

# RIC20-020-R4A110V/DC36V

2 pole | 20 A | 7 kW | DC-5 | 4 A 110 V DC



## Main circuit

|                                                     |                              |
|-----------------------------------------------------|------------------------------|
| Available contact materials                         | AgNi                         |
| Rated voltage                                       | 230 V AC                     |
| Rated current AC-1                                  | 20 A                         |
| Recommended minimum contact load                    | 50 mA, 17 V                  |
| Inrush current                                      | 50 A, 100 ms / 180 A, 300 µs |
| Rated load AC-1                                     | 7 kW                         |
| Rated load AC-3                                     | 1.3 (NO) / 0.75 (NC) kW      |
| Rated load DC-1                                     | see fig. 2                   |
| Mechanical endurance (cycles)                       | ≥ 10 000 000                 |
| Electrical endurance at rated load AC-1 (cycles)    | ≥ 150 000                    |
| Electrical endurance at rated load AC-3 (cycles)    | ≥ 200 000                    |
| Electrical endurance at rated load DC-1 (cycles)    | ≥ 200 000                    |
| Electrical endurance at rated load DC-5 (cycles)    | ≥ 300 000                    |
| Switching frequency at rated load AC-1 (cycles / h) | ≤ 600                        |
| Switching frequency at rated load AC-3 (cycles / h) | ≤ 600                        |
| Switching frequency at rated load DC-1 (cycles / h) | ≤ 300                        |
| Switching frequency at rated load DC-5 (cycles / h) | ≤ 300                        |

## Control circuit

|                         |                              |
|-------------------------|------------------------------|
| Nominal voltage         | see table product references |
| Operating voltage range | 0.70 ... 1.25 U <sub>N</sub> |
| Pick-up voltage         | ≤ 0.70 U <sub>N</sub>        |
| Release voltage         | ≥ 0.1 U <sub>N</sub>         |
| Pick-up time            | 15 ... 45 ms                 |
| Release time            | 20 ... 50 ms                 |
| Power consumption DC    | 2.6 W                        |

## Insulation

|                                              |              |
|----------------------------------------------|--------------|
| Rated insulation voltage                     | 440 V        |
| Rated impulse withstand voltage open contact | 4 kV / 1 min |
| Pollution degree                             | 3            |
| Overvoltage category                         | III          |
| Clearance of open contact                    | 3.6 mm       |

## Wiring

|                                                |                                         |
|------------------------------------------------|-----------------------------------------|
| Contact type control / main circuit            | Screw connection, M3 / M3.5             |
| Conductor cross section control / main circuit | 2.5 mm <sup>2</sup> / 6 mm <sup>2</sup> |
| Stripping Length control / main circuit        | 7 mm / 9 mm                             |
| Nominal screw torque control / main circuit    | 0.6 Nm / 1.2 Nm                         |
| Screwdrive control / main circuit              | PZ1 / PZ1                               |
| Max. wire count control / main circuit         | 1                                       |
| Dual sleeve control / main circuit             | 1                                       |

## Housing and environmental conditions

|                                    |                               |
|------------------------------------|-------------------------------|
| Storage temperature (no ice)       | -40 ... 80 °C                 |
| Spacer                             | Integrated                    |
| Operation temperature              | -40 ... 70 °C                 |
| Relative humidity, no condensation | 95 %                          |
| Ingress Protection                 | IP 20                         |
| Weight                             | 133 g                         |
| Housing material                   | PA 6                          |
| Operation Altitude                 | Max. 2 000 m                  |
| Mounting                           | 35 mm rail                    |
| Dimensions                         | see fig. 3                    |
| Mounting position                  | see installation instructions |



fig. 1. Wiring diagram

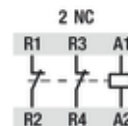


fig. 2. DC load limit curve

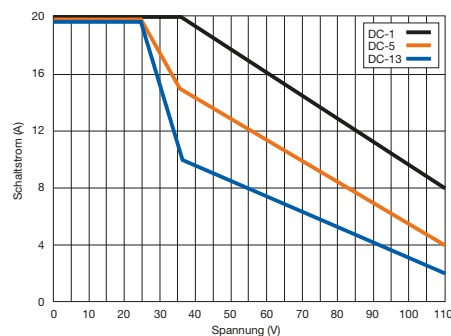
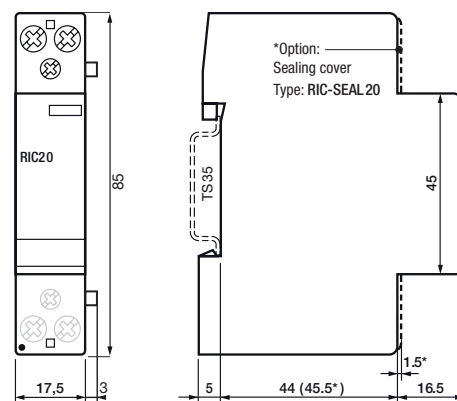


fig. 3. Dimensions (mm)



## Technical approvals, conformities

Standards IEC/EN 60947

Railway EN 50155; EN 45545-2

Approvals

RIC20-020-R4A110V/DC36V

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Safety

|                                                                                     |          |
|-------------------------------------------------------------------------------------|----------|
| MTTF - Mean time to failure, AC-1 (h)                                               | 5,000    |
| MTTF = 1/λ = B10/(0.1 n <sub>op</sub> ), AC-3 (h)                                   | 7,500    |
| MTTF <sub>d</sub> - Mean time to failure dangerous, AC-1 (h)                        | 6,667    |
| MTTF <sub>d</sub> = 1/λ = B10 <sub>d</sub> /(0.1 n <sub>op</sub> )                  | 10,000   |
| B10 - Number of operating cycles until 10 % of devices fail, AC-1                   | 150,000  |
| B10 - Number of operating cycles until 10 % of devices fail, AC-3                   | 225,000  |
| B10 <sub>d</sub> - Number of operating cycles until 10 % of devices dangerous, AC-1 | 200,000  |
| B10 <sub>d</sub> = B10/ratio of dangerous failures, AC-3                            | 300,000  |
| λ - Failure rate, AC-1 (1/h)                                                        | 0.0002   |
| λ = (0.1 n <sub>op</sub> )/B10, AC-3 (1/h)                                          | 0.000133 |
| λ <sub>d</sub> - Failure rate dangerous, AC-1 (1/h)                                 | 0.00015  |
| λ <sub>d</sub> = (0.1 n <sub>d</sub> )/B10 <sub>op</sub> , AC-3 (1/h)               | 0.0001   |
| Ratio of dangerous failures (%)                                                     | 75       |
| n <sub>op</sub> - Operating cycles (operating cycles/h)                             | 300      |

Product references

| Description | Type                     | 36 |
|-------------|--------------------------|----|
| 2 NC        | RIC20-020-R4A110V/DC...V | ✓  |

Other voltages on request. Please contact support@comatreleco.com.

«...» List control circuit voltage to complete product references

Accessories

|               |                            |
|---------------|----------------------------|
| End covers    | RIC-EK-11, RIC-EK-23       |
| Busbar        | RIC-NS-1-1-R, RIC-PS-1-2-R |
| Sealing cover | RIC-SEAL20 (BAG 10 PCS)    |

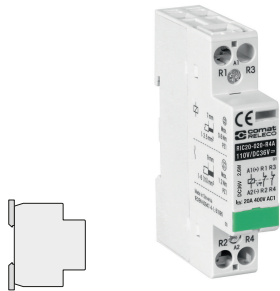


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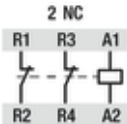


fig. 2. DC load limit curve

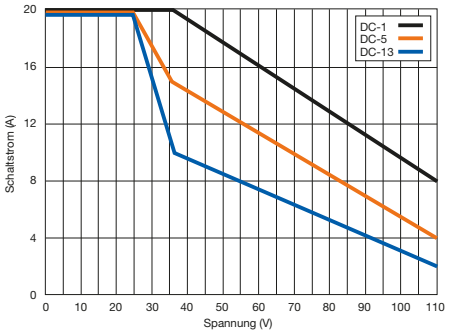
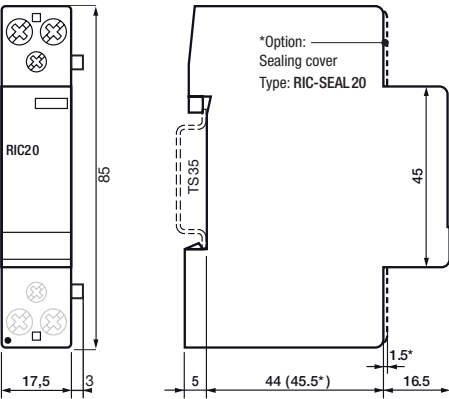


fig. 3. Dimensions (mm)



Technical approvals, conformities

Standards

IEC/EN 60947

Railway

EN 50155; EN 45545-2

Approvals