

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 k Ω 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 $\pm(3\%$ 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 k Ω .
- 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	$\pm(3 \text{ \% m.v.} + 3 \text{ digits})$ to 199.9 Ω ; $\pm 5 \text{ \%}$ to 1999 Ω ; $\pm 8 \text{ \%}$ to 9999 Ω
Auxiliary electrodes	R_H and R_S : 0...19.9 k Ω ; $\pm(5 \text{ \% m.v.} + 8 \text{ digits})$
Interference voltage	0...100 V; $\pm(10 \text{ \% m.v.} + 1 \text{ digit})$
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 $\times$ 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 $^{\circ}\text{C}$; humidity 20-90 %
Dimensions and weight	221 $\times$ 102 $\times$ 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	$\pm(3\% \text{ m.v.} + 3 \text{ digits})$
20.0...199.9 Ω	0.1 Ω	$\pm(3\% \text{ m.v.} + 3 \text{ digits})$
200...1999 Ω	1 Ω	$\pm 5\%$
2000...9999 Ω	1 Ω	$\pm 8\%$

Earth resistance R_E – 2-pole method

Range	Resolution	Accuracy
0.01...19.99 Ω	0.01 Ω	$\pm(3\% \text{ m.v.} + 3 \text{ digits})$
20.0...199.9 Ω	0.1 Ω	$\pm(3\% \text{ m.v.} + 3 \text{ digits})$
200...1999 Ω	1 Ω	$\pm 5\%$
2000...9999 Ω	1 Ω	$\pm 8\%$

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	$\pm(10\% \text{ m.v.} + 1 \text{ digit})$

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	$\pm(5\% + 8 \text{ digits})$
1.00...9.99 k Ω	0.01 k Ω	$\pm(5\% + 8 \text{ digits})$
10.0...19.9 k Ω	0.1 k Ω	$\pm(5\% + 8 \text{ digits})$



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