

HV MEASUREMENT

Product brochure



*Excellence in Calibration
40 years - Est. 1982*

Microohm Meters

Our Microohm meter product range



Measuring very low resistances in large conductors such as windings, breakers and busbars requires high current to minimize errors as well as the use of 4-wire Kelvin method to eliminate errors due to lead and contact resistances. Selected Metrel continuity testers use both this method and currents up to 100 A to ensure the highest measuring accuracy possible.

We have a range of microohm meter's to suit many applications, they have built in memory for easy storage test results which can later be transferred to PC for further analysis and printing of reports.



MI-3242 (2A)

- Bidirectional resistance measurement from $1\mu\Omega$ up to 199.9Ω with test current up to 2A
- Four measuring modes: Inductive, automatic, continuous and single

A portable low resistance ohmmeter used to measure low resistances of switches, relays, connectors, bus bars, power distribution cable joints, motor & generator winding, power transformers, power inductors, rail track joints, wire and cable resistance, welding joints etc...



MI-3250 (10A)

- Bidirectional resistance measurement from $0.1\mu\Omega$ up to 2000Ω with test current up to 10A
- More than 1000 measurements with 10A test current can be performed on battery power alone

The MI-3250 has test current up to 10A and a higher range of measurement capability.

Using the 4-lead Kelvin testing method together with automatic bidirectional procedure ensure very high accuracy of test results (0.25%).



MI-3252 (100A)

- Resistance measurement with adjustable test current (100mA to 100A)
- Voltage drop measurement function
- High protection degree: IP64

- Single and continuous measuring modes.
- Accurate: $1\text{ n}\Omega$ best resolution with 0.25% accuracy.
- Portable: rugged carrying case with a handle and lightweight design (less than 12 kg)

Insulation Testers

Our insulation testing product range



Intended for diagnosing of Insulation Resistance by using high test voltages. This range of testers is for applications such as testing of Power transformers; Measuring transducers in distribution networks; Testing insulation resistance of rotating machinery and cables; Production line periodic testing and maintenance; Troubleshooting and analysis of all kinds of insulation problems; High voltage generators; Surge arrestors and varistors.

All of these models can run on battery power or by mains power, they all have a capacitance measuring function and programable timers, among many other excellent features.

MI-3205

- Insulation resistance up to 15 TΩ
- Adjustable test voltage up to 5kV
- PC software HVLink PRO for downloading and analyzing of the test results and report printing

MI-3209

- Entry Level 10 kV tester
- Insulation resistance readings up to 10TΩ
- Adjustable test voltage up to 10kV
- Software package is an optional extra

MI-3210

- Metrel's flagship model
- Insulation resistance up to 20 TΩ.
- Adjustable test voltage up to 10kV
- PC software HVLink PRO for downloading and analyzing of the test results and report printing



- Excellent robustness (CAT IV protection) and high immunity to radiated RF fields makes these testers well suited for industrial environments
- Lid pouch included to store leads and accessories

Transformer Analysers

Our transformer analyser product range



Power transformers are the heart of any distribution system and as usually the most expensive component require special attention when it comes to safe and reliable operation. Periodic preventive maintenance coupled with analysis of electrical parameters and other examinations is therefore necessary to ensure uninterrupted operation within acceptable parameters.

Metrel transformer testers support a wide range of testing and measuring methods and have colour-coded test leads coupled with integrated help menus for reliable connection and testing of transformers.

Metrel MI-3280



- Turn ratio measurement of single and three phase transformers
- Phase deviation between high voltage and low voltage winding
- Excitation current
- Winding resistance measurement of single and three phase transformers (Power Transformers up to 1,6 MVA)
- A 4.3" colour LCD display with touch screen offers easy-to-read results and all associated parameters.

Applications: Testing of Three phase and single phase power transformers, Voltage transformers, Current transformers.

Metrel MI-3281



The **MI-3281 Winding Resistance Analyser** is a portable test instrument intended for measuring winding resistance of single and three phase transformers.

The operation is straightforward and clear to enable the user to operate the instrument without the need for special training.

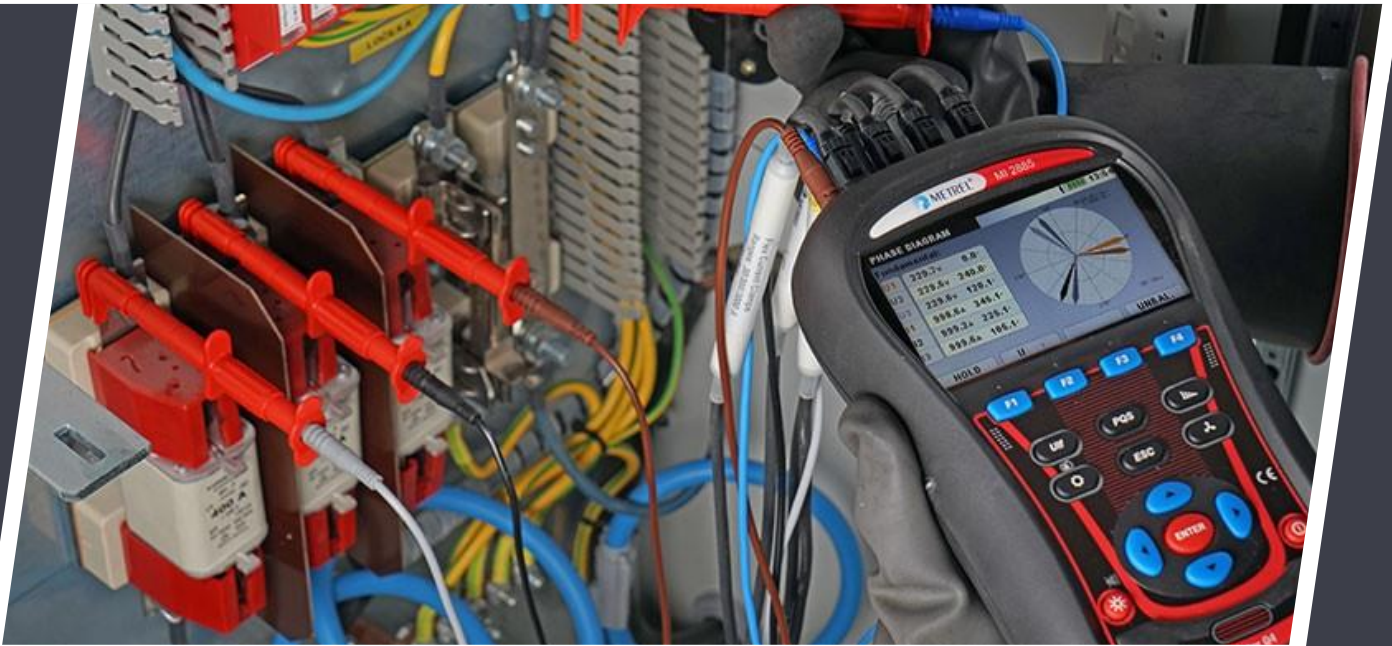
- Manual or automatic tap changer test
- Demagnetisation of tested transformer
- Selectable test current in range from 10 mA to 20A

Power Quality Meters/Loggers

Our power quality meter product range



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The Metrel power quality analysis range allows automatic voltage and power quality analysis, they can be used as a troubleshooting and maintenance tool to discover voltage sags and swells, resonant states, high neutral conductor currents, asymmetry harmonics and transients.

There are various models available to suit any budget and measurement requirement, each model adding new features and functions.

MI-2883 Energy Master

The **MI-2883 Energy Master** is the most economical version. As a single & 3 phase PQ analyser, it offers basic operation with 3 voltage measuring inputs.



MI-2884 Energy Master

The **MI-2884 Energy Master** while still economically priced, adds waveforms and transients recording.

MI-2885 Master Q4

The **MI-2885 Master Q4** has 4 voltage inputs, waveform recording, inrush currents and variable frequency drives, as well as extra comms ports and GPS synchronisation.

MI-2892 Power Master

The **MI-2892 Power Master** is a class A 0.1% option which introduces transients measurement at >49,000 samples/sec and includes temperature measurement as standard.

MI-2893 Power Master XT

Top of the range **MI-2893 Power Master XT** with 0.1% class A accuracy, improves the sampling rate to >1,000,000 samples/sec. These units can be used for long-term logging to uncover hard-to-find or intermittent issues at a site and can later be analysed with included PC software.

Earth Testers

An overview of the earth testers in our range



A correctly designed grounding grid is an essential safety measure against dangerous overvoltage's that could damage electrical systems or electrocute personnel. To ensure a reliable connection to earth, electrical resistances of soil, grounding electrodes and other parts of the grounding grid should be periodically measured and analysed.

Metrel earth testers are simple and easy to use and cover an entire spectrum of earth testing methods, from the basic to the most complex ones. They include 2-, 3- and 4-pole earth resistance, selective earth resistance, earth potential, earth resistance of multi-leg pylons, and earth impedance measurement with simulated lightning strike voltage pulse and many others.

Metrel MI-3288



Earth Insulation Tester

- Perform all main types of earth measurements with a single instrument.
- Multi-frequency test signal for best noise immunity.
- Insulation range: wide range of insulation test voltages from 50V to 2500V, resistance measuring range up to 100 GΩ.
- Overvoltage category 600 V CAT II, 300 V CAT III; at 4000 m above sea level (Excellent for use at high altitude).
- 4.3" colour LCD display with touch screen.
- Programmable AUTO SEQUENCES.

Metrel MI-3295



The **Metrel MI-3295 Step Contact Voltage** Measuring System is a voltage measuring system intended for testing and verification of protective earthing of power stations, substation and other power systems

- Accurate: high accuracy of the measurements due to a high current of up to 50 A and effective suppression of noise.
- Safe: high safety due to low output voltage (55 V).
- Low weight: the weight of the station is only 29.5 kg.

Functions: • Step voltage; • Contact voltage; • Specific earth resistance; • Earth resistance; • Potential; • Leakage current.

Metrel MI-3290



Earth analyser for measurement of earth resistance, specific earth resistance and earth potential of various energised and non-energised objects. The user can choose between different methods from 3 wire earth resistance measurement up to one or four clamp methods for measurement of pylons.

- Possibility of performing different types of earth measurements with a single instrument.
- Analysis of earth impedance as a function of the frequency due to a wide measurement frequency band (55 Hz ... 15 kHz).
- Various 'sets' available with different testing accessories and a wide variety of measuring clamp options.

Applications

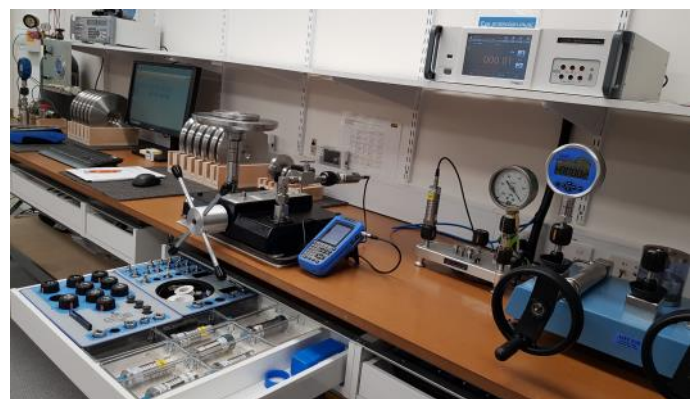
Measurement of protective earthing of:

- Mono and multi-leg pylons with protective earth cable connected
- MV to LV transformer stations;
- Sub stations, radio towers;
- Solar power plants, wind and water turbine;
- Industrial areas.



The Zedflo advantage - Life time service for your test and measurement needs

- By carrying a significant range of stock, that can be calibrated in our NATA lab, we can supply specialist calibration or test gear with certification and very short lead times.
- Ongoing NATA accredited calibration as required.
- Expedited service available—24 hour and same-day turnaround.
- Servicing and repairs - Authorised and trained staff offering wide range of services. From calibration pump refurbishment and seal replacing, to micro soldering PCB repair.
- Guarantee to offer professional, impartial advice for your calibration, test or measurement application.





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Process Control Instrumentation Pty Ltd T/A **Zedflo Australia**

ABN 58 120 609 814

U3/115 Excellence Drive, Wangara, 6065, WA

www.zedflo.com.au - sales@zedflo.com.au - (08) 9302 1266

