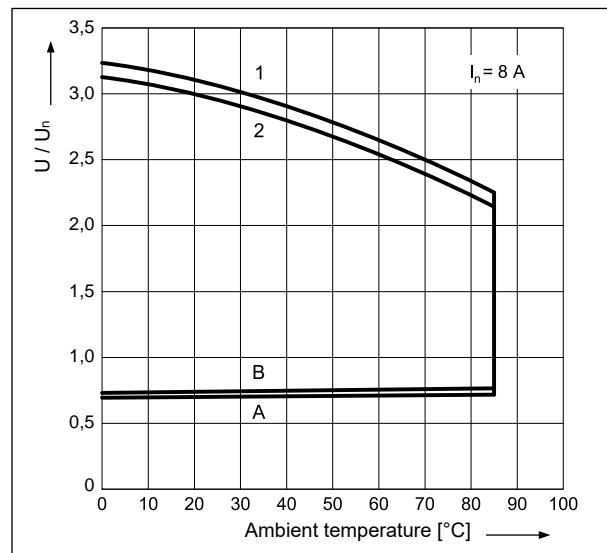
Dimensions



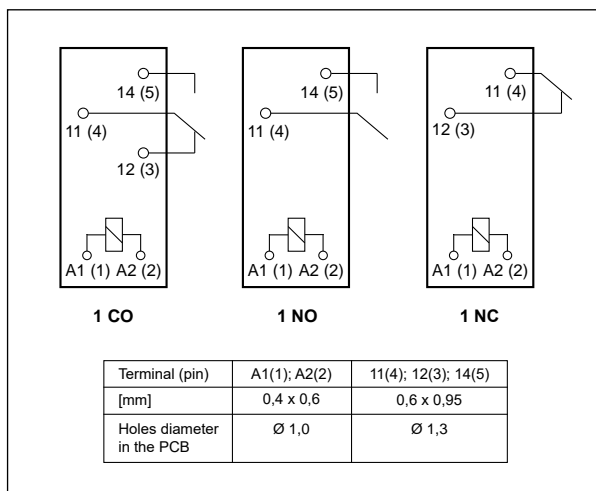
Max. DC resistive load breaking capacity Fig. 1



Coil operating range - DC Fig. 2



Connection diagrams (pin side view)



Description of Fig. 2

A - relations between make voltage and ambient temperature at no load on contacts. Coil temperature and ambient temperature are equal before coil energizing. Make voltage is not higher than the value read on Y axis (multiplication of rated voltage).

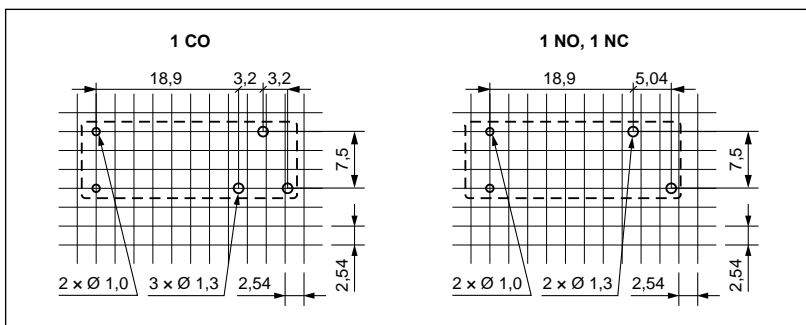
B - relations between make voltage and ambient temperature after initial coil heating up with 1,1 U_n, at continues load of I_n on contacts. Make voltage is not higher than the value read on Y axis (multiplication of rated voltage).

1, 2 - values on Y axis represent allowed overvoltage on coil at certain ambient temperature and contact load:

1 - no load

2 - rated load

Pinout (solder side view)



Mounting

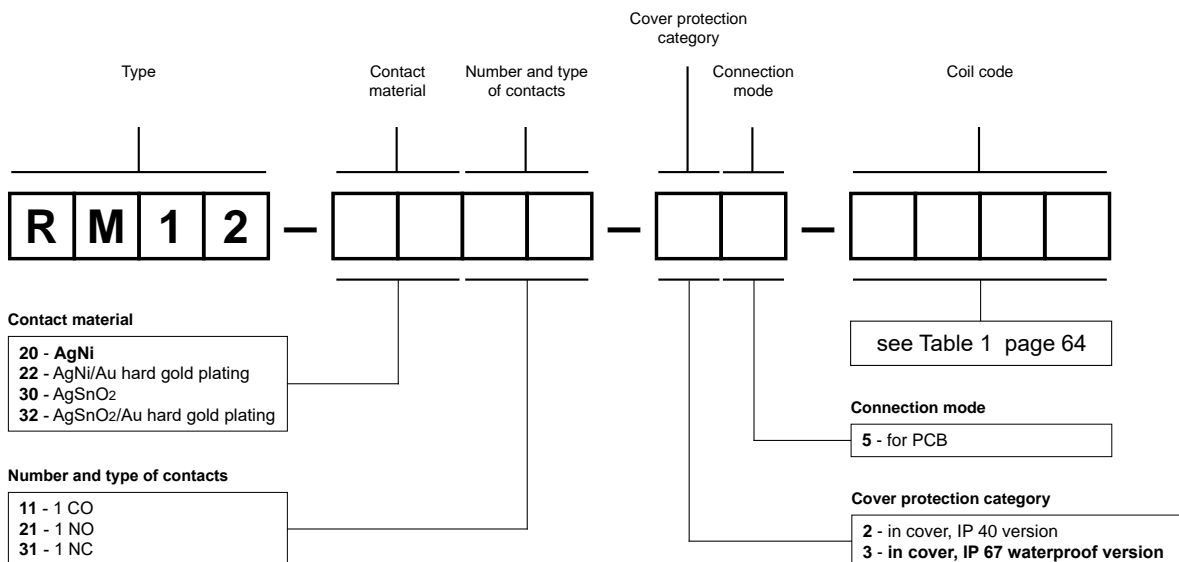
Relays **RM12** are designed for direct PCB mounting.

Coil data - DC voltage version

Table 1

| Coil code | Rated voltage V DC | Coil resistance at 20 °C Ω | Acceptable resistance | Coil operating range V DC | |
|-----------|-----------------------|----------------------------------|--------------------------|------------------------------|-----------------|
| | | | | min. (at 20 °C) | max. (at 20 °C) |
| 1005 | 5 | 102 | ± 10% | 3,5 | 15,0 |
| 1006 | 6 | 144 | ± 10% | 4,2 | 18,0 |
| 1009 | 9 | 330 | ± 10% | 6,3 | 27,0 |
| 1012 | 12 | 580 | ± 10% | 8,4 | 36,0 |
| 1018 | 18 | 1 300 | ± 10% | 12,6 | 54,0 |
| 1024 | 24 | 2 300 | ± 10% | 16,8 | 72,0 |
| 1048 | 48 | 9 340 | ± 10% | 33,6 | 144,0 |
| 1060 | 60 | 14 000 | ± 10% | 42,0 | 180,0 |

Ordering codes



Examples of ordering codes:

- RM12-2011-35-1012** relay **RM12**, for PCB, one changeover contact, contact material AgNi, coil voltage 12 V DC, in cover IP 67
- RM12-3031-25-1024** relay **RM12**, for PCB, one normally closed contact, contact material AgSnO₂, coil voltage 24 V DC, in cover IP 40