

RCM 201-ROGO & RCM 202-AB



RESIDUAL CURRENT MONITORING DEVICES

according to IEC 62020

Standards Compliant Residual Current Monitoring



ENSURE SYSTEM AVAILABILITY

**ESPECIALLY IN MARKET SEGMENTS WITH SENSITIVE APPLICATIONS
(E.G. DATA CENTERS, HOSPITALS, INDUSTRIAL POWER SUPPLY SYSTEMS),
UNINTERRUPTED RCM MONITORING IS OF CRUCIAL IMPORTANCE.**

Continuous residual current monitoring enables dangerous fault currents to be detected at an early stage, thereby avoiding damage to the system as well as production downtimes. RCM measurement in accordance with DIN EN 62020 offers a good and safe alternative wherever the realization of insulation resistance measurements or residual current devices would entail a great deal of effort and cost.

ADVANTAGES OF CONTINUOUS RESIDUAL CURRENT MONITORING



Avoidance of production interruptions, reduced maintenance costs and ensuring the functionality of TN-S systems are goals that can be achieved with continuous residual current monitoring.

INCREASE THE SAFETY OF ELECTRICAL INSTALLATIONS



Continuous RCM monitoring, combined with an early warning system, identifies the need for action and, with the resulting measures, improves fire protection. In the area of final subcircuits, residual currents of >30 mA which are hazardous to persons are detected and reported in a timely manner. EMC interference due to interference currents is minimized.

REDUCTION OF MEASURING EFFORT FOR REPEAT TESTING



The use of suitable RCM measurement devices according to the DIN EN 62020 standard allows the omission of insulation measurements in accordance with IEC 60364-6:2016 on stationary electrical systems and the shutdown which these require. The costs for the legally required recurring inspection of electrical operational safety for fixed installations (German Social Accident Insurance, DGUV V3) can be reduced considerably.

SAVE COSTS AND INCREASE HIGH-LEVEL AVAILABILITY



Uninterrupted monitoring of the installation is ensured through continuous monitoring. Errors are detected immediately, not just later when the recurring test is performed. The high personnel and administration costs associated with a system shutdown are reduced considerably and costs are saved. Faults due to interference currents in building structures, electrical operating equipment and data lines are minimized.

JANITZA RESIDUAL CURRENT MONITORING

RCM 201-ROGO and RCM 202-AB enable continuous monitoring of TN-S systems and comply with DIN EN 62020/VDE 0663/IEC 62020. This refers to residual current monitoring devices which check circuits for the occurrence of a residual current and trigger an alarm if a set alarm value is exceeded.

RCM 201-ROGO

HIGH MEASURING ACCURACY

- from 1% to final value
- Measurement of residual currents in the measurement ranges 5 / 10 / 25 / 125 A

STANDARDS-COMPLIANT TO IEC 62020

- Recording, evaluation and monitoring of Type A residual currents

RETROFITTABLE

- Rogowski RCM current transformers for large cable cross sections and busbars up to 4000 A

ALARM FUNCTION

- Configurable limit values and alarm output via digital output and Modbus

COMPATIBILITY

- Compatible with Janitza measuring devices RCM inputs

COMMUNICATION

- RS-485 interface (protocol: Modbus RTU)
- Compatible with all communication-enabled Janitza Modbus master devices

Rogowski coils available in different lengths:

Diameter	Length
120 mm	ca. 375 m
200 mm	630 mm
290 mm	910 mm
390 mm	1230 mm
580 mm	1800 mm

Additional lengths in planning!



Further information and details at:
<https://www.janitza.com/rcm-201-rogo.html>



RCM 202-AB

RESIDUAL CURRENT TRANSFORMER

- Residual current measurement, up to 2 residual current transformers
- Measurement range, AC/DC 10 mA ... 20 A

PATENTED MEASURING METHOD

- Type A, B, B+ measurement with passive residual current transformers

STANDARDS-COMPLIANT TO IEC 62020

- Detection, evaluation and monitoring of residual current types A, B and B+

RCM ANALYSIS

- Evaluation of AC and DC
- Harmonic spectrum up to 2 kHz, Type B
- Mixed current up to 20 kHz, Type A, Type B+

HISTORICAL DATA

- Memory for measured values and extreme values with time stamp

ON-SITE OPERATION

- High resolution LCD display with intuitive operation

PERIPHERALS

- 2 analog outputs
- 2 alarm outputs
- Compatible with RCM inputs of the UMG 96-RM-E & UMG 96-PA with RCM module

COMMUNICATION

- RS485 interface (protocol: Modbus RTU)
- Compatible with all communication-enabled Janitza Modbus master devices



Further information and details at:
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APPLICATIONS

RCM 201-ROGO

Standards-compliant Type A measurement on the busbar

The RCM 201-ROGO residual current monitoring device complies with standard DIN EN 62020 and is used for monitor systems and consumers that must be operated without interruption. It is ideally suited for monitoring residual currents in TN-S systems. The main application of the stand-alone device is the measurement of Type A residual current for large cross-section or busbar systems. In combination with a **Rogowski coil** (included in the scope of delivery), the user enjoys flexibility even in confined spaces and also benefits from the retrofitting capability of the measurement device.

Flexible measuring current transformer in different lengths:

- Space-saving and fast installation
- Easy retrofitting in existing systems
- No shutdown of the system required for installation
- Analog output for external measurement devices provided

RCM 202-AB

Monitoring of Type A to B+ residual currents

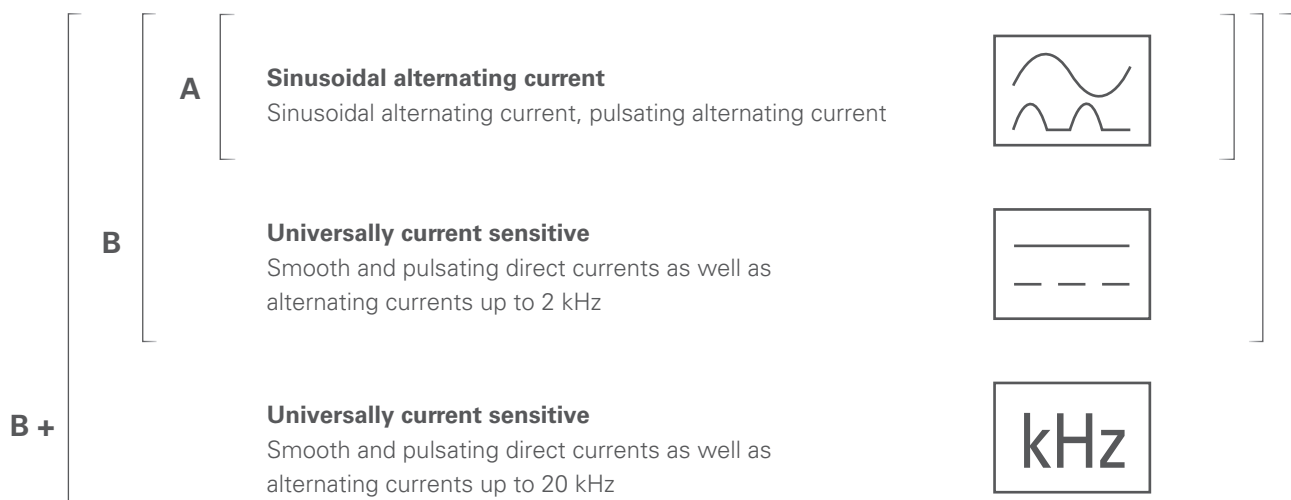
The two-channel residual current monitoring device meets the requirements of the DIN EN 62020 standard. A recurring insulation test can be omitted or at least limited. Typical applications are low-voltage main distribution boards (LVMDB) and subdistribution panels (SDP) in grounded systems (e.g. TN-S systems). The RCM 202-AB is a safe cross-industry alternative if current interruptions due to a residual current device (RCD) or an insulation resistance measurement cannot be tolerated. Complete integration into the GridVis® software is possible. The device can be integrated directly via the RS-485 interface.

Patented measuring method

Suitable as an RCM at any point, e.g. direct current systems, frequency converters, or applications with increased fire protection requirements.

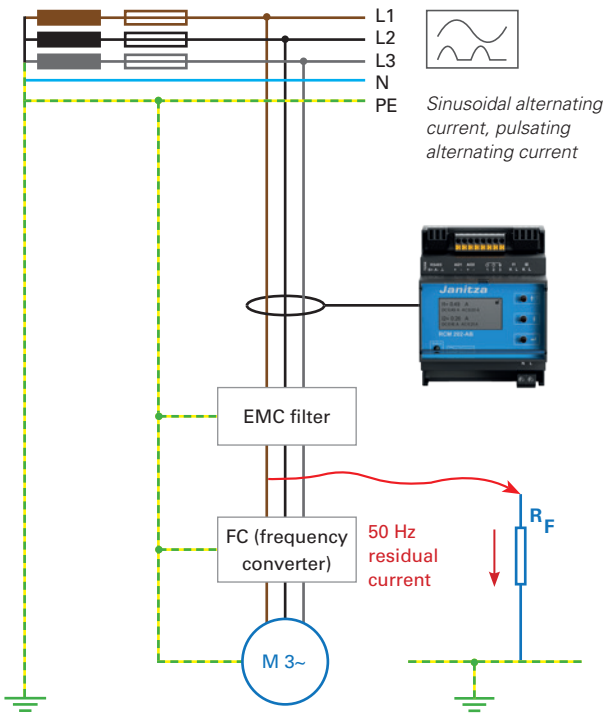
- Can be combined with any standard Janitza residual current transformer
- Residual currents of Type A to Type B+
- Measurement up to 20 kHz (Type B+) possible
- Exact measurement on several levels

MEANING OF TYPE A, B, B+

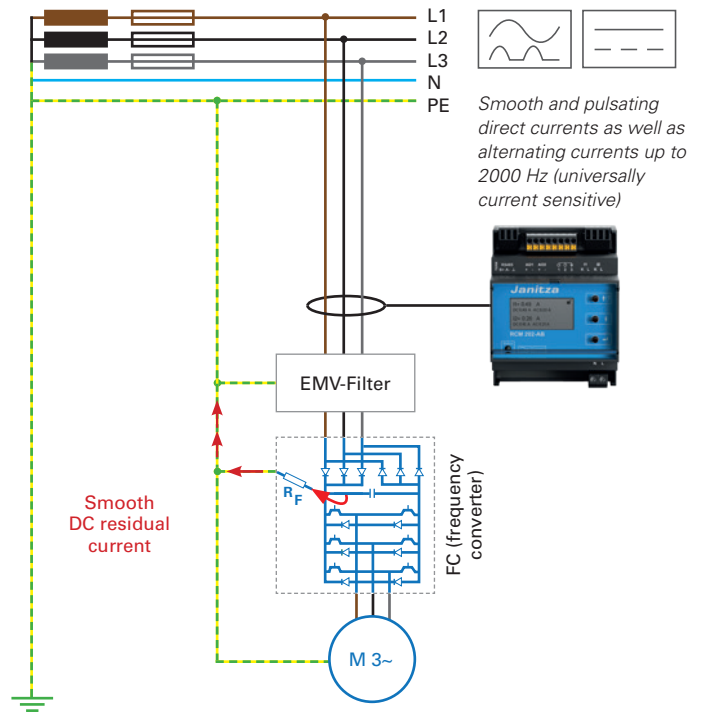


Application examples for types of residual currents

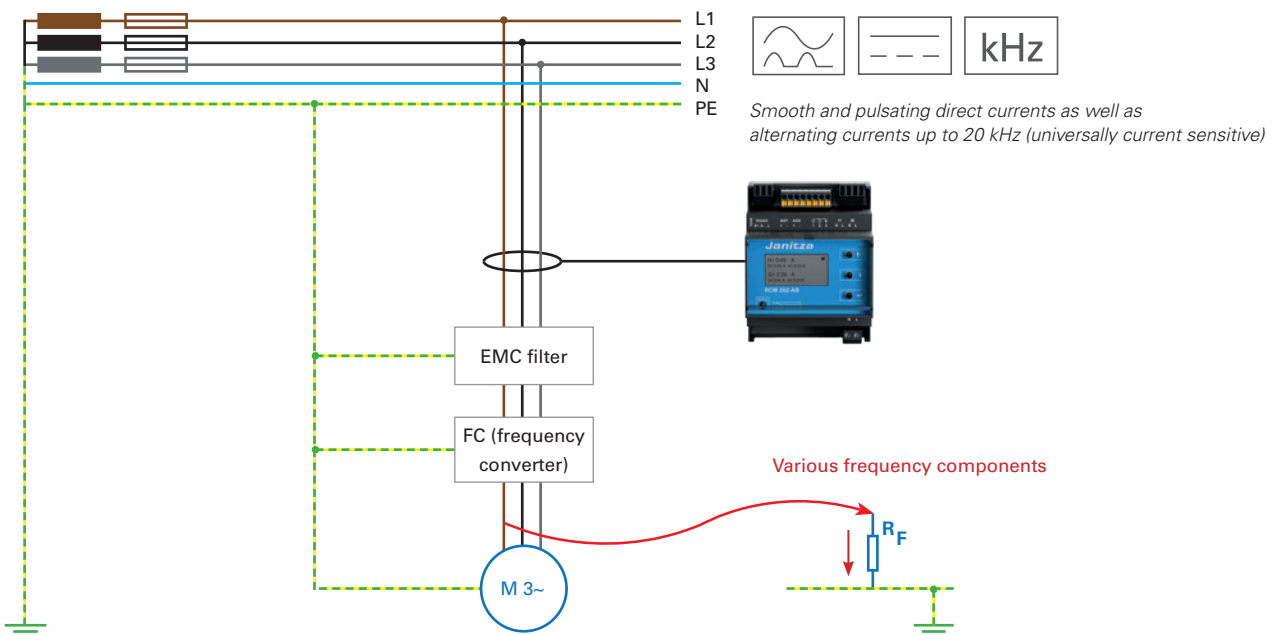
TYP A



TYP B



TYP B+



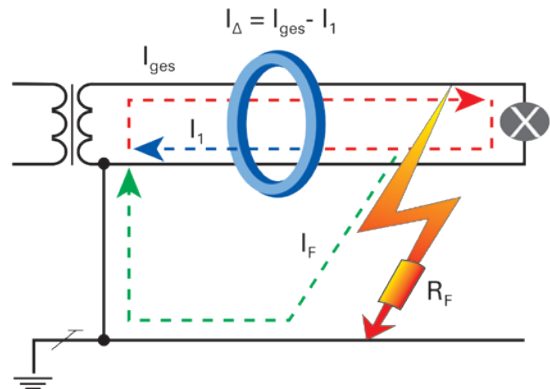
POWER SUPPLY WITHOUT FAILURES

TN-S systems are mandatory for new installations. Conversion to TN-S systems is also recommended for older TN-C-S systems. The functionality of TN-S systems can be monitored and logged continuously with Janitza RCM solutions.

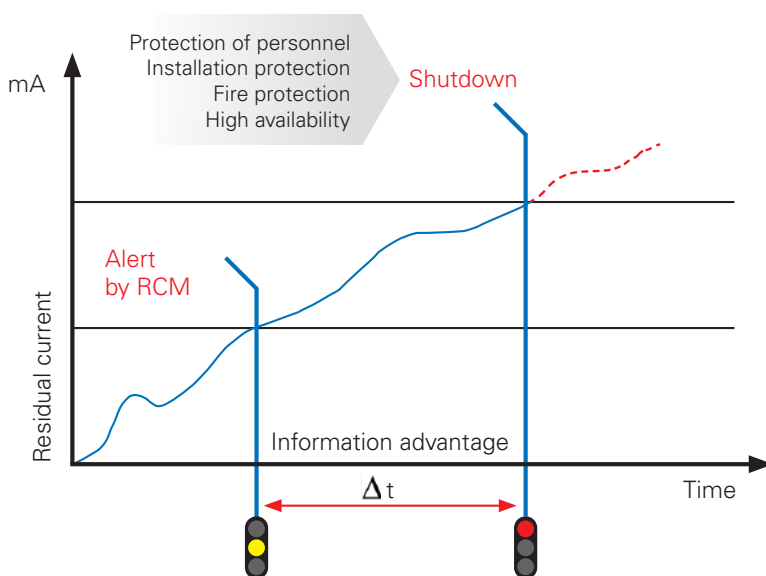
In many industries and application areas, this requirement represents a key function for the safety and economic success of the company.

In practice, all three phases and the neutral conductor run through the summation current transformer. In systems without neutral conductors, for example in controlled drives, only the three phases of the summation current transformer are used. When the system is in the fault-free state, the summation current is zero or close to zero (within the tolerance range), so that the current induced in

the secondary circuit is also zero or close to zero. If, on the other hand, a residual current flows to ground in the event of a fault, the current imbalance in the secondary circuit causes a current to be detected, reported and evaluated by the RCM measurement device.



EARLY REPORTING INSTEAD OF SWITCHING OFF



Alert before switching off – An objective of residual current monitoring

The decisive factor is to detect any disturbances early on, **before** fuses or residual current devices (RCDs) of affected systems or socket power circuits are switched off. For this purpose, the increases in residual currents, which are typically very gradual (e.g. triggered by insulation faults and operating currents of system components or consumers that become too high), must be monitored, evaluated and reported before failures occur!

RESIDUAL CURRENT TRANSFORMERS FOR THE RCM 202-AB



CT-AC-RCM

Plug-on residual current transformer

- In combination with Janitza Universal Measuring Devices (UMG), the residual current to ground of machines or systems can be determined
- Compact design
- Detection of very small currents
- Round interior window, in mm: 35, 80, 110, 140, 210



DACT

Residual current transformer

- For residual current detection in 3-wire and 4-wire alternating current networks
- Highly sensitive current sensor for detecting even the smallest residual currents
- High level of safety thanks to integrated overvoltage protection
- Flexible use due to a wide frequency range
- Round interior window, in mm: 20



CT-AC-RCM A

Separable residual current transformer

- In combination with Janitza Universal Measuring Devices, the residual current to ground of machines or systems can be determined
- Compact design
- Detection of very small currents
- Separable current transformer, ideal for retrofitting
- Round interior window, in mm: 110, 150, 310



KBU

Separable residual current transformer

- Simple and cost-effective installation
- Practical locking system: No need to disconnect and remove the primary conductors
- Available in various dimensions
- No interruption of operation
- Rectangular inside window, in mm: 20 x 30, 50 x 80, 80 x 120

POWER GRID MONITORING SOFTWARE

A FUNDAMENTAL COMPONENT FOR RCM MONITORING AND ANALYSIS

GridVis® RCM Report

- Meaningful statistics on exceedances of limit values for residual currents and operational interruptions
- Support for system testing and the obligation to provide verification
- Verification of a "clean" TN-S system
- Optimal for large systems with many RCM measurement points
- Support of devices with dynamic limit value monitoring or static limit values
- Status overview with signal colors for a general overview

Channel #	Current	Comments
1	30 mA	OK
2	30 mA	OK
3	not configured	OK
4	not configured	OK
Network	not configured	OK
Signature	not configured	OK

Channel #	Current	Limit	Status
1	30 mA	30 mA	OK
2	30 mA	30 mA	OK
3	not configured	not configured	OK
4	not configured	not configured	OK
Network	not configured	not configured	OK
Signature	not configured	not configured	OK

GridVis®
RCM Report as
proof of testing



- Residual current 2
- Residual current 3
- Residual current 1

RCM – VISUALIZATION, ALARMING, ANALYSIS AND REPORTING

With GridVis®, technicians and business managers are given the data necessary to:

- Receive early alerts before a failure
- Identify failures and vulnerabilities
- Evaluate uptime as a whole
- Create a basis for predictive maintenance
- Calculate key performance indicators
- Depict cost centers
- Monitor status messages

GridVis® – Convenient and versatile

- Convenient programming and parameter configuration
- Link measurement points & create dashboards
- Web-based alarm manager with escalation management
- Versatile presentations
- Automated reports and exports
- Histories and topologies
- Analysis of the effects of nonlinear loads and filter currents
- Integration of RCM systems from other manufacturers via OPC UA or Modbus



GridVis®
System and energy monitoring
at the highest level

Janitza electronics GmbH
Vor dem Polstück 6 | 35633 Lahnau
Germany

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

Distributor

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The current version of the brochure is available for you at www.janitza.com.