



RESIDUAL CURRENT MEASUREMENT DEVICE

RCM 202-AB

(as of firmware 1.5.0)

Data sheet

APPLICATION AND FUNCTION

The RCM-202-AB is used with connected current transformers to measure and monitor residual currents in TN and TT systems (grounded AC systems). The main functions of the RCM-202-AB are:

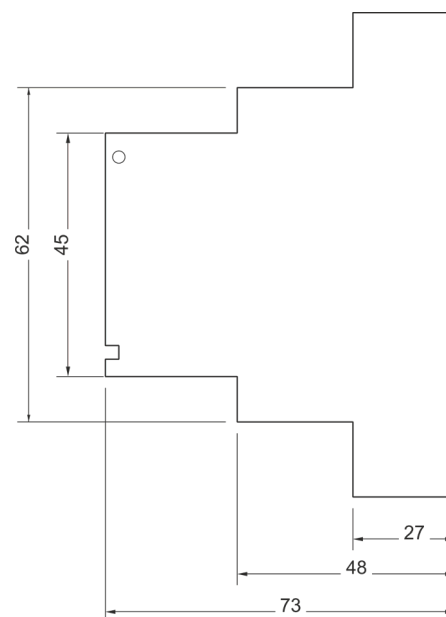
- Residual current measurement via up to two connected current transformers
- Converter connection monitoring for wire breakage or short circuit per channel
- Evaluation of residual currents (differential currents) type A and B according to IEC 62020
- Detection of sinusoidal AC residual currents with frequencies up to 20 kHz (type B+)
- Memory for measured values and extreme values with time stamp
- parameterizable response thresholds per channel (warning message and alarm message)
- parameterizable delay times and reset delay times of the response messages
- Indication of operating and error messages in the display
- Communication via Modbus (RS-485 interface/Modbus RTU)

DEVICE VIEWS

Front view



Side view



Device dimensions in mm

TECHNICAL DATA

Operational data	
Supply voltage U_s	AC 90 ... 230 V +/-10% OVC III, 50/60 Hz,
Required external back-up fuse for the power supply	Line circuit breaker 1-pole, 3 A, AC 230 V
Operating mode	Continuous operation
Power consumption (own consumption)	8 W
Area of application	Indoor use
Insulation coordination according to IEC 60664-1	
Rated current I_b	4 kA
Rated surge voltage	4 kV
Pollution degree	2
Rated voltage	AC 250 V, 50 ... 60 Hz
Monitored system	
Transformer types/transformer ratio:	
Current transformer - rated voltage	AC 20 ... 720 V
Current transformer - rated frequency	0 ... 20 kHz
Current transformer - rated current	(depending on type)
Measurement channels	
Number of measurement channels	2 (current transformers, can be connected)
Measured value acquisition	Parallel, true RMS
Evaluation	Residual currents Type A and B according to IEC 62020
Rated residual current $I_{\Delta n}$	Configurable, 20 mA ... 20 A
Response delay time of the warning and alarm messages t_v	Configurable, 10 ms ... 10 s
Reset delay time t_{vr}	Configurable, 10 ms ... 10 s
Transformer connections	
Connection to current transformer n	Line resistance max. 2 Ω
Transformer cable	2-conductor
Cable length	
Single wires (0.75 to 1.5 mm ²)	max. 1 m (39.37 in)
Single wires twisted (0.75 to 1.5 mm ²)	max. 10 m (32.808 ft)
Shielded cable (0.75 to 1.5 mm ²)	max. 10 m (32.808 ft)

Displays, messages and memory	
Full graphic display (LCD)	128 x 64 pixels with backlight
LED status	Three-color
Controls	3 buttons
Menu languages	German, English, Spanish
Date and time	With RTC, zero-voltage safe
Configuration	On the RCM 202-AB in the configuration menu
Messages	Display, LED, Modbus, digital outputs
Measured value memory	18,725 data records (ring memory) with date and time
Examples	
Shielded cable 0.75 mm ² (shield to I)	Length max. 20 m (65.62 ft)
Cable type J-Y(ST)Y Ø 0.6 mm	Length max. 15 m (49.2 ft)
Analog outputs	
Interface	4 ... 20 mA
Quantity	2
Supply voltage of the analog outputs	DC 12 ... 24 V
Digital outputs	
Quantity	2
Switching voltage	max. DC 60 V, AC 30 V
Maximum current	350 mA
Switch-on resistance	2 Ω
Maximum cable length	up to 30 m (98.4 ft) unshielded, greater than 30 m (98.4 ft) shielded
RS-485 interface	
Protocol	Modbus RTU (RCM 202-AB as server)
Interface	RS-485
Baud rate	Configurable, 9.6 ... 115.2 kbaud
Address range	1 to 247
Max. cable length (at 38.4 kbaud)	1200 m (1312.3 yd)
Cable (shielded, shield connected to PE at one end)	Unitronic Li2YCY(TP) 2x2x0.22 (Lapp cable)
Termination resistor	120 Ω (can be switched on at the device)

Device safety	
Safety regulations for electrical measuring, control, and laboratory equipment	
Part 1: General requirements	IEC/EN 61010-1
Part 2-030: Special provisions for test and measured current circuits	IEC/EN 61010-2-030
Electromagnetic compatibility (EMC)	
Immunity from interference	
Class A: Industrial area	IEC/EN 61326-1
Electrostatic discharge	IEC/EN 61000-4-2
Voltage dips	IEC/EN 61000-4-11
Emissions:	
Class B: Residential area	IEC/EN 61326-1
Radio interference field strength 30 ... 1000 MHz	IEC/CISPR11/EN 55011
Radio 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	
Environmental 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 transportation	-25 ... +70 °C (-13 °F...158 °F)
Altitude	0 ... 2000 m (0...6562 ft)
Relative humidity in operation:	Maximum relative humidity 80% at temperatures up to 31°C (87.8°F), decreasing linearly up to 50% relative humidity at 40°C (104°F), up to 25% relative humidity at 55°C (131°F)
Installation conditions	
Mounting orientation	Horizontal/vertical
Installation/assembly	DIN rail 35 mm (1.38 in) according to DIN EN 60715
Device dimensions in mm (W x H x D)	71 x 90 x 73 (2.78 x 3.54 x 2.87 in)
Horizontal pitch	4 TE
Protection level to EN 60529	IP20
Protection class	II
Flammability classification	UL 94V-0
Weight	approx. 170 g (0.375 lbs)
Connection type/line	Terminal blocks / copper
Connection cross-section solid/fine-wire	0.2 ... 4 mm ² / 0.2 ... 1.5 mm ² (AWG 24-15)

COMPATIBLE CURRENT TRANSFORMERS

Transformer type	Inner window (mm)	Separable	Ratio	Max. primary residual current (mA)	Information
DACT 120	120	-	600:1	18000	As of firmware version V1.5.0
DACT 60	60	-	600:1	18000	As of firmware version V1.5.0
DACT 35	35	-	600:1	18000	As of firmware version V1.5.0
Socomec ΔIC200	200	-	600:1	10000	As of firmware version V1.4.0
Bender W4-S140	140	-	600:1	18000	As of firmware version V1.3.1
Bender W3-S105	105	-	600:1	18000	As of firmware version V1.3.1
Bender W1-S35	35	-	600:1	18000	As of firmware version V1.0.3
CT-AC RCM A310N	310	•	700:1	20000	
CT-AC RCM A150N	150	•	700:1	20000	
CT-AC RCM A110N	110	•	700:1	20000	
DACT 20	20	-	600:1	18000	
KBU812D	80 x 120	•	600:1	18000	
KBU58D	50 x 80	•	600:1	18000	
KBU23D	20 x 30	•	600:1	18000	
CT-AC RCM 210N	210	-	700:1	20000	
CT-AC RCM 140N	140	-	700:1	20000	
CT-AC RCM 110N	110	-	700:1	20000	
CT-AC RCM 80N	80	-	700:1	20000	
CT-AC RCM 35N	35	-	700:1	20000	

Janitza electronics GmbH
Vor dem Polstück 6 | 35633 Lahnau
Germany

Tel.: +49 6441 9642-0
info@janitza.de | www.janitza.com

Subject to technical alterations.

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