



MRU-30

Indeks: WMGBMRU30

Earth Resistance and Resistivity Meter

CAT III

300V

IP 65

Description

The Sonel MRU-30 uses most known methods of earth resistance measurements. Tests can be performed using the 3-pole, 4-pole, 3-pole with auxiliary clamp and also, additionally, the MRU-30 employs the two clamp method of measurement, without the use of auxiliary test rods which can't be used in some situations. Complementary features of the MRU-30 are measurements of soil resistivity, continuity measurement of protective and equipotential conductors and, using clamps, leakage currents and interference voltages.

- Robust and weatherproof (IP65) - no ingress of dust, water protected by a nozzle against enclosure from any direction.
- Ergonomic casing - small and handy casing to make the measurements more convenient than before.
- Built-in rechargeable battery - saving time to replace flat batteries; can be recharged from Power Bank and Cigarette Lighter Socket!
- Clear on-screen notes - displayed on screen before and after the measurement to alert user of possible dangers and irregularities.
- Many measurement methods available in a small, portable casing.

[Virtual instrument application of Sonel MRU-30](#)

Technical Specification

It allows to take the measurements of:

- earthing resistance using auxiliary electrodes,
- earthing resistance using auxiliary electrodes and clamp (for measurements of multiple earthing),
- earthing resistance using double clamps for measuring multiple earthing without underground connections.
- ground resistivity (Wenner method),
- continuity of equipotential bondings and protective conductors (meeting the requirements IEC 60364) with auto-zero function - with current 200mA.

Additionally:

- measurement of resistance of auxiliary electrodes RS and RH,
- measurement of interference voltage,
- measurement in the presence of interference voltage in the power network
- with frequency 50Hz, 60Hz,
- selection of maximum measuring voltage (25V and 50V),
- 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,
- data transmission to the computer (USB),
- indication of battery state.

Measurement of interference voltage U_N (RMS)

Range	Resolution	Accuracy
0...100 V	1 V	$\pm(10\% \text{ m.v.} + 1 \text{ digit})$

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

measurement range to IEC 61557-4:2007: 0,13 Ω ...1999 Ω

Range	Resolution	Accuracy
0,00...9,99 Ω	0,01 Ω	

10,0...99,9 Ω	0,1 Ω	±(2% m.v. + 3 digits)
100...1999 Ω	1 Ω	

- measurement current: under short circuit >200mA
- frequency of measurement current: 125 Hz (for networks 50 Hz) and 150 Hz (for networks 60 Hz)

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

measurement range to IEC 61557-5:2007: 0,53 Ω...9999 Ω (dla 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	
200,0...1999 Ω	1 Ω	±5% m.v.
2000...9999 Ω	1 Ω	±8% m.v.

- measurement current: under short circuit >20 mA,
- voltage on open terminals: selectable 25 V AC or 50 V AC,
- frequency of measurement current: 125 Hz (for networks 50 Hz) or 150 Hz (for 60 Hz).

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

Range	Resolution	Accuracy
0,00...19,99 Ω	0,01 Ω	±(3% m.v. + 3 digits)
20,0...199,9 Ω	0,1 Ω	
200...1999 Ω	1 Ω	±5% m.v.

2000...9999 Ω	1 Ω	$\pm 8\%$ m.v.
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- voltage on open terminals: selectable 25 V AC or 50 V AC,
- measurement current: under short circuit > 20 mA,
- frequency of measurement current: 125 Hz (for networks 50 Hz) and 150 Hz (for networks 60 Hz)

Measurement of resistance of auxiliary electrodes R_H i R_S

Range	Resolution	Accuracy
0...999 Ω	1 Ω	$\pm(5\%$ m.v.+ 8 digits)
1,00k...9,99 k Ω	0,01 k Ω	
10,0k...19,9 k Ω	0,1 k Ω	

Measurement of multiple earthing resistance with using double clamps

Range	Resolution	Accuracy
0,00...19,99 Ω	0,01 Ω	$\pm(10\%$ m.v. + 8 digits)
20,0...99,9 Ω	0,1 Ω	$\pm(20\%$ m.v. + 3 digits)

- frequency of measurement current: 125 Hz (for networks 50 Hz) and 150 Hz (for networks 60 Hz)

Measurement of ground resistivity

Measurement method: Wenner, $\rho = 2\pi LR_E$

Range	Resolution	Accuracy
0,00...9,99 Ωm	0,01 Ωm	depending on measurement accuracy R_E with 4p method, but not less than ± 1 digit
10,0...99,9 Ωm	0,1 Ωm	
100...999 Ωm	1 Ωm	
1,00...9,99 $\text{k}\Omega\text{m}$	0,01 $\text{k}\Omega\text{m}$	
10,0...99,9 $\text{k}\Omega\text{m}$	0,1 $\text{k}\Omega\text{m}$	
100...999 $\text{k}\Omega\text{m}$	1 $\text{k}\Omega\text{m}$	

L – distance between probes: 1...50 m.. or 1...150 ft

Electric security:

- type of insulation: double, according to EN 61010-1 i IEC 61557,
- measurement category: CAT III 300V wg EN 61010-1,
- protection class acc. to EN 60529: IP65,

Rated operational conditions:

- operation temperature: $-10...+55^{\circ}\text{C}$,
- storage temperature: $-20...+80^{\circ}\text{C}$,
- humidity: 20...90%,

Other technical data:

- LCD display: segment, backlit,
- dimensions: 200x150x74 mm.