

AMRU-120

HIGHEST ACCURACY & LOWEST COST



Earth Resistance Meter

AMRU-120

Earth resistance measurement with 3-pole,4-pole method.

Earth resistance measurement without disconnecting measured earths (using clamp).


Continuity of equipotential bondings and protecting conductors.

Two clamps earth resistance measurement without auxiliary test probes.

Earth resistivity measurement.

amperis

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It allows to take the measurements of:

- Earth resistance using auxiliary electrodes.
- Earth resistance using auxiliary electrodes and clamp (for measurements of multiple earth).
- Earth resistance using double clamps (for measurement of earthing when it is impossible to use auxiliary electrodes).
- Ground resistivity (Wenner method).
- Measurement of continuity of equipotential bondings and protective conductors (meeting the requirements of IEC 60364 - 6-61:2000 section 6.12.2) with auto-zero function – with current 200 mA.

Additionally:

- Measurement of resistance of auxiliary electrodes R_s and R_n .
- Measurement of interference voltage.
- Measurement of interference frequency.
- Measurement in the presence of interference voltage in the power network with frequency 50 Hz, 60 Hz.
- Selection of maximum measuring voltage (25 V and 50 V).
- Introducing the distance between the electrodes for the resistivity in metres (m).
- Memory of 990 measurements (10 banks of 99 cells each).
- Calibration of clamp used.
- Real time clock (RTC).
- Data transmission to the computer (USB, wireless).
- Indication of battery state

Measurement of interference voltage U_N (RMS)

Range	Resolution	Accuracy
0...100V	1V	±(2% m.v. + 3 digits)

Singnalling overvoltage 24 V or 40 V rms.
Measurement for DC and AC 45...65 Hz.

Measurement of continuity of equipotential bondings and protective conductors (R_{cont})

Measurement range to IEC61557-5: 0,24Ω...19,9kΩ

Range	Resolution	Accuracy
0,00...19,99Ω	0,01Ω	±(2% m.v. + 2 digits)
20,0...199,9Ω	0,1Ω	
200...1999Ω	1Ω	
2,00k...9,99kΩ	10Ω	±(5% m.v. + 2 digits)
10,0k...19,9kΩ	100Ω	

2-pole method.
Voltage on open terminals: <24 Vrms but >4 Vrms.
Measurement current: under short circuit >200 mA.
Frequency of measurement current: 125 (for networks 50 Hz) or 150 Hz (for networks 60 Hz), possible choice of measurement frequency in menu.
Auto-zero function measurement leads.

"m.v." – measured value

Measurement of earth resistance (method 3- and 4-pole)

Measurement range to IEC61557-5: 0,30Ω...19,9kΩ

Range	Resolution	Accuracy
0,00...19,99Ω	0,01Ω	±(2% m.v. + 2 digits)
20,0...199,9Ω	0,1Ω	
200...1999Ω	1Ω	±(5% m.v. + 4 digits)
2,00k...9,99kΩ	10Ω	
10,0k...19,9kΩ	100Ω	

3-pole,4-pole method.
Measurement current: under short circuit >200 mA.
Voltage on open terminals: selectable <25 V AC or <50 V AC.
Frequency of measurement current: 125 (for networks 50 Hz) or 150 Hz (for 60 Hz).

Measurement of resistance of auxiliary electrodes R_H and R_S

Range	Resolution	Accuracy
0...999Ω	1Ω	±(5% ($R_s + R_e + R_H$) + 8 digits)
1,00kΩ...9,99kΩ	10Ω	
10,0kΩ...19,9kΩ	100Ω	

Reading of values measured for the electrode will be in the right side of display R_H and R_S (separated part of display).

Measurement of multiple earth resistance with using the clamp and auxiliary electrodes (3p + clamp)

Measurement range to IEC61557-5: 0,44Ω...1999Ω

Range	Resolution	Accuracy
0,00...19,99Ω	0,01Ω	±(8% m.v. + 3 digits)
20,0...199,9Ω	0,1Ω	
200...1999Ω	1Ω	

3-pole,4-pole method
Measurement current: under short circuit >200 mA
Voltage on open terminals: selectable <25 V AC or <50 V AC
Frequency of measurement current: 125 (for networks 50 Hz) or 150 Hz (for 60 Hz)

Measurement of ground resistivity. Measurement method: Wenner, $\rho = 2\pi LR_e$

Range	Resolution	Accuracy
0,00...199,9Ωm	0,1Ωm	Depending on measurement accuracy R_e with 4p method, but not less than ±1 digit
200...1999Ωm	1Ωm	
2,00k...19,99kΩm	10Ωm	
20,0k...99,9kΩm	100Ωm	
100k...999kΩm	1kΩm	

L – distance between probes: 1...50m.

Measurement of multiple earth resistance with using double clamps

Range	Resolution	Accuracy
0,00...19,99Ω	0,01Ω	±(10% m.v. + 3 digits)
20,0...149,9Ω	0,1Ω	±(20% m.v. + 3 digits)

Double clamps method.
Frequency of measurement current: 125 (for networks 50 Hz) or 150 Hz (for 60 Hz).

AMRU-120 Specifications

Electric security:

Type of insulation	Double, according to EN 61010-1 and IEC 61557
Measurement category	CAT III 600V acc. to EN 61010-1
Protection class acc. to EN 60529	IP54

Other technical data:

Display	LCD graphic, backlighted
Interface	USB, wireless
Number of measurements carried out of set of batteries	> 500
Warranty	24 months

Rated operational conditions:

Operation temperature	-10...+50°C
Storage temperature	-20...+70°C
Humidity	20...80%

Standard accessories:

- Test lead on a reel; 50 m; yellow
- Test lead on a reel; 25 m; red
- Test lead on a reel; 25 m; blue
- Pin probe with banana connector; yellow
- Test lead with banana plug; 1,2m; yellow
- Test lead with banana plugs 2,2m; black
- Crocodile clip K01; black
- Earth contact test probe (rod); 0,30m - 4 pcs.
- Carrying case L2
- USB transmission cable
- Ni-MH battery package 4,8V 3Ah
- Power supply adaptor Z7
- Cable for battery charger
- Hanging straps
- Calibration certificate
- Operating manual

Optional accessories:

- Software for creation of documentation
- Software for creation drawings and diagrams
- USB key for software
- Crocodile clip K02; black
- Earth contact test probe (rod); 0,80m
- Test2 wire lead with banana plug; 2m
- Carrying case L3
- Current clamps C-3(Ø=52mm)
- Current clamps N-1(Ø=52mm)
- Ni-MH battery package 4,8V 4,2Ah
- Cramp
- Battery case LR14 (size C)
- Charger for battery loading from the socket car lighter (12V)
- USB radio interface OR-1

