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EARTH RESISTANCE METERS
MRU-105 & MRU-106

The MRU-105 (for 50Hz) and MRU-106 (for 60Hz) are portable meters for the earth resistance and earth resistivity measurement (Wenner's method). The instruments can measure resistance using 2, 3, or 4 poles method. Measurements can be simplified using current clamps. The very high immunity for existing interference voltage AC + DC at which measurement is still performed: 24V (68V-p-p) but also measurement of existing interference voltage up to 40V is unique functionality of the meters. Moreover meters measure the resistance of the probes and calculate automatically the error coming from probe's resistances.

The meters MRU-105 (for 50Hz) and MRU-106 (for 60Hz) additionaly can be powered from Ni-MH batteries or standard C size, and the test results can be stored in the internal memory and transmited to PC via USB - cable.

Standard accessories of the meters MRU-105 & MRU-106:

- test lead on a reel; 50 m; yellow	**WAPRZ050YEBBSZ**
- test lead on a reel; 25 m; red	**WAPRZ025REBBSZ**
- pin probe with banana connector; yellow	**WASONYEOGB1**
- test lead with banana plug; 1,2m; yellow	**WAPRZ1X2YEBB**
- test lead with banana plugs 2,2m; black	**WAPRZ2X2BLBB**
- „crocodile" clip K01; black	**WAKROBL20K01**
- earth contact test probe (rod); 0,30m - 2 pcs.	**WASONG30**
- carrying case L2	**WAFUTL2**
- USB transmission cable	**WAPRZRUSB**
- hanging straps	**WAPOZSZE1**
- battery pack	
- calibration certificate issued by calibration laboratory	
- operating manual	

Optional accessories of the meters MRU-105 & MRU-106:

- test lead on a reel; 25 m; blue	**WAPRZ025BUBBSZ**
- software for creation of documentation from electrical measurements „SONEL PE3"	**WAPROPE4EN**
- software for creation drawings and diagrams „SONEL Schematic" + „SONEL PE4"	**WAPROPE4SEN**
- USB key for software	**WAADAKEY1**
- cable for battery charger	**WAPRZLAD230**
- Ni-MH battery package 7,2V 3Ah	**WAAKU5**
- earth contact test probe (rod); 0,30m	**WASONG30**
- earth contact test probe (rod); 0,80m	**WASONG80**
- carrying case L3	**WAFUTL3**
- current clamps C-3	**WACEGC30KR**
- cramp	**WAZACIMA1**
- test wire reel	**WAPOZSZP1**

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MRU-105 & MRU-106

- **Measurement of earthing resistance using a three- or four- pole technique:**
- selective earth resistance measurement with clamp (no influence from parallel earths; no opening of rusty junctions is needed),
- supervision of the measurement conditions (eg. voltages, impact resistance measurement electrodes R_H i R_S and battery state/monitor),
- high immunity of interference voltage.
- **Measurement of ground resistivity (Wenner's method):**
- the earth resistivity measurement with the possibility to introduce the distance between electrodes,
- automatic calculation and displaying the resistivity.
- **Measurement of resistance using a two- or four-pole technique.**
- **Built-in battery charger.**
- **Memory of 300 measurement results with an ability to transfer the data to a PC.**
- **Meter meets the requirements of the standard EN 61557.**

Electric security:

- type of insulation	double, according to EN 61010-1 and IEC 61557
- measurement category	CAT III 300V acc. to EN 61010-1
- protection class acc. to EN 60529	IP54

Other technical data:

- power supply	alkaline batteries LR14 (C) (5 pcs.) or Ni-MH battery package
- charger power supply	100...250V, 50...60Hz
- display	LCD, 20mm high

Rated operational conditions:

- operating temperature	0...+40°C
- maximum interference voltage AC + DC, at which the measurement is still performed	24V ($68V_{p-p}$)
- test current for resistance value ≤ 100Ω	225mA
- maximum measured voltage	40V
- test current frequency	128Hz

Measurement of earthing resistance (three-, four-pole method):
measurement range in accordance with IEC61557-5: **0,12Ω...20kΩ**

Range	Resolution	Accuracy
0,00...9,99Ω	0,01Ω	±(3% m.v. + 3 digits)
10,0...99,9Ω	0,1Ω	±(2% m.v. + 2 digits)
100...999Ω	1Ω	
1,00...9,99kΩ	10Ω	
10,0...20,0kΩ	100Ω	

Measurement of earthing resistance using clamps:
measurement range in accordance with IEC61557-5: **0,16Ω...20kΩ**

Range	Resolution	Accuracy
0,00...9,99Ω	0,01Ω	±(8% m.v. + 3 digits)
10,0...99,9Ω	0,1Ω	±(8% m.v. + 2 digits)
100...999Ω	1Ω	
1,00...9,99kΩ	10Ω	
10,0...20,0kΩ	100Ω	

Measurement of ground resistivity

Range	Resolution	Accuracy
0,00...9,99Ωm	0,01Ωm	±(3% m.v. + 3 digits)
10,0...99,9Ωm	0,1Ωm	±(2% m.v. + 2 digits)
100...999Ωm	1Ωm	
1,00...9,99kΩm	10Ωm	
10,0...99,9kΩm	100Ωm	
100...999kΩm	1kΩm	

„m.v."- measured value