



MIC-5010

Indeks: WMGBMIC5010

Insulation resistance meter

 IP 40

CAT IV
600V

CAT III
1000V

Description

- Insulation resistance measurement:
 - measurement voltage any in the range of 50...1000 V at 10 V and 1000...5000 V at 25 V resolution,
 - continuous indication of measured insulation resistance or leakage current,
 - automatic discharge of measured object capacitive voltage after the end of insulation resistance measurement,
 - acoustic signaling of 5 seconds intervals to facilitate capturing time characteristics,
 - metered T_1 , T_2 and T_3 test times for measuring one or two absorption coefficients from the range of 1...600 s,
 - adjustable measuring time to 99'59'',
 - polarization index (PI) and dielectric absorption ratio (DAR) measurement,
 - indication of actual test voltage during measurement,
 - 1.2 mA and 3 mA test current,
 - step voltage insulation resistance measurement (SV),
 - Dielectric Discharge calculation (DD),
 - protection against measuring live objects,
 - measurements with test leads up to 20 m
- Digital filters function for measurements in high noise

environment (10 s, 30 s, 60 s).

- Continuity measurement of protective connections and equipotential bonding in accordance with EN 61557-4 with current > 200 mA.
- Adjustable limits for measured resistance R_{ISO} and R_{CONT} .
- Measurement of leakage current during insulation resistance testing.
- Measurement of capacitance during the measurement of R_{ISO} .
- DC and AC voltage measurement in the range of 0...600 V.
- 990 cells of memory (11880 records) with the capability of wireless data transmission to a PC or through a USB cable.
- Power supply from battery packs, low battery warning indicator, built-in fast charger.
- Keyboard and display backlit.

The instruments meet the requirements of the EN 61557 standard.

[Virtual instrument application of Sonel MIC-5010](#)

Technical Specification

Insulation resistance measurement (two-lead)

Measurement range acc. to IEC 61557-2: 50k...15,0 TΩ ($I_{ISO_{nom}} = 1,2$ mA or 3 mA)

Range	Resolution	Accuracy
0,0...999 kΩ	1 kΩ	±(3% m.v. + 10 digits)
1.00...9,99 MΩ	0,01 MΩ	
10.0...99,9 MΩ	0,1 MΩ	
100...999 MΩ	1 MΩ	
1.00...9,99 GΩ	0,01 GΩ	
10.0...99,9 GΩ	0,1 GΩ	

100...999 GΩ	1 GΩ	±(3.5% m.v. + 10 digits)
1.00...9,99 TΩ	0,01 TΩ	±(7.5% m.v. + 10 digits)
10.0...15,0 TΩ	0,1 TΩ	±(10% m.v. + 10 digits)

Values of measured resistance depending on measurement voltage

Voltage U_{ISO}	Measurement range
250 V	500 GΩ
500 V	1.00 TΩ
1000 V	2.00 TΩ
2500V	5.00 TΩ
5000V	15.0 TΩ

Measurement of leakage current

Range	Resolution	Accuracy
0... I_{Lmax}	m, μ , n [A]	Calculated basing on resistance measurements

- I_{Lmax} – maximum current at short circuit of leads,
- resolution and units result from the measurement range of individual insulation resistance.

Step voltage insulation resistance measurement

Target voltage	Measurement voltage sequence
1 kV	200, 400, 600, 800, 1000 V
2.5 kV	0.5, 1, 1.5, 2, 2.5 kV
5 kV	1, 2, 3, 4, 5 kV

- duration of each "step" adjustable from 30s to 5mins
- measurement result for each voltage step is stored in memory

Continuity measurement of protective connections and equipotential bonding with 200 mA current

Measurement range acc. to EN 61557-4: 0,12...999 Ω

Range	Resolution	Accuracy
0.00...19.99 Ω	0,01 Ω	$\pm(2\% \text{ m.v.} + 3 \text{ digits})$
120.0...199.9 Ω	0,1 Ω	
200...999 Ω	1 Ω	$\pm(4\% \text{ m.v.} + 3 \text{ digits})$

- Voltage on open terminals: 4...24 V
- Output current at $R < 2 \Omega$: $I_{\min} > 200 \text{ mA}$ (ISC: 200...250 mA)
- Compensation of test lead resistance
- Current flowing in both directions, mean value of resistance is displayed

Capacity measurement

Range	Resolution	Accuracy
1...999 nF	1 nF	$\pm(5\% \text{ m.v.} + 5 \text{ digits})$
1.00...49.99 μF	0.01 μF	

- Capacity measurement result is displayed after the R_{ISO} measurement

DC and AC voltage measurement

Range	Resolution	Accuracy
0.0...29.9 V	0.1 V	$\pm(2\% \text{ m.v.} + 20 \text{ digits})$
30.0...299.9 V	0.1 V	$\pm(2\% \text{ m.v.} + 6 \text{ digits})$
300...600 V	1 V	$\pm(2\% \text{ m.v.} + 2 \text{ digits})$

The acronym “m.v.” stands for a “measured reference value”.