

AMIC-5005

Insulation resistance meters



Up to 15 TΩ with voltage steps as fine as 10 V

AMIC-5005

5 kV insulation resistance meter

amperis

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Insulation resistance up to 15 TΩ with test voltages up to 5 kV adjustable in fine steps.

Product overview



The AMIC-5005 with its backlit display and keyboard

Fine steps, wide range

The AMIC-5005 measures insulation resistance from 50 kΩ to 15 TΩ per EN 61557-2, with any test voltage from 50 to 1000 V in 10 V steps and from 1000 to 5000 V in 25 V steps, and test currents of 1.2 or 3 mA. Automatic discharge of the object capacitance, protection against live objects and test leads up to 20 m make each measurement safe and repeatable.

Diagnostics with memory

PI and DAR indices, step-voltage sequences (SV) up to 5 kV with steps of 30 s to 5 min, dielectric discharge calculation (DD) and leakage-current and capacitance measurement during the test cover the full diagnosis. The 990 memory banks hold 11880 records and transmit them to a PC through the USB cable or wirelessly with the optional USB-OR receiver.

Main features

- Continuous indication of insulation resistance or leakage current.
- PI, DAR, SV and DD diagnostics with timer up to 99'59".
- DC and AC voltage measurement from 0 to 600 V.
- Digital filter of 10, 30 or 60 s for noisy environments.
- Acoustic signalling every 5 s to capture time characteristics.
- Backlit keyboard and display; built-in fast charger.



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Applications and delivery

Applications

- Insulation testing of transformers, motors and generators.
- Single- and multi-core cables in substations.
- Capacitors, switchgear and other power station equipment.
- Periodic maintenance of medium-voltage installations.

Everything in the case

The meter is supplied with 5 kV test leads, crocodile clips and probes, carrying case, harness, battery pack, power and USB cables and a calibration certificate; shielded 10 kV leads of 3, 5 or 10 m, a transport backpack and the OR-1 radio receiver are optional. Rated CAT IV 600 V (CAT III 1000 V) and IP54 — IP67 with the cover closed — it weighs about 7 kg.



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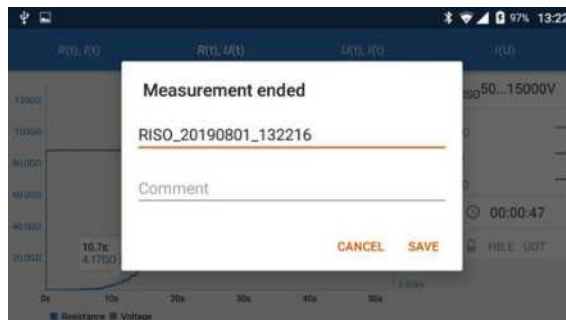
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The results stored in the meter become PC reports and live graphs on a mobile device.

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-5005 through the USB cable or the wireless 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.

AMIC-5005 – TECHNICAL SPECIFICATIONS

Insulation resistance	50 kΩ...15.0 TΩ per EN 61557-2
Test voltage	50-1000 V in 10 V steps; 1-5 kV in 25 V steps
Test current	1.2 mA or 3 mA
Basic accuracy	±(3 % m.v. + 10 digits); up to ±(10 %) at 15 TΩ
Diagnostics	PI, DAR, SV, DD; timer up to 99'59"
Step voltage (SV)	Sequences up to 5 kV; steps of 30 s to 5 min
Voltage measurement	DC and AC, 0...600 V; 45-65 Hz
Capacitance measurement	1 nF...49.99 µF; ±(5 % m.v. + 5 digits)
Memory	990 banks (11880 records)
Interface	USB or wireless transmission (optional USB-OR)
Power supply	Mains 90-265 V, 50/60 Hz or battery pack; fast charger
Safety	CAT IV 600 V (CAT III 1000 V); double insulation
Protection class	IP54 (IP67 with the cover closed), per EN 60529
Display	Backlit LCD and keyboard
Dimensions and weight	390 × 310 × 170 mm; approx. 7 kg
Standards	EN 61010-1, IEC 61557, EN 61557-2



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AMIC-5005 – MEASUREMENT DATA

Insulation resistance measurement

Measuring range acc. to IEC 61557-2: $R_{ISOmin} = U_{ISOmin} / I_{ISOmax} = 50 \text{ k}\Omega \dots 15.0 \text{ T}\Omega$ ($I_{ISOmin} = 1.2 \text{ mA}$ or 3 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...15.0 T Ω	0.1 T Ω	$\pm(10\% \text{ m.v.} + 10 \text{ digits})$

Maximum short-circuit current I_{SC} : 3.6 mA $\pm 15\%$.

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...600 V	1 V	$\pm(2\% \text{ m.v.} + 2 \text{ digits})$

Frequency range: 45...65 Hz.

"m.v." – measured value.

Ranges of measured resistance depending on the test voltage

Voltage U_{ISO}	Measuring range
250 V	500 G Ω
500 V	1 T Ω
1000 V	2.00 T Ω
2500 V	5.00 T Ω
5000 V	15.0 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 μ A	0.01 μ A	$\pm(1.5\% \text{ m.v.} + 2 \text{ digits})$
10.0...99.9 μ A	0.1 μ A	$\pm(1.5\% \text{ m.v.} + 2 \text{ digits})$
100...999 μ A	1 μ A	$\pm(1.5\% \text{ m.v.} + 2 \text{ digits})$
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 μ F	0.01 μ F	$\pm(5\% \text{ m.v.} + 5 \text{ digits})$

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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