

EARTH RESISTANCE METER

MRU-30



Possible measurements:

- earth resistance measurement with 3-pole, 4-pole method,
- selective earth resistance measurement with clamp (no influence from parallel earths; no opening of rusty junctions is needed),
- continuity of equipotential bondings and protecting conductors,
- two clamps earth resistance measurement without auxiliary test probs,
- earth resistivity measurement.

Standard accessories of the meter MRU-30:

- earth contact test probe (rod); 0,3m
- test lead with banana plug; 1,2m; red
- test lead with banana plug; 2,2m; black
- test lead on a reel with banana plug; 25m; red
- test lead on a reel with banana plug; 50m; yellow
- „crocodile” clip K01; black

- WASONG30**
- WAPRZ1X2REBB**
- WAPRZ2X2BLBB**
- WAPRZ025REBBSZ**
- WAPRZ050YEBBSZ**
- WAKROBL20K01**

- pin probe with banana plug; red
- USB transmission cable
- Sonel Reader software
- power supply adaptor Z7
- carrying case M9
- carrying case L10

- WASONRE0GB1**
- WAPRZUSB**

- WAZASZ7**
- WAFUTM9**
- WAFUTL10**

Sonel S.A.
ul. Wokulskiego 11
58-100 Świdnica, PL
tel. +48 74 85 83 860
fax +48 74 85 83 809

export@sonel.pl
www.sonel.pl



• **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 measurement of earthing when it is impossible to use auxiliary electrodes),
- 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 R_s and R_H ,
- 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.

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°C
- storage temperature -20...+80°C
- humidity 20...90%

Other technical data:

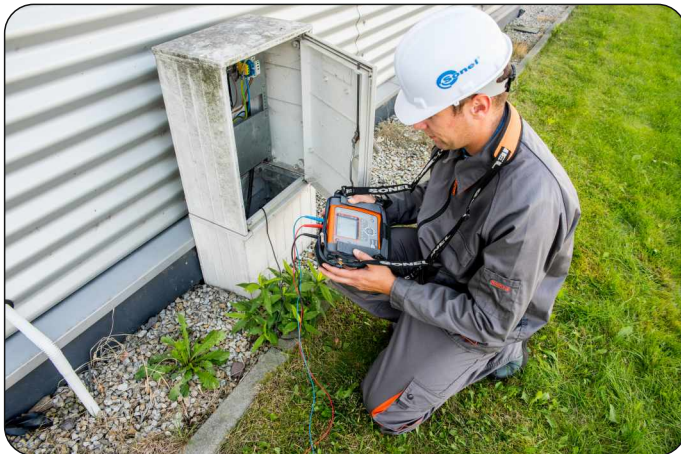
- LCD display segment, backlit
- dimensions 200x150x74 mm

Other accessories of the meter MRU-30:

- earth contact test probe (rod); 0,8m;
- current clamp N-1 ($\varnothing=52\text{mm}$)
- current clamp C-3 ($\varnothing=52\text{mm}$)
- carrying case L3
- charger for battery loading from the socket of car lighter (12V)
- calibration certificate issued by calibration laboratory
- Test lead with banana plugs 2m (N-1)
- „Crocodile” clip K02; red
- Cramp

WASONG80
WACEGN1BB
WACEGC30KR
WAFUTL3
WAPRZLAD12SAM

WAPRZ002DZBB
WAKRORE20K02
WAZACIMA1



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_{con})

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

Range	Resolution	Accuracy
0,00...9,99 Ω	0,01 Ω	$\pm(2\% \text{ m.v.} + 3 \text{ digits})$
10,0...99,9 Ω	0,1 Ω	
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	$\pm(3\% \text{ m.v.} + 3 \text{ digits})$
20,0...199,9 Ω	0,1 Ω	
200...1999 Ω	1 Ω	$\pm 5\% \text{ m.v.}$
2000...9999 Ω	1 Ω	$\pm 8\% \text{ m.v.}$

- 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	$\pm(3\% \text{ m.v.} + 3 \text{ digits})$
20,0...199,9 Ω	0,1 Ω	
200...1999 Ω	1 Ω	$\pm 5\% \text{ m.v.}$
2000...9999 Ω	1 Ω	$\pm 8\% \text{ m.v.}$

- 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 multiple earthing resistance with using double clamps

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

- 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

Measurement of resistance of auxiliary electrodes R_H i R_s

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