

RUCT-M

relays for railroad industry - industrial



- **Relays with permanent magnet** ①, designed for continuous operation*
- For plug-in sockets: on 35 mm rail mount acc. to EN 60715
- DC coils, insulation class F: 155 °C • Version: faston 187 (4,8 x 0,5 mm)
- Compliance with standards: EN 45545-2 (category EL10, requirement R26 - flammability class V-0 acc. to EN 60695-11-10); EN 61373 category 1, class B (mechanical shock and vibration resistance); EN 50155; EN 60077-1; EN 61810-1
- Recognitions, certifications, directives: RoHS, **CE ENEC IK** ②

Contact data

| | | | |
|--------------------------------|--------------|--|--|
| Number and type of contacts | | 1 NO (double-break) | 2 NO |
| Contact material | | AgNi | |
| Rated / max. switching voltage | | 250 V DC; 250 V AC / 250 V DC; 250 V AC | |
| Min. switching voltage | | 5 V | |
| Rated load | DC1 | 16 A / 24 V DC; 13 A / 110 V DC 10 A / 220 V DC | 16 A / 24 V DC; 9 A / 110 V DC 3,8 A / 220 V DC |
| | DC L/R=40 ms | 16 A / 24 V DC; 4,6 A / 110 V DC 2,5 A / 220 V DC | 16 A / 24 V DC; 1,2 A / 110 V DC 0,4 A / 220 V DC |
| | AC1 | 16 A / 250 V AC | 16 A / 250 V AC |
| Min. switching current | | 5 mA | |
| Max. make current | | 40 A 20 ms | |
| Rated current | | 16 A | |
| Max. breaking capacity | AC1 | 4 000 VA | |
| Min. breaking capacity | | 0,3 W | |
| Contact resistance | | ≤ 100 mΩ | |
| Max. operating frequency | AC1 | • at rated load | 1 200 cycles/hour |
| | | • no load | 12 000 cycles/hour |

Coil data

| | | |
|-----------------------------------|----|--|
| Rated voltage | DC | 24, 110 V ③ |
| Must release voltage | | ≥ 0,1 U _n |
| Operating range of supply voltage | | 0,7...1,25 U _n EN 50155 see Table 1 |
| Must operate voltage | | ≤ 0,7 U _n |
| Rated power consumption | DC | 1,7 W reinforced version |

Insulation according to EN 60664-1

| | | |
|-----------------------------|-----------------------------|--|
| Insulation rated voltage | | 250 V AC |
| Rated surge voltage | | 4 000 V 1,2 / 50 μs |
| Overvoltage category | | III |
| Insulation pollution degree | | 3 |
| Flammability class | | V-0 UL 94, PN-EN 60695-11-10 |
| Dielectric strength | • between coil and contacts | 2 500 V AC 1 min., type of insulation: basic |
| | • contact clearance | 4 000 V AC 1 min., contact 1 NO, type of clearance: full-disconnection, with contact gap ≥ 5 mm |
| • pole - pole | | 2 000 V AC 1 min., contacts 2 NO, type of clearance: full-disconnection, with contact gap ≥ 2,5 mm |
| | | 2 500 V AC 1 min., contacts 2 NO, type of insulation: basic |
| Contact - coil distance | • clearance | ≥ 6,3 mm |
| | • creepage | ≥ 8 mm |

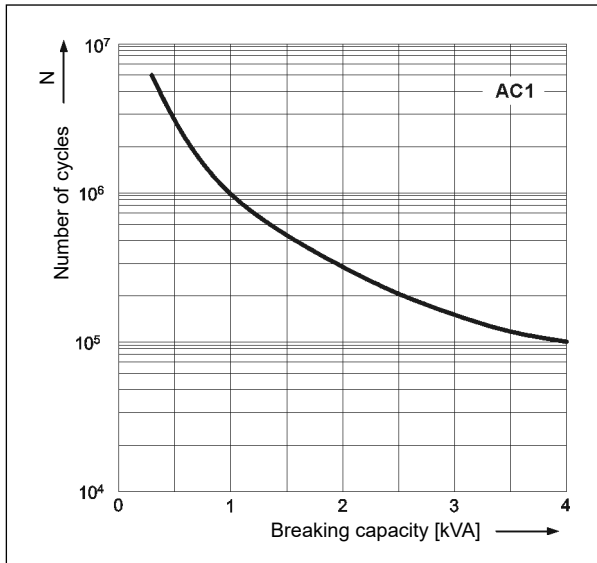
General data

| | | |
|---------------------------|------------------|--|
| Operating / release time | • typical values | 20 ms / 15 ms |
| | • max. values | 25 ms / 35 ms |
| Electrical life | • resistive DC1 | > 2 x 10 ⁵ 10 A, 220 V DC |
| | • DC L/R=40 ms | > 2 x 10 ⁵ 2,5 A, 220 V DC |
| | | > 2 x 10 ⁵ 3,8 A, 220 V DC |
| | | > 2 x 10 ⁵ 0,4 A, 220 V DC |
| Mechanical life (cycles) | | > 2 x 10 ⁷ |
| Dimensions (L x W x H) | | 36,1 x 38,6 x 52,65 mm |
| Weight | | 80 g |
| Ambient temperature | • storage | -40...+85 °C |
| | • operating | -40...+55 °C |
| Cover protection category | | IP 00 EN 60529 |
| Environmental protection | | RTI EN 61810-1 |
| Shock resistance | | 10 g category 1, class B EN 61373 |
| Vibration resistance | | 5 g 10...150 Hz category 1, class B EN 61373 |

The data in bold type relate to the standard versions of the relays. *The relays are designed for continuous operation while maintaining the parameters declared in the data sheet. ① The permanent magnet is fixed on the contact plate. Its magnetic field is directed to the contacts and it blows the electric arc which occurs when the DC load is switched off. ② Certification IK for interface set PRUCT-M (RUCT-M with socket GUC11S-V0). ③ For other voltages, please contact Relpol S.A.

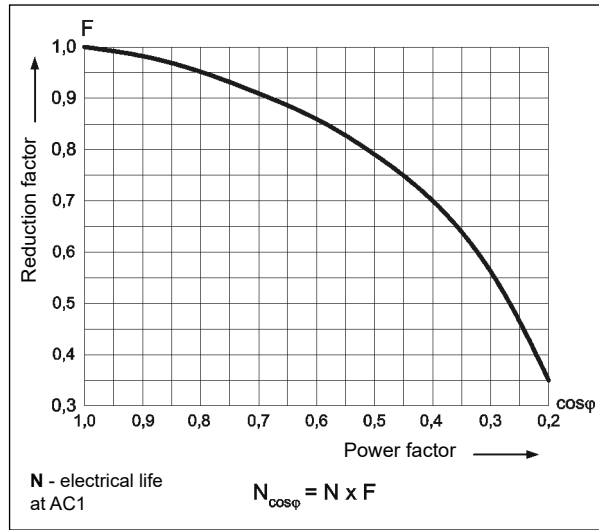
Electrical life at AC resistive load.
Switching frequency: 1 200 cycles/hour

Fig. 1

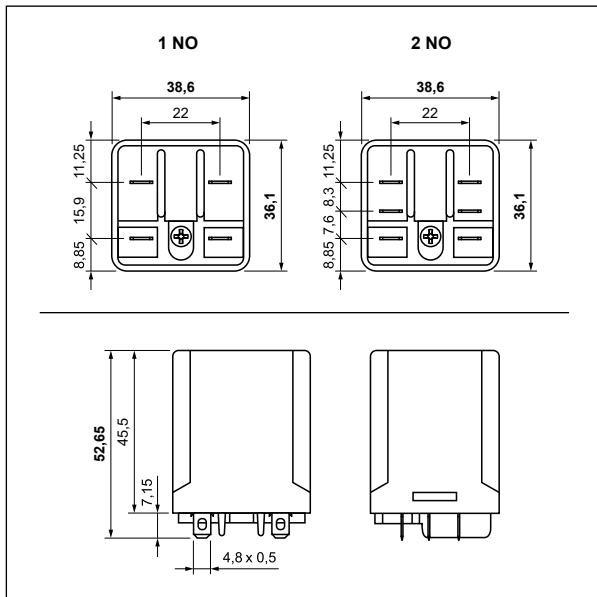


Electrical life reduction factor at AC inductive load

Fig. 2

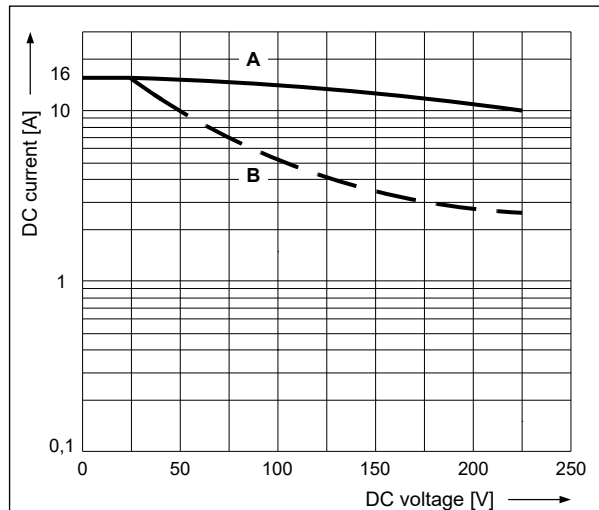


Dimensions

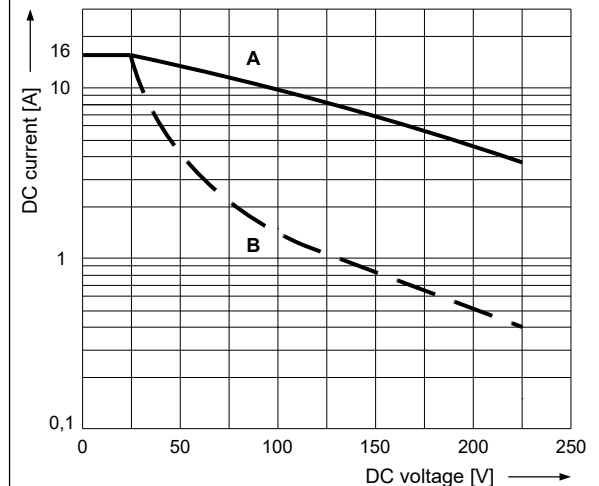


Max. DC breaking capacity
A - resistive load DC1
B - inductive load L/R = 40 ms

Fig. 3

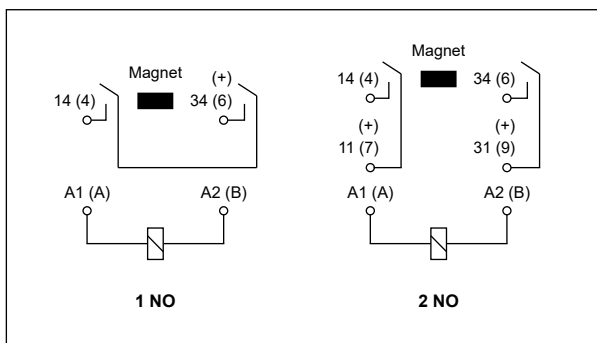


$U_n = 24 \text{ V DC}$ - version 1 NO (5 mm)



$U_n = 24 \text{ V DC}$ - version 2 NO (2,5 mm)

Connection diagrams (pin side view)



Mounting, sockets and accessories for relays

Relays **RUCT-M** are designed for mounting in plug-in sockets.

| | |
|---|--------------------|
| Sockets for RUCT-M | Accessories |
| | Spring wire clips |
| Screw terminals sockets, 35 mm rail mount (acc. to EN 60715) | |
| GUC11S-V0 | MBA |

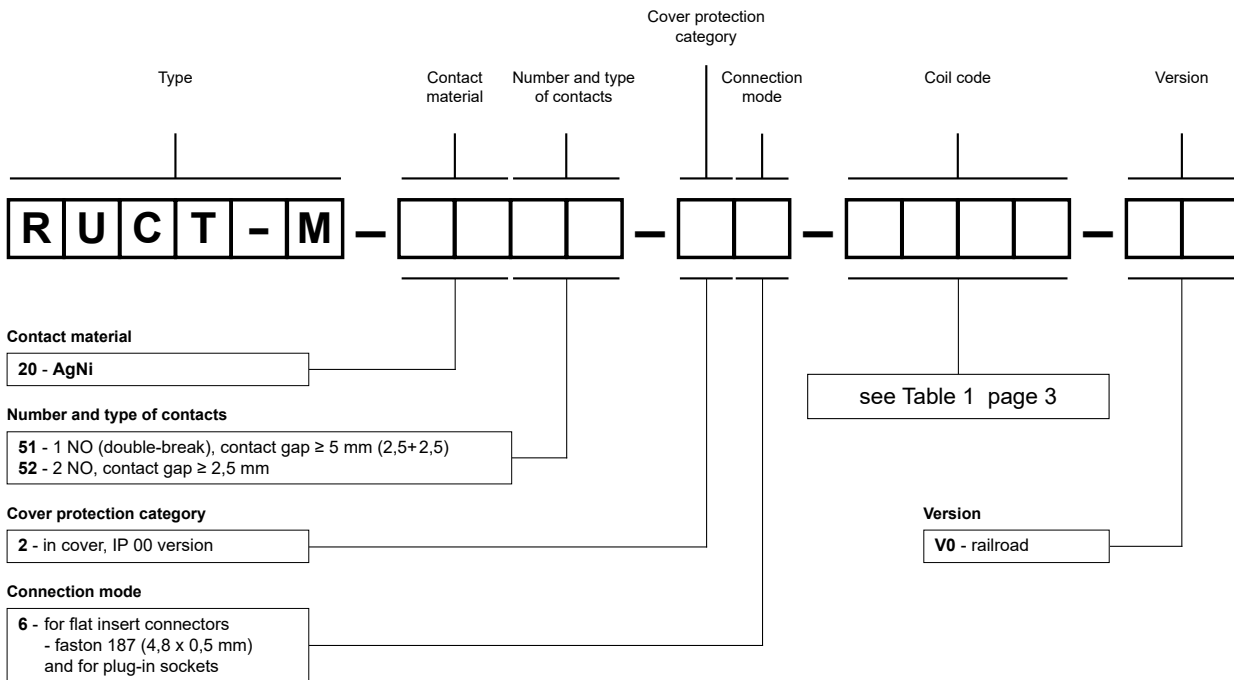
Coil data - DC voltage version

Table 1

| Coil code | Rated voltage V DC ③ | Coil resistance at 20 °C Ω | Acceptable resistance | Coil operating range V DC EN 50155 ④ | |
|-------------|----------------------|----------------------------|-----------------------|--------------------------------------|-------------|
| | | | | min. | max. |
| W024 | 24 | 345 | ± 10% | 16,8 | 30,0 |
| W110 | 110 | 7 300 | ± 10% | 77,0 | 137,5 |

The data in bold type relate to the standard versions of the relays. ③ For other voltages, please contact Relpol S.A. ④ Changes of voltage within the range 0,6...1,4 Un below 0,1 s and changes of voltage within the range 1,25...1,4 Un below 1 s are admissible and they do not distort operation of the relays.

Ordering codes



Examples of ordering codes:

RUCT-M-2051-26-W024-V0

relay **RUCT-M** (railroad version), faston 187 (4,8 x 0,5 mm), for plug-in sockets, one normally open contact (double-break), with contact gap ≥ 5 mm (2,5+2,5), contact material AgNi, reinforced coil voltage 24 V DC, in cover IP 00

RUCT-M-2052-26-W110-V0

relay **RUCT-M** (railroad version), faston 187 (4,8 x 0,5 mm), for plug-in sockets, two normally open contacts, with contact gap $\geq 2,5$ mm, contact material AgNi, reinforced coil voltage 110 V DC, in cover IP 00

Sockets and accessories

GUC11S-V0

For RUCT, RUCT-M

Screw terminals

Cross section of the cables: max. $1 \times 4 \text{ mm}^2$
/ $2 \times 2,5 \text{ mm}^2$ (1 x 12 / 2 x 14 AWG),
min. $1 \times 0,25 \text{ mm}^2$ (1 x 23 AWG)

Max. tightening moment
for the terminal: 0,7 Nm

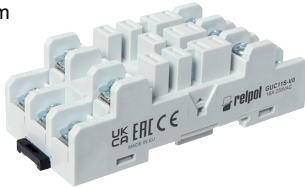
35 mm rail mount

acc. to EN 60715

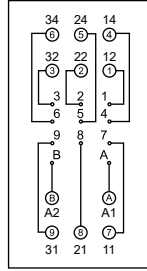
81,5 x 35,5 x 26,5 mm

Three poles

16 A, 250 V AC



Connection diagram

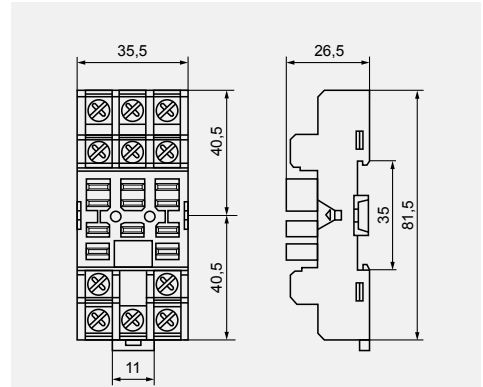


Accessories

MBA

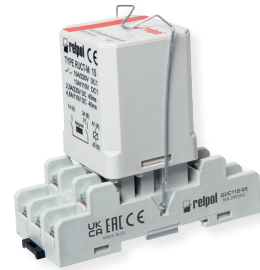
Dimensions

CE ENEC



PRUCT-M

Relays for
railroad industry
- interface,
contacts 1 NO, 2 NO



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.