Accessible version (HTML): amperis.com/en/accesible/brochure-amic-5010/

AMIC-5010

Insulation resistance meters

From 50 kΩ to 15 TΩ, measuring even in strong electromagnetic fields

AMIC-5010

5 kV insulation resistance meter

amperis

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Premium insulation measurement up to 15 TΩ with unique immunity to electromagnetic interference.

Product overview

The AMIC-5010 in its transport case, ready for substation work

Fifteen teraohms under control

The AMIC-5010 measures insulation resistance from 50 kΩ to 15 TΩ per IEC 61557-2, with any test voltage from 50 to 1000 V in 10 V steps and from 1 to 5 kV in 25 V steps. Test currents of 1.2 or 3 mA charge large objects quickly, and after every test — completed or interrupted — the object is discharged automatically.

Measures where others give up

Unique algorithms recognise the nature of the voltage present on the object: mains voltage blocks the test, voltage induced by electromagnetic fields does not, so measurements succeed beside live HV equipment. Digital filters of 10, 30 and 60 s stabilise the reading, interference immunity reaches 500 V, and leads up to 20 m can be used. PI, DAR, Ab1, Ab2, SV and DD complete the diagnosis.

Main features

- Adjustable measuring time up to 99'59'' with T1, T2, T3 timing.
- MIC-5010 continuity testing per EN 61557-4 with >200 mA.
- Capacitance and leakage current measured during R_{ISO}.
- 990 memory cells (11 880 records); USB and Bluetooth.
- Adjustable limits for R_{ISO} and R_{CONT} results.
- Supplied leads rated 11 kV; clips and probes 5.5 kV.

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Applications and safety

Applications

- Transformers, motors and generators in power plants and industry.
- Medium-voltage cables and substation switchgear.
- Measurements next to live busbars and HV lines.
- Periodic diagnostics with stored results and PC reports.

Safe and self-sufficient

Rated CAT IV 600 V (CAT III 1000 V) with double insulation, the AMIC-5010 runs from its LiFePO4 13.2 V battery — at least 1000 measurements per EN 61557-2 — or from the 90-260 V mains. The case reaches IP67 closed (IP40 open), works from -20 to +50 °C up to 3000 m, and weighs about 6 kg at 390 × 308 × 172 mm.

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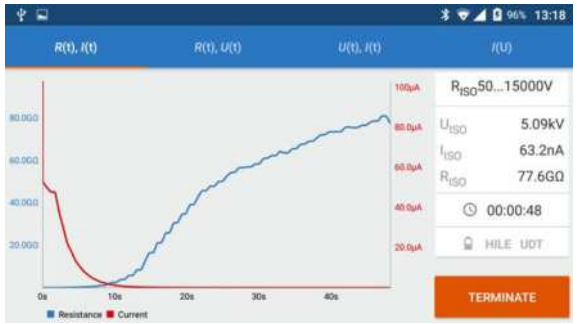
A mobile application follows the test live; the PC software archives every record.

Software & applications



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

The documentation software manages reports, inspectors, test points and downloaded data

The measurement on the phone

The mobile application connects to the AMIC-5010 over Bluetooth and shows resistance and leakage current graphs in real time while the test runs; each result is saved with its own name and comment, and the operator keeps a safe distance from the object under voltage.

Records on the PC

The 11 880 records of the internal memory are downloaded over USB or Bluetooth into the free PC reader software, which organises them by client, site and point, exports to popular formats and prints the measurement documentation.

What the software provides

- Live graphs of the measurement on an Android device.
- Results named and commented at the point of test.
- Download of the memory over USB or Bluetooth.
- Structured archive and printing on the PC.

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AMIC-5010 — MEASUREMENT DATA

Insulation resistance measurement

Display range	Resolution	Accuracy
0…999 kΩ	1 kΩ	±(3% m.v. + 10 digits)
1.00…9.99 MΩ	0.01 MΩ	±(3% m.v. + 10 digits)
10.0…99.9 MΩ	0.1 MΩ	±(3% m.v. + 10 digits)
100…999 MΩ	1 MΩ	±(3% m.v. + 10 digits)
1.00…9.99 GΩ	0.01 GΩ	±(3% m.v. + 10 digits)
10.0…99.9 GΩ	0.1 GΩ	±(3% m.v. + 10 digits)
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)

Measuring range per IEC 61557-2: 50 kΩ…15.0 TΩ (I_{ISOmax} = 1.2 mA or 3 mA).

Continuity test with >200 mA current

Display range	Resolution	Accuracy
0.00…19.99 Ω	0.01 Ω	±(2% m.v. + 3 digits)
20.0…199.9 Ω	0.1 Ω	±(2% m.v. + 3 digits)
200…999 Ω	1 Ω	±(4% m.v. + 3 digits)

Range per IEC 61557-2: 0.12…999 Ω. Bidirectional current; lead compensation and autozeroing.

"m.v." = measured value

Measured resistance vs. test voltage

U_{ISO} voltage	Measuring range
250 V	500 GΩ
500 V	1 TΩ
1000 V	2.00 TΩ
2500 V	5.00 TΩ
5000 V	15.0 TΩ

Capacitance measurement

Display range	Resolution	Accuracy
0…999 nF	1 nF	±(5% m.v. + 5 digits)
1.00…49.99 µF	0.01 µF	±(5% m.v. + 5 digits)

Result displayed after the R_{ISO} measurement; below 100 V the error is unspecified.

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AMIC-5010 — TECHNICAL SPECIFICATIONS

Type of insulation	Double, per EN 61010-1 and IEC 61557
Measurement category	CAT IV 600 V (CAT III 1000 V)
Ingress protection	IP67 (IP40 with the case open), per EN 60529
Power supply	LiFePO4 13.2 V 5.0 Ah battery; mains 90…260 V, 50/60 Hz
Battery performance	Min. 1000 R_{ISO} measurements per EN 61557-2
Memory of results	990 cells (11 880 records)
Data transmission	USB, Bluetooth
Display	Segment LCD, backlit
Operating temperature	-20…+50 °C
Humidity	20…90 %
Operating altitude	≤3000 m
Dimensions	390 × 308 × 172 mm
Weight	approx. 6 kg
Standards	EN 61010-1, IEC 61557
EMC requirements	EN 61326-1, EN 61326-2-2

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