

LI-ION BATTERY POWERED INSTRUMENTATION

Everything is becoming smaller, lighter and unconstrained by the need for mains power and this also applies to test equipment. To this goal Pacific Test Equipment will be showcasing many game changing products at this year's TechCon® Aus/NZ. All highly portable and powered by the latest Li-Ion technology.

Come and visit the PTE Stand at TechCon® Aus/NZ 4-5 April, 2017

Li-ion batteries offer significant benefits for the intermittent usage for test and measurement applications. Whereas Ni-Mh batteries do not respond well to recharging before fully discharged and will slowly discharge when not used, none of this applies to Li-Ion which can be topped up any time work demands.

All functions are represented by icons on the home screen where operations such as test current, inductive or non-inductive, demagnetisation, temperature compensation or heat run analysis are set from the touch screen.

The MMR-650 is supplied complete with both Kelvin Spike and Kelvin Clip leads, charger, carry bag, calibration certificate and software ready for immediate use.



SONEL MMR-650
Micro-ohmmeter.

BATTERY POWERED WINDING OHMMETER

Latest product from Sonel is the new MMR-650, a 10 Amp micro-ohmmeter with the added capability of measuring the resistance of inductive loads.

The new Sonel MMR-650 can be used to measure the resistance of any device from a busbar or cable joint to the windings of a large power transformer, motor or generator.

Essential functions of winding discharge and de-magnetisation are included.

The MMR-650 has no mechanical switches and is fully controlled from the full colour touch screen which we are all familiar with on our smart phones.



DV-Power
RMO200H
Micro-ohmmeter.

BATTERY POWERED 200A MICRO-OHMMETER

DV-Power have taken the hand-held micro-ohmmeter to new levels of accuracy with the RMO200H which features a 200A test current measuring from $0.1\mu\Omega$ to 1Ω with an accuracy of 0.2%, significantly outperforming its nearest rival, and weighing under 1kg!

With the ultra-capacitor fully charged, approximately 65 consecutive measurements can be made with no recovery time required between measurements. When the voltage from the ultra-capacitor becomes insufficient, it is automatically re-charged from the Li-Ion batteries.

To maximise battery life the test duration can be user defined at 0.1, 0.6 and 3 seconds. Approximately 1,200 0.1 sec tests can be performed before the batteries require recharging. When fully discharged the Li-Ion batteries will recharge in 6 hours compared to overnight with Ni-Mh.

An SD memory card stores 1000 measurements which can be accessed by the included DV-Win software communicating either by Bluetooth or USB interfaces.

When measuring the contacts of high voltage circuit breakers with both sides earthed for safety reasons therefore shorting out the contacts, the RMO200H incorporates a "Both Sides Grounded" capability to measure contact resistance.



DV-Power
CAT-P Circuit
Breaker Analyser.

BATTERY POWERED CIRCUIT BREAKER ANALYSER

The new DV-Power CAT-P Circuit Breaker Analyser weighs less, costs less and performs better than what you are probably using now!

The CAT-P incorporates all the necessary functions for distribution breaker analysis into a hand held unit weighing just 1.4kg, less than half that of the nearest competitor!

Capabilities of the CAT-P include

- Off-line and On-line testing of circuit breakers
- Timing of up to 3 main contacts plus auxiliary contact with 0.05s resolution
- Resistance & timing of pre-insertion resistors
- Evaluation of the substation battery

The large 5.7" touch screen allows full set up and the overlay of up to 4 graphical records for easy assessment. DV-Win software provides downloading and PC analysis, printing, export and test report generation.



Mitton ET1000
Earth Tester.

HV SOIL RESISTIVITY FOR LARGE EARTH GRIDS

Earth grid design requires detailed profile of the site soil resistivity. Good soil resistivity data is critical to producing a design that is both safe and cost effective.

SOIL RESISTIVITY MEASUREMENT

Soil resistivity measurements are usually carried out with a 4-terminal earth tester, using the Wenner or Schlumberger method, where current and voltage test electrodes are spaced at specified distances relating to the depth at which soil resistivity is to be measured.

Large earth grids such as terminal stations and switchyards require significant test electrode spacings in order to determine the soil resistivity at higher than normal depths. For satisfactory results a meter with a high resolution and repeatable accuracy is required because readings can be less than 0.01Ω.

To obtain reliable readings, a test current from 10 mA - 50 mA is typically used, driven by a test voltage of up to 50V. The test current is limited by the contact resistance of the test stakes and in most situations these parameters are adequate, especially if the area around the test electrodes is wetted.

UNFAVOURABLE SOIL CONDITIONS

In conditions where the soil resistivity is very high and little moisture is present (eg sand, rock or pumice) then it may not be possible to drive sufficient test current with a 50V source to obtain a reliable reading and this is where many instruments falter.

HIGH TEST VOLTAGE

To address this limitation, the Mitton ET1000 Earth Tester overcomes high test stake contact resistance by providing a test voltage up to 400V. If the test current is <5mA, the ET1000 will increase the test voltage to 400V with a test current of 10 mA. To further improve its performance for soil resistivity, the operating frequency of the ET1000 is a very low 2.3Hz.

BUILT-IN MICRO-OHMMETER

As an added bonus, the Mitton ET1000 can also operate as a micro-ohmmeter. In this mode, very low resistances can be measured (5μΩ - 10mΩ), allowing measurement of conductor joints, connections and overall switchyard plant bonding to the earth grid.

IMMUNITY FROM INTERFERENCE

Being purpose designed for use in high voltage environments, the ET1000 is unaffected by electrical noise such as 50 Hz coupling and stray ground currents as well as test electrode galvanic currents, all of which can affect instrument readings.

POWER SUPPLY

To further aid in its suitability for field work, the ET1000 is powered by a rechargeable Li-Ion battery giving up to 12 hours of measurements between charges.

The ET1000 is light weight at just 1kg, is very easy to use with just a single test key and is an economical investment for anyone measuring soil resistivity under all types of soil conditions.

For more information, please contact



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equipment

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