

# Measure insulation resistance up to 100 $\mbox{G}\Omega$

## Main features

- measurement of insulation resistance up to 100 GΩ thanks to max 1000 V measurement voltage
- designed for harsh environmental conditions conditions IP67 ingress protection
- excellent for repeatable measurements memory of 12,000 records and UNI-Schuko adapter for sockets
- allows for testing electrical continuity R<sub>CONT</sub> 200 mA function
- checking start capacitors in motors thanks to capacity measurement function

### ...and much more

- measurement voltage selected from: 50, 100, 250, 500, 1000 V or freely configurable within the range of 50...1000 V in steps of 10 V
- continuous reading of measured insulation resistance or leakage current
- automatic discharge of the measured object's capacitance upon completion of insulation resistance measurement
- sound signalling of five-second time intervals, facilitating capture of time characteristics
- timing of measurement times T<sub>1</sub>, T<sub>2</sub> and T<sub>3</sub> for measurement of one or two absorption coefficients, within the range of 1... 600 seconds
- readings of actual measurement voltage during measurement
- protection against measurement of live objects
- three-lead measurement additional lead GUARD
- capacitance measurement during measurement of R<sub>ISO</sub>
- low-voltage measurement of circuit continuity and resistance
- continuity test of protective conductors and equipotential bonding with current I<sub>Iso</sub>≥200 mA flowing in two directions in compliance with EN 61557-4
- measurement of direct and alternating voltages within the range of 0...600 V









Measurement of insulation resistance

## Application

MIC-30 insulation resistance meter is perfectly suited for the needs of all users, who often examine the condition of electrical systems in single- and multi-family buildings as well as in public buildings and in small workshops or factories. With its test voltage settings from 50 V to 1000 V (in 10 V steps), the device is perfect for diagnosing the electrical, control, communication and telecommunications objects.

## Features •

Test voltage settings of 500 V or 1000 V perfectly match the requirements for assessing the protection of power supply lines but also of floors and walls in places where the insulation of the stand was used as a means of protection against electric shock – PRS-1 probe (optional accessory) is very useful for this purpose.

The dedicated UNI-Schuko adapter enables user to configure the tested cable pairs – this ensures quick and efficient inspection of the insulation resistance from the side of sockets.

With MIC-30 meter you can check whether an object is under voltage (measuring range up to 600 V), both in overhead and cable networks (measuring category of the device: CAT IV 600 V). You can verify the continuity of cables, e.g. PE connections and equipotential bonding – using the current of at least 200 mA, according to EN 61557-4. You can check the capacity of the start-up capacitors in household appliances and drives of any type (measuring range up to 10  $\mu$ F). With the third socket (GUARD), you can verify the amount of leakage current, which may "escape" through faulty or contaminated insulation.

Built-in memory and wireless transmission ensure gathering and transmission of data to software that provides archiving and analysis (Sonel Reader). All of this makes MIC-30 meter an essential tool for every service technician.

## Durable housing

Handy and ergonomic housing provides protection of IP67, ensuring reliability of the meter even in the harshest environmental conditions (moisture, dust, high temperature, etc.)

Range	Resolution	Accuracy	V <sub>n</sub>	Measuring range
0.0999.9 kΩ	0.1 kΩ	± (3% m.v. + 8 digits) [± (5% m.v. + 8 digits)]*	50 V	50 kΩ250.0 MΩ
1.0009.999 MΩ	0.001 MΩ		100 V	100 kΩ500.0 MΩ
10.0099.99 ΜΩ	0.01 MΩ		250 V	250 kΩ2.000 GΩ
100.0250.0 MΩ (for V <sub>p</sub> = 50 V)			500 V	500 kΩ20.00 GΩ
100.0500.0 MΩ (for $V_n = 100 \text{ V}$ ) 100.0999.9 MΩ (for $V_n \ge 250 \text{ V}$ )	0.1 ΜΩ		1000 V	1000 kΩ100.00 GΩ
1.0002.000 GΩ (for V <sub>n</sub> = 250 V)	0.001 GΩ			
1.0009.999 GΩ (for V <sub>n</sub> ≥ 500 V)	0.001 GΩ			
10.0020.00 GΩ (for V <sub>n</sub> ≥ 500 V)**	0.01.00	±(4% m.v. + 6 digits)		
10.0099.99 GΩ (for V <sub>n</sub> = 1000 V)	0.01 GΩ	[±(6% m.v. + 6 digits)]*		
100.0 GΩ (for V <sub>n</sub> = 1000 V)	0.1 GΩ			

\* for WS-04 adapter

\*\* for WS-04 adapter, range up to 10 G $\Omega$ 

## Low-voltage measurement of continuity of circuit and resistance – Measuring range according to EN 61557-4: $0.10...1999 \Omega$

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Range	Resolution	Accuracy		
0.0019.99 Ω	0.01 Ω			
20.0199.9 Ω	0.1 Ω	±(2% m.v. + 3 digits)		
2001999 Ω	1 Ω	±(4% m.v. + 3 digits)		

#### Capacitance measurement -

Low-current resistance measurement

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Accuracy	Resolution	Range
±(5% m.v. + 10 digits)	1 nF	1999 nF
	0.01 µF	1.009.99 µF

- Capacitance measurement result displayed after measurement of  $\mathsf{R}_{_{\rm ISO}}$ 

• For measurement voltages below 100 V and measured resistance of less than 10 M $\Omega$ , the error of capacitance measurement is unspecified

Range	Resolution	Accuracy	Range	Resolution	Accuracy
0299.9 V	0.1 V	±(2% m.v. + 6 digits)	0.00199.9 Ω	0.1 Ω	1 (2% m v 1 2 digita)
300600 V	1 V	±(2% m.v. + 2 digits)	2001999 Ω	1 Ω	±(3% m.v. + 3 digits)
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Frequency range: 45...65 Hz

## Technical specification

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double	type of insulation according to EN 61010-1 and EN 61557
IV 600 V (III 1000 V	measurement category according to EN 61010-1
IP6	degree of housing protection acc. to EN 60529
4 x AA alkaline battery or 4x AA rechargeable batter	power supply of the meter
200 x 100 x 60 mn	dimensions
7.9" x 3.9" x 2.4	dimensions
ca. 0.6 k	masar weight
ca. 1.3 lb	meter weight
-10°C+50°C	operating temperature
14°F122°	operating temperature
segment LCI	display
990 cell	memory of measurement results
wireless lin	data transmission
ISO 900	quality standard for design, construction and manufacturing compliant with
EN 6155	the device meets the requirements of
EN 61326-	the product meets EMC requirements (immunity for industrial environment)
EN 61326-2-2	according to the following standards

## **Standard accessories**



test probe with banana socket; 1 kV; black WASONBLOGB1



shielded test lead with banana plugs; 1 kV; 4 ft (1.2 m); black



4 ft (1.2 m); black

M-6 carrying case

WAFUTM6



test lead with banana plugs;

test probe with

banana socket;

1 kV; red

WASONREOGB1

1 kV; 4 ft (1.2 m); red WAPRZ1X2REBB

meter strap (type M-1) WAPOZSZE4

M-1 housing holder – hanger WAPOZUCH1



blue "crocodile" clip 1 kV 20 A WAKROBU20K02

test lead with banana plugs; 1 kV; 4 ft (1.2 m); blue WAPRZ1X2BUBB

Factory calibration certificate

Abbreviation "m.v." used in the specification of measurement means a measured value.

## **Optional accessories**



black "crocodile" clip 1 kV 20 A WAKROBL20K01



red "crocodile" clip 1 kV 20 A WAKRORE20K02



pin probe, blue 1 kV (banana socket)

WASONBUOGB1



test lead 16.4 ft (5 m), black, 1 kV (banana plugs, shielded) WAPRZ005BLBBE



test lead 16.4 ft (5 m), red, 1 kV (banana plugs) WAPRZ005REBB



test lead 16.4 ft (5 m), blue, 1 kV (banana plugs) WAPRZ005BUBB



WS-04 adapter with UNI-SCHUKO angular plug WAADAWS04



PRS-1 resistance test probe WASONPRS1GB



CS-1 cable simulator WAADACS1



AGT-16P threephase socket adapter 16 A WAADAAGT16P



AGT-32P threephase socket adapter 32 A WAADAAGT32P





AGT-16C threephase socket adapter 16 A (PEN)



AGT-32C threephase socket adapter 32 A (PEN)



Sonel Reader PC software



AGT-16T industrial socket adapter 16 A WAADAAGT16T



AGT-32T industrial socket adapter 32 A WAADAAGT32T



Calibration certificate with accreditation



Virtual instrument application gives you an unique real-like experience with the meter. The application of the virtual instrument is a real visualization of the meter e.g. its functions and display. The user has a possibility to make a setup of the instrument and all possible measurements like in the reality. Such opportunity gives the user a closer look and a feeling for the functioning of the instrument.