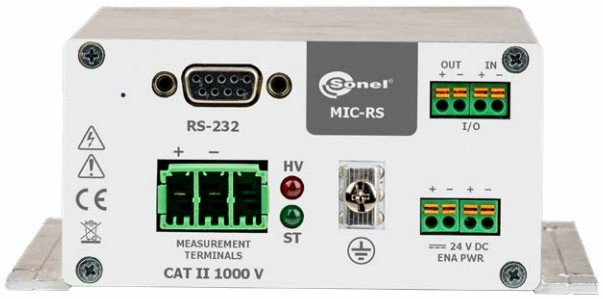
Insulation resistance meter

MIC-RS

MIC-RS: RS-232, MIC-RS-SCP | index: WMGBMICRS232
MIC-RS: RS-232, Modbus | index: WMGBMICRS232M
MIC-RS: RS-485, Modbus | index: WMGBMICRS485M

CAT II
1000 V

version with
RS-232 interface

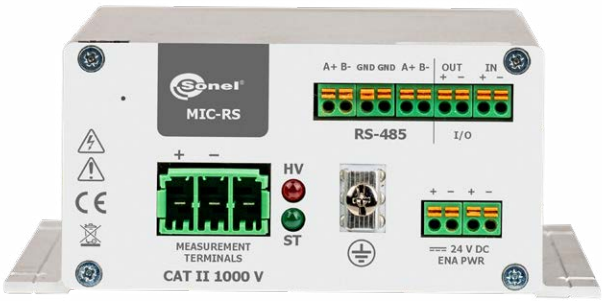


MIC-RS-SCP
communication protocol

OR

MODBUS
communication protocol

version with
RS-485 interface



MODBUS
communication protocol

Designed for the industry

Features

- Measurement voltage selected within the range of **50...1000 V**
- Automatic discharge of the measured object's capacitance upon completion of insulation resistance measurement
- Measurement current **≤2 mA**
- Protection against measurement of live objects
- Two- or three-lead method of insulation resistance measurement

Additional features

- Capacitance measurement after measurement of R_{ISO}
- Low-voltage measurement of resistance
- RS-232 or RS-485 interface
- Data transmission to a controlling device through the MIC-RS-SCP or Modbus communication protocol
- External power supply
- The instrument meets the requirements laid down by standard EN IEC 61557

Variants

Model	Interface	Communication protocol	Index
MIC-RS	RS-232	MIC-RS-SCP	WMGBMICRS232
MIC-RS	RS-232	Modbus	WMGBMICRS232M
MIC-RS	RS-485	Modbus	WMGBMICRS485M

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

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 1000 V.

The scope set of functions of the meter is tailored to specialised applications. With the **AutoRange** function, available in two versions, the instrument can switch the test voltage dynamically and adjust it to the current conditions.

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. In addition, **the user may define the default function** of the device as the measurement of insulation resistance ($\mathbf{R_{Iso}}$), or low resistance ($\mathbf{R_x}$).

Response and communication

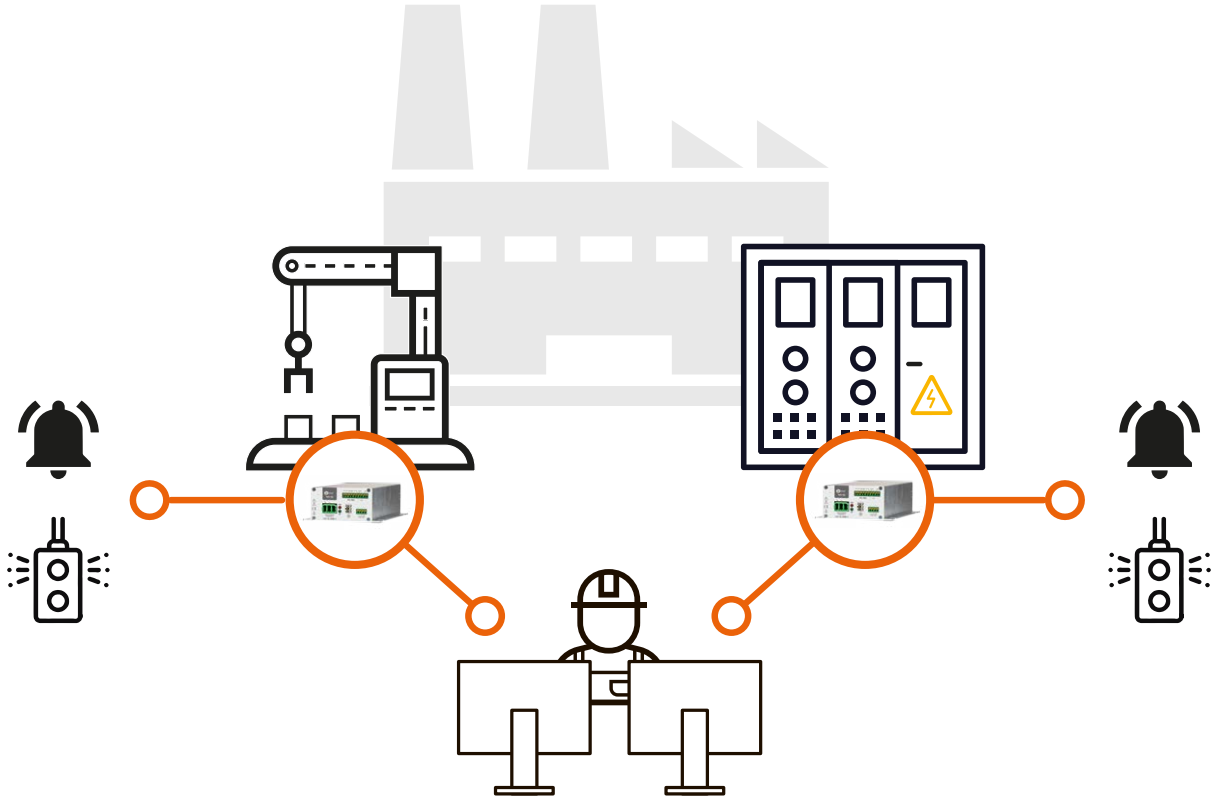
The functionality of the instrument is extended by digital input and output. This enables the meter to respond to the events in the system, in which it operates.

The meter is operated from the Main/Master control device by means of the **MIC-RS-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.

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. The measurement is performed by means of clamps, used to connect the test leads of the system, in which the instrument is installed.



Specifications

Measurement functions	Measurement range	Reading range	Resolution	Accuracy ±(% m.v. + digits)
Insulation resistance				
Measuring voltage 500 V I_{ISOnom} = 2 mA + ⟨-0.8...0 mA⟩	500 kΩ...2.00 GΩ acc. to IEC 61557-2	1.00 kΩ...2.00 GΩ	from 0.01 kΩ	from ±(3% m.v. + 8 digits)
Measuring voltage 1000 V I_{ISOnom} = 2 mA + ⟨-0.8...0 mA⟩	1000 kΩ...9.99 GΩ acc. to IEC 61557-2	1.00 kΩ...2.00 GΩ	from 0.01 kΩ	from ±(3% m.v. + 8 digits)
Capacitance measurement after R_{ISO} measurement	0 µF...9.9 µF	0 µF...9.9 µF	0.1 µF	±(5% m.v. + 6 digits)
Measurement of resistance with low current	0.0 Ω...999 Ω	0.0 Ω...999 Ω	from 0.1 Ω	from ±(3% m.v. + 4 digits)

Other technical data

Safety and work conditions	
Type of insulation according to EN 61010-1 and IEC 61557	basic
Measuring category according to EN 61010	
rated operating altitude ≤2000 m	II 1000 V
Power supply of the meter	external, isolated, 24 V DC
Dimensions	55 x 130 x 215 mm
Meter weight	ca. 0.8 kg
Storage temperature	-20...+70°C
Operating temperature	-5...+50°C
Humidity	20...80%
Reference temperature	23 ± 2°C
Reference humidity	40%...60%
Memory and communication	
Memory of measurement results	-
Data transmission	RS-232 or 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

Standard accessories

Factory calibration certificate

Optional accessories

Calibration certificate with accreditation

„m.v." - measured value