AMRU-10

Earth resistance meters

Earth resistance up to 9999 Ω with 3-pole and 2-pole methods

AMRU-10

Earth resistance meter

amperis

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Earth resistance by the technical 3-pole and the 2-pole methods, up to 9999 Ω, in an IP67 housing.

Product overview

The AMRU-10 with its large segment display

Grounding, kept simple

The AMRU-10 measures earth resistance by the technical three-pole method per EN 61557-5 — from 0.53 Ω to 9999 Ω at 50 V — and by the two-pole method, along with the resistance of the auxiliary electrodes R_H and R_S up to 19.9 kΩ and interference voltages up to 100 V. Its ergonomic, rugged housing and large, legible display make it a natural choice for field work.

Stable readings under disturbance

A measurement current above 20 mA at 125 or 150 Hz and a selectable test voltage of 25 or 50 V keep the readings accurate even with disturbance voltages up to 24 V present. Resolution starts at 0.01 Ω with an intrinsic uncertainty of ±(3 % of reading + 3 digits), and battery indication with automatic power-off looks after the four AA cells.

Main features

- Technical 3-pole method per EN 61557-5 and 2-pole method.
- Auxiliary electrode resistances R_H and R_S up to 19.9 kΩ.
- Interference voltage measurement up to 100 V.
- Selectable measuring voltage of 25 V or 50 V.
- Battery state indication and auto-off function.
- CAT III 300 V safety with an IP67 housing.

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Applications and delivery

Applications

- Verification of earthing systems in electrical installations.
- Earth electrodes of buildings, substations and lightning protection.
- Quality checks of the earthing circuit from the measured result.
- Work by installation contractors and maintenance technicians.

Everything included

The set includes 30 m and 15 m leads on reels, a 2.2 m lead, a crocodile clip, two 25 cm ground probes, AA batteries, carrying case, straps and a calibration certificate; 80 cm probes and leads up to 200 m on spools are optional. At about 660 g with batteries and only 221 × 102 × 62 mm, the AMRU-10 travels to wherever the earthing is.

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AMRU-10 — TECHNICAL SPECIFICATIONS

Measuring methods	Technical 3-pole per EN 61557-5; 2-pole
Earth resistance range	0.53…9999 Ω (U_N = 50 V); display from 0.01 Ω
Accuracy	±(3 % m.v. + 3 digits) to 199.9 Ω; ±5 % to 1999 Ω; ±8 % to 9999 Ω
Auxiliary electrodes	R_H and R_S: 0…19.9 kΩ; ±(5 % m.v. + 8 digits)
Interference voltage	0…100 V; ±(10 % m.v. + 1 digit)
Measuring current	> 20 mA (short circuit); 125 Hz or 150 Hz
Measuring voltage	Selectable: 25 V or 50 V
Permitted disturbance	R_E measured with interference up to 24 V
Power supply	4 × AA alkaline batteries or NiMH accumulators
Display	Backlit segment LCD
Safety	CAT III 300 V; double insulation per EN 61010-1
Protection class	IP67, per EN 60529
Operating conditions	-10…+50 °C; humidity 20-90 %
Dimensions and weight	221 × 102 × 62 mm; approx. 660 g with batteries
Standards	EN 61557-5, EN 61010-1, EN 61326-1, EN 61326-2-2

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AMRU-10 — MEASUREMENT DATA

Earth resistance R_E — 3-pole method

Measuring range acc. to EN 61557-5: 0.53 Ω...9999 Ω for test voltage U_N = 50 V.

Range	Resolution	Accuracy
0.00...19.99 Ω	0.01 Ω	±(3% m.v. + 3 digits)
20.0...199.9 Ω	0.1 Ω	±(3% m.v. + 3 digits)
200...1999 Ω	1 Ω	±5%
2000...9999 Ω	1 Ω	±8%

Earth resistance R_E — 2-pole method

Range	Resolution	Accuracy
0.01...19.99 Ω	0.01 Ω	±(3% m.v. + 3 digits)
20.0...199.9 Ω	0.1 Ω	±(3% m.v. + 3 digits)
200...1999 Ω	1 Ω	±5%
2000...9999 Ω	1 Ω	±8%

Test current at short circuit > 20 mA; measuring frequency 125 Hz (50 Hz networks) or 150 Hz (60 Hz networks); test voltage selectable 25 V or 50 V; maximum interference voltage during the R_E measurement: 24 V.

"m.v." – measured value.

Interference voltage measurement U_N

Range	Resolution	Accuracy
0...100 V	1 V	±(10% m.v. + 1 digit)

Measurement for 45...65 Hz; at least 2 measurements per second.

Resistance of auxiliary electrodes R_H, R_S

Range	Resolution	Accuracy
0...999 Ω	1 Ω	±(5% + 8 digits)
1.00...9.99 kΩ	0.01 kΩ	±(5% + 8 digits)
10.0...19.9 kΩ	0.1 kΩ	±(5% + 8 digits)

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