



CAT IV

300 V



IP65

Basic measurements of earthing systems and continuity of connections

Measurement methods

- **3-wire method** – measurement of earthing systems using auxiliary probes
- **2-wire method** – simplified measurement of resistance-to-earth
- **Resistance of earth and compensatory conductors** measured using current ≥ 200 mA with auto-zero function – meets the requirements of EN 61557-4

Additional features

- Measurement of resistance of auxiliary electrodes R_s and R_H
- Measurement of interference voltage
- Selection of maximum measuring voltage (25 V and 50 V)
- Auto-zero function for the resistance of measurement leads (R_{CONT} zero)

Application

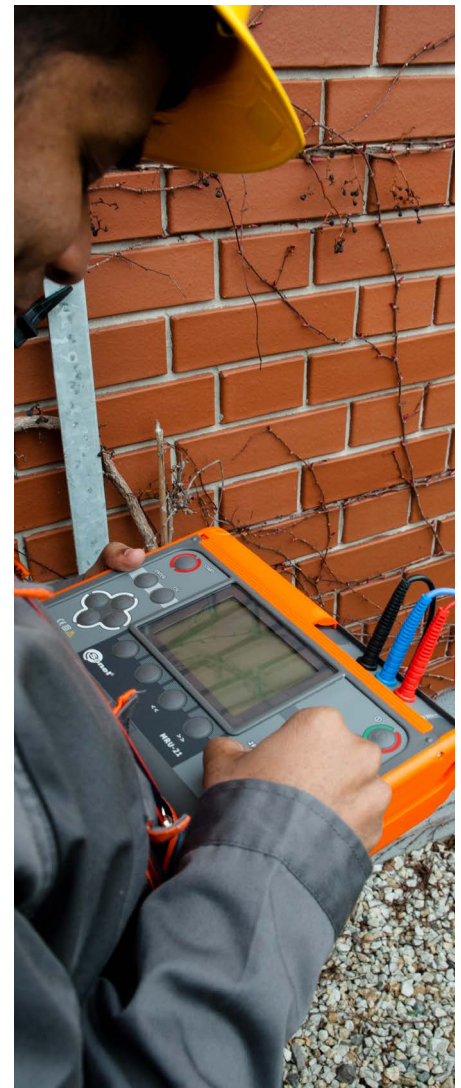
MRU-21 is designed as a reliable measuring instrument, which is both technically advanced and easy to use. It is suitable for tests in industrial plants and in companies providing electrical measurement services. MRU-21 allows user to test individual earth electrodes and systems with multiple earthing electrodes.

Capabilities

Large and easy to read display shows the resistance values and supporting information in all weather conditions. Additional warnings inform the user about irregularities during the measurement.

Housing with IP54 rating ensures safety in difficult weather conditions and protect the device against splashes.

The results can be saved to the device's memory. It is divided into **10 banks of 99 cells**, each corresponding to one measurement. These results can be easily transferred to the **Sonel Reader** software for archiving or subsequent analysis and research.



Technical specifications

Measurement functions	Measurement range	Display range	Resolution	Accuracy ±(% m.v. + digits)
Interference voltage	0 V...100 V	0 V...100 V	1 V	±(2% m.v. + 3 digits)
Connection and equipotential bonding resistance	0.13 Ω...199 Ω acc. to EN 61557-4	0.00 Ω...199 Ω	from 0.01 Ω	±(2% m.v. + 3 digits)
Earth resistance				
2-wire method	0.00 Ω...1.99 kΩ	0.00 Ω...1.99 kΩ	from 0.01 Ω	from ±(2% m.v. + 3 digits)
3-wire method	0.50 Ω...1.99 kΩ acc. to EN 61557-5	0.00 Ω...1.99 kΩ	from 0.01 Ω	±(2% m.v. + 3 digits)
auxiliary electrodes resistance	0 Ω...50.0 kΩ	0 Ω...50.0 kΩ	from 1 Ω	±(5% (R _e +R _h +R _s) + 3 digits)
Safety and work conditions				
Measuring category according to EN 61010				III 600 V / IV 300 V
Ingress protection				IP54
Type of insulation according to EN 61010-1 and IEC 61557				double
Dimensions				288 x 223 x 75 mm
Weight				ca. 1.4 kg
Operating temperature				-10...+55°C
Storage temperature				-20...+70°C
Humidity				20...90%
Nominal temperature				23 ± 2°C
Reference humidity				40%...60%
Memory and communication				
Memory of measurement results				990 results
Data transmission				USB
Other information				
Quality standard – development, design and production				ISO 9001
The product meets the EMC (emission for industrial environment) requirements according to standards				EN 61326-1 EN 61326-2-2

Standard accessories



Test lead 15 m on a reel, banana plugs, blue

WAPRZ015BUBBSZ



Test lead 1.2 m (banana plugs) blue

WAPRZ1X2BUBB



Crocodile clip 1 kV 20 A black

WAKROBU20K02



Test lead 30 m for earth resistance measurements on a reel, red

WAPRZ030REBBSZ



Test lead 2.2 m (banana plugs) black

WAPRZ2X2BLBB



Crocodile clip 1 kV 20 A black

WAKROBL20K01



2 x earth contact test probe (30 cm)

WASONG30



USB cable

WAPRZUSB



Battery pack 4xLR14

WAPOJ1



L-4 carrying case

WAFUTL4



Hanging straps

WAPOZSZEKPL



- 4 x R14 alkaline battery
- Calibration certificate issued by an accredited laboratory (no accreditation)

Optional accessories



Test lead on a reel red 75 m / 100 m / 200 m

WAPRZ075REBBSZ
WAPRZ100REBBSZ
WAPRZ200REBBSZ



Test lead on a reel blue 75 m / 100 m / 200 m

WAPRZ075BUBBSZ
WAPRZ100BUBBSZ
WAPRZ200BUBBSZ



Test lead on a reel yellow 75 m / 100 m / 200 m

WAPRZ075YEBBSZ
WAPRZ100YEBBSZ
WAPRZ200YEBBSZ



Test lead 25 / 30 m on a reel, banana plugs, red

WAPRZ025REBBSZ
WAPRZ030REBBSZ



Test lead 15 / 25 m on a reel, banana plugs, blue

WAPRZ015BUBBSZ
WAPRZ025BUBBSZ



Test lead 50 m for earth resistance measurements (banana plugs) yellow

WAPRZ050YEBBSZ



Pin probe 1 kV (banana socket) black / red / blue / yellow

WASONBUOGB1
WASONREOGB1
WASONBLOGB1
WASONYE0GB1



Test lead 1.2 m (banana plugs) black / red / blue / yellow

WAPRZ1X2BLBB
WAPRZ1X2REBB
WAPRZ1X2BUBB
WAPRZ1X2YEBB



Crocodile clip 1 kV 20 A red / blue / yellow

WAKRORE20K02
WAKROBU20K02
WAKROYE20K02



Cramp with banana socket

WAZACIMA1



Earth contact test probe 25 cm / 80 cm

WASONG25
WASONG80



L-3 carrying case (for 80 cm test probes)

WAFUTL3



Test wire reel

WAP0ZSZP1



Calibration certificate with accreditation