

RCM 202-AB

Residual current monitoring device, type AB

Alarm management



Modbus interface



Norm
62020

Residual current monitoring

Communication

- Modbus RTU

Interfaces

- 2 x 4-20 mA outputs
- 2 digital outputs

RCM – Residual Current Monitoring

- 2 residual current inputs

Residual current monitoring

- 2 channels
- Compatible with all Janitza residual current transformers
- Universally current sensitive up to 20 kHz
- IEC 62020 compliant

Completely configurable on site

Display

- LCD display
- Display of the momentarily measured current values
- Errors and alarms

Networks

- TN, TT networks

Power Grid Monitoring Software

- Free copy of GridVis®-Basic

Areas of application



- Residual current monitoring in industrial installations
- Computing centers
- Hospitals
- Standards compliant measurement to minimize DGUV V3

Main features

The RCM 202-AB is employed with current transformers connected for the measurement and monitoring of residual currents of the types A, B and B+ in TN and TT systems (grounded AC systems).

- Residual current measurement using up to two connected current transformers (compatible with all Janitza residual current transformers)
- Transformer connection monitoring for wire break or short circuits per channel
- Acquisition, evaluation and monitoring of residual currents of types A, B and B+ to IEC 62020
- Acquisition of sinusoidal AC fault currents with frequencies of up to 20 kHz (type B+)
- Acquisition of purely DC currents
- Measured and extreme values memory with time stamp

Measuring channels

- Two current transformer connections (compatible with all Janitza residual current transformers)
- AC/DC measurement range: 10 mA ... 20 A

Measuring display and operation

- Two-color LED display (128 x 64 pixels)
- 3-button control
- Self test and check indicator
- German, English and Spanish user guidance can be selected

RCM analysis variables

- Individual limit values can be set for type A, type B, and type B+
- Individual frequencies for 1-2000 Hz
- Spectrum display for 2-20 kHz

Peripherals

- 2 digital alarm outputs, 2 freely scalable analog outputs

Communication

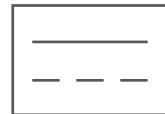
- RS485 interface (protocol: Modbus RTU)
- Compatible with all communications-capable Janitza Modbus master devices



A Sensitive to pulsed current
Sinusoidal alternating current
pulsed direct current



B Universally current sensitive
All currents up to 2 kHz

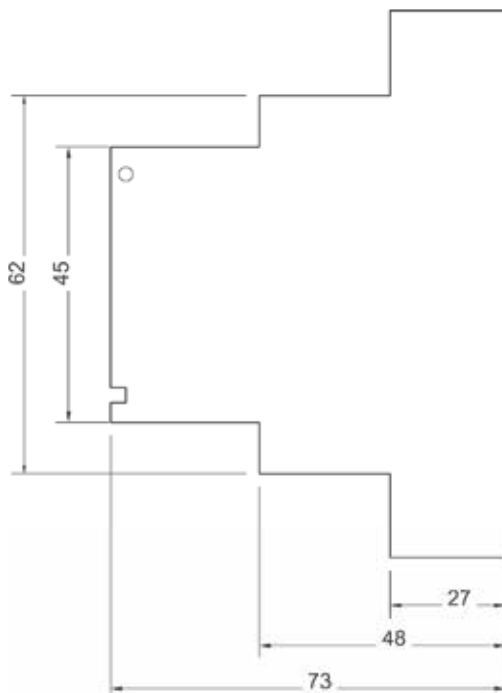


B+ Universally current sensitive
All currents up to 20 kHz



Dimensional drawings

All dimensions in mm



Side view



Front view



Device overview and technical specifications

	RCM 202-AB
Part number	14.01.627
General	
Supply voltage U_s	AC 90 ... 276 V/50 ... 60 Hz
Required external back-up fuse for the power supply	5 x 20 mm, 3 A, AC 250 V
Operating mode	Continuous operation
Power consumption (internal consumption)	8 W
Isolation coordination according to IEC 60664-1	
Rated current I_b	4 kA
Rated surge voltage	4 kV
Pollution degree	3
Rated voltage	AC 250 V, 50 ... 60 Hz
Monitored system	
Measurement transformer types/transformation ratio:	
Residual current measuring transducer	See Tab. 5 on page 64
Current measurement transformer rated voltage	AC 20 ... 720 V
Current measurement transformer rated frequency	0 ... 20 kHz
Current measurement transformer rated current	(depending on the type)
Measurement channels	
Number of measuring channels	2 (connectable current measurement transformers)
Measured value recording	Parallel, effective value measurement (true RMS)
Evaluation	Residual currents Type A and B according to IEC 62020
Measurement response residual current I_{An}	parameterizable, 30 mA ... 20 A
Response delay time of the warning and alarm messages t_{vr}	parameterizable, 10 ms ... 10 s
Reset delay time t_{vr}	parameterizable, 10 ms ... 10 s
Transformer connections	
Connection to the current measurement transformers	Line resistance max. 5 Ω
Line/transformer	2-wire
Line length:	
Single wires (0.75 to 1.5 mm ²)	max. 1 m
Twisted single wires (0.75 to 1.5 mm ²)	max. 10 m
Shielded cable (0.75 to 1.5 mm ²)	max. 10 m
Displays, messages and memory	
Full graphics display (LCD)	128 x 64 Pixel
Status LED	3-color
Controls	3 keys
Menu languages	German, English, Spanish
Date and time	with RTC, stored in the non-volatile memory
Parameterization	on RCM 202-AB in the configuration menu
Messages	Display, LED, Modbus, digital outputs
Measured value memory	18,725 datasets (circular buffer) with date and time
Examples:	
Shielded cable 0.75 mm ² (shield on I)	Max. length 20 m (21.87 yd)
Cable type J-Y(ST)Y \varnothing 0.6 mm	Max. length 15 m (16.4 yd)
Analog outputs	
Interface	4 ... 20 mA
Quantity	2
Supply voltage of the analog outputs	4 ... 20 mA
Digital outputs	
Number of digital outputs	2
Switching voltage	max. DC 60 V, AC 30 V
Maximum current	350 mA
Start-up resistance	2 Ω
Maximum cable length	up to 30 m (32.8 yd) unshielded, above 30 m (32.8 yd) shielded

RS485 interface	
Protocol	Modbus-RTU (RCM 202-AB as the slave)
Interface	RS485
Baud rate	parameterizable, 9.6 ... 115.2 kbaud
Address range	1 ... 247
max. cable length (38.4 kbaud)	1200 m (1212.3 yd)
Cable (shielded, shield one-sided on PE)	Unitronic Li2YCY(TP) 2x2x0.22 (Lapp cable)
Termination resistor	120 Ω (can be activated on the device)
Device safety	
Safety regulations for electrical measurement, control, regulation and laboratory devices	
Part 1: General requirements	IEC/EN 61010-1
Part 2-030: Particular requirements for equipment having testing or measuring circuits	IEC/EN 61010-2-030
Electromagnetic compatibility (EMC)	
Immunity from interference	
Class A: Industrial sector	IEC/EN 61326-1
Electrostatic discharges	IEC/EN 61000-4-2
Voltage dips	IEC/EN 61000-4-11
Emissions	
Class B: Residential sector	IEC/EN 61326-1
RFI field strength 30 ... 1000 MHz	IEC/CISPR11/EN 55011
Radiated interference voltage 0.15 ... 30 MHz	IEC/CISPR11/EN 55011
Standards	
The RCM 202-AB fulfills the requirements according to EN 62020:1998+A1:2005 (VDE 0663):2005	
Ambient conditions	
Ambient temperature during operation	-5 ... +55 °C (23 °F .. 131 °F)
Ambient temperature during storage	-25 ... +70 °C (-13 °F .. 158 °F)
Ambient temperature during transport	-25 ... +70 °C (-13 °F .. 158 °F)
Altitude	0 ... 2000 m (0 ... 1.24 mi)
Climate category according to IEC 60721-3-3 (operation)	3K5
Installation conditions	
Installation position	Horizontal/vertical
Assembly	Top hat rail per DIN EN 60715
Device dimensions in mm (H x W x D)	71 x 90 x 73
Protection class according to EN 60259	IP 20
Protection class	III
Flammability rating	UL94V-0
Weight	approx. 170 g (0.375 lb)
Connection type/cable	Series terminal/copper
Connection cross section single-wire/finely stranded	0,2 ... 4 mm ² /0,2 ... 1,5 mm ² (AWG 24-15)

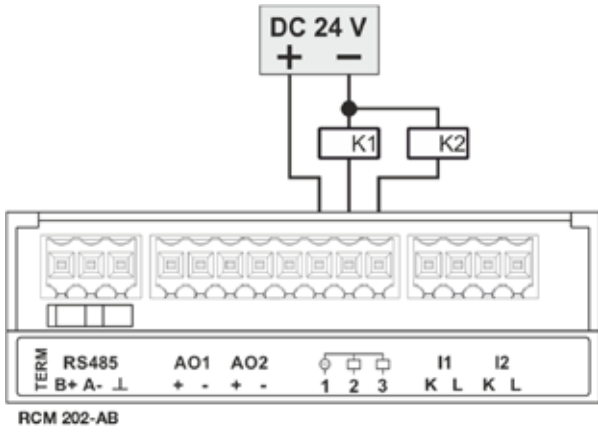


Fig.: Application example RCM 202-AB in stand-alone mode – connection of two relays to the digital outputs

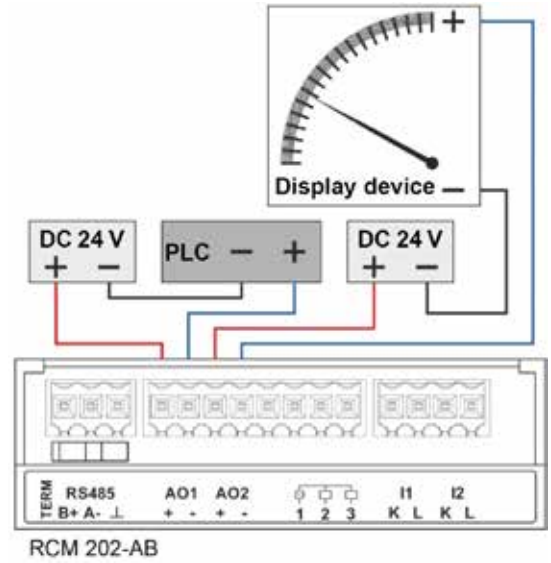


Fig.: Application example analog outputs (interface 4 ... 20 mA) – connection of a display device and a PLC to the analog outputs

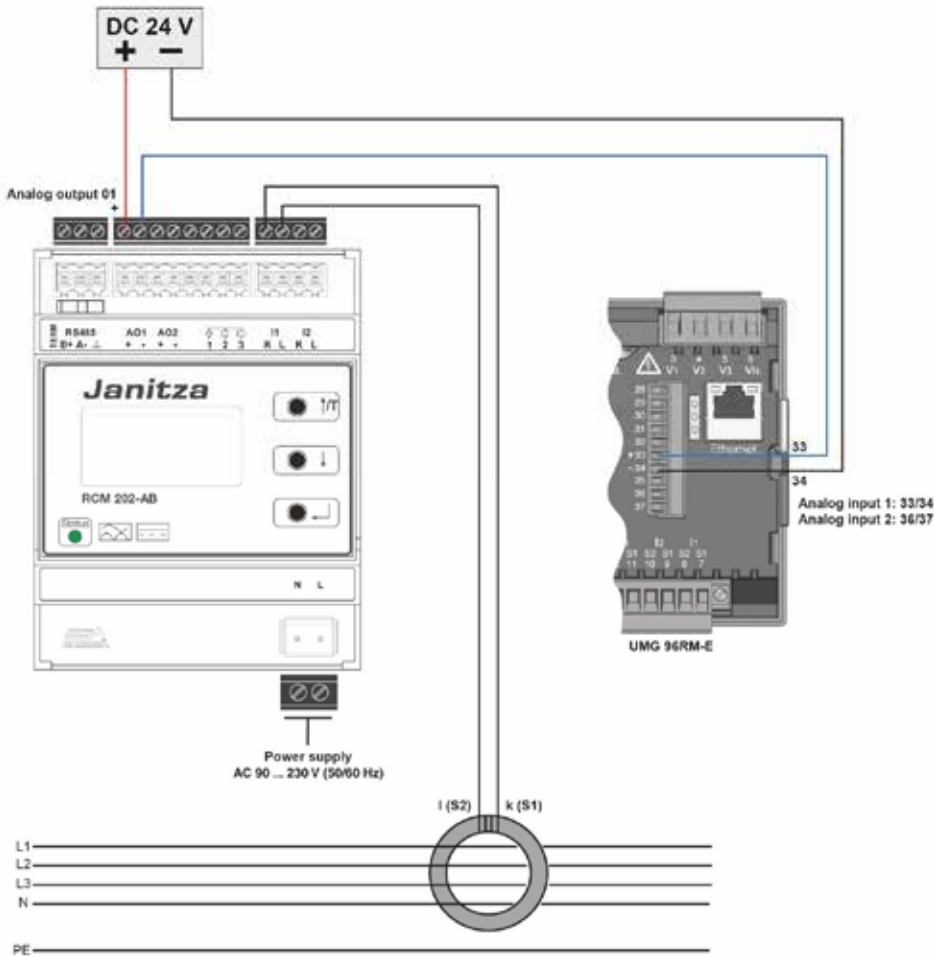


Fig.: Application example analog outputs and UMG 96RM-E