

MIC-RSx-SCP

communication
protocol

MODBUS

communication
protocol



CAT II

1000 V

Designed for the industry



Features

- Measurement voltage selected within the range of:
 - » **MIC-RS2 | 50...2500 V**
 - » **MIC-RS3 | 50...5000 V**
- Automatic discharge of the measured object's capacitance upon completion of insulation resistance measurement
- Measurement current **1,4 mA**
- Protection against measurement of live objects

Additional features

- Capacitance measurement after measurement of R_{iso}
- RS-485 interface
- Data transmission to a controlling device through the MIC-RSx-SCP or Modbus communication protocol
- External power supply
- The instrument meets the requirements laid down by standard EN IEC 61557

It is possible to prepare a version of the meter with the interface and communication protocol requested by the customer.



Application

The instrument is dedicated for companies and sites, in which continuous or random assessment of the insulation resistance is required as part of production. It is also perfect for automated production systems.

The meter can be installed in the distribution board, at the operator's station (assembly or quality control bench), in the control cabinet or even in the rack enclosure. It can be controlled by switchgear management devices, such as Siemens S7 Simatic controllers. The measurement is performed by means of clamps, used to connect the test leads of the system, in which the instrument is installed.

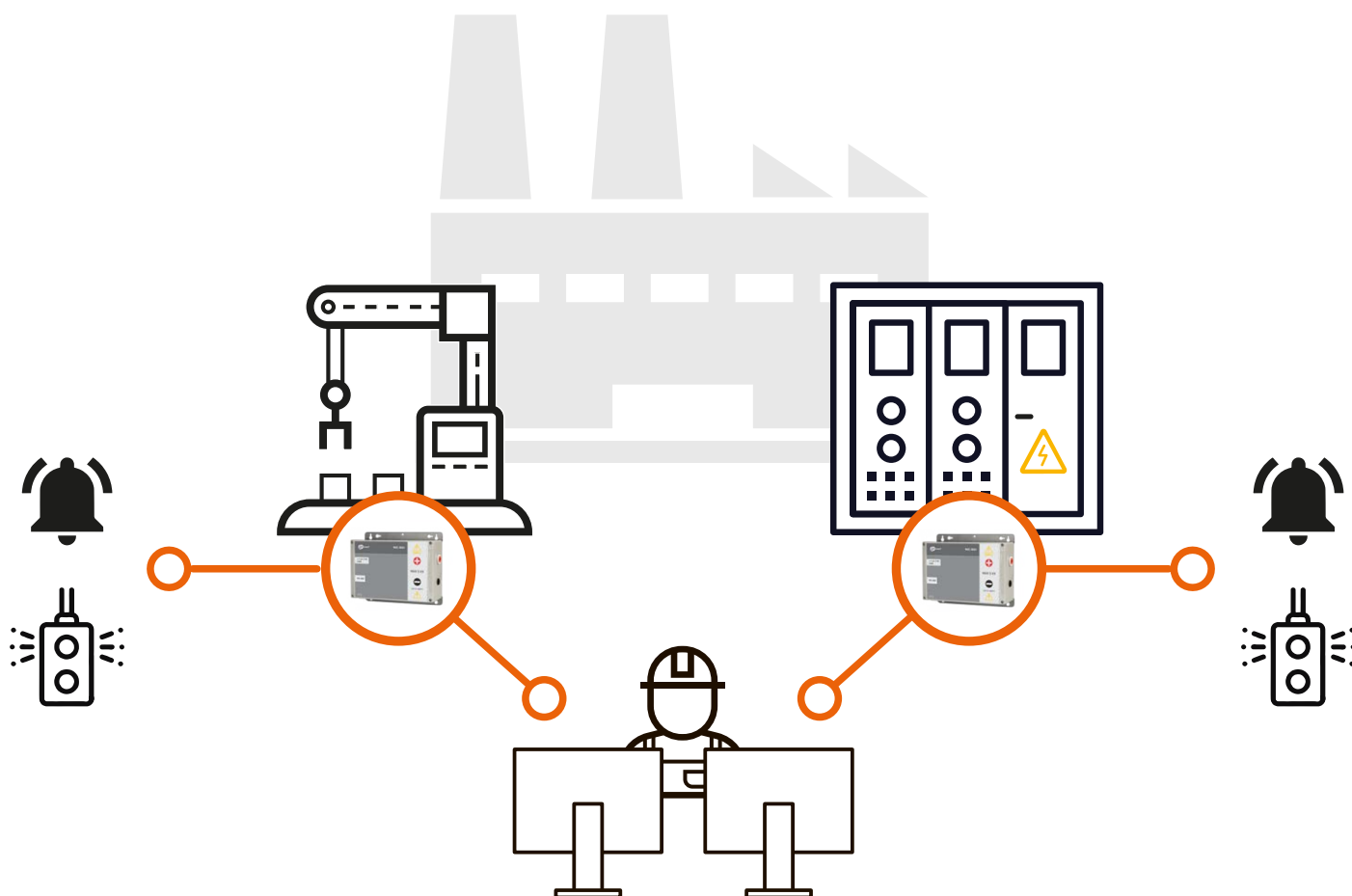
Features

The meter is designed for building in/permanent installation. It plays a Secondary/Slave role, meaning that it executes the commands issued by the Main/Master control device and it does not initialise the transmission on its own. It enables measuring the insulation resistance with the test voltage of up to 2500 V (**MIC-RS2**) or 5000 V (**MIC-RS3**).

There are two measurement modes available: **automatic** (continuous) and **manual** (one-time). Under automated testing, the meter can be programmed to measure the capacity or not.

Response and communication

The meter is operated from the Main/Master control device by means of the **MIC-RSx-SCP serial communication protocol** or **Modbus protocol**. It enables, for example, starting and stopping the measurement of resistance, reading the measurement result or changing the configuration of the instrument.



Specifications

Insulation resistance measurement

Measurement range acc. to IEC 61557-2:

MIC-RS2 | $R_{ISOmin} = U_{ISOnom} / I_{ISOnom} \dots 2500 \text{ G}\Omega$ ($I_{ISOnom} = 1,4 \text{ mA}$)

MIC-RS3 | $R_{ISOmin} = U_{ISOnom} / I_{ISOnom} \dots 5000 \text{ G}\Omega$ ($I_{ISOnom} = 1,4 \text{ mA}$)

Range	Resolution	Accuracy
0.0...999.9 k Ω	0.1 k Ω	$\pm(3\% \text{ m.v.} + 20 \text{ digits})$
1.000...9.999 M Ω	0.001 M Ω	
10.00...99.99 M Ω	0.01 M Ω	
100.0...999.9 M Ω	0.1 M Ω	
1.000...9.999 G Ω	0.001 G Ω	
10.00...99.99 G Ω	0.01 G Ω	
100.0...999.9 G Ω	0.1 G Ω	
MIC-RS2 1.000...2.500 T Ω	1 G Ω	$\pm(3\% \text{ m.v.} + 20 \text{ digits})$
MIC-RS3 1.000...5.000 T Ω	1 G Ω	$\pm(4\% \text{ m.v.} + 50 \text{ digits})$

Values of measured resistance depending on measuring voltage

Voltage U_{ISO}	Measurement range
0...100 V	50 G Ω
200 V...400 V	100 G Ω
500 V...900 V	250 G Ω
1000 V...2400 V	500 G Ω
2500 V	2500 G Ω
MIC-RS3 5000 V	5000 G Ω

Other technical data

Safety and work conditions

Type of insulation according to EN 61010-1 and IEC 61557	double
Measuring category according to EN 61010	
rated operating altitude $\leq 2000 \text{ m}$	II 1000 V
	external, isolated
Power supply of the meter	MIC-RS2 24 or 48 V DC (19...50 V DC) / 0.5 A / 12 W MIC-RS3 24 or 48 V DC (19...50 V DC) / 0.8 A / 19 W
Dimensions	241 x 202 x 90 mm
Meter weight	1.5 kg
Storage temperature	-20...+60°C
Operating temperature	-15...+40°C
Humidity	20...90%
Reference temperature	23 $\pm$ 2°C
Reference humidity	40%...60%

Memory and communication

Memory of measurement results	-
Data transmission	RS-485

Other information

Quality standard for design, construction and manufacturing compliant with	ISO 9001, ISO 14001, ISO 45001
The device meets the requirements of	EN 61010-1, EN IEC 61557, EN IEC 61010-2-030
The product meets EMC requirements (immunity for industrial environment) according to the following standards	EN IEC 61326-1, EN IEC 61326-2-2

„m.v.“ - measured value

Standard accessories



Test lead 2 m 5 kV
(banana plug,
whitewashed) red

WAPRZ002REBW5K



Test lead 2 m 5 kV
(banana plug,
whitewashed) black

WAPRZ002BLBW5K



LAN network cable,
shielded, 5 m

WAPRZRJ45005E



Mains power
cable 24 V

WAPRZZAS24V



Factory calibra-
tion certificate

Optional accessories



Calibration
certificate
with accreditation

