

AMIC-10K1

Insulation resistance meters



Up to 40 TΩ with test voltages from 50 V to 10 kV

AMIC-10K1

10 kV insulation resistance meter

amperis

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Insulation resistance up to 40 TΩ with any test voltage from 50 V to 10 kV and full diagnostic indices.

Product overview



Insulation testing on the stator of a large electrical machine

Built for large machines

The AMIC-10K1 measures insulation resistance up to 40 TΩ with any test voltage between 50 V and 10 kV — in 25 V steps up to 1000 V and 50 V steps above — and test currents of 1.2, 3 or 5 mA. The two- or three-wire method, test leads up to 20 m and protection against live objects suit it to transformers, motors, generators and high-voltage cables.

Complete insulation diagnostics

The meter records the T1, T2 and T3 times for absorption coefficients from 1 to 600 s and delivers the polarization index (PI), the dielectric absorption ratio (DAR), step-voltage tests (SV) and the dielectric discharge (DD). Damage location by burnout, leakage current and capacitance measurement during the test and a digital filter for noisy environments complete the diagnosis.

Main features

- Continuous indication of insulation resistance or leakage current.
- Automatic discharge of the object capacitance after each test.
- Continuity of protective connections per EN 61557-4 with >200 mA.
- DC and AC voltage measurement from 0 to 750 V.
- Memory with descriptions of points, sites and clients; USB and Bluetooth.
- Backlit 5.6-inch LCD with graphs; optional Bluetooth mini keyboard.



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Applications and safety

Applications

- Insulation testing of power transformers, motors and generators.
- Single- and multi-core high-voltage cables.
- Capacitors, switchgear and other substation equipment.
- Measurements in environments with high electrical noise.

Safe and self-sufficient

Rated CAT IV 600 V (CAT III 1000 V) with double insulation to EN 61010-1 and IEC 61557, the AMIC-10K1 runs from the 90-265 V mains or from its battery packs with built-in fast charger, measures the temperature of the object with an optional probe, and its case reaches IP67 when closed — ready for the substation and for the field.



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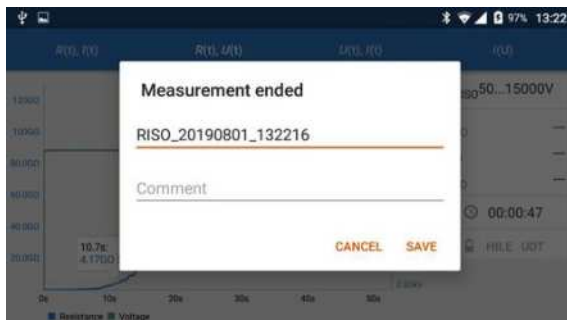
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The results stored in the meter become PC reports and live graphs on a mobile device.

Software & applications



Real-time resistance and current graphs in the mobile application during the test



Each result is saved with its own name and a comment at the end of the measurement

Reading and reports on the PC

The free PC reading software downloads the results stored in the memory of the AMIC-10K1 through the USB port or the Bluetooth link, keeps them organised by clients, sites and measuring points, and prints them or exports them to popular formats on any Windows computer. The stored history is compared with the current results to follow the ageing of the insulation and plan maintenance before a failure occurs.

AMIC Mobile application

The AMIC Mobile application connects a phone or tablet to the meter and shows the measurement as it happens: resistance and current graphs in real time, elapsed time and the diagnostic indices as they are computed. The test is started and stopped remotely — from another room or from a vehicle in bad weather — and each result is saved with a name, a comment and the GPS position of the measuring point.

What the software provides

- Complete download of the meter memory to the PC.
- Reports organised by client, site and measuring point.
- Export to popular formats for further analysis.
- Remote control and live graphs on the mobile device.



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AMIC-10K1 – TECHNICAL SPECIFICATIONS

Insulation resistance	10 MΩ...40.0 TΩ per EN 61557-2 ($U_N = 10$ kV)
Test voltage	50-1000 V in 25 V steps; 1-10 kV in 50 V steps
Test current	1.2 mA, 3 mA or 5 mA
Basic accuracy	$\pm(3\% \text{ m.v.} + 10 \text{ digits})$; up to $\pm(12.5\%)$ at 40 TΩ
Diagnostics	PI, DAR, SV, DD; timer up to 99'59"
Voltage measurement	DC and AC, 0...750 V; 45-65 Hz
Capacitance measurement	1 nF...49.99 μF; $\pm(5\% \text{ m.v.} + 5 \text{ digits})$
Continuity	Protective connections per EN 61557-4, >200 mA
Temperature	-40...+99.9 °C with optional probe
Memory and interface	Memory with descriptions; USB and Bluetooth
Display	Backlit 5.6-inch graphic LCD
Power supply	Mains 90-265 V, 50/60 Hz or battery packs; fast charger
Safety	CAT IV 600 V (CAT III 1000 V); double insulation
Protection class	IP40 (IP67 with the cover closed), per EN 60529
Dimensions and weight	390 × 310 × 180 mm; approx. 7 kg
Standards	EN 61010-1, IEC 61557, EN 61557-2



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AMIC-10K1 – MEASUREMENT DATA

Insulation resistance measurement

Measuring range acc. to IEC 61557-2: $R_{ISOmin} = U_{ISOnom} / I_{ISOmax} = 5 \text{ M}\Omega \dots 40 \text{ T}\Omega$ ($I_{ISOmax} = 1.2 \text{ mA}$, 3 mA or ($\pm 15\%$) mA).

Range	Resolution	Accuracy
0...999 k Ω	1 k Ω	$\pm(3\% \text{ m.v.} + 10 \text{ digits})$
1.00...9.99 M Ω	0.01 M Ω	$\pm(3\% \text{ m.v.} + 10 \text{ digits})$
10.0...99.9 M Ω	0.1 M Ω	$\pm(3\% \text{ m.v.} + 10 \text{ digits})$
100...999 M Ω	1 M Ω	$\pm(3\% \text{ m.v.} + 10 \text{ digits})$
1.00...9.99 G Ω	0.01 G Ω	$\pm(3\% \text{ m.v.} + 10 \text{ digits})$
10.0...99.9 G Ω	0.1 G Ω	$\pm(3\% \text{ m.v.} + 10 \text{ digits})$
100...999 G Ω	1 G Ω	$\pm(3.5\% \text{ m.v.} + 10 \text{ digits})$
1.00...9.99 T Ω	0.01 T Ω	$\pm(7.5\% \text{ m.v.} + 10 \text{ digits})$
10.0...40.0 T Ω	0.1 T Ω	$\pm(12.5\% \text{ m.v.} + 10 \text{ digits})$

AC/DC 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...1500 V	1 V	$\pm(2\% \text{ m.v.} + 2 \text{ digits})$

Frequency range: 45...65 Hz.

Temperature measurement

Range	Resolution	Accuracy
-40.0...99.9 °C	0.1 °C	$\pm(3\% \text{ m.v.} + 8 \text{ digits})$

"m.v." – measured value.

Ranges of measured resistance depending on the test voltage

Voltage U_{ISO}	Range	Range with AutoISO-5000
50 V	200 G Ω	20.0 G Ω
100 V	400 G Ω	40.0 G Ω
250 V	1.00 T Ω	100 G Ω
500 V	2.00 T Ω	200 G Ω
1000 V	4.00 T Ω	400 G Ω
2500 V	10.00 T Ω	400 G Ω
5000 V	20.0 T Ω	400 G Ω
10 000 V	40.0 T Ω	—

Leakage current measurement

Range	Resolution	Accuracy
0.01...9.99 nA	0.01 nA	$\pm(1.5\% \text{ m.v.} + 2 \text{ digits})$
10.0...99.9 nA	0.1 nA	$\pm(1.5\% \text{ m.v.} + 2 \text{ digits})$
100...999 nA	1 nA	$\pm(1.5\% \text{ m.v.} + 2 \text{ digits})$
1.00...9.99 μA	0.01 μA	$\pm(1.5\% \text{ m.v.} + 2 \text{ digits})$
10.0...99.9 μA	0.1 μA	$\pm(1.5\% \text{ m.v.} + 2 \text{ digits})$
100...999 μA	1 μA	$\pm(1.5\% \text{ m.v.} + 2 \text{ digits})$
1.00...9.99 mA	0.01 mA	$\pm(1.5\% \text{ m.v.} + 2 \text{ digits})$

Capacitance measurement

Range	Resolution	Accuracy
0...999 nF	1 nF	$\pm(5\% \text{ m.v.} + 5 \text{ digits})$
1.00...49.99 μF	0.01 μF	$\pm(5\% \text{ m.v.} + 5 \text{ digits})$

The capacitance value is displayed after the R_{ISO} measurement.

For test voltages below 100 V the measurement error is not specified.



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