

RIC20-110-SR/DC110V

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



Main circuit

Available contact materials	AgNi
Rated voltage	400 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

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

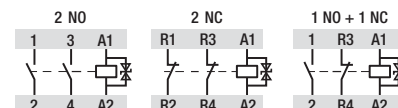


fig. 2. DC load limit curve

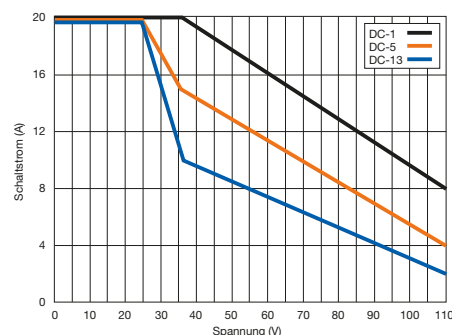
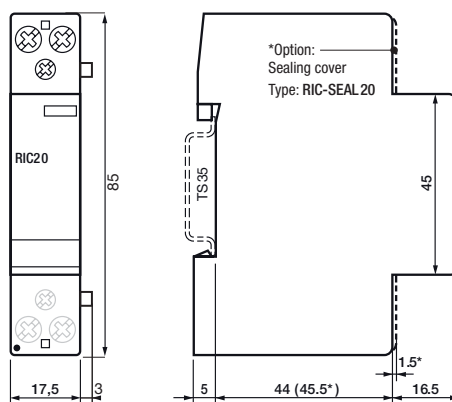


fig. 3. Dimensions (mm)



Technical approvals, conformities

Standards IEC/EN 60947

Railway EN 45545-2; EN 50155



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Safety

MTTF - Mean time to failure, AC-1 (h)	5,000
MTTF = 1/λ = 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/λ = 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
λ = (0.1 n _{op})/B10, AC-3 (1/h)	0.000133
λ _d - Failure rate dangerous, AC-1 (1/h)	0.00015
λ _d = (0.1 n _d)/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	110
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

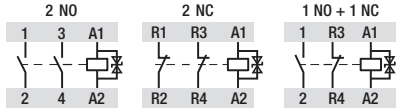


fig. 2. DC load limit curve

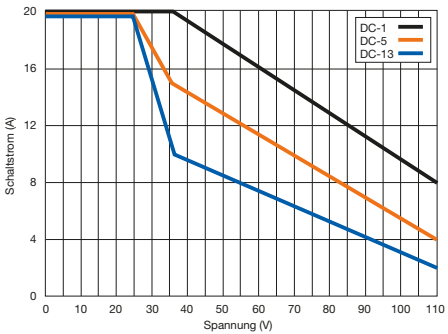
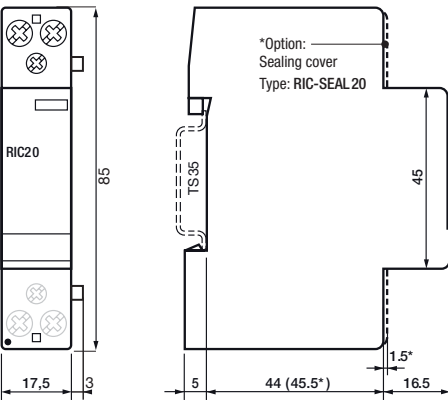


fig. 3. Dimensions (mm)



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Approvals