RESISTANCE IMPULSE METER IMR-6

Resistance measurement device IMR-6 uses its own single test probing pulse lasting approx. 40 ms with a maximum voltage of 100 V DC and a maximum current of 100 A, depending on the resistance of the circuit. Fully charged battery is sufficient for more than 100 field measurements.

Unique advantage of the meter is two wires (probes) measurement method, where the current probe with known resistance is used (railway or tramway running rails, return shield of HV cables or neutral wire N of LV network). IMR-6 allows accurate measurements of earth resistance in an urbanized area without the commonly used voltage probe.

The unique algorithm of calculating the measured earth resistance or short-circuit loop eliminates the influence of AC and DC stray (equalizing) currents and their harmonics, circuit inductance and the DC component occurring before the measurement.

Meter IMR-6 features with other options related to the measurement of earth resistance, including soil resistivity.

APPLICATION

- Earth electrode resistance measurements
- Small resistance measurements
- Soil resistivity measurements
- Single earth electrode resistance measurement in complex earthing system
- Power cables shielding and wires continuity tests
- Continuity and quality test of earthing and bonding
- Earth and fault loop resistance measurement

PARAMETERS

Measuring range	0.05 - 4000 Ω
Standard Accuracy	< 100 Ω 1.5 % R ≥ 100 Ω 5 %
Probing voltage	100 V (150V)
Power supply	internal Li-Ion battery
Dimensions	363/281/120 mm
Weight	3.8 kg

BENEFITS

- Portable device
- Large and legible display simplifies measurement procedure
- Probing pulse voltage and current waveforms shown on the display
- Eliminated voltage probe and reference earth in earth electrode resistance measurement
- Resistance measurement equivalent to voltmeter-ammeter method
- Accurate resistance measurement results, independent on inductance, DC voltage level and harmonics of power supply network (50 Hz) in the measured circuit
- More than 100 tests with fully charged internal battery

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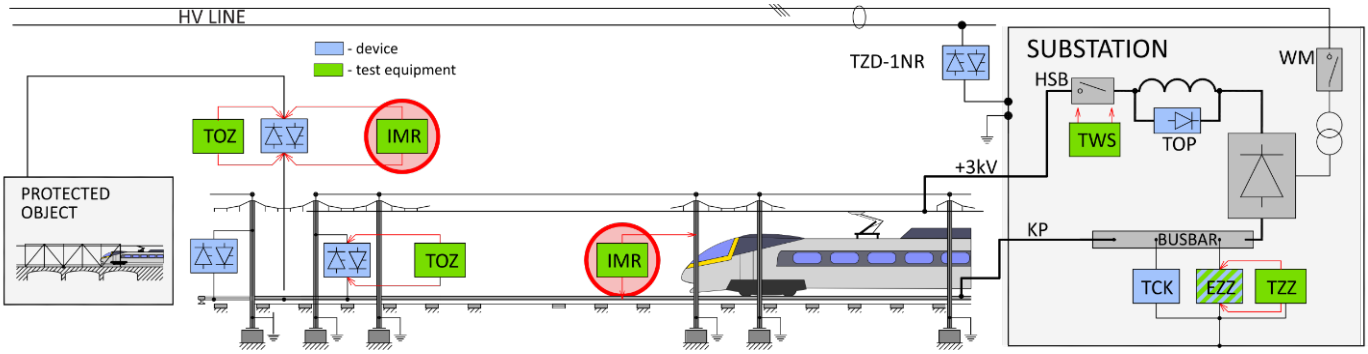


Resistance impulse meter IMR-6 is a portable device dedicated to measurement of earth electrode resistance. Unique advantage of the meter is two wires (probes) measurement method, where the current probe with known resistance is used (railway or tramway running rails, return shield of HV cables or neutral wire N of LV network). IMR injects a single probing impulse. Short duration of probing pulse in the order of dozen milliseconds does not introduce any interferences either to railway control-command and signalling systems or HV or LV networks. Two wires (probes) measurement method significantly improves reliability of earth electrode resistance measurement by eliminating errors related to the placement of voltage probe and reference earth. IMR-6 is also capable for resistance measurement using three wires (probes) method, where voltage probe is required.

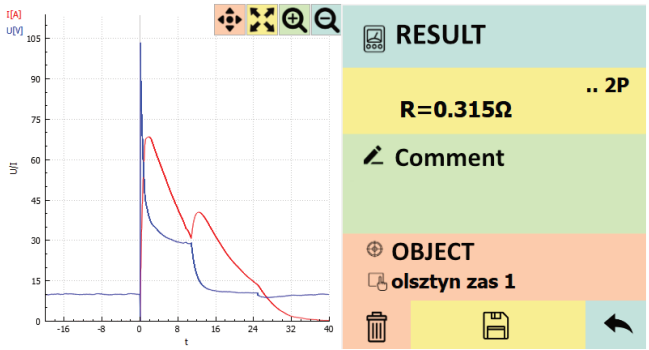
In general, the use of running rails during for measurement does not require powering-off of the traction power network. Earth electrode measurements of objects supplied from HV or LV network may be performed only when these objects are powered off.

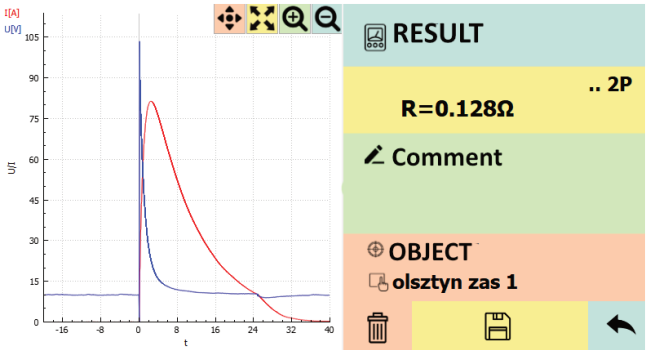
Following resistance measurement methods are available: two probe, three probes and four probes (wires).

Optionally, IMR-6 can be used for soil resistivity measurement, single earth electrode resistance measurement of a complex earthing without any dismantling in the object (with current clamp), three (four) unknown earth electrode resistance, step contact voltage measurement.

IMR features with large touch screen displaying the current and voltage waveforms, the measurement result and other info necessary to prepare a measurement report. Data are saved in the internal memory can be transferred to a computer in order to prepare a measurement report.

The current and voltage waveforms displayed on the screen allow to assess whether the measurement is correct. An example of uncertain connections during the measurement of fault loop resistance in the overhead contact line is shown in the picture below. On the left-hand side, the disturbances occur (electric arc). On the right-hand side, the same measurement is made with improved connections. Current and voltage waveforms are not disturbed thus it can be clearly stated that the result of the first measurement is false (additional voltage drop on the electric arc). The same phenomena may occur duriang measurements in the earthing system (e.g. corroded connections).





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