AMRU-200

HIGHEST ACCURACY & LOWEST COST

Earth Resistance Meter

AMRU-200

It is the only meter in the market which uses all measurement methods:

Earth resistance measurment with 2-pole, 3-pole,4-pole method.

Impulse earth impedance measurement, two kinds of measuring impulse 4/10µs, 10/350µs.

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

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),
-Current using the clamp (e.g. leakage) and flexible clamp (Rogowsky coils).
-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_h
-Measurement of interference voltage
-Measurement of interference frequency
-Measurement in the presence of interference voltage in the power network
with frequency 16 2/3 Hz, 50 Hz, 60 Hz and 400 Hz (with automatic selection of proper frequency of measuring signal or with manual selection
-Selection of maximum measuring voltage (25 V and 50 V)
-Introducing the distance between the electrodes for the resistivity in metres (m) and feet (ft)
-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)

Measurement of interference frequency

Range	Resolution	Accuracy
15...450Hz	1Hz	±(1% m.v. + 2 digits)

Measurement of continuity of equipotential bondings and protective conductors (Rcont)

Measurement range to IEC61557-5: 0,045Ω...19,9kΩ

Range	Resolution	Accuracy
0,00...3,99Ω	0,001Ω	±(2% m.v. + 4 digits)
4,0...39,9Ω	0,01Ω	±(2% m.v. + 2 digits)
40...399Ω	0,1Ω	
400...3999Ω	1Ω	
4,0k...19,9kΩ	10Ω	±(5% m.v. + 2 digits)

Measurement of dynamic earthing resistance (R_D) with impulse wave method (4p)

Range	Resolution	Accuracy
0,0...99,9Ω	0,1Ω	±(2,5% m.v. + 3 digits)
100...200Ω	1Ω	

"m.v." – measured value

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

Measurement range to IEC61557-5: 0,10Ω...19,9kΩ

Range	Resolution	Accuracy
0,000...3,999Ω	0,001Ω	±(2% m.v. + 4 digits)
4,0...39,99Ω	0,01Ω	±(2% m.v. + 2 digits)
40,0...399,9Ω	0,1Ω	
400...3999kΩ	1Ω	
4,00kΩ...19,99kΩ	10Ω	±(5% m.v. + 2 digits)

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	

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

Measurement range to IEC61557-5: 0,12Ω...1999Ω

Range	Resolution	Accuracy
0,00...3,99Ω	0,001Ω	±(8% m.v. + 4 digits)
4,00...39,99Ω	0,01Ω	±(8% m.v. + 3 digits)
40,0...399,9Ω	0,1Ω	
400...1999Ω	1Ω	

Measurement of ground resistivity. Method: Wenner, p=2πLR$_E$

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	

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)

Measurement of AC current (leakage)

Range	Resolution	Accuracy
0,1...99,9mA [1]	0,1mA	±(8% m.v. + 5 digits)
100...999mA [1]	1mA	±(8% m.v. + 3 digits)
1,00...4,99A [1]	0,001A	±(5% m.v. + 5 digits) [1]
5,00...9,99A [1,2]	0,01A	±(5% m.v. + 5 digits)
10,0...99,9A [1,2]	0,1A	
100...300A [1,2]	1A	

[1]-receiving clamp (diameter 52 mm) – C-3.
[2]-flexible clamp (Rogowsky coil) with diameter 400 mm – F-1.

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AMRU-200 Specifications

Electric security:

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

Otros datos técnicos:

Display	LCD graphic, backlighted
Interface	USB
Number of measurements carried out of set of batteries	> 300
Warranty	36 months

Rated operational conditions:

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

Standard accesories:

Test lead on a reel; 50 m; yellow
Test lead on a reel; 25 m; red
Test lead on a reel; 25 m; blue
Test lead with banana plug; 1,2m; yellow
Test lead with banana plugs 2,2m; black
USB transmission cable
Charger for battery loading from the socket car lighter (12V)
Earth contact test probe (rod); 0,30m - 4 pcs.
Carrying case L2
Crocodile clip K01; black
Crocodile clip K02; black
Ni-MH battery package 4,8V 4,2Ah
Cramp
Cable for battery charger
Power supply adaptor Z7
Hanging straps
Calibration certificate
Operating manual

Optional accesories:

Software for creation of documentation
Earth contact test probe (rod); 0,80m
Current clamps N-1(Ø=52mm)
Test2 wire lead with banana plug; 2m
Current clamps C-3(Ø=52mm)
Battery case LR14 (size C)
Carrying case L3
Hard carrying case
Current flexible clamp (Rogowsky coil) F-1 (Ø=400mm)

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