

RIC20-110-SR/DC24V

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



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 _N |
| Pick-up voltage | ≤ 0.70 U _N |
| Release voltage | ≥ 0.1 U _N |
| Pick-up time | 15 ... 45 ms |
| Release time | 20 ... 50 ms |
| Power consumption DC | 2.6 W |
| TVS Diode type | Bidirectional surge TVS |
| TVS Diode failure mode | defined short cut |

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 ² / 6 mm ² , use copper conductors only |
| 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 |
| Operation temperature | -15 ... 55 °C |
| Relative humidity, no condensation | 95 % |
| Ingress Protection | IP 20 |
| Weight | 135 g |
| Housing material | PA 6 |
| Operation Altitude | Max. 2 000 m |
| Mounting | DIN rail |
| Dimensions | see fig. 3 |
| Vibration test | switched off: 2 g (Z and X axis) / switched on: 3 g (Z axis) and 1 g (X axis) |
| Shock test | switched off: 10 g (Z and X axis) / switched on: 15 g (Z axis) and 2 g (X axis) |



fig. 1. Wiring diagram

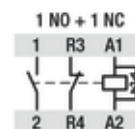


fig. 2. DC load limit curve

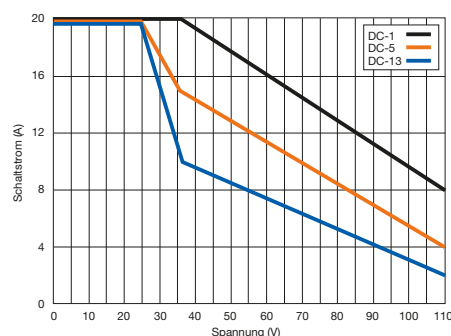
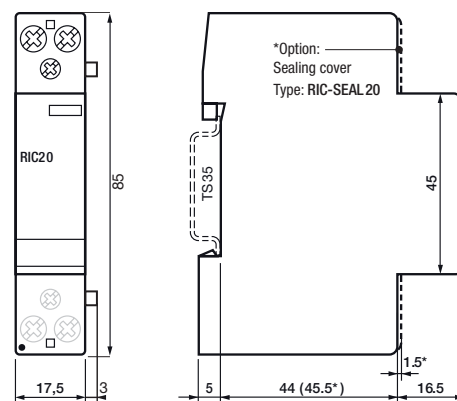


fig. 3. Dimensions (mm)



Technical approvals, conformities

Standards IEC/EN 60947
 Railway EN 50155; EN 45545-2
 Approvals

RIC20-110-SR/DC24V

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Safety

| | |
|---|----------|
| MTTF - Mean time to failure, AC-1 (h) | 5,000 |
| MTTF = $1/\lambda = B10/(0.1 n_{op})$, AC-3 (h) | 7,500 |
| MTTF _d - Mean time to failure dangerous, AC-1 (h) | 6,667 |
| MTTF _d = $1/\lambda = B10_d/(0.1 n_{op})$ | 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 _d - Number of operating cycles until 10 % of devices dangerous, AC-1 | 200,000 |
| B10 _d = B10/ratio of dangerous failures, AC-3 | 300,000 |
| λ - Failure rate, AC-1 (1/h) | 0.0002 |
| $\lambda = (0.1 n_{op})/B10$, AC-3 (1/h) | 0.000133 |
| λ_d - Failure rate dangerous, AC-1 (1/h) | 0.00015 |
| $\lambda_d = (0.1 n_{op})/B10_{op}$, AC-3 (1/h) | 0.0001 |
| Ratio of dangerous failures (%) | 75 |
| n_{op} - Operating cycles (operating cycles/h) | 300 |

Product references

| Description | Type | 24 |
|-------------|---------------------|----|
| 1 NO + 1 NC | RIC20-110-SR/DC...V | ✓ |

Other voltages on request. Please contact support@comatreleco.com.
«...» List control circuit voltage to complete product references.

Accessories

| | |
|---------------|--|
| Sealing cover | RIC-SEAL20 |
| End covers | RIC-EK-11 (BAG 25 PCS), RIC-EK-23 (BAG 10 PCS) |
| Busbar | RIC-NS-1-1-R, RIC-PS-1-2-R |

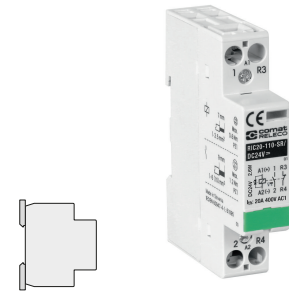


fig. 1. Wiring diagram

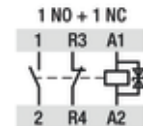
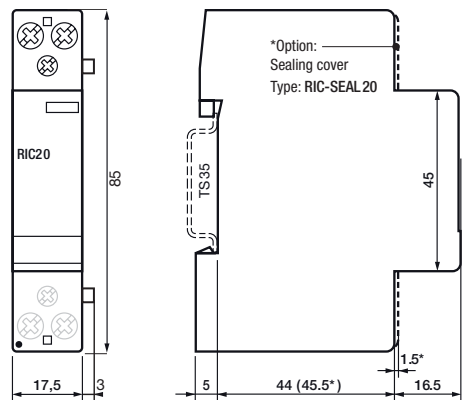


fig. 2. DC load limit curve



fig. 3. Dimensions (mm)



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