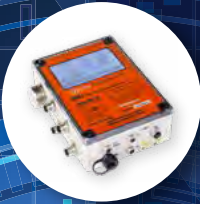




techrentals
your rental business partner



Test & Measurement RENTAL SOLUTION GUIDE

2022/23

NZ WIDE
OVERNIGHT
DELIVERY

YOU KNOW YOUR NEEDS
... WE KNOW OUR INSTRUMENTS. CALL US.

0800 832 473

sales@techrentals.co.nz ■ www.techrentals.co.nz

- Need advice on the right equipment for the job?
- Can't seem to find what you are looking for?
- Not sure what you need?

OUR FRIENDLY TEAM CAN HELP, CALL US:

 **0800 832 473**

CALL US FOR ALL YOUR TECHNOLOGY RENTAL NEEDS:

- We offer a comprehensive range of test and measurement equipment including exclusive access to TechRentals Australia's equipment
- We work around your timeframes – rent from just one day onwards; the longer you hire the cheaper the rate
- We provide nationwide Courier Service with next day delivery promised for most locations. Same day Auckland wide.
- Almost all our equipment is calibrated

TECHNICAL SUPPORT SERVICES:

- Equipment Configuration:** your equipment arrives pre-programmed & ready to go
- Data download in the format you require** so you don't have to worry about downloading your data before returning



CALIBRATION SERVICES

- IANZ Endorsed and Traceable** Calibrations
- Refer to pages 91 to 93 for a detailed description of our Calibration Services



"We are your technology experts, give us a call and we will help find you the right equipment to get the job done"

Can't find something?

If you are after a particular instrument and can't find it in our catalogue or online we may still have what you are looking for or know where you can get it. We may even buy it. Give us a call, we would be happy to help.

- Call us on:** 0800 832 473 or
- Email:** sales@techrentals.co.nz

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WHY RENTAL MAKES GOOD BUSINESS SENSE

CONSERVE YOUR CAPITAL / PRESERVE CREDIT FACILITIES

Just as most companies rent buildings, motor vehicles and office equipment it makes sound commercial sense to avoid spending your valuable working capital on often infrequently used test equipment. With rental you can invest your limited capital into areas of the business offering the highest returns.

RECOVER YOUR COSTS MORE QUICKLY / TAX ADVANTAGES

Generally rental payments are fully tax deductible and the expense can be recovered far more quickly than tax allowances for ongoing depreciation. On a net present value basis, looking at the best deployment of working capital, rental is usually the most cost effective way to deploy technology in your business.

MANAGE YOUR CASH FLOW

Replace an expensive initial outlay, uncertain on-going operating costs and resale value risks, with a fixed one-off monthly rental payment. The same reasons as for premises, cars, office equipment.....

TECHNICAL SUPPORT

When you rent from TechRentals® you'll have the support of an experienced team of product experts, who will help you get the most from your equipment. In the unlikely event of failure we will do our utmost to rectify the issues as soon as possible.

INCREASE SERVICES OFFERED TO YOUR CUSTOMER

Rental makes available to you a vast equipment range. Promote the wide range of services this allows you to offer your Customer, at no cost! Gain the contract, rent the item only when you need it.

ELIMINATE RUNNING COSTS

The expense of maintaining, calibrating and warehousing your test and measurement equipment can be high. With rental you avoid these costs.

SIMPLIFY COST ALLOCATION OR CHARGING

Rental payments are easy to track and account for in your business, making it easy to allocate appropriate costs to departments, clients or specific projects.

APPLY NEW TECHNOLOGIES AND AVOID OBSOLESCENCE

Rental allows you to update your equipment in line with other businesses and take advantage of new technologies. It avoids the cost of owning equipment that can be quickly superseded.

RESPOND TO SUDDEN DEMANDS

At peak periods, for sudden unexpected projects, or when essential equipment breaks down, rental can put the equipment in your hands ensuring seamless operation.

STRETCH YOUR BUDGET

Test equipment is often only used infrequently or for a specific project. Rental allows you to pay for it only when you use it, therefore stretching your budget by being able to access more equipment than if you purchased every item required outright.

HAVE YOU CONSIDERED LONG TERM RENTAL OR RENT TO OWN?

Companies rent cars, office equipment and premises because they understand the benefits, be it cash-flow, immediate tax deduction, preserving capital, no disposal risk, no maintenance or calibration costs etc. (detailed advantages - see facing page). At TechRentals® we offer 2 long term options:

LONG TERM RENTAL

- Is Capex a problem?
- Do you need an instrument for a specific project?

Long term rental attracts special rates for any term beyond 3 months. Enjoy discounts of up to 80% on the casual rate in return for a fixed term commitment.

RENT WITH A VIEW TO OWNERSHIP (ROS)

- Upfront purchase cost too high?
- Pay for equipment as it earns

If you have a view to owning the instrument, but want to enjoy the immediate advantages of rental, ROS is the way to proceed. We purchase, finance, insure (damage waiver), maintain and calibrate the instrument in return for a fixed monthly payment. Plus you have full access to our team of experienced Application Engineers for all the technical support required during the rental period. At the end of the agreed period we may offer to sell you the instrument in return for one payment of the same monthly value. Enjoy the cash flow and tax advantages through the rental period, then make a small additional payment to own outright.





HIGH QUALITY EQUIPMENT

At TechRentals® we source only industry standard, quality and robust equipment from the world's leading Test and Measurement Equipment Suppliers, providing you the confidence when the equipment arrives not only will it work first time, but is well maintained and calibrated.

HIOKI	FLUKE	CHK POWER QUALITY	aeroqual
Megger	TSI	Anritsu	VAISALA
METREL	OLYMPUS	profound	TOPCON
INDUSTRIAL SCIENTIFIC	proceq	YSI	UE SYSTEMS INC
Be sure. testo	Panametrics <small>a Baker Hughes business</small>	FLIR SYSTEMS	ONSET
CRYSTAL <small>engineering corporation</small>	Druck <small>a Baker Hughes business</small>	Acoustic Research Labs Pty Ltd	Hal Technology
FLUKE networks	TA HYDRONICS	YOKOGAWA	EMERSON
RION	WÖHLER	HV Diagnostics	narda <small>Safety Test Solutions</small>
OMICRON	CASELLA	dpm	DeFelsko <small>Inspection Instruments</small>
FITEL	GRAPHTEC	Sonel	FW BELL <small>www.fwbell.com</small>



CAN'T FIND WHAT YOU ARE LOOKING FOR?

We have a number of possible solutions to get you the equipment you need.



techrentals
your rental business partner

- ⚡ We may have purchased the equipment since this catalogue went to print
- ⚡ We may have an alternative product that you are not aware of
- ⚡ TechRentals Australia may have what you are after and as our Customer you have exclusive access to their range
- ⚡ We may decide to buy one so you can rent it from us
- ⚡ We may know where you can find one if we don't have it

Remember - at TechRentals® we ...

- ⚡ Specialise in industry standard, quality, robust equipment rentals
- ⚡ Offer casual, short-term and long-term rental and ROS (rental with option to sell)

We listen to you

Over our 40 years in business we have introduced numerous items based on what you, our Customers have said. Ask us about a piece of equipment that you would find useful and we may be able to get it for you.

CALL OUR FRIENDLY TEAM

0800 832 473

- ⚡ **Call us on:** 0800 832 473 or
- ⚡ **Email:** sales@techrentals.co.nz

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New items are always being added so please call

0800 832 473



SPECTRUM ANALYSERS / ANTENNA & CABLE TEST

**Anritsu S332D Colour
Sitemaster incl 3GHz
Spectrum Analyser**
ANR.S332D


Antenna and cable test set, with spectrum analyser, used in commissioning and maintenance of cellphone sites, radio installations and coaxial cables. Standard signal table allows automated setup. Colour display. Frequency range 25MHz~4GHz for cable and antenna test. 9kHz~3GHz for spectrum analysis. Measures return loss (range 0~60dB), SWR (range 1~65), cable loss (range 0~30dB) and distance to fault (range 1197m). Spectrum analyser resolution bandwidth 100Hz~1MHz. Integral synthesized signal generator. Calibration components included for initial set-up. RS-232 interface for printer or PC. Analysis software contains distance to fault and Smith chart tools. Portable.

DIGITAL STORAGE OSCILLOSCOPES

**Fluke 190-504 500MHz 4
Channel Scopemeter**
FLU.190-504


500MHz bandwidth, 4 channel colour oscilloscope with DMM feature. Digital display persistence giving analog oscilloscope-like waveform decay. Sampling rate: 5 GS/s. Sensitivity: 2 mV-100 V/div plus variable attenuation. Trigger types: Connect-and-View™, Free Run, Single Shot, Edge, Delay, Dual Slope, Selectable pulse width, N-Cycle. Glitch capture: 8ns. Measures electrical power properties VDC, VAC rms, VAC + DC rms, Current (through clamp or shunt). Independently floating isolated inputs up to 1000 V CAT III/600 V CAT IV between inputs, references and ground. 30,000 data points stored per channel. Captures intermittents and fast glitches. Software supplied. Battery powered.

ELECTROSTATIC METER

**Vermason 222541
Electrostatic Meter**
VER.222ES


Precision field meter is designed to measure electrostatic voltage potentials over selected distances from 1 to 20cm. Ideally suited to periodic audits of facilities, monitoring packaging, materials, machines and other electrostatic generative equipment or processes. Range at the standard distance of 2cm is 20kV. Range: 1 to 20cm. Display: two range, 3 digits in V or kV.

LAN CABLE TESTERS

**Fluke DSX-5000
Cable Analyzer**
FLU.DSX5000


Copper tester from Fluke, to replace the DTX1800, for certifying LAN cables. Capacitive touch screen allows quick set-up including pre-programmed test standards selectable from a menu. Tests speeds up to 1000 MHz, with Cat 6A / Class FA autotest time of 10 seconds. Graphically displays the source of failures including crosstalk and distance to shield faults for faster trouble shooting. Tests to Category 5e, 6, 6A & Class FA. Internal memory stores 12,000 Cat 6A with plots. Channel/ Permanent Link Adapter 1 GHz range. Analyse test results and create professional test reports using LinkWare™ and USB cable included. Typical battery life: 8 hours.

**Fluke DSX-8000
Cable Analyzer**
FLU.DSX-8000


The latest generation copper tester from Fluke, to upgrade the DSX-5000, for certifying LAN cables. Capacitive touch screen allows quick set-up including pre-programmed test standards selectable from a menu. Tests speeds up to 2000 MHz, with Cat 6A / Class FA autotest time of 8 seconds and Cat 8 / Class I/II test time of 16 seconds. Graphically displays the source of failures including crosstalk and distance to shield faults for faster trouble shooting. Tests to Category 5e, 6, 6A, 7, 8 or Class FA and Class I/II. Internal memory stores 5,000 Cat 8 with plots; 12,000 Cat 6A with plots. Channel/ Permanent Link Adapter 2 GHz range. Analyse test results and create professional test reports using LinkWare™ and USB cable included. Typical battery life: 8 hours.

**Fluke DSX-5000 Cable
Analyser Modules**
FLU.DSX5000- MOD


Copper tester modules to add to your own Fluke Versiv base unit. Once installed this becomes a Fluke DSX 5000 cable analyser and performs all the tests as per this model described above.

Overnight delivery
New Zealand wide

AUSOPTIC®**FITEL® S179****Hand-held Core Alignment
Fusion Splicer**

Lightning-fast 6 sec. splice / 9 sec. heating
4.3" Touch-screen with glove-friendly controls
Fully rugged with 5-axis drop resistance



plus
FITEL S326A High Precision
Optical Fiber Cleaver



Standard with 3-year warranty

Tuned and kitted for harsh conditions

Fully specified with our custom road kit and individually tuned by our engineers in Sydney, Australia - ready for work in the field.

**FITEL Optical Fiber Identifier
ID-H/R v3**

G.652 (SM), G.657 A1 (ITU R10) and G.657 A2 (ITU R7.5) fiber identification

Class-leading traffic direction recognition performance in brightly lit environments

Additional G.657 B3 (ITU R5) fiber compatibility with add-on PD head

Compact pocket-size, just 170g with battery



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ELECTRIC GROUP



Talk to our team or browse our full range online

T +61 2 9424 2111 | team@ausoptic.com.au | ausoptic.com.au

FIBRE OPTICS**Fitel S178A V2 Fusion
Splicer and Cleaver**

FIT.S178A



Precision core alignment fusion splicer and cleaver for many variants of fibre including singlemode and multimode. Fully automatic splicer, splice time typically 7s. In demanding applications will also offer cladding alignment (as opposed to core alignment). Data memory for last 2000 splices with visuals of last 100. 304x and 608x magnification. Illumination lamp lights up the v-grooves for better clarity in low light conditions. Supplied with 10mm tight fibre holder, and 250um and 900um holders interchangeable with the S326 cleaver, alleviating need to precisely realign fibres once cleaved. Automatic post-splice tension test (1.96N). Built-in heater for applying splice protectors. Altitude sensors operate up to 5000m which adjust arc time and intensity as required. Dual battery (up to 200 splices & heatings) or AC power. Fitel S326 precision one-step cleaver: Cleave length fixed at 10mm or adjustable to 3-20mm. Integrated sharps bin.

Fitel S326 Fibre Cleaver

FIT.S326



Fibre Optic Cleaver for single fibre cleaving. Cutting blade locks in place after scoring, preventing double scoring of fibre and also ensuring quality cleaving angles. Waste fibre deposits automatically into a collection chamber. Single Fibre Cleave length: fixed length 10 & 16 mm or adjustable to 3-20mm.

**Fluke Optifiber Pro Quad
OTDR**

FLU.OPTIFIBERPQ



Designed for testing, troubleshooting & certifying multi & singlemode network cabling. Measures insertion loss & fibre length. Automatic & manual OTDR analysis including channel map of connectors. Includes software for data management, analysis & reporting. Battery Powered. Multimode; Wavelengths: 850 & 1300nm. Attenuation Deadzone: 850nm 2.2m typical; 1300nm 4.5m typical. Range: 850nm 9km; 1300nm 35km. Dynamic Range: 850nm 28 dB typical; 1300nm 30 dB typical. 50um launch cables included: SC/LC (2), SC/SC. Singlemode: Wavelengths: 1310 & 1550nm. Attenuation Deadzone: 1310nm 3.6m typical; 1550nm: 3.7m typical. Range: 1310nm 80km; 1510nm 130km. Dynamic Range: 1310nm 32 dB typical; 1510nm 30 dB typical. 9um Launch cables included: SC/LC (2), SC/SC (2).

VERSIV™

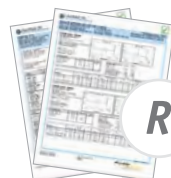
Cabling Certification System

Certify

Unsurpassed speed for fiber and copper certification, with troubleshooting features that find problems instantly.



Versiv saves you money every time you use it.



Report

Transfer test results directly from the field and generate reports faster.

LinkWare Live

Manage

Set up and track the status of the job from any smart device using LinkWare™ Live.

Email: sales@techrentals.co.nz or sales@flukenetworks.com

Phone: 0800 832 473

FLUKE
networks

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FIBRE OPTICS – CONT'D

Fluke Certifiber Pro Quad OLTS

FLU.CERTPROQUAD



Fluke's latest generation fibre certification tester designed for testing, trouble shooting and certifying network cabling for both singlemode and multimode. Multimode testing is Encircled Flux compliant. Touch screen user interface for simple set-up and troubleshooting. This unit provides validation of fibre link performance and installation quality, fibre length, measurement of optical loss at multiple wavelengths and polarity confirmation. Multimode bi-directional testing at 850nm & 1300nm at the same time. Singlemode bi-directional testing at 1310nm & 1550nm at the same time. Interchangeable adaptors for SC, LC and ST testing. Pass/fail results based on common fibre standards. Includes in built visual fault locator (VFL).

Fluke Certifibre Pro Multimode OLTS

FLU.CERTPROMM



Designed for testing, trouble shooting and certifying multimode network cabling. Multimode testing is Encircled Flux compliant. Touch screen user interface for simple set-up and troubleshooting. This unit provides validation of fibre link performance and installation quality, fibre length, measurement of optical loss at multiple wavelengths and polarity confirmation. Multimode bi-directional testing at 850nm & 1300nm at the same time. Interchangeable adaptors for LC or SC connectors. Pass/fail results based on common fibre standards. Includes in built visual fault locator (VFL).

Fluke FI-1000 Fibre Inspection Camera

FLU.FI1000



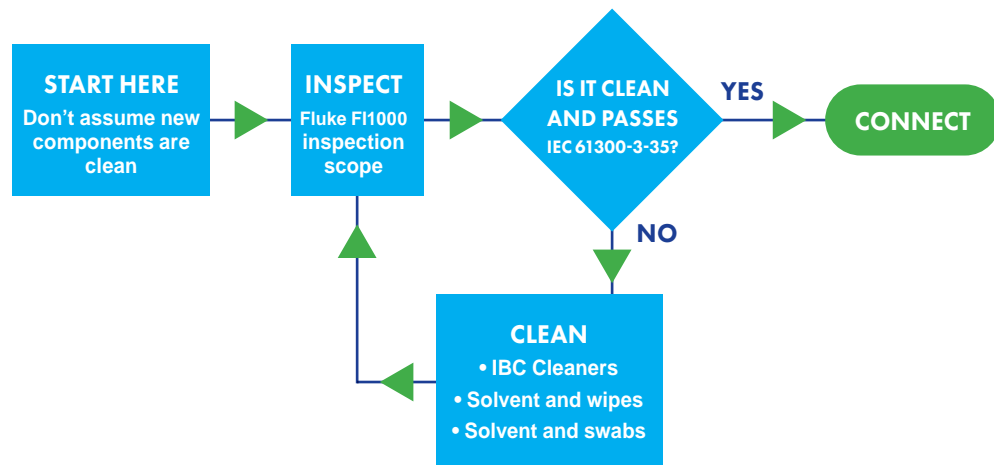
Enables the inspection and pass/fail certification of fibre end-faces required under IEC61300-3-35. Used with either of the above two certifieres, it provides a visual display of the end-face. Results can be stored and professional reports produced using software supplied. Contamination is the No 1 source of problems in optical networks and use of this camera is recommended to ensure optimum performance of the network. Suitable for all singlemode and multimode applications. Supplied with SC, LC, ST and APC connector tips. Powered from the Certifibre.

FOCUS ON FIBRE

TechRentals® offer the solutions for Cleaving & Splicing, Inspecting & Cleaning, and Testing & Certifying Fibre networks.

Inspecting and cleaning is the least costly component to the procedure of installing and certifying fibre yet all too often it is overlooked, resulting in failures and reworks, and costly damage to equipment.

Fibre Optic end faces are extremely susceptible to contamination. All fibre manufacturers recommend you follow the process shown in the diagram to minimise the risk of contamination and damage.



Typical examples of acceptable and failed end-faces:



For our LAN and fibre testing instruments refer pages 13 to 17

Fibre Optic Cable Testing – Adhere to ISO/IEC 14763-3 and IEC 61300-3-35 Standards

ISO/IEC 14763-3 defines not only the test limits and methodology for installed fibre but also the test equipment standards, including reference leads, field test leads, end-faces and adapters. TechRentals® will only supply test instruments and reference leads that meet this standard. We calibrate fibre testing equipment, keep it maintained and clean, and certify every connector of every reference lead (four certificates per lead). We include test certificates with every reference lead we rent or sell.

ACTION	INSTRUMENT	CAPABILITY
CLEAVE & SPLICE	Fitel S178A Fusion Splicer + S326 Precision Cleaver	Multimode fibre 50um and 62.5um and Singlemode fibre 9um
	Fitel S326 Precision Cleaver	Multimode fibre 50um and 62.5um and Singlemode fibre 9um
INSPECT & CLEAN	Fluke FI1000 Fibre Inspection Camera	Inspects fibre end faces and connectors. Provides pass/fail certification to IEC 61300-3-35 Multimode fibre 50um and 62.5um and Singlemode fibre 9um
	Fibre Cleaning Kit	Includes IBC Cleaner, Solvent and wipes
TEST & CERTIFY	Fluke CertiFibre Pro Quad	Multimode fibre 50um and 62.5um and Singlemode fibre 9um
	Fluke CertiFibre Pro Multimode	Multimode fibre 50um and 62.5um
	Reference Cables including Encircled Flux (EF)	Rent or purchase Multimode or Singlemode cables
TROUBLE SHOOTING	Fluke Optifibre Pro Quad OTDR	Measures insertion loss and fibre length. Automatic and Manual ODTR analysis. Multimode & Singlemode

Encircled Flux compliant instruments and reference leads available

BATTERY MANAGEMENT SYSTEMS

Megger (Programma) Torkel 950 Battery Discharge Tester MEG.TOR950



Battery discharge tester, which enables testing of batteries while in service. Works with 7.5V to 500V battery systems and can discharge at up to 220A (15kW maximum power). Can be programmed for constant current, constant power, constant resistance or user defined load profiles. The included DC current clamp allows on-load testing. Tests are controlled by a built in PC and results can be copied to a USB memory stick.

Megger BVM300 Battery Voltage Monitor MEG.BVM300



Optional extra for Megger (Programma) Torkel Battery Discharge Testers. 31 clamps supplied which enable testing of each battery cell individually, though up to 120 clamps can be supported in a single test. One BVM clamp for each battery connects to the next in a "daisy-chain" method. Automates battery voltage measurement during capacity tests using the Torkel software. Easy set-up and identification of faulty cell when the entire battery string fails the load testing. Voltage ranges: 0-5 V DC and 0-20 V DC. Resolution: 1.00 mV both ranges. Accuracy: < 0.1% of full scale ± 0.002 VDC. Battery string voltage: 300 V DC (max). Meet the test standards IEEE450, IEC896-1, IEEE 1188-1996 & IEC896-2.

Hioki 3554 Battery Tester HIO.3554



This battery tester takes on-the-spot measurements of the internal resistance, voltage and temperature of lead-acid batteries, principally for UPS and similar applications, without needing to shut off the battery. Instantaneous results, on a three-rank scale of Pass, Warning, or Fail, using a composite decision based on the internal resistance and the voltage. Resolution of 1 μ ohm, necessary for high capacity batteries (of at least 500Ah). Includes Hioki 9460 clip type temperature leads.

POWER ANALYSERS & RECORDERS

Fluke 435-II 3-Phase Power Quality & Energy Analyser FLU.435



Provides load-logging & fault finding through event capture. Primarily a 3 phase unit but can also monitor single phase. Safety rating 600 V CAT IV / 1000 V CAT III. Configure on site from front panel, or set-up in advance. Displays parameter selected (as data and/or graphical). Can be configured to start up & stop logging at a predetermined time. Underlying most functions are limits as prescribed by EN50160, or can be customised by the user, so events are captured for detailed analysis independent of the main function. 4 x 600/6000A AC flexible CTs (length 610mm and diameter 190mm). 5 voltage input cables including 3 phase, neutral & ground. Records: V, A, pf, f(Hz), kVA, kVAR, kW, harmonics, Inter harmonics, voltage and current imbalance (THD and individual to 48th), Flicker, total energy, tariffs, maximum demands, and transient and sub-cycle disturbances. Stores data to SD Card. Software supplied for detailed data analysis & report generation. Mains powered with battery backup (up to 8h).

Fluke 345 Power Quality Clamp Meter FLU.345



This clamp meter undertakes both AC and DC current and voltage measurement. Combining the functions of a clamp meter, oscilloscope, data logger and digital power meter it is ideal for working with variable frequency motor drives, high efficiency lighting and other loads using switching electronics. Provides clamp-on measurement of AC current up to 1400 A rms and DC current up to 2000 A without breaking the circuit. Measures current, voltage and harmonics. For both single and 3 phase measures watts, VA, VAR, power factor and displacement power factor. Other functions include frequency measurement and inrush current, and a scope function. Jaw capacity: 58mm. USB interface for download to software provided for data analysis and reporting.

Metrix MX2040 AC/DC Clamp-on Meter MET.MX2040



Measures: Watts, AC/DC voltage, AC/DC current, active power, apparent power, reactive power, kWh, power factor, resistance and frequency. AC ranges: 200 and 2000 amps. Bandwidth: (True RMS) 10 Hz - 3 kHz. Analogue output of RMS and instantaneous values.

POWER ANALYSERS & RECORDERS - CONT'D

Hioki 3169-20 Clamp-on Power Analyser

HIO.3169-20



Measurement of single-phase to three-phase 4-wire circuits using this compact and light weight meter. The Hioki 3169-20 is ideal for achieving close control over energy-saving management activities and measures e.g. it can measure the power of just a few cycles. Wiring configurations include: single-phase, multiple single-phase, three-phase 3-wire and three-phase 4-wire. 0.5A to 5000A range. Measures voltage, current, power, power factor and integrated values and can simultaneously perform demand measurements required for carrying out power management and energy-saving measures, as well as harmonic measurements. Supplied with four 500A clamp-on CTs, other CT options available. Flashcard memory. Hioki 9625 Power Measurement Support Software for data analysis and reporting.

Hioki Clamp-on Sensors

HIO.9667

HIO.9667-02

HIO.9669

HIO.9694



Set of CT's suitable for use with Hioki 3169 power quality analysers for measurements of currents.

- HIO.9667: up to 5000A AC per phase. Output voltage: 500 mV AC f.s. Measurable conductor diameter up to 180mm or 254mm. Dual Range: 500A and 5000A. Four CT's in a kit.
- HIO.9669: up to 1000A AC per phase. Output voltage: 500mV AC f.s. Core Jaw Diameter: 55mm. Four CT's in a kit.
- HIO.9694: Up to 5A AC per phase. Output voltage 10 mV AC/A. Measurable conductor diameter up to 15 mm. 4 CT's in kit.

Fluke VR1710 Voltage Recorder

FLU.VR1710



Single-phase (230V) Voltage Disturbance Logger, the first line of defence in proving suspected voltage anomalies. Programme the unit in advance, stipulating the limits outside which you would class as anomalies, then plug into a domestic 230V three pin power point. Stores up to 175,000 events such as Sags, Surges, Outages, Transients & Frequency variations. Supplied with software & USB cable for programming, downloading and analysing results.



HIOKI

Creating Innovative Technologies of Tomorrow.

Hioki's measurement technologies help create safe lifestyles by playing a key role at manufacturing facilities, in infrastructure, and in buildings and factories. They also underpin the development of next-generation technologies in the automotive and alternative energy sectors, as well as in other industries, while making possible high quality, low cost manufacturing.

Email: info@electrotest.co.nz

Phone: 09 488 2600

ETL
ELECTROTEST LTD

Power Quality Analysis, made easy!



The *MIRO* Class A range of portable power quality analysers are high precision instruments that are portable, robust, reliable and weatherproof!

Built for high performance, the Miro can be installed with minimal or no configuration set up, due to the optimised default configuration. Just remove from box, connect and walk away!

Three or four voltage channel models are available.

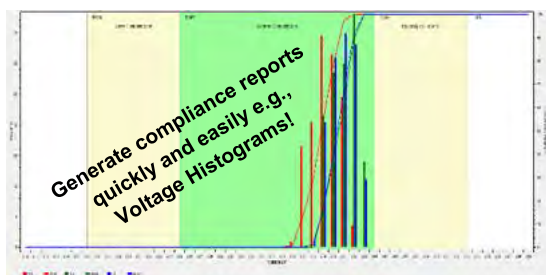
Main Features:

- ✓ Highest safety rating! CATIV, 600V (Miro PQ45 & PQ45-1k).
- ✓ Isolated input channels.
- ✓ Logs automatically upon power up.
- ✓ Powered from Phase A (PQ35 and PQ45).
- ✓ Optional Remote Cellular Communications.
- ✓ WIFI communications.
- ✓ Protective rubber holster, bracket and magnetic legs.
- ✓ Gapless logging.
- ✓ Automatic current sensor detection.



Applications Include:

- Renewable energy efficiency.
- Load and energy surveys.
- Nuisance tripping investigations.
- Monitoring motors to determine the cause of overheating.
- Monitoring capacitor banks and VSDs.
- Transformer monitoring.



CHK Power Quality Pty Ltd

Unit 1, 3 Tollis Place, Seven Hills, NSW 2147, Sydney, Australia

+61 2 8283 6945; Fax: +61 2 8212 8105

www.chkpowerquality.com.au; Enquiries: sales@chkpowerquality.com.au



POWER ANALYSERS & RECORDERS – CONT'D

CHK PQ45 Power Quality Analyser CHK.PQ45



Weatherproof IP66 Cat IV 600V field unit that provides load-logging and fault finding through event capture. Configure the unit using the CHK Citrus software provided, take it to site and it will log for as long as required. Powered from the monitored voltage. The tablet supplied enables the unit to be configured on site and data reviewed real-time. Can be configured to start on power up or at a predetermined time. Includes 4G comms for interrogation while in-situ, data downloaded and instrument reprogrammed with no interruption to logging. Graphical display of logged data with ability to drill down. Export data to Excel or generate pdf reports. Memory: 8GB; Built-in GPS; 2 probes supplied to monitor temperature: -50°C to 150°C; Monitors mains signalling (Ripple amplitude) and IEC events (sags, swells, dips, interruptions, RVC). Records DC voltages and also DC currents with DC clamps (separately available).

CHK AC/DC 1000A Clamps CHK.DC1000A



Used in conjunction with the CHK PQ45 Power Quality Analyser to measure DC Current. CAT III, 600V, $\pm 10A$ to $\pm 1000A$ clamps with a 50mm jaw. DC frequency range to 10 kHz, bare conductor limited to 1 kHz. Can also measure AC and DC concurrently. Set of 4 clamps supplied.

CHK AC/DC 250A Clamps CHK.DC250A



Used in conjunction with the CHK PQ45 Power Quality Analyser to measure DC Current. AC and DC can also be measured concurrently. CAT III, 600V, $\pm 10A$ to $\pm 250A$. Clamps with a 50mm jaw. DC frequency range to 10 kHz, bare conductor limited to 1 kHz. Set of 4 clamps supplied.

POWER ANALYSERS & RECORDERS COMPARISON SCHEDULE

PRODUCT	KEY FEATURES	TARGET USE
FLUKE 345 Clampmeter	<ul style="list-style-type: none"> AC/DC 40/400/2000 Amp manual or autoranging Displays I, V, f, pf, kVA, kVAR, kWh Simple to use 	<ul style="list-style-type: none"> Simple but powerful clampmeter
FLUKE VR1710 Single phase Voltage Recorder	<ul style="list-style-type: none"> "Set and forget" logging Captures time, magnitude and duration of voltage events simple configuration and installation, plugs into 3 pin 10 Amp outlet 	<ul style="list-style-type: none"> First line of defence to determine the presence of single phase voltage events
HIOKI 3169 Three phase PQA	<ul style="list-style-type: none"> 5/50/500 amp current clamp 150 to 600V displays and logs I, V, f, pf, kVA, kVAR, kW, kWh, harmonics field configurable stores data to memory card Simple to use 5/1000/5000A clamps also available 	<ul style="list-style-type: none"> Three phase PQA specifically designed for energy auditing Analyse and/or log profiles Compare three phases or up to four independent circuits Detailed analysis using included software Quantities available for large audits
FLUKE 435-II Three phase PQA	<ul style="list-style-type: none"> Class-A certified meter Purpose-built modules for common forms of analysis Displays and logs power usage, quality and efficiency figures Automatic report generation 5 microsecond sampling 6000A flexible CTs DC option for inverter efficiency 8GB SD card 	<ul style="list-style-type: none"> Three-phase PQA for detailed infield analysis Focus on power quality and energy efficiency Detailed yet simple to construct reports

Our experienced Application Engineers are only a phone call away, offering the expert advice you need!

PRODUCT	KEY FEATURES	TARGET USE
CHK PQ45 Three phase PQA	<ul style="list-style-type: none"> "Set and forget" logging 3000 Amp flexible CTs Displays and logs I, V, f, pf, kVA, kVAR, kW, kWh, harmonics Captures RMS and waveform events Powered by monitored phase A plus backup battery Weatherproof Flicker USB interface Can be configured on-site with tablet supplied View live data on tablet Monitors mains signalling & IEC events Probes to monitor temperature: -50°C to 150°C Can record DC voltages and currents 8GB internal memory 4G Comms for live data review, data download and reprogramming from your PC GPS 	<ul style="list-style-type: none"> Three phase PQA for both load profiling (up to 3000 Amps) and event capture Events include voltage or current threshold exceedance, phase imbalance, inrush, transients Remote interrogation, data download and reprogramming Detailed analysis using included software From short (hours) to extended periods (months) Monitor mains and DC power simultaneously Review data from safe distance via tablet (wifi), where 4G unavailable Can log 2 sets of TRMS data simultaneously Quantities available for large audits

	FLUKE 345	FLUKE VR1710	HIOKI 3169	FLUKE 435-II	CHK PQ45
SINGLE PHASE / THREE PHASE	✓/-	✓/-	✓/✓	✓/✓	✓/✓
PROFILING		✓	✓	✓	✓
EVENT CAPTURE		✓		✓	✓
ONSITE CONFIGURATION	✓		✓	✓	✓
POWERED FROM MONITORED VOLTAGE		✓			✓
BATTERY / MAINS POWERED	✓/-	-/-	-/✓	✓/✓	-/-
WEATHERPROOF					✓

Cable Fault Locators



Time Domain Reflectometers



Cable Identification



Sweep Frequency



Battery Testing

Multifunction Relay/
Substation Test System

Primary Injection

Turns Ratio / Winding
Resistance

Tan delta



Multifunction Testers



Relay Testing



Oil Test Sets



Circuit Breaker Analysers



Insulation Testing



Contact Resistance



Earth Testing



Partial Discharge

Power Transformer
Testing

INSULATION / CONDITION / RESISTANCE TESTERS

**Megger MIT1025 10kV
Insulation Tester**

MEG.MIT1025



NEW



10kV insulation tester for the testing and maintenance of high voltage equipment. A built-in timer makes both spot tests and Polarisation Index (PI) testing easy to carry out. Pre-set standard test voltages: 500 V, 1, 2.5, 5 and 10 kV. User defined test voltage: 50 to 1kV - 10V steps; 1 kV to 10 kV in 25 V steps. Short circuit current: maximum 3mA. Displays capacitance at the end of a test to 25µF. Preconfigured diagnostic tests include Polarisation Index (PI), Dielectric Absorption Ratio (DAR), Dielectric Discharge (DD), Stepped Voltage (SV) and Ramp Test. Large LCD display with backlight. Safety rated up to CAT IV 600 V. Advanced memory with time / date stamp to stream data or download data to a PC / laptop via USB later. Operates from battery (4.5h at 10kV) or mains supply.

**Megger 10kV Insulation
Tester**

MEG.MIT1020



10kV insulation tester for the testing and maintenance of high voltage equipment. A built-in timer makes both spot tests and Polarisation Index (PI) testing easy to carry out. Pre-set standard test voltages at 250, 500, 1, 2.5, 5 and 10kV. Variable test voltage: 50 to 1kV - 10V steps; 1kV to 10kV - 25V steps. Displays capacitance at the end of a test to 10µF. Performs automatic PI, Step Voltage and Dielectric Discharge and Absorption Ratio tests. Short circuit current: maximum 3mA. Analogue / digital backlit LCD. Optically isolated RS232 port enables results to be downloaded during a test or manually stored for later download. Battery life: 4h at 10kV.

**Megger DLRO10HDX
Digital Low Resistance
Ohmmeter**

MEG.DLRO10HDX



Fully automatic, it selects the most suitable test current up to 10 A dc to measure resistance from 0.1 µΩ to 2,000Ω in seven ranges. Five test modes, including auto start on connection. Manual test current selection also available. Capable of delivering 10 A while measuring up to 250 mΩ and 1A while measuring up to 2.5 Ω. Real-time display of results. On-board storage for later download to a PC. Accuracy: ±2% of reading. Modes of Operation: Normal, Auto, Auto-unidirectional, Continuous & Inductive. Onboard memory stores up to 200 records. 3m Test Lead with interchangeable connectors. Test lead live voltage warning light. LCD display. Battery or AC. IP65 lid closed, IP54 operational.

INSULATION / CONDITION / RESISTANCE TESTERS - CONT'D

Sonel MIC-10K1 Insulation Resistance Tester

SON.MIC-10K1

NEW



10kV Insulation Resistance Meter designed for the testing and maintenance of high voltage equipment including single- and multi-core cables, transformers, motors and generators, capacitors, switches etc. Meets EN 61010-1 and IEC 61557 standards. Also offers a cable "thumper" like feature to intensify the damage for fault finding. Pre-set standard test voltages: 50, 100, 250, 500 V, 1, 2.5, 5 and 10 kV. User defined test voltage: 50 to 1kV - 10V steps; 1 kV to 10 kV in 25 V steps. Maximum measuring range: 40 TΩ. Test current: 1.2 mA, 3 mA or 6 mA. Continuous indication of measured insulation resistance or leakage current. Displays capacitance during the measurement of RISO. Pre-configured diagnostic tests include: Polarization index (PI), absorption coefficients Ab1, Ab2 and dielectric absorption ratio (DAR) measurement, Step voltage insulation resistance (SV), Dielectric Discharge calculation (DD). Temperature measurement: -40 to 100°C with ST-1 probe included. Safety rated up to Cat IV 600 V (III 1000 V). Graphical LCD 5.6" display with data transmission via USB and Bluetooth. Memory: 8 MB equivalent (10,000 records). Operates from battery (1,000 measurements) or mains supply.

Metrel MI 3360 25A PAT Tester

MET.MI3360-25A



Automatic Portable Appliance Tester [PAT] system. Performs all necessary tests via its Autosequence function to ensure AS/NZS3760 compliance. Can also create and save your own specific test requirements. System includes tester, tag printer and QR barcode scanner. Uses 4.3" Colour TFT Touch Screen or keyboard for easy navigation. Internal memory for storing test results and software to download data (via USB) to produce detailed reports on assets, including next test date. Durable plastic adhesive test tags printed to attach to appliances and leads [logo optional on request]. Mains or battery powered. Tests include: Continuity/Protective earth resistance: 200mA; 10A & 25A Bond Testing; Polarity / Active polarity test; RCD testing (type A, AC, B, B+, F); P-RCD testing (2 pole, 3 pole, K/ Di (varistor), S (3-pole)); Insulation Resistance; Leakage current (Substitute/-S, Differential, PE, Touch).

INSULATION / CONDITION / RESISTANCE TESTERS - CONT'D

Megger MOM2 Microohmmeter

MEG.MOM2



Handheld, lightweight (1 kg), versatile and easy to use unit for resistance testing, ideal for use out in the field. Suitable for use in high voltage sub-stations and industrial environments. Applications include circuit breaker contacts, bus-bar joints, and other high-current links such as switches, safety ground connections, welding points & fuses. Display offers both an analog arc and a dual digital readout. Supplied with 2, 3 metre Kelvin probes (one with trig button). Capable of using the DualGround™ Method for safe testing. Complies with IEEE and IEC standards. Up to 220 A. Auto range: 1 μΩ to 1000 mΩ. Number of measurements (fully charged): 50A 2220; 100A 800. Logging capacity: 190 measurements. Bluetooth headset for audible pass/fail testing against adjustable limits. MOM2 Win software supplied for downloading test results, via Bluetooth dongle. Battery powered up to 12 hours.

Megger DLRO600 Digital MicroOhm Meter - High Current Ductor

MEG.DLRO600



Measures resistance between 0.1 microOhms to 999.9 mOhms at currents from 10 amps to 600 amps, subject to load resistance and supply voltage. Backlit liquid crystal display shows all test parameters and measurement results. Accuracy: Voltage ±0.5% ±0.1mV, Current: ±0.5% ±0.1A, Resistance: better than 1% 100 microOhms to 100 milliOhms. Test modes; manual, auto, continuous. Test time 7s normal/auto mode. Refreshed every 2s in continuous mode. On board memory for up to 300 test results and notes. Supplied complete with 5 metre test leads and download software. RS232 port to download stored results. Mains Power only.

Kyoritsu 4200 Earth Ground Clamp Meter

KYO.4200



Earth ground loop testing without breaking the circuit. Uses the stakeless method; eliminates the need to disconnect parallel ground rods and find suitable locations for placing auxiliary ground stakes. Performs earth ground loop tests in locations where it is not possible to use other techniques, including inside buildings or on power pylons. Resistance range from 0.05 Ohms to 1200 Ohms. Ground leakage current from 0.1mA to 1000mA. AC current measurement range from 0.1A to 30A.



INSULATION / CONDITION / RESISTANCE TESTERS – CONT'D

Metrel A 1532 Electric Charging Station Test Adapter

MET.A1532EVSE



Testing live EV Charge Point and connection cables with this new EVSE (Electric Vehicle Supply Equipment) adapter from Metrel made easy by simulating a vehicle connected to the charging station. Performs Voltage, Loop Impedance, PFC & RCD Tests externally. The A1532 is an extender for interfacing EVSE to test socket of installation tester for verification of electrical safety and functional testing. It is intended for testing Mode 3 EV supply equipment with type 2 (default) and type 1 (adapter) connectors. A1532 ESVE adapter is special accessory intended for using with METREL installation testers.

Metrel A1632 eMobility Analyser

MET.A1632



The A 1632 eMobility Analyser is a special accessory designed for diagnostic testing of Electric Vehicle Charging Stations in combination with supported METREL installation testers (also available for hire). It supports verification of electrical safety and functional testing of Type 1 and/or Type 2 charging stations as well as testing of Mode 2 and Mode 3 electrical vehicle (EV) charging cables and communication monitoring between the charging station and the EV during charging. Fully supported professional station-based and cable-based report creation with MESM software, included.

Give us a call on
0800 832 473 to discuss
calibrating your instrument

Or check our pages 91 to 93 for instruments
we calibrate...pressure, temperature,
humidity, airflow, etc.

INSULATION / CONDITION / RESISTANCE TESTERS – CONT'D

Metrel MI3102BT Multifunction Installation Tester

MET.MI3102BT



Measures and tests with fixed parameters set to international standards including AS/NZS3017, then provides a pass/fail indication. Also offers a range of auto-sequencing tests for fast testing and certifying. Application includes: Initial and periodic testing of domestic and industrial installations, testing of single and multiphase systems, testing of TT, TN and IT earthing systems and medical installation testing. Voltage: TRMS 0-550V, Frequency 0-500Hz. Insulation resistance with DC voltage (50-1000V): 0-999MΩ. Automated RCD testing (general and selective, type AC, A, F, B, B+, MI RCD, EV RCD, PRCD/-K/-S). Line/Loop impedance (Trip Lock RCD): 0-10KΩ. Continuity (Automatic Polarity reversal): 0-2KΩ. Earth resistance (3-wire and 2-clamps method): 0-10KΩ. Phase Sequence. First Fault Leakage Current (ISFL): 0-20mA. Insulation Monitoring Devices (IMD) Test: 5-640KΩ. Predefined mini AUTOSEQUENCES for earthing systems: TT, TN/RCD, TN, IT. PC Software EuroLink PRO for report generation for saved results supplied.

Metrel MI3108PV Electrical & Photovoltaic Installations Test Set

MET.MI3108PV



Standard **Electrical** installation tester to measure and test installations with fixed parameters set to AS/NZS3017, then provides a pass/fail indication. Also offers a range of auto-sequencing tests for fast testing and certifying. AS/NZS3000 mandatory tests can be completed including: Voltage, Visual Inspections, Earth Continuity & Resistance, Insulation resistance, Phase rotation, AC Current (load and leakage), Fault Loop Impedance and RCD Verification tests. Displays power usage, power factor, harmonics (up to 11th) and THD. Stores up to 1800 test results or 500 graphical results. Software supplied for downloading, uploading, review, analysis and printing of test results. **Photovoltaic:** Tests, evaluates and troubleshoots photovoltaic installations including: insulation, voltage, current and efficiency of inverter. STC characteristics of individual panels can be tested. Supplied with a photovoltaic reference cell, temperature probe and a remote unit (for use where the inverter is separated from the panels). Voltage: 0 – 999 DC and AC; I-V m: 0 – 999 DC. Current: 0mA – 300 DC and AC; I-V m: 0 – 15 ADC. Power: 0 – 999kW; I-V m: 0 – 14.99kW. U / I curve: 1000 V / 15 A / 15 kW. Irradiation: 0 – 1.75 kW/m². Temperature: -10°C to +85°C.

INSULATION / CONDITION / RESISTANCE TESTERS – CONT'D

Sonel MRU-200-GPS Earth Resistance Tester

SON.MRU200GPS



Sonel MRU-200-GPS documenting Earth Resistance meter. Fully featured instrument for testing; earthing resistance using auxiliary electrodes, earthing resistance using auxiliary electrodes and clamp (for measurements of multiple earthing), earthing resistance using double clamps (for measurement of earthing when it is impossible to use auxiliary electrodes), impulse earth resistance (without disconnecting measured earthing), ground resistivity (four spike Wenner method aka Fall of Potential soil resistivity), current e.g. leakage current using the clamp or flexible Rogowski coil (both supplied) and measurement of continuity of equipotential bondings and protective conductors (meeting the requirements of IEC 60364-6-61:2000 section 6.12.2) with auto-zero function – test current 200mA. Additionally: measurement of interference voltage, measurement of interference frequency, selection of maximum measuring voltage (25V and 50V), store up to 1000 results to memory and notes GPS coordinates of test. Automatic report generation of test results once downloaded to PC via USB cable. Online help (wiring diagrams). Supplied with 4 earth spikes, three cable reels, short leads, alligator clips, current CTs, test clamp, structure clamp, software, USB cable, instruction manual.

CORONA CAMERA

Ofil Uvolle-VX Corona Camera

OFI.UVOLLE-VX

Available Ex-Australia



Corona video/still camera to record and display corona and partial discharge. IP54 includes GPS, temperature and humidity measurement capability. Visible & UV Zoom, UV events counter, Integrated flashlight. Minimum discharge detection 1pC, Spectral range 240~280nm. 4Hr operation on one battery. Two batteries supplied.

ELECTRICAL CIRCUIT MAPPER

Tasco 24 Channel Circuit Mapper System

TAS.CIRCUITMAP



The Circuit Mapper maps up to 24 wiring circuits concurrently. Connect the transmitter cables to each circuit at the switchboard and the receiver displays the corresponding circuit number, to determine which breaker is connected to each transmitter lead. Can be used on live or de-energised cables up to 300 V. Transmitter, receiver, 24 clamps and manual supplied. Battery Powered.

MAGNETIC FIELD METERS – GAUSS TESLA

Bell 4190 MilliGauss Meter

BEL.4190



Handheld digital ELF Milligauss meter. Applications include detecting magnetic field emissions from overhead AC power lines, video display terminals, office equipment and household appliances. Analogue o/p, data logging, auto range 0.1 to 1999 mG, minimum resolution 0.1 mG/.01 microTesla. Displays three axes independently or orthogonally (vector sum). Not suitable for measurements of permanent magnets.

NEED YOUR ELECTRICAL GEAR CALIBRATED?

TechRentals® is an IANZ endorsed Calibration Laboratory

- Clamp-Meters • Clamp-on Earth Resistance Testers
- Decade Resistance Boxes • High Voltage Insulation Testers
- Industrial Process Calibrators • Medical Equipment
- Micro-Ohm Meters • Multifunction Electrical Safety Testers
- Multimeters • Oscilloscopes and Function Generators
- Power Quality Loggers/Analysers • Relay Test Sets
- Standard Resistors



RELAY PROTECTION SYSTEMS

Omicron 356 Advanced Relay Protection Test Set OMI.CMC356



Protection Relay Test Set. Also useful for commissioning new substations and as a power system simulator. Six current sources (6 x 32A/430VA, 3 x 64A/860VA or 1 x 128A/1000VA). Four voltage outputs (4 x 300V or 1 x 600V). 10 x multifunctional binary inputs. Generator Combination Cable for wiring convenience. Six current and four voltage output channels are continuously and independently adjustable in amplitude, phase and frequency. Advanced Protection Test Software included for loading to your PC prior to use.

POWER TRANSFORMER TESTERS

OMICRON CPC 100 Multi-functional Primary Test System OMI.CPC100PTS



Portable (29 kg) primary test system suited for testing of current transformers, voltage transformers, power transformers, power lines, HV cables, grounding systems, switchgear and circuit breakers, protection relays and more. Tests to 800A (extended to 2000A with CP CB2) over frequency range 15Hz to 400Hz, or to 400A DC. Laptop included, preloaded with CPC 100 Toolset. Optional accessories: HGT1 (ground test controller), OMI.CPCU1 (with or without OMI.CPSTEP), OMI.CPSB1, OMI.CP-TD1, OMI.CPCB2.

Megger MWA330A 3Ph TTR & Winding Resistance Tester MEG.MWA330A



The Megger MWA330A is capable of performing 3-phase turns ratio, 3-phase winding resistance, OLTC Continuity (make-before-break), 3-phase core demagnetisation, magnetic balance/flux distribution, excitation current, polarity and phase angle deviation, auto vector detection, and heat-run tests. The kit includes 18 m test leads, and when connected, the instrument performs the full range of transformer tests without the need for test lead reconnection or a separate switch box. The unit effectively tests: Power transformers, distribution transformers, CTs and UTs (PTs) and motors/generators. Built-in touch-screen PC which will produce PDF reports via USB memory stick. Built-in printer.

PARTIAL DISCHARGE MEASUREMENT

Omicron MPD 600-1 Single Channel PD Measurement System OMI.MPD600

Available
Ex-Australia



MPD 600-1 Single Channel High-end partial discharge measurement and analysis system. IEC 60270-compliant partial discharge measurement. Recording and analysis of measurements with full function control. This unit is suitable for many PD testing applications. Requires voltage source.

HI-POT TESTERS

HV Diagnostics HVA60 60kV-50mA DC/VLF High Voltage Insulation Dielectrics Test Set HVD.HVA60-DC/VLF



True sine wave low frequency output: 0.1Hz & 0.02Hz. For VLF, DC and jacket/sheath testing. Fault conditioning capability. Test result storage capability. Short circuit protection. Complies with CENELEC, IEEE 400.2, VDE 0296 and other international standards. Manual or fully automatic test sequence selection. Real time display of actual output waveform. High voltage power source suitable for testing electrical plant including cables: XLPE, PE, EPR, PILC etc, capacitors, switchgear, transformers, rotating machines, insulators and bushings.

HV Diagnostics HVA TD60 Portable Tan Delta System HVD.HVA TD60

Available Ex-Australia



Optional accessory for HVD.HVA60-DC/VLF and HVD.HVA90-DC-VLF. Tan Delta or Power Factor tester used to determine the power factor of cables, transformers, capacitors, rotating machines and other switchgear. This test allows the detection of insulation defects before they fail in service.



CABLE / PIPE TESTERS & LOCATORS

**Megger TDR2000-3P
Cable Fault Locator**
MEG.TDR2000-3P

Time Domain Reflectometer (TDR) cable fault locator. Transmits electrical pulses along a cable pair to detect changes in cable impedance, identifying faults, poor joints or degradation. Single or dual channel and memory for real time channel to channel, or channel to memory comparisons. Also use for base line readings when commissioning cables, saving them for future comparison. Auto select function selects trace parameters with a manual override to fine tune for hard to determine faults. High resolution LCD colour display. Range: 0 to 20km. Minimum Resolution: 0.1m. Internal memory for up to 100 traces. Software supplied for downloading results and reporting. Battery powered, up to 12 hours.

**Fluke AT 8030 Advanced
Wire Tracer**
FLU.AT-8030-INT

NEW



Trace energized and de-energized wires in walls, ceilings, floors and tight spaces. Also identifies breakers and fuses, as well as the location of a break, open or short. Work directly on an energized circuit without the need to take equipment offline. Three Transmitter power modes: "High Signal" mode for normal circuits, "Low Signal" mode for precision tracing in difficult areas and "Loop" mode for closed loop de-energized circuits. Two automatically selected frequency modes for optimal tracing. Displays the location and orientation of energized wires. High resolution 3.5" TFT LCD colour display. CT-400 Signal Clamp included (for inducing signal into wires without access to bare conductors). CAT IV 600 V rated.

**Tempo TE-508S
Cable Locator**
TEM.508S

For locating buried or in-wall wiring. Compact design. Provides results on buried cables to depths of 1 metre and lengths up to 300 metres. Can be used to determine approximate depth of a wire or cable before you dig. Fully adjustable transmitter output and receiver gain. Transmitter frequency is 447.5kHz. Transmitter can be connected directly to AC power outlet. Transmitter runs approximately 35h and receiver runs approximately 20h from standard 9V batteries.

CABLE / PIPE TESTERS & LOCATORS - CONT'D

**Dynatel 2273 Buried Cable
and Fault Locator**
DYN.2273

Used to find cables to 2.5 metres deep underground or in walls. Traces path of energised cables and conductive pipe or cable using multi-frequency tone generator. Can also be used to find breaks in cables and "short to earth" problems using an A-frame accessory.

**CScope MXL4-MXT4
Cable and Pipe Locator**
CSC.MXL4-MXT4

Cable location tool. Traces path of energised cables, conductive pipe or cable and in "radio mode" searches for re-radiated signals, common in underground services. Four detection modes; Power, Radio, Generator and Allscan. Features a Dynamic Swing Sensor to aid in cable and pipe location. Simultaneous dual 33+131 kHz frequency will assist in the detection of smaller buried pipes and cables such as telecoms, cast iron and street lighting spurs. Lower frequencies aid location of correct cable in areas where cables are co-located. Multi-frequency generator with 6 signal outputs: 512Hz, 640Hz, 8kHz, 33kHz, 131kHz, simultaneous 33+131kHz. Transmitter: operates with direct connection, tongs or induction. Can determine depth of cable: up to 2m in radio mode, other modes up to 3m. Radio detection mode: 33kHz sondes. Alarm indicates shallow cables (under 300mm). Direct connection current feature aids in locating correct pipe. Automatic daily self-test to confirm working condition.

CURRENT INJECTORS

**Megger Multi-Amp MS-2
High Current Test Set**
MUL.MS2

Designed to test overload relays, circuit breakers and earth fault trip devices. Input 240V 50/60Hz. Output continuously adjustable in 4 ranges 120V/5A, 24V/25A, 6V/120A & 3V/240A. Short term over current of several times the rated current ranges is possible. Digital current meter has read and hold facilities for short duration currents. Digital timer measures elapsed time between energisation and the test device operating.



NEED YOUR INSTRUMENT CALIBRATED?



TechRentals® is an IANZ Endorsed Calibration Laboratory



ELECTRICAL

- POWER MEASUREMENT
- ELECTRICAL SAFETY TESTERS



AIRFLOW

- ANEMOMETERS
- PITOT TUBES



MEDICAL

- BIOMEDICAL TESTERS
- GAS FLOW ANALYSERS



HUMIDITY

- RECORDERS/LOGGERS
- THERMOHYGROMETERS



PRESSURE

- MANOMETERS
- GAUGES



MASSFLOW

- THERMAL/DP TYPE
- ROTAMETERS



LIGHT

- LUX METERS
- PORTABLE WORK LAMPS



TEMPERATURE

- THERMOMETERS
- RECORDERS/LOGGERS



VIBRATION

- ACCELEROMETERS
- VIBRATION METERS

NOISE & SOUND ANALYSIS

Rion NL52EX Type 1 Sound Level Meter RIO.NL-52EX



Precision integrating sound level meter with extended functionality. IEC type 1 (class 1) and NATA/IANZ calibration. Frequency range 20Hz to 20 kHz. Weightings: A, C, & Z. Time weighting: fast & slow. Measurement ranges: A-weighting 25 to 138dB, C-weighting 33 to 138dB, Z-weighting 38 to 138dB. Peak sound level 141dB. Measurement functions include: instantaneous sound level pressure (Lp), equivalent continuous sound pressure level (Leq), sound exposure level (Le), maximum & minimum (Lmax/Lmin), percentile sound pressure level (Ln) [up to 5 values]. Additional functions include Lceq, Lcpeak, Lzpeak, Laieq, Laimax, Latm5 etc. LCD touch screen for set-up and graphical display of results. Manual or auto storage to internal memory or SD card. Delay time: Specified start time after start button pushed or on user trigger point exceeded. Built-in help system. Alkaline batteries (24h operation) or AC adaptor. Supplied with Pulsar 105 field calibrator.

Rion NL52EX Type 1 Sound Level Meter with 1:1 and 1:3 Octave Filtering RIO.NL-52EX-RT



Precision integrating sound level meter with extended functionality and 1/3 Octave Analysis. IEC type 1 (class 1) and NATA/IANZ calibration. Frequency range 20Hz to 20 kHz. Weightings: A, C, & Z. Time weighting: fast & slow. Measurement ranges: A-weighting 25 to 138dB, C-weighting 33 to 138dB, and Z-weighting 38 to 138dB. Peak sound level 141dB. Measurement functions include: instantaneous sound level pressure (Lp), equivalent continuous sound pressure level (Leq), sound exposure level (Le), maximum & minimum (Lmax/Lmin), percentile sound pressure level (Ln) [up to 5 values]. Additional functions include Lceq, Lcpeak, Lzpeak, Laieq, Laimax, Latm5 etc. LCD touch screen for set-up and graphical display of results. Manual or auto storage to internal memory or SD card. Delay time: Specified start time after start button pushed or on user trigger point exceeded. Built-in help system. Alkaline batteries (24h operation) or AC adaptor. Supplied with Pulsar 105 field calibrator. **Also included: NX-42RT option for real-time Octave and 1/3 Octave band analysis and NX-42RV option for reverberation time measurement calculations at T20/T30, or user defined intervals. Reverberation time-decay curves can be saved.**

Acoustic Research Labs is a NATA accredited calibration laboratory with over 25 years experience calibration and sales of acoustic and vibration instrumentation.



Ngara

Real Time Sound Acquisition System

- Long Term Remote Noise Logging
- High Quality 48kHz Waveform Recording
- A/C, F/S, Leq, Lmax, Lmin, Ln (1-99)
- Band Pass Filter
- Post Processed 1/1 & 1/3 Octave Data
- IEC 61672-3

Noise Cloud

- View and download your data online

RION Distributor Sound and Vibration Equipment

- | | |
|---------------|----------------------------|
| - NL-42/52/62 | Sound Level Meter / Logger |
| - VA-12 | Vibration Analyser FFT+ |
| - RIONOTE | Real-time Freq Analyser |
| - AS-60/70 | Analysis Software |
| - DA-21 | Data Recorder |
| - VM-56 | Vibration PPV, VDV, Disp+ |



NATA Accredited Calibrations

- | | |
|---------------|----------------------|
| - IEC 61672-3 | Sound Level Meters |
| - IEC 60942 | Acoustic Calibrators |
| - IEC 61260 | Octave-band Filters |

NOISE & SOUND ANALYSIS – CONT'D

ARL Ngara Environmental Noise Logger

ARL.NGARA
ARL.COMMS



Real time Class 1 sound acquisition system, simultaneously producing the following acoustic measurements; Fast SPL-A, Fast SPL-C, Leq-A and Leq-C. Ideally suited to monitor environmental noise continuously for up to 3 weeks. Samples are taken every 100ms. Measurement Range: 20 - 120dB. Logged data is saved in a CSV file on a USB memory stick, for easy data retrieval and analysis. The option to store calibrated (continual or triggered) 48 kHz raw audio data is also available. The **ARL.COMMS** 3/4G Kit allows the Ngara to be interrogated while in-situ, csv data downloaded and instrument reprogrammed. It requires mains power to the modem at site. Solar power option available.

ARL Firefly Acoustic Post Processing Software

ARL.FIREFLY



Powerful post-processing software package for use with the ARL Ngara Real time sound logger to enable large blocks of Ngara data to be analysed. Create 1/1 and 1/3 Octave statistics. Zoom on regions of interest. Replay audio at a specific time of interest. Interprets the data and displays graphically. Compare multiple sessions simultaneously. Create statistics to the time and frequency weightings of your choice. Export graphs and results to a number of formats, ready for inclusion in reports.

Casella 350 Personal Sound Exposure Meter

CAS.CEL-350
CAS.CEL350ISKIT
CAS.DBADGE2PRO-KIT



Intrinsically safe, noise dosimeter for measuring personal workplace noise exposure. Pin or clip to the shoulder of the person being measured. Ideal for OH&S surveys. Operating range: 65 to 140 dB. Built-in display provides status information and key measurement data. Visual "LED light" alarm when exposure levels are exceeded. Time history of noise is logged in 1 minute values of average exposure and peak value. Comes with Class 2 Calibrator for auto-calibration prior to use. Keypad can be locked. Insight software supplied for graphical display and analysis of noise history, and automatic report generation. Battery Powered, 28 hour life. Single unit(s) or a kit of 3. Also available is the **dBadge2PRO** Kit, which has the following additional features: Audio recording and Octave Band Frequency Analysis.

FOCUS ON NOISE

GLOSSARY OF TERMS

SPL	Sound Pressure Level, the basic measure of noise level, expressed in decibels
SOUND LEVEL	Sound Pressure Level with a Frequency weighting, such as dB(A)
INTEGRATING AVERAGING SOUND LEVEL METER	A Sound Level Meter which accumulates the total sound energy over a measurement period and calculates an average
ACOUSTIC CALIBRATOR	An instrument that provides a reference noise source that is used to calibrate and check the performance of a Sound Level Meter
TYPE 1	Laboratory & Field Grade for Sound Level Meters
TYPE 2	General Field Grade for Sound Level Meters
A WEIGHTING	dB(A) A-weighted noise measurements approximate to how the human ear perceives noise
C WEIGHTING	dB(C) Standard frequency weighting for sound level meters, commonly used for higher level measurements and Peak Sound Pressure levels
PEAK	The maximum value reached by the sound pressure at any instant during a measurement period (in dB usually with C frequency weighting)
1:1 OCTAVE BAND FILTERS	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit
1:3 OCTAVE BAND FILTERS	Single 1:1 Octave bands divided into three parts
LA10	The noise level exceeded for 10% of the measurement period with 'A' frequency weighting calculated by statistical analysis
LA90	The noise level exceeded for 90% of the measurement period with 'A' frequency weighting calculated by statistical analysis
LAE	Sound Exposure Level (SEL) with 'A' frequency weighting
LCE	Sound Exposure Level (SEL) with 'C' frequency weighting
LCPEAK	Peak Sound pressure level with 'C' frequency weighting
LEQ	Equivalent continuous sound pressure level. A measure of the average sound pressure level during a period of time, t, in dB
LN	Statistical analysis of noise levels. The n denotes the percentage exceedence
% DOSE	The noise exposure expressed as a percentage (%) of a fixed level for 8 hours

SPOT METERING

See Rion NL-52EX/NL-52EX-RT pg. 41

Type 1 (class 1) sound level meter. This is a hand-held or tripod-mounted device to display and record instantaneous and/or short duration surveys. They will also integrate sound level readings (Leq) over a time period from 10 seconds to 1000 hrs. Commonly perform Octave analysis to determine from which frequency bands the noise is detected. Reverberation time measurement also available. Results are stored to SD card and downloaded to Excel for reporting and analysis.

PERSONAL DOSE

See CAS.CEL-350/CAS.DBADGE2PRO pg. 43

Portable noise dose logger worn by a worker (subject). The instrument is set to analyse sampled data in accordance with recognised standards such as ISO 85 (85dB criterion), ISO 90 (90dB criterion).

Results are stored internally, downloaded to a PC and automatically compiled into tamperproof reports.

Though primarily a noise dose meter they include SLM function (Class 2).

ENVIRONMENTAL LOGGING

See ARL Ngara and ARL Comms Kit pg. 43

For often prolonged exposure to the elements, environmental loggers are built to be rugged and self-contained. Housed in a weatherproof Pelican case and powered by one (or two) 12V batteries (solar power option available), supplied with locks and chains they can be left in the wild for up to a month, all the while recording data every 100ms. Common applications include baseline and post installation surveys of wind farms, traffic noise surveys, construction zone monitoring. Data is stored to USB flash drives which are hot-swappable, allowing replacement without interruption to data collection. Comms kit available to interrogate while in-situ.

POST PROCESSING

See ARL Firefly pg. 43

While Excel can perform much of this analysis on small amounts of data, the sheer amount of data collected from an environmental survey makes this a daunting task. Firefly software enables analysis of split files and from SPL-A, SPL-C, LeqA, LeqC and .wav files, produce any number of time weighted Leq statistics, Ln indices, octave and 1/3 octave statistics, and may replay any portion of .wav files.

	SPOT METERING		PERSONAL DOSE		ENVIRONMENTAL
	RION NL-52EX	RION NL-52EX-RT	CASELLA CEL-350	CASELLA DBAGE2PRO	ARL NGARA
TYPE 1 OR 2 SLM	1	1	2	2	1
OCTAVE ANALYSIS		✓		✓	✓*
REVERBERATION		✓			
LN INDICES	✓	✓			✓
LOGGING	✓	✓	✓	✓	✓
RECORDS SOUND FILES (WAV)				✓	✓
NOISE DOSE			✓	✓	
DIRECT CONFIGURATION (NO PC REQUIRED)	✓	✓	✓	✓	✓

* Using Firefly post-analysis software



RADIATION MONITORING & PROTECTION

Narda Radman Personal RF Field Radiation Monitor

NAR.RADMAN



Radman ESM-20 (2250/56/E) personal occupational limit monitor and leakage detector for monitoring RF signals in mobile, telecom, broadcast and industrial applications. A warning buzzer will produce a loud sound as soon as 50% of the maximum permissible exposure limit is exceeded. Four level indicator LEDs provide an approximate indication of the measured field strength in steps of 12.5%, 25%, 50% and 100% of the radiated power density. Frequency range H field: 27MHz to 1GHz. Frequency range E field: 1MHz to 40GHz. Earphone provided for noisy environments.

GAS ANALYSIS & MONITORING

OdaLog NO₂ & CO Area Monitor

APT.ODA7000CP



Portable multi-gas monitor for area air-quality measurement, logging or personal monitoring in areas such as car-parks, loading areas and related zones. Configured for carbon monoxide [from petrol vehicles] and nitrogen dioxide [from diesel vehicles]. Ranges CO 0-500ppm [to 1ppm] and NO₂ 0-50ppm [to 0.1ppm]. Dust and water sealed to IP66. Intrinsically safe: rated for general or mines use. Logging interval: from 1 sec to 1 hour. Logging memory: up to 500,000 readings. Integral infrared communications interface, with software and IrDA USB adaptor for configuration and download. Rechargeable: approx 7 days operation on full charge.

OdaLog H₂S Area Monitor

APT.ODALL-H2S-200



Intrinsically safe, portable H₂S gas logger designed to be located close to the source of Hydrogen Sulphide (H₂S). Often used in the wastewater industry e.g. within sewerage pumping stations, manholes and inside sewer collection lines. Robust unit, corrosion-resistant and able to log data for extended periods of time. Range: 0-200 ppm. Accuracy: 0.1 ppm 1% Full Scale. Data logging interval: from 1 second to 1 hour. Memory: Up to 42,000 data points. Software supplied for setup and data download. Battery life: up to 12 months. Rated IP66/68.

GAS ANALYSIS & MONITORING – CONT'D

Aeroqual OZG Portable Ozone Monitor

AER.500L



Portable ozone monitor suitable for indoor and outdoor air monitoring. Applications include: personal exposure monitoring, health and safety compliance, indoor air quality testing, mapping outdoor ambient ground level ozone, process monitoring and source and leak detection. Also measures temperature (0 to 40°C) and humidity (15 to 90%). 0-10ppm ozone measurement. Resolution 0.01ppm. Response Time 5s. Reading functions: Instant, minimum, maximum, average. Data logging: Up to 8,188 records (2706 incl. Temp/RH). High and low audible alarm functionality. Analog output: 0-5V. Download data to view in Excel via USB cable supplied. Software can view charts or table format. Rechargeable Lithium Battery. Weighs <460g.

HalTech HFX205 Formaldehyde Meter

HAL.HFX205



Reads and displays the formaldehyde concentration in ppm or mg/m³. Designed for use in a wide variety of applications e.g. paint, construction, dye stuffs, paper manufacture, medical, food, cleaning, synthetic resins, textile treatment, horticulture and cosmetics. Range: 0 to 100ppm. Response time: <30 seconds. Resolution: 0.01 ppm. USB interface for data download or real time monitoring. User defined excess limit warning. Self-calibrating.

Testo 330 Flue Gas Analyser

TES.330-2LL



Portable industrial flue gas analyser for gas and liquid fuel burners (not suited for solid fuels). Provides a comprehensive analysis of the heating system and logs data for analysis and reporting. 20 fuel options pre-loaded including gases, light oil, diesel etc. Measures O₂, CO, Temperature and Pressure. Calculates CO₂, Efficiency, Excess air. Probe 300mm insertion, maximum temperature 500°C. High-resolution colour display provides instantaneous values and graphic representation of tuning. EasyHeat software and Bluetooth printer supplied.



GAS ANALYSIS & MONITORING - CONT'D

**Testo 300 Longlife
Flue Gas Analyser**

TES.300-LL

NEW



Portable industrial flue gas analyser for gas, liquid, and solid fuel burners. Provides a comprehensive analysis of the heating system. Logs data for analysis and reporting. Large scratch-resistant 5" HD display with smart-touch operation. Create professional reports by pre-loading Customer information then email with the data once the testing is complete. Fuel options are natural gas, butane, propane, light oil, kerosene, heavy oil, coke, wood pellets, anthracite and coke. Measures: O₂, CO, CO₂ and Temperature. O₂: 0 to 21 vol.%. CO: 0 to 8000ppm (H₂ compensated). CO₂: calculated from O₂. Display range 0 to CO₂ max. Temperature: 1000°C maximum. Display instantaneous values, trending function as well as logging capability for up to 1 million data points. Supplied with 335mm probe. Bluetooth data transfer to Printer (supplied). USB interface for data transfer to PC. Fully portable with Lilon battery.

**Testo 350XL Portable
Flue Gas Analyser**

TES.350XL



New generation Testo 350XL Portable Flue Gas/ Combustion Analyser for emission testing and combustion analysis. Measures O₂, CO, CO₂, NO, NO₂, and SO₂ concentrations, plus draught, temperature, excess air, and gross/net efficiency values. Ranges: O₂ 0-25% volume; CO₂ measured by NDIR 0-50% volume; CO with H₂ compensation 0-10,000 ppm with measuring-range extension and selectable dilution factor; NO 0-4,000 ppm; NO₂ 0-500 ppm; SO₂ 0-5,000 ppm. Probes 335mm and 670mm insertion, maximum temperature 500°C and 1000°C respectively. Bluetooth communication between analyser box, control unit and printer. Includes switch-off and rinse function for CO cell and fresh air rinse for longer term measurements. Internal memory for 250,000 readings. USB interface and software provided. Battery (2.5h) or mains powered.

CO

O₂CO₂NO_xNO₂

Testo 350

Be sure. **testo**

NEW!

SmartTouch

Testo 300

High Accuracy Testo Combustion and Flue Gas Analysis.

350 Combustion Analyser

- Gas selection: 6 gases can be used simultaneously from the 10 available in the 350 analyser box
- Long term measurements greater than 2 hours
- Bluetooth with Free App for easy engine adjustments



300 Flue Gas Analyser

- Intuitive measurement menus and the fast response Smart-Touch display - just as easy as on your smartphone.
- Including O₂ and CO sensor up to 4000ppm
- Creation of documentation directly on site and emailing of reports.
- Large 5-inch HD display



PERSONAL GAS MONITORS

INTRODUCING THE PERFECT COMBINATION...

STANDARD CONFINED SPACE PERSONAL GAS MONITOR RETROFIT "CLAMP-ON" PUMP

- Attach the Pump to complete your pre-entry tests
- Remove the Pump and it's your lightweight personal gas monitor
- Technical detail – see the facing page.....
- Immediately available, bump tested, Overnight NZ wide delivery
- Absolutely no need to take any Health and Safety risks!



GAS ANALYSIS & MONITORING - CONT'D

MX4 Ventis Personal Gas Monitor

ISC.MX4



Personal gas monitors for use in hazardous areas and confined spaces, designed to simultaneously and continuously monitor for four gases: Oxygen, Carbon Monoxide, Hydrogen Sulphide, and Combustible gas (LEL). Alarm limits set to Department of Labour Workplace Exposure Standard. Alarms include audible (95dB), vibrating and screen alerts. Weight: 182g. Impact resistant housing. Li-Ion battery for up to 12hr continuous monitoring. Spare set of batteries included. Simple user interface. Intrinsically safe EEX IA T4 rated. Continuous data-logging at 10s intervals with three month cyclic memory.

MX4 Ventis Personal Gas Monitor and Sampling Pump

ISC.VENPUMP



Personal gas monitor performing all the same functions as the above MX4, but also includes a sampling pump to test confined spaces prior to entry from a safe area. 5m tube supplied for pre-entry testing. Rated to pump up to 30m. Weight: 380g. Extended life Li-Ion battery for up to 12hr continuous monitoring. All other details as per the MX4 above.

MX4 Ventis Slide-on Pump

ISC.MX4PUMP



The Ventis slide-on pump attaches to the ISC MX4 pump for testing confined spaces prior to entry. Use this slide-on pump to complete the pre-entry tests, then remove the pump and you have a personal gas monitor for use in hazardous areas and confined spaces. 5m tube supplied for pre-entry testing. Rated to pump up to 15m. Li-Ion battery for up to 18hrs continuous use.

PERSONAL SAFETY EQUIPMENT



ENVIRONMENT

Hioki Temperature and Humidity Loggers

- Logs temperature -40°C to 85°C and humidity 0 to 100% RH
- Wide range of applications: place loggers at multiple points in an area e.g. warehouse or factory

Hobo 5 Channel Temperature Logger

- Logs temperature by 4 type K thermocouples -260°C to 980°C
- Typical use is to place thermocouple ends in hot or cold environments to check uniformity of temperature at different points e.g. ovens, concrete

DustTrak Airborne Particle Monitor

- Portable aerosol monitor that measures and logs total air particle concentrations
- Detects potential problems with airborne contaminants such as dust, smoke, fumes and mists
- Used for spot measurements and also continuous unattended monitoring at pre-set recording intervals
- Software supplied for reporting

GAS

ISC Ventis Personal Gas Monitor

- Designed for use in hazardous areas and confined spaces
- Sampling pump option for pre-entry checks
- Sensors detect: combustible gas (LEL), Oxygen, Carbon Monoxide and Hydrogen Sulphide
- Alarms: vibration, alarm, screen alerts & flashing lights

HalTech Formaldehyde Meter

- Reads and displays the formaldehyde concentration in ppm to help establish, and log, potential risk
- Commonly found in textiles, paper products and industries using resins

Odalog NO₂ and CO Area Monitor

- Measures and logs carbon monoxide and nitrogen dioxide
- Typically used in car parks, loading areas, mines and related zones
- IP66 and Intrinsically safe
- Logs readings for later download

Odalog H₂S Area Monitor

- Measures H₂S
- Often used in wastewater industry
- IP66/68 and intrinsically safe

Aeroqual OZG Portable Ozone Monitor

- 0 – 10ppm ozone monitor
- Suitable for indoor or outdoor use

TSI Q-Trak Indoor Air Quality Monitor

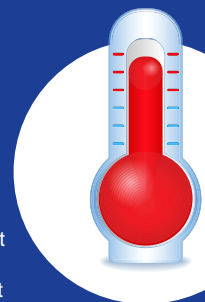
- Monitors CO or VOC and temperature, humidity and carbon dioxide
- Logs data with intervals of 1 second to 1 hour
- Software included for analysis and reporting



HEAT STRESS

QUESTemp II Personal Heat Stress Monitor

- Worn by the user to detect their physiological heat response to their work environment
- Temperature range: 32° to 40°C
- User-selected alarm trip points, audio alert when triggered
- Minute by minute data logging. Download for permanent record



LIGHT

Hioki Lux Digital Illuminance Meter

- Accurate, reliable instrument measuring Lux in 5 ranges (0-20 through 0-200,000)
- Delay function facilitates taking readings in very low light
- Head can be separated for remote readings
- Enables lighting checks to ensure Department of Labour guidelines are met
- IANZ Calibration

Topcon Luminance Meter

- Measures reflected light of any surface or through any transparent material (transmission)
- Can measure from LCDs, OLEDs, LEDs and robotic sensors
- Applications include street, tunnel, airport and medical lighting

RADIATION

Bell 4190 Gauss/Tesla Meter

- Detects magnetic field emissions in both commercial and domestic environments
- Examples include from overhead AC power lines, video display terminals, office equipment, household appliances and electrical and electronic equipment



Radman Personal Radiation Monitor

- Personal monitor and leakage detector for high frequency electromagnetic fields
- Audible and visual alarm when pre-set levels triggered
- Typically used when working on radio antennas and cell phone towers

HPI Cypher 5000 Digital Radiation Alert Monitor

- Alpha, Beta, Gamma and X-ray radiation monitor
- Used to check for naturally occurring radiation (NORM)
- Also in industrial, mining, environmental (eg soils) and remedial applications

NOISE

Casella Personal Noise Dose Meter

- Measures personal workplace noise exposure
- Worn by the user
- Set-up to international standards, but also customisable
- Logs data, software included for downloading and reporting



Rion NL-52EX Sound Level Meter

- Ideal for spot metering of sound levels
- Precision, hand-held portable unit
- Measures decibel range 25 to 138dB



WATER QUALITY

YSI Professional Plus pH, Salinity & Conductivity Meter

YSI.PROPLUS



Multi use instrument. Supplied with temperature, pH, Conductivity and Salinity sensors. 2000 data-set memory with GLP event logging. Interval or single event logging capability. Rugged construction with IP67 waterproof case. The meter incorporates a back lit display and keypad. The graphic display comes with a detailed Help. Temperature range: -5° to 70°C. Conductivity range: 0 to 200 mS/cm (autorange), Accuracy: $\pm 0.5\%$ of reading or 0.001mS/cm whichever is greater (20m cable). Salinity: range 0 to 70 ppt, Accuracy: $\pm 1.0\%$ of reading or 0.1ppt whichever is greater. pH: range 0 to 14 units, Accuracy: ± 0.2 units. 20 m cable with probe.

YSI ProSolo Optical Dissolved Oxygen and Conductivity Meter

YSI.PROSOLOODCT



Measures dissolved oxygen (DO) in mg/L or percent saturation, and Conductivity. Also provides simultaneous readings of O₂ & temperature. Dissolved O₂ readings are automatically compensated for temperature. Useful for any application requiring accurate, real-time salinity-compensated DO measurements. DO Range: 0 to 50 mg/L. DO Accuracy: 0 to 20 mg/L ± 0.1 mg/L or $\pm 1\%$ of reading, whichever is greater; 20 to 50 mg/L $\pm 8\%$ of the reading. Conductivity Range: 0 to 200 mS/cm. Temperature Range: -5° to 70°C. 100,000 data-set memory. 10 metre cable with probe.

YSI Optical Dissolved Oxygen Meter

YSI.PROODO



Measures dissolved oxygen (DO) in mg/L or percent saturation. Provides simultaneous readings of O₂ & temperature. Dissolved O₂ readings are automatically compensated for temperature. Range: 0 to 50 mg/L. Accuracy: 0 to 20 mg/L ± 0.1 mg/L or $\pm 1\%$ of reading, whichever is greater; 20 to 50 mg/L $\pm 15\%$ of the reading. Temperature Range: -5° to 70°C. 5,000 data-set memory. 10 metre cable with probe.

AIR FLOW MEASURING / AIR QUALITY

Testo 635-2 Humidity, Temperature & Dew Point Meter

TES.635-2



Portable Humidity & Temperature meter, with calculated channels and logging. Calculating channels include Dew Point, Delta temperature and Psychrometric temperature. 10,000 point logging capacity for spot readings and/or automated reading at intervals from 1s to 24hr. Thermocouple input. Temperature range: -20° to 125°C. RH range 0 to 100%. USB interface, cable and software for downloading. Battery powered.

Testo Precision Pressure Dew Point Probe

TES.06369836



Optional extra for Testo 635-2 Dew Point Meter. High precision dew point probe designed for use in extreme conditions including dew point down to -60°C, temperature down to -20°C and pressure to 15Bar. Sensor: testo® ceramic sensor. Measuring range: 0 to 100%RH. Pressure dew point tpd: -60° to +50°C tpd. Pressure range: Overpressure to 15 bar. Accuracy temperature: $\pm 0.4^\circ\text{C}$. Resolution: 0.1%RH / 0.1°C. Temperature range: Probe: -20° to +50°C, Instrument: 0 to +40°C. Response time: 1 to 5 min (typically 2 min).

Vaisala DM70 Handheld Dewpoint Meter

VAI.DM70



High precision dew point meter and probe designed for use in extreme conditions including dew point down to -70°C, temperature down to -10° and pressure to 20Bar. The probe may be inserted directly into pressurized processes, and it responds rapidly from ambient to process conditions. Typical industrial dew point applications include compressed air, sealed units e.g. transformers, metal treatment, manufacturing processes as well as food and plastics drying. DMP74B Probe Dew Point range: -70° ~ +30°C; Accuracy: $\pm 2^\circ\text{C}$. Temperature range: -10° ~ +60°C; Accuracy: $\pm 0.2^\circ\text{C}$. Operating range: Temperature: -10° ~ +40°C; Humidity: 0 to 100% RH. Response Time: -60° to 0°C - 10 to 20 sec; 0 to 30°C - 1 to 6 min, typical 2 min. Resolution: 0.01% RH; 0.01°C. Logging capacity: 2,700 data points. Logging interval: 1s to 12h. Data can be logged and transferred to a PC via USB using MI70 Link software supplied. IP Rating: Meter IP54; Probe IP65. Battery Life: up to 48 hours.



Personal Monitors



Dust Systems



Dust Monitors



IAQ Meters



Respirator Fit Testers



Ventilation Testing



Diesel Emissions



Air Balancing Hoods



Duct Leakage Testers

Whatever your monitoring needs,
we have your solution.



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Exclusive
Channel
Partner of:



AIR FLOW MEASURING / AIR QUALITY - CONT'D

TSI Air Flow 100mm Vane Anemometer

TSI.5725



Handheld Ø100mm Vane Anemometer with articulating extension handle. Measures air velocity and temperature, calculates volumetric flow. Ideally suited to measuring air flow in an open environment e.g. air conditioning outlets and/or wind speed. Reversible 100mm head allows readings at supply and extract grilles. Velocity range: 0.25 to 30 m/s. Accuracy: $\pm 1\%$ of reading or ± 0.02 m/s. Temperature range: 0° to 60°C . Accuracy: $\pm 0.5^{\circ}\text{C}$, can be used at -30°C for short periods. Features a Sweep Mode for one overall measurement. Can log, store and recall data and download to PC via USB interface. Stores 12,700+ samples. Optional air flow hoods available.

TSI 9545A Hot Wire Anemometer

TSI.9545A



Hot wire anemometer with digital display. Measures air velocity, temperature and humidity; and calculates flow, dew point and wet bulb temperature. Velocity measurement: 0 to 30 m/s, temperature range: -10° to 60°C , Relative humidity range: 0 to 95%. Probe: 1016mm when fully extended, Ø7mm at tip and Ø13mm at base, the last 197mm is articulated. Data captures 12,700+ samples and has automatic logging. LogDat2 downloading software included.

TSI 7575 Q-Trak Indoor Air Quality Monitor with Logging

TSI.7575

TSI.7575-VOC



Portable indoor air quality meter/logger. Measures either CO or low concentration (ppb) VOC. Both models also simultaneously measure temperature, humidity, CO₂ & Barometric pressure and calculate percent outside air, wet bulb and dew point temperatures. 5 line display. Temperature range: 0 to 60°C , Accuracy $\pm 0.5^{\circ}\text{C}$. Relative Humidity: 5 to 95%, Accuracy $\pm 3\%$ RH. CO: 0 to 500 ppm. VOC: 10 to 20,000 ppb. Accuracy $\pm 3\%$ +3 ppm whichever is greater. CO₂: 0 to 5000 ppm. Accuracy $\pm 3\%$. Barometric pressure: 517 to 930mm Hg $\pm 2\%$. Logging intervals from 1s to 1hr. 56,000 data point data logger. Probe: 19mm diameter x 178mm length. Supplied with software and USB cable for downloading results. AC or battery powered.



AIR FLOW MEASURING / AIR QUALITY - CONT'D

TSI DustTrak II Desktop Aerosol MonitorTSI.8530
TSI.8535

Portable laser photometer that measures and logs total particle concentrations in the air. Detects potential problems with airborne contaminants e.g. dust, smoke, fumes and mists. Features include real-time spot measurements, logging with user selectable start-stop times and recording intervals for unattended monitoring. Suitable for clean office settings and harsh industrial workplaces, construction and environmental sites, and other outdoor applications with environmental enclosure (TSI.8535). Range: 0.001 to 400 mg/m³. Particle size range: 0.1–10µm. Resolution: ± 0.1% of reading or 0.001 mg/m³ whichever is greater. Zero stability: ±0.002 mg/m³ per 24 hours at 10 sec time constraint. Flow rate: 3.0L/min set at factory, 1.4 to 3.0 L/min user adjustable. Sensor type: 90° light scattering. Data Logging: 5MB internal memory (>60,000 data points) and USB. 45 days at 1 min logging interval. Log interval: 1 second to 1 hour, user adjustable. Battery and mains powered. **TSI.8535** custom designed weatherproof enclosure for use outdoors also available.

TSI 8533 DustTrak DRX Desktop Aerosol Monitor

TSI.8533



Portable dust and particle monitor, light scatter photometer. Measure concentrations corresponding to PM1, PM2.5, PM4 (Respirable) and PM10. Aerosol concentrations .001 to 150mg/m³. Used for industrial/occupational hygiene surveys, indoor air quality monitoring, outdoor environmental monitoring, baseline trending and screening etc. Will size particles in four sizes PM1, PM2.5, PM4 and PM10.

Aeroqual Dust Sentry Outdoor Dust MonitorAER.DUST-SENTRY
AER.DUST-WEATHER

Robust weather-proof (lockable) dust monitor. Records the data and stores the information in the cloud, enabling real-time access. Equipped with a PM10 filter (other filters can be supplied if required). Range 0–60mg/m³ accuracy ±/-2ug/m³ + 5% of reading. Lowest detection limit <1ug/m³. Set email/SMS alerts on parameters to easily identify exceedances. Requires AC power. Ideally suited for perimeter/fenceline monitoring for a variety of applications e.g. construction, deconstruction, waste management, landfill, roadsides, base level monitoring to meet consent conditions etc. Weather station available as an optional extra.

AIR FLOW MEASURING / AIR QUALITY - CONT'D

Testo 420 Accubalance BalometerTES.420
TES.420TRIPOD

Testo 420 Air balancing hood, 610 * 610mm, including removable differential pressure measuring instrument. Measures air volume flowing through registers, diffusers and grilles. Weighs only 2.9kgs. Range: 40~4000m³/hr. Differential Pressure: -120 to +120 Pa. Relative Humidity: 0 to 100%. Temperature: -20°C to 70°C. 2GB internal storage, approx. 18,000 measurements. Operating temperature: -5°C to 50°C. Bluetooth connectivity to your smartphone, android or iPhone. Optional Extra: Tripod (on wheels) available.

DPM TT550C Digital Micromanometer

DPM.TT550C



High Resolution micromanometer & accessories to measure differential air pressure and air velocity/flow. Differential pressure: 0.06 to 5000Pa in 3 ranges, plus mmH₂O, inH₂O and mBar. Applications include clean rooms, paint booths and warehouses. Accessories (incl. for high velocity & high temperature); Ellipsoidal pitot extendable to 1.2m, velocity 2 to 90m/s, for temperatures > 200°C; Straight dpm-i™ pitot, 0.27 to 30m/s, 300mm long, ideal for hard to access situations. Ane™ 100mm, 0.27 to 25 m/s, vaneless anemometer. Three pitot factors & four duct dimensions stored to simplify flow measurement. Programmable autozero frequency. Logs up to 2500 points. Software for downloading to PC. Battery powered.

Can't find something?

If you are after a particular instrument and can't find it in our catalogue or online we may still have what you are looking for or know where you can get it. We may even buy it. Give us a call, we would be happy to help.

FOCUS ON AIR FLOW

VANE ANEMOMETERS

Vane anemometers rely on air flowing through them to spin the vane proportionally to the velocity of the flow. They offer good averaging (damping) and can be used in sweep mode to determine average flow across a duct that may have varying velocity profile. Somewhat tolerant to turbulence compared to other forms of anemometer. Greatest accuracy of the three forms of anemometers.

Can sample, log, record temperature, and calculate volumetric flow given duct dimensions.

They store data internally for download to PC in fixed format or editable in Excel.

See TSI.5725 page 57

HOTWIRE ANEMOMETERS

Hotwire anemometers use the cooling effect of air passing over a heated element. They monitor the power required to maintain the temperature of the element, and this is proportional to the air flow.

Hotwire anemometers are commonly used to insert perpendicularly into ducts, being ~7mm diameter they can be used where vane anemometers can not. With an articulated head they can also be inserted longitudinally into large ducts.

Hotwire anemometers calculate air flow (volumetric rate) given duct dimensions, and temperature. They will log sample figures.

Advanced versions will log periodically, measure humidity, and calculate dewpoint and wet bulb temperature.

Data is stored internally for download to PC in fixed format or editable.

See TSI.9545A page 57

PITOT TUBES / PITOT MATRIX

Measuring air flow by pitot principal relies on the precise measurement of the differential pressure of air on the tip of the pitot (the dynamic pressure) compared to that at the reference holes (the static pressure). The measurement and subsequent calculation is performed by precision micromanometer and units of measure may include dp (Pa/mBar, kPa) velocity, and volumetric flow.

Pitot tubes are very directional so can be adversely affected by turbulence or misalignment. They do however offer extended flow measurement band (100m/s) and may be used at elevated temperatures and within ducting, making them ideal for exhaust flue measurement or measurement where hotwires would be considered dangerous (volatile gas).

The Pitot matrix works on the same principal but employs an array of static and dynamic pressure holes to allow exceptional averaging of multiple readings as is the case with an accubalance balometer.

See DPM.TT550C with pitot and vane anemometer and TES.420 with matrix, all on page 59

EXCITING NEW DEVELOPMENTS IN HVAC

Our new precision micromanometers, the TT550C from DPM, will read differential pressure as low as 0.06Pa with resolution 0.01Pa. We've coupled these with three air flow devices so not only will they read differential pressure very accurately but now air velocity in a range of situations.

- Standard ellipsoidal pitot tube kit for extreme temperature and/or flow rate
- Straight DPM-i pitot that is inserted radially into a duct. Great for lagged or spigotted ducts that a standard pitot can't access
- DPM Ane. Think of it as a 100mm vane anemometer but with no vanes! It uses a pitot matrix so there are no moving parts.

	Minimum velocity / flow	Maximum velocity / flow	Temperature tolerance	Sampling / Logging	Head dimensions	Vane Anemometer	Hotwire Anemometer	Pitot tube	Pitot matrix	Micromanometer	Benefits
DPM TT550C & ANE	0.27 m/s	25 m/s		√ / √	Ø100mm				●	●	<ul style="list-style-type: none"> no moving parts good averaging
DPM TT550C WITH DPM-I PITOT	0.27 m/s	30 m/s	100°	√ / √	Ø8mm			●		●	<ul style="list-style-type: none"> radial access to pipes low velocity pitot
DPM TT550C & ELLIPSOIDAL PITOT	2.0 m/s	90 m/s	200°	√ / √	Ø6mm			●		●	<ul style="list-style-type: none"> very high velocity elevated temperature
TSI 9545A HOTWIRE ANEMOMETER	0.1 m/s	30 m/s	60°	√ / √	Ø7mm		●				<ul style="list-style-type: none"> very low velocity may be inserted longitudinally or radially
TSI 5725 Ø100 VANE ANEMOMETER	0.25 m/s	30 m/s	60°	√ / √	Ø100mm	●					<ul style="list-style-type: none"> good averaging
TES.420 ACCUBALANCE BALOMETER	11 l/s	1100 l/s	70°	√ / √	610x610				●	●	<ul style="list-style-type: none"> Used as an air capture hood plus micromanometer



HEAT STRESS

QUESTemp® II Personal Heat Stress Monitor
QUE.TEMP11

Personal heat stress monitor provides protection by detecting the individual's physiological heat response. User-selected alarm trip points provide an audio alert to workers experiencing elevated core temperatures. Minute-by-minute data logging documents personal heat exposure. Range and accuracy: $\pm 0.1^{\circ}\text{C}$ from 32°C to 40°C . Intrinsically safe. Kit includes control module, cable to ear sensor, thermoplastic ear mould assembly, Digital Oral Thermometer, software and serial cable. Expanding foam earplugs and thermometer sheaths available as consumables.

LIQUID FLOW METERS

GE PT900 Ultrasonic Flowmeter
GE.PT900

Portable non-contact liquid flowmeter using transit-time principle, and works with a variety of fluids. Comes with wireless tablet, for configuration and display, via bluetooth communication with the transmitter. Includes clamping fixture to attach to pipes. Includes transducers for pipes 15 to 600mm diameter & temperature range -40° to 150°C . Flow velocity range 0.03 to 12.2m/s. 8GB internal memory for data logging, which can be downloaded to a PC via USB. Holds up to 32 sets of site parameters. Analog inputs compatible with temperature transmitters for energy-flow calculations. Analog 4~20mA output. Tablet provided to display velocity, volumetric and energy flow rate, totalised flow and trend data in alphanumeric and graphical formats. Thickness gauge included. Rechargeable lithium batteries for up to 18~20 hours continuous operation.

Overnight delivery
New Zealand wide

LIQUID FLOW METERS – CONT'D

PT878 2-CH TX Energy Calculation Module
PAN.2CHRT-1-2

2 channel 4-20 mA RTD transmitter and clamps. Provides the supply and return temperatures for flowing liquid when used in conjunction with the PT900 flowmeter. Temperature Range -20° to 150°C . Monitoring these temperatures allows the measurement of energy rate and consumption. A typical application is in heating & cooling systems. Powered from flowmeter.

TA-Scope Balancing Instrument
TA.SCOPE

Digital balancing instrument to measure and document differential pressure, flow, temperature and power in hydronic (cooling water) systems. Ideal for balancing new systems, trouble shooting existing systems and analysing ongoing system performance. Temperature Range: -20° to 120°C , accuracy $<0.2^{\circ}\text{C}$. Total Pressure: max 2500 kPa. Differential Pressure: 0-200 kPa, accuracy 0.1 kPa or 1%, whichever is the greatest. TA Select PC software supplied.

Polysonics Hydra SX30 Dual Frequency Doppler Liquid Flowmeter
POL.HYDRA-SX30-2

Dual frequency Doppler ultrasonic non-contact flowmeter. Designed for fluids and liquids containing particulates e.g. slurries, primary sludge, dredging and activated sludge. Comes with transducers to be strapped to outside of pipe. Velocity range: 0.06 to 5.5m/s, accuracy $\pm 1\%$ fs. Transducer temperature range: -40° to 121°C . Pipe size range: 12mm to 5m diameter. Programmable logging intervals: 30sec, 1, 5, 15, 30 and 60 min. Data logging: 90,000 points. Analog output: 4~20mA. Software for data download included. Battery powered, 24hr continuous use.

FOCUS ON ULTRASONIC LIQUID FLOW METERING

Ultrasonic liquid flow metering is a convenient method of determining liquid flow within rigid pipes. Instruments are portable, easily configured, self-powered, log data, and are non-intrusive, so no pipefitting or modification required, no need to halt production, no risk of contamination. They cater for a wide range of fluids and conditions by utilising one of two methodologies.

METHOD 1: DOPPLER EFFECT

Applications:

- Raw sewage, Primary sludge, Slurries, Carbonated Beverages, Paper pulp, Waste water, Grey water, Aerated fluids.

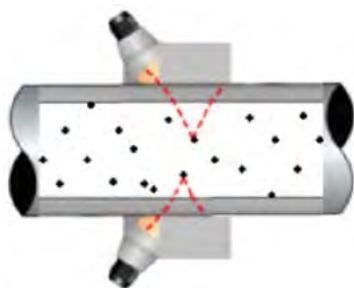
Principle: In contrast to Transit Time flowmeters (see next page), 'Dopplers' are reliant on ultrasonic pulses bouncing off targets so do require a degree of aeration or suspended (not dissolved) solids. Each transducer sends pulses which are then reflected back at a rate dependant on the speed of the moving target (bubble / solid etc). The 'Doppler Effect' is widely known for the change in pitch when an object such as a vehicle (plane etc) approaches and passes an observer. The difference between the reflected frequencies and transmitted frequencies is directly proportional to the speed of the sonic reflectors, and thus the instrument calculates the rate of liquid flow.

Applicable Model: Polysonics Hydra SX30 Doppler Liquid Flowmeter (ref p63)



Application Note:

- The Polysonics SX30 uses two transducers and dual ultrasonic frequencies to identify and eliminate noise, giving it the ability to perform in areas previously classed unsuitable for Doppler flowmeters.



METHOD 2: TRANSIT TIME – TIME OF FLIGHT

Applications:

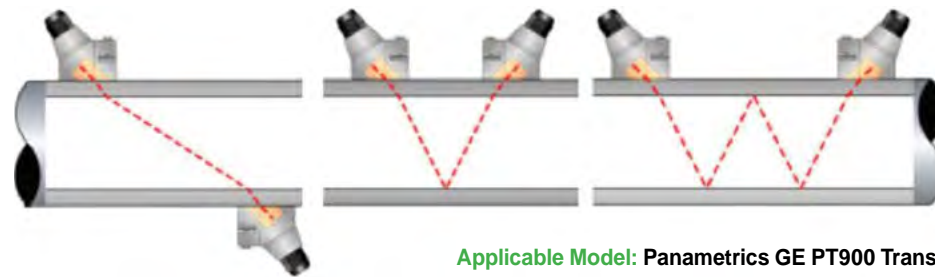
- Potable water, Wastewater, Cooling and heating water, Ultrapure water and liquids, Water/glycol solutions, Crude oil, Refined hydrocarbons, Diesel and fuel oils, Chemicals, Lubricating oils, Beverages.
- Establishing flows of water, waste, coolant, lubricant, fuel, beverages.
- Determining consumption of water, waste, coolant, lubricant ...
- Energy auditing of heat exchangers

Principle: Two transducers are coupled to the surface of rigid pipe. Each acts as a transmitter and receiver. Ultrasonic signals are sent [and received] by both transducers alternately. Sound energy in a moving liquid is carried faster when it travels in the direction

of fluid flow (downstream) than it does when it travels against fluid flow (upstream), therefore a differential in time of flight will result, and the instrument calculates from this the rate of liquid flow.

It is important that the fluid is homogenous and carries minimal solids and bubbles as these tend to scatter the sound pulses and reduce the signal strength.

Common transducer positions allow for one (Z) traverse where transducers are diametrically opposed but longitudinally spaced, two (V) traverses where the transducers are mounted on the same side of the pipe, or multiple even (W) traverses. Pipe diameter largely dictates which method is used.



Applicable Model: Panametrics GE PT900 Transit Time Liquid Flowmeter (ref p62)



Options:

- Panametrics Energy Option consisting of dual channel 4-20mA RTD transmitter and pair of RTDs, enabling measurement of supply and return temperature.
- Analogue input/output cable.



LIGHT MEASUREMENT

Hioki Digital Illuminance Meter

HIO.FT3424



Digital illuminance (lux) meter. Five measurement bands; 0.00lx through to 200,000lx. Applications include emergency, task and industrial lighting. LED lighting compatible. Response time in autorange mode 5 sec [2 sec in manual mode]. Hold and backlight function. Connecting cable allows separation of sensor and meter. Timer for delayed readings. Memory for 99 illuminance samples, downloadable to PC. Analogue output allows coupling to a data logger for automated surveys. Battery powered (up to 300hrs). Tripod mountable. Traceable calibration.

Hioki FT3425 Digital Illuminance (Lux) Meter

HIO.FT3425



The FT3425 has all the above features of the FT3424 but in addition includes: OLED compatibility Mobile app for your device, pair via Bluetooth, to record data and create reports (csv/pdf) easily and efficiently. Email reports using the app. Take pictures of drawings or upload CAD data, measured data is automatically sent to your smartphone/tablet and assign it to particular locations on drawings shown on the phone's display. IANZ Calibration.

Topcon BM-9A Luminance Meter

TOP.BM-9A



Portable luminance meter with 6-digit display for measurement of LCDs, OLEDs, LEDs, robotic sensors and various lighting installations including street, tunnel, airport and medical lighting. Can also provide transmittance measurement. Built-in keyboard for inputting correction factor and reference illuminance for deviation/percentage measurement, and also calculate luminous intensity. Comes with a 2° measuring, 5° viewing field detector. Silicon photodiode sensor with automatic 5-step or manual range selection. Built-in USB interface and analogue output. 2m extension cable to detach detector unit from display unit included. Tripod mount and battery powered. Range: 0.01 to 280,000 cd/m². Accuracy: ±2% of reading. Measuring distance: 350mm to infinity. Minimum spot diameter: 10mm.



NEED YOUR INSTRUMENT CALIBRATED?

TechRentals® is an IANZ Endorsed Calibration Laboratory



POWER MEASUREMENT
ELECTRICAL SAFETY TESTERS



ANEMOMETERS
PITOT TUBES



BIOMEDICAL TESTERS
GAS FLOW ANALYSERS



RECORDERS/LOGGERS
THERMOHYGROMETERS



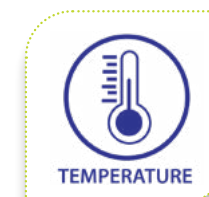
MANOMETERS
GAUGES



THERMAL/DP TYPE
ROTAMETERS



LUX METERS
PORTABLE WORK LAMPS



THERMOMETERS
RECORDERS/LOGGERS



ACCELEROMETERS
VIBRATION METERS

NON DESTRUCTIVE TESTING

Olympus 27MG Ultrasonic Thickness Gauge

OLY.27MG



Ultrasonic metal thickness gauge. Supplied with 10mm diameter D799 probe. Used with ferrous and non-ferrous alloys and some plastics. Thickness range: 1 mm to 500 mm. Resolution: 0.01 mm. Probe operating temperature: -20° to +150°C. Has fast scan MIN hold mode with 20 readings/sec & freeze function.

Defelsko PosiTector 6000 Coating Thickness Gauge

DEF.POS-6000



Measures coating thickness on both ferrous and non-ferrous metals, using magnetic and eddy current principles. Continually displays and updates average, standard deviation, min/max thickness and number of readings while measuring. HiLo limits audible & visible alerts when measurements exceed specified limits. Measurement range: 0 to 1500µm or 0 to 60 mills (selectable). Accuracy: 0-50µm +/- 1µm +1% of reading; >50µm +/-2µm +1% of reading. Resolution 0.1µm. Ready to measure – no calibration adjustment required for most applications. Weatherproof – solvent, acid, oil, water, and dust resistant. Storage: up to 100,000 readings. Built in USB, Bluetooth and Wifi for downloading readings. Supplied with external probe, carry pouch and calibration standards.

Krautkramer DynaPocket Rebound Hardness Tester

KRA.DYNAPOCKET



Based on the Leebs method HL, utilising a 3mm tungsten carbide ball. Other hardness scales can be selected, HS Shore, HB Brinell, HRB Rockwell B, HRC Rockwell C, HV Vickers and N/mm² tensile strength. Choice of nine material groups can be selected, they are: St Low-alloy/unalloyed steel and cast steel; ASt Tool steel; SSt Corrosion resistant steel; GCI Gray cast iron; NCI Nodular graphite cast iron; AL Aluminium cast alloys; brS Brass ; brZ Bronze; Cu Wrought copper alloys.

NON DESTRUCTIVE TESTING – CONT'D

Proceq Profoscope Rebar Detector

PRO.PROFOSCOPE



Portable rebar and concrete cover meter for measuring concrete thickness above steel reinforcing. This unit can also be used to locate rebar, determine its diameter and detect the midpoint between the rebars. Profoscope has excellent graphics indicating the rebars position on the screen, as the meter is moved across the concrete. Additional visual and audio signals are available to indicate when the rebar is located. Maximum working depth: 180mm. Comes with start-up test kit to enable familiarisation before travelling to site.

Testo Wood & Material Moisture Meter

TES.616



Fast and non-destructive observation of the material moisture of woods and building materials. Display is in percent by weight in comparison to the dry mass of the material. Equipped with 10 characteristics curves for soft wood, hard wood, chipboard, anhydrite screed, cement screed, lime sand brick, aerated concrete, concrete, vertical hole brick and solid brick. Measurement depth up to 5cm. Handy shape for optimum contact pressure, hold, max, min function. Illuminated digital display. Advantageous for measurements on exotic woods: non-destructive determination of wood moisture.

Proceq GPR-Live PRO Concrete Ground Penetrating Radar

PRO.GPR-LIVE-PRO

Available
Ex-Australia



Portable ground penetrating radar (GPR) for concrete testing. Conducts wide frequency spectrum measurement with Line and Area scan modes. Features a compact, wireless probe with standard rechargeable AA batteries. Proceq GPR Live PRO software supplied with iPad for easy analysis of data on-site. Additional capabilities like Pro time-slice view, 3D view, Data sharing and reporting, augmented reality and secure cloud features are available.



NON DESTRUCTIVE TESTING – CONT'D

Leica Disto D8 Digital Laser Tape Measure LEI.DISTOD8



The Disto D8 is a laser distance measuring instrument. 6.1cm colour display and 4x zoom function allows quick and easy targeting. Measures up to 200m with supplied target plate, 100m without plate. Clearly visible laser dot for indoor/outdoor use. Typical measurement accuracy $\pm 1\text{mm}$. 360° inclinometer to measure angles. Advanced trigonometrical functions. Tripod available on request.

EMC 2063 Weight Processor and Load Cells EMC.2063



A self contained weight (or force) measuring system with selection of loadcells. Typical uses include the weighing of product (in suspended hopper), measuring the force (tensile or compressive) to cause product failure, measuring tensile force resulting from wind or traffic loading. Supplied and configured with your choice of loadcell. Instantaneous display, peak hold and totaliser. Zero and tare adjustment. 70mm LED main display (legible from 6m distance). LED sub display for secondary functions. 100Hz scanning frequency. Mains or battery powered. 0-20mA analogue output for connection to data logger (supplied separately). Housed in weather resistant enclosure (including battery and logger). Cells available; Compressive button cell: 5,000kg; S-type compressive/tensile cells with eyebolts: 100kg, 1,000kg, 5,000kg & 10,000kg.

CAS ECB Counting Scales CAS.ECB150











Counting Scales that provide 2 functions; Weight: scales that weigh up to 150kgs, in 10g increments; and Counting: test weigh a sample quantity, load all items and the scales will provide the total number of items. Ideal for stocktaking. Differs slightly from illustration - a folding upstand makes this unit portable.

Why TechRentals® offer high spec thermal imagers ... **QUALITY PAYS OFF**

High resolution, high thermal sensitivity and adjustable emissivity allows the greatest possible detection of potential warning signs

Collects up to 307,200 readings simultaneously, colour coded and presented in one image - up to 30 times a second!

KEY FEATURES OF OUR THERMAL CAMERAS:

-  **High Thermal Sensitivity; as low as 0.03°C**
 - detects very fine temperature variations
-  **Adjustable span; as low as 2°C**
 - allows the spectrum of colours to be spread over just 2°C
-  **High Resolution; up to 307,200 sensors**
 - reduces the 'averaging' a thermal imager must do
 - ensures small heat sources are represented as accurately as large areas
 - allows you to stand further from the target
 - outstanding clarity to images sets you apart from the competition
 - the days of single spot measurement are over
-  **Adjustable emissivity**
 - tune the instrument to the material to ensure the temperature you read is representative
-  **IR-Fusion**
 - control of the blend of visual light and infrared energy
-  **Software supplied**
 - makes analysis and report generation powerful yet painless
 - Allows you to alter almost every aspect of the image retrospectively – a life-saver for images that can't be repeated
-  **Robust design, dependability, and ease of use**
-  **Technical support available and try them out at our office before use**



WHATEVER YOUR THERMAL IMAGING NEED WE HAVE A CAMERA FOR YOU ...

... Commissioning, Preventative maintenance, Predictive maintenance, Fault-finding, Energy auditing, Weatherproofing

THERMAL IMAGING CAMERAS

Fluke Ti480 Thermal Imaging Camera

FLU.TI480



Displays and captures surface temperature of objects. Temperature range: -20°C to 1200°C. Ruggedised touch screen for menu navigation; Laser Sharp (Dot) Auto Focus; IR Photo notes (take up to 5 digital photo's to support the thermal image); Wi-fi connectivity; Video capture and streaming. Visual camera: 5 megapixel. MultiSharp™ focus - takes multiple images and combines them to give clear, accurate focus on targets near and far; SuperResolution™ captures multiple images and combines them to create a 1280 x 960 image, 4 times the pixel data of native 640 x 480 images; 2x and 4x digital zoom. Applications include: electrical inspection, building inspections, R&D etc. 9.1cm colour display. Detector type: 320 x 240 focal plane array, uncooled microbolometer. Accuracy: $\pm 2^\circ\text{C}$ or 2% (whichever is greater). Thermal sensitivity (NETD): $\leq 0.05^\circ\text{C}$ at 30°C (50 mK). Infrared spectral band: $7.5\mu\text{m}$ to $14\mu\text{m}$. IR-Fusion® information: Control over IR and visual light blending and/or Picture in Picture. 60 seconds maximum voice recording time per image. 2GB SD memory card (store up to 1200 files). Fluke SmartView software for analysing images and creating reports.

Flir Thermal Imaging Cameras

FLI.E86

FLI.E95



-20°C to 1500°C, 464 x 348 (928 x 696 with UltraMax®) for displaying and capturing surface temperature of objects. 30 Hz sampling rate suitable for video recording and live streaming. Applications include: energy audits and building inspection, electrical surveys, mechanical applications, R&D etc. Touch screen LCD with auto-rotation. Minimum span: 2.0°C . Focus Options: Continuous, one-shot laser distance meter (LDM), one-shot contrast, manual. Time-lapse (Infrared): 10 sec to 24 hours. Digital Zoom: 1-4x continuous. Digital Camera: 5 megapixel. Thermal sensitivity FLI.E95: $\leq 0.03^\circ\text{C}$ (30mK) [FLI.E86: $\leq 0.04^\circ\text{C}$]. Quantify problems through on-screen area measurement (m^2 or ft^2). Image Modes: visual, Infrared, MSX® (FLIR's high level thermal image option), Picture-in-Picture. SD card (8 GB). 2x Li-ion batteries, approx. 2.5 hours each. Communication Interfaces: USB 2.0, Bluetooth & WiFi for live streaming and capture to tablets and smartphones. Software supplied for importing and analysing images, creating inspection reports and viewing live IR camera video.

THERMAL IMAGING CAMERAS - CONT'D

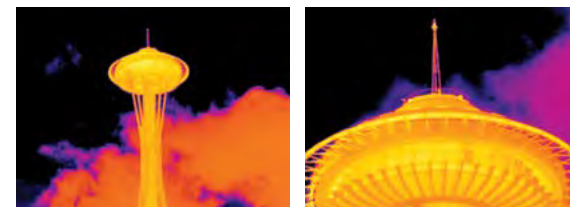
Fluke Thermal Imager 4X Lens

FLU.LENS4X



Fluke 4x Telephoto IR Smart Lens for Ti450 and Ti480 thermal cameras. Using this lens offers 2 main features: Firstly it enables images to be captured from greater distances away be it on the ground, in the air or just a safer distance. Ideal for hard to reach, energized or unsafe areas. Secondly it can detect a spot approx. 25% of the size of a standard lens, if images are taken from the same distance. Potential applications include: overhead transmission lines, power substations, tall stacks in petrochemical plants, areas too hot to get close to, hazardous and/or unsafe working areas or similar.

USING THE
4X LENS



The invisible threat...
now you can see



Fluke ii910 Precision Acoustic Imager

Quickly, easily, and safely monitor your equipment for partial discharge.

Partial discharge is a very serious issue that you would be like to be able to monitor quickly and easily. Whether you are inspecting insulators, transformers, switch gears or high voltage power lines you need to be sure that you can spot problems quickly and early. Partial discharge that goes unchecked can cause blackouts, fires, explosions, or even death from arc flashes. In addition, there is a significant monetary risk of downtime. Finally, a better way to safely detect partial discharge and prevent downtime before it occurs.



Learn more:
fluke.co/ii9xx-trg

LEAK LOCATORS/DETECTORS

UE Systems UP3000 Digital Ultrasonic Leak Detector UES.UP3000



NEW

Hand held pistol type leak detector system. Displays dB levels. A tone generator is supplied together with a stethoscope probe and a rubber focusing probe. Noise attenuating headphones provided. Interface software to download readings is also supplied. Frequency response: 35-45 kHz. Response time: <10 ms. 16 segment bar graph. Operating Temperature: 0°C to 50°C. Data storage: 400 data points.

Trotec LD6000 Leak Detection Set TRO.LD6000



Portable acoustic detection system for locating leaks in underground pipes, supplied with both a wind protected microphone and high attenuating earphones. Ideal for plumbers and drainlayers for locating leaks in underground pipes. High-resolution colour graphic touchscreen display. Numerous pre-programmed common applications for quick access. Long-term measuring with logging function, data extracted through software via USB. Battery powered 4x type LR14 C 1.5V (up to 14h non-stop & 40h normal operations). IP54 protection.

Fluke ii900 Sonic Industrial Imager FLU.ii900

Available Ex-Australia



Detects leaks in air, gas, steam and vacuum systems and displays them on a 7" LCD with capacitive touch screen. The Imager calculates a sound image which is superimposed over the visual image. The sound image is also adapted depending on the frequency selected, to filter out the background noise. Frequency range: 2kHz to 52kHz. Operating distance: up to 50 metres. Sensitivity: detects 0.005 CFM leak at 100PSI from up to 10 metres.



FOR ALL THOSE HARD
TO REACH PLACES ...

CHECK OUT OUR VIDEOSCOPES

- ▶ **Probe Diameters:** 6.0mm, 6.2mm, 25mm and 40mm
- ▶ **Insertion Lengths:** Up to 2m and 3.5m and up to 30m
- ▶ **Lighting:** LED's on all Camera Heads
- ▶ **Viewing:** 4 way pan and tilt or 120° orientation
- ▶ **Waterproof Probes**
- ▶ **Display:** View results on Screen
- ▶ **Storage:** Log images/video for later download
- ▶ **Totally Portable Systems**



ENDOSCOPES

Wohler VIS350 Push Camera Inspection System WOH.VIS350



Fully integrated and self-contained portable push-rod inspection camera system for the internal inspection of pipes, ducts, chimneys, drains, voids, inside/behind walls etc. Includes video display, distance marking, video recording, and a choice of two colour cameras. Camera 1: Ø40mm 120° field of view. Operated remotely from the control unit, the camera will pan 180° and rotate 360°. 12 LEDs for illumination in dark environments. IP67 rated. Camera 2: Ø25mm Views straight ahead and will not tilt or pan, but at 25mm will access spaces more confined than the first camera, and is IP68 rated. 120° field of view and LEDs for illumination in dark environments. Screen: Flip up 7" (178mm) LCD: allows for optimal viewing. Can also be removed altogether as it has 2m of cable attached to the control unit. Pushrod: 30m flexible Ø6.5mm pushrod is coiled within unit. Accepts either camera, Navigates multiple bends in pipework, and distance extended is displayed on-screen to allow mapping position of points of interest. Controller: Simple seven-button controller allows user to pan & tilt camera, and record & review video. Video: 2GB removable SD card allows up to 2.5hrs of video to be captured and analysed. "Home" button which returns the pan & rotate camera back to horizontal and straight-ahead. Inclination and rotation indication. 8.9kHz transmitter built into both cameras, for use with the Wohler L200 locator, to pinpoint the camera head. Power: DC powered through AC adapter plus two 45min NiMH batteries offering 1.5hrs of inspection between charges.

Wohler L200 Locator WOH.L200



Wohler L200 locator is a lightweight receiver for graphically and audibly locating the head of the Wohler VIS350 inspection camera whether underground, in walls, under floors or in a roof space. It is attached to a telescopic handle and moved across the surface to pinpoint the camera beneath. Detects 8.9kHz. Bright LED display. Battery powered with charger. Supplied with headphones.

ENDOSCOPES – CONT'D

Olympus Iplex GL 3.5m x 6mm Handheld Endoscope OLY.IPLEX-GL 3.5-6



Olympus IPLEX G Lite 4 way articulating industrial endoscope with 3.5 meter probe. Integrated control unit and touch screen LCD monitor, with intuitive icons for menu control, allows one handed operation. Lightweight and portable this endoscope is designed to provide quick and easy inspections of difficult to reach areas. Images and/or video is stored to an SD card, for later download. Compliant to IP65. The insertion probe can be used underwater, up to 3.5m. Insertion tube length: 3.5m. Tube Diameter: 6mm. Articulation: 4 Way, each 150°. Depth of view: 19+ mm. Field of view: 120°. 5x seamless digital zoom. 60fps for smooth video and still images. Lighting: multiple ultra-high intensity LED's and high beam mode for extra-bright illumination. Insertion Tube Operating Temperature In Air: -25° to 100°C. Insertion Tube Operating Temperature In Water: 10° to 30°C. Battery powered, 90 min life. Spare battery and AC adaptor included.

Olympus IVO620C Endoscope OLY.IVO620C



Olympus 4 way articulating industrial endoscope with 2 metre probe. The probe has high intensity LED lights, and 8 brightness settings. Images are stored to an SD card, for later download. Lightweight and portable this touch screen endoscope provides quick and easy inspections of difficult to reach areas. Insertion probe can be used underwater. Insertion tube length: 2m. Tube Diameter: 6.2mm. Articulation: 4 Way, each 120°. Field of View: 90°. Depth of view: 12 ~ 150mm. Operating Temperature In Air: -25° to 80°C. Operating Temperature In Water: 10° to 30°C. Battery powered, 120 min life. Spare battery included.

If you don't see what you are after, or unsure what you need, please call – expert advice is on hand

Solutions for Critical Assets



About Olympus

Olympus designs, manufactures, and globally markets a range of innovative non-destructive testing, remote visual inspection instruments developed with a commitment to technology, design, and user friendliness.

These products are used for inspection and maintenance in industrial and research fields ranging from aerospace and energy to transportation and manufacturing. Olympus instruments contribute to product quality and add to the safety of infrastructure and facilities. Olympus has earned industry-wide reputations for providing cost-effective solutions and excellent support and customer service.

Solutions

- Corrosion Testing
- Weld Inspection
- Security
- Flaw Detection
- Thickness Measurements
- Automated Testing
- Image Capture
- Material Identification

Technologies



Ultrasound



Ultrasound
Phased Array



Remote Visual
Inspection



XRF/XRD



Eddy Current /
Eddy Current Array



Microscopy
Solutions



WHEN YOU HAVE THE NEED FOR S-P-E-E-D...

Nothing comes close to the high speed video solution we've developed.

- The centrepiece of the solution is the **camera and display unit**

Olympus i-Speed 3: 2000 frames per second at 1280x1024 10bit colour, up to 150,000fps at reduced resolution. 8GB onboard memory and Gigabit Ethernet. F Mount lenses from 24mm macro to 240mm telephoto

Olympus Controller Unit 8.4" vivid display and camera controls. Image Manipulation includes Zoom/Pan/etc and measurement of distance, speed, acceleration etc

- You need to control that power so we've sourced industry renowned **tripod and video head**

Manfrotto 545 aluminium tripod. Maximum stability and control

Manfrotto 509 Ø100mm fluid head. Counterbalance control and variable drag control ensures movement as smooth as silk

- And at a shutter speed of 1µs you need LOTS of **light**

Comer CM5500K high efficiency LED array. 5500 lux at 1m. Colour temperature 5600K to 3200K. Godox 200W / 20,000 lux light also available.

High speed production • Destructive testing • Research & Development
Ballistics • Sports Analysis • Nature photography • Special effects

What is YOUR need for SPEED ?

HIGH SPEED CAMERA

Olympus i-Speed3 High Speed Camera OLY.ISPEED3



Complete kit supplied including Olympus i-Speed3 video camera, 8.4" LCD display/control unit, lenses, lighting array, tripod & head. Maximum resolution: 2000 frames/sec at 1280x1024, up to 150,000 fps at lower resolutions. Display unit controls the camera & reviews footage, analyse distance, speed, acceleration etc. Manfrotto tripod & head for stability & control. Comer LED lighting array & stand. Godox 200W / 20,000 lux light also available. 10bit colour or monochrome. Maximum shutter speed: 1 µs. Storage: 8GB. CF Card or Gigabit Ethernet file transfer. Cyclic memory & triggering methods including pickle switch & sensed movement. Four F-mount lenses: 24, 50, 105 & 75 to 240mm. Tripod counterbalance control & variable drag control of pan (-60° to 90°) & tilt (360°). Light output up to 5500 lux adjustable colour temperature. All battery or mains powered.

PRESSURE TRANSDUCERS

Endress & Hauser Pressure Transducers

E&H.PMP-1BAR
E&H.PMP-10BAR
E&H.PMP-100BAR
JUM.1030-0-10BAR



Pressure transducer with flushable diaphragm. Accuracy: 0.5% of FS. Operating temp: E&H -25°~70°C; JUM -40° to 85°C. Response time is 90% of FS: E&H 20ms; JUM 30ms. Output: 4~20mA. Pressure connection: E&H 1/2"NPT; JUM 1/4"NPT.

PRESSURE GAUGES / RECORDERS

Crystal XP2i Digital Gauge & Logger

CEC.20BAR
CEC.30BAR
CEC.140BAR
CEC.700BAR



Two tools in one; high accuracy pressure gauge and pressure data logger. Four models available: 20Bar, 30Bar, 140Bar and 700Bar. IANZ calibration. Recording intervals from 1 per second to 18 hours. Records at least 3000 pressure measurements. Temperature compensated. Intrinsically safe. Software supplied for data download and analysis in Microsoft Excel. Battery powered for up to 3 months.



VIBRATION ANALYSIS

Rion VA-12 Vibration Analyser RIO.VA12



Hand-held Real-Time Vibration Analyser capable of operating as a vibration meter and as an FFT vibration frequency spectrum analyser. Measures displacement, velocity and acceleration in either Peak, RMS or Peak-to-Peak modes and stores up to 1000 data sets (SD card). In FFT mode it is capable of displaying real-time frequency analysis up to a frequency of 20kHz and resolution of 3200 spectrum lines. High resolution vibration waveform data can also be stored.

Profound Vibra+ Ground Vibration Logger PRO.VIBRA+



Designed for long term ground vibration logging, for example, demolition work, pile driving or traffic. Data can be continuously monitored and recorded to assess the vibration risk to buildings, equipment or people, in an objective manner against applicable guidelines. Meets standards for 'Vibration in buildings' - Effects on structures' and 'Effects on persons in buildings', such as DIN 4150 and DIN 45669. On-board GPRS (2G) modem that can send out alert and data e-mails. Remote alarm with flashing light. Velocity Range: 0 to 100mm/s. Enables displacement measurement in addition to velocity and acceleration. Enables FFT analysis of waveforms. Battery powered.

Profound Vibra Cloud Ground Vibration Logger PRO.VIBRA-CLOUD

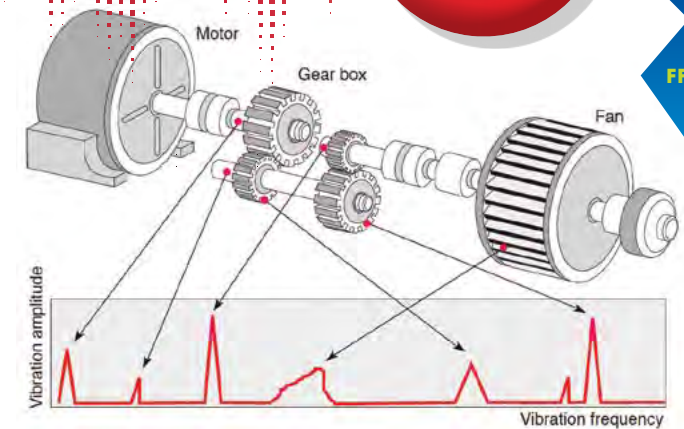


This CLOUD version has all the features of the above Vibra+ (except the remote alarm). Data captured in the cloud means it is accessed remotely for you to view and download your real-time data at any time from any location. View data as numerical and graphical or exported as a CSV file. Meets standards for 'Vibration in buildings' - Effects on structures' and 'Effects on persons in buildings', such as DIN 4150 and DIN 45669. Map feature displays location of logger. SMS alarm if pre-set vibration levels exceeded. Solar power option available.

NEED TO MEASURE VIBRATION?

**CALL
US!**

GROUND VIBRATION



FFT

PLANT VIBRATION



VIBRATION CALIBRATION



VIBRATION ANALYSIS – CONT'D

TMS Portable Vibration Calibrator inc Wobulator option

TMS.9110D-WOB



This portable vibration calibrator will test accelerometers, velocity transducers and proximity probes. It can provide 7Hz to 10kHz vibrations at 100g payload. It can also confirm alarm trip points are set properly. Includes an interface to most common accelerometers and a report generation capability. Calculates and displays test sensor sensitivity automatically. Maximum amplitude: 20g (no load). Maximum payload: 800gram. Stores up to 500 calibration records. Battery life: up to 18 hours.

PROCESS CALIBRATORS

Fluke 754 Process Calibrator with Hart Protocol

FLU.754



High accuracy, multifunction, documenting process calibrator which includes HART communication protocols for communicating with and setting up smart transmitters. DC and AC voltage measurement: 300V max, sourcing 15V max. DC current measurement: up to 110mA, sourcing 22mA max. Resistance measurement and sourcing: up to 10 kOhm max. Thermocouples E, N, J, K, T, B, R, S, PT100 & C and RTD's 2, 3 & 4 wire. Uses scaling factors for measurement & source. Autostep function. USB interface. Portable unit, battery powered.

Fluke 725 Process Calibrator

FLU.725



High accuracy multifunction process calibrator. Source and measurement of current, voltage, resistance, thermocouples and RTD's. DC voltage measurement: 30V max, sourcing 11V max. DC current measurement and sourcing: up to 24mA. Resistance measurement and sourcing: up to 3.2 kOhm max. Thermocouples E, N, J, K, T, B, R, S, PT100 & C and RTD's 2, 3 & 4 wire. Portable unit, battery powered.

PROCESS CALIBRATORS – CONT'D

Druck DPI611 2 Bar Pressure Calibrator

DRU.DPI611-07G



The DPI611 is a portable Pneumatic Pressure Calibrator, hand-held and lightweight. Full-colour touch screen interface self-contained pressure test and calibration system that calculates PASS/FAIL errors and documents result. Pressure Range: -1 to 2 Bar. Accuracy: 0.0185% FS. Creates 95% vacuum. In-built 24V energising voltage. Electrical connections for measuring mA, mV, V and detecting switch contacts. Monitors loop current to 55mA, DC loop voltage to +/-30V. Multiple different pressure scale units are available, 2 units presented on the display. Supplied with: G1/8 female and 1/8 NPT female adaptors. Sealed to IP54. Battery powered.

Druck DPI611 20 Bar Pressure Calibrator

DRU.DPI611-13G



The DPI611 is a portable Pneumatic Pressure Calibrator, hand-held and lightweight. Full-colour touch screen interface self-contained pressure test and calibration system that calculates PASS/FAIL errors and documents result. Pressure Range: -1 to 20 Bar. Accuracy: 0.0185% FS. Creates 95% vacuum. In-built 24V energising voltage. Electrical connections for measuring mA, mV, V and detecting switch contacts. Monitors loop current to 55mA, DC loop voltage to +/-30V. Multiple different pressure scale units are available, 2 units presented on the display. Supplied with: G1/8 female and 1/8 NPT female adaptors. Sealed to IP54. Battery powered.

Crystal Engineering Hydraulic Comparator

CEC.GAUGEAL



The Crystal Engineering hydraulic comparator is beautiful in its simplicity. It allows your pressure gauge to be compared against a standard. Choose a Reference Gauge...20Bar, 30Bar, 140Bar or 700BAR Hydraulic test gauge [on page 81]. All of which have IANZ endorsed calibration. Attach the Unit Under Test and the Reference Gauge, apply hydraulic fluid (water, oil, isopropyl alcohol) and then simply and easily apply pressure to chosen setpoints. Features main screw plus fine-adjust screw. Can be used with flexible hose and Ralston fittings when testing less than 350Bar.

PROCESS CALIBRATORS – CONT'D

Fluke 9103 Dry Block Temperature Calibrator -25°~140°C

FLU.9103



Dry well reference calibrator for calibration of temperature probes, including thermocouples, RTD's and PT100's. It is recommended to be used in conjunction with a calibrated reference probe: see Fluke 52 or Fluke 1523. Temperature range: -25° to 140°C. Accuracy: $\pm 0.25^\circ\text{C}$. Heating time: 18min ambient to 140°C. Cooling time: 20min ambient to -25°C. Stabilisation: 7min. Stability: $\pm 0.02^\circ\text{C}$ at -25°, $\pm 0.04^\circ\text{C}$ at 140°C. Inserts with metric holes from 3mm to 15mm. Well depth: 124mm. Supplied with PC Software and RS232 cable.

Fluke 9144 Dry Block Temperature Calibrator 50°~660°C

FLU.9144



Dry well reference calibrator for calibration of temperature probes, including thermocouples, RTD's and PT100's. It is recommended to be used in conjunction with a calibrated reference probe: see Fluke 52 or Fluke 1523. Temperature range: 50° to 660°C. Accuracy $\pm 0.35^\circ\text{C}$ 50° to 420°C; $\pm 1.0^\circ\text{C}$ 420° to 660°C. Heating time: 15min to 650°C. Cooling time: 25min from 650°C to 100°C. Stabilization time 7min. Stability: $\pm 0.04^\circ\text{C}$ 50° to 400°C; $\pm 0.05^\circ\text{C}$ above 400°C. Insert hole sizes 1/8", 3/16", 1/4", 3/8". 3mm, 4mm, 6mm, 8mm & 10mm. Well depth: 150mm. Includes PC software and interface cable.

Emerson AMS Trex Device Communicator with HART & FFbus

EME.AMS TREX-LF



The AMS Trex is an intrinsically safe HART and Foundation fieldbus device communicator. It allows technicians to configure, isolate, diagnose and repair problems while devices continue to run using the Loop power function and on board ammeter. Segment and loop diagnostic tools quickly validate loop and fieldbus segment characteristics for easy troubleshooting. This model has options L-"Device Communicator Plus Communication Module" and F-"HART + Foundation Fieldbus".

TEMPERATURE METERS / IR THERMOMETERS

Fluke 52-IANZ Digital Thermometer

FLU.52-IANZ



Type K, two channel thermometer with 3 probes supplied. High Temperature 530 x 6mm probe, IANZ calibration range: 150° to 1000 °C, accuracy: $\pm 1^\circ$. Standard insertion 150 x 3mm probe, IANZ calibration range: -20° to 124 °C (although probe can go to 300°C), accuracy: $\pm 1^\circ$. Surface contact probe, operating range -200° to 1372°C, traceable calibration range: -20° to 100°C.

Fluke 1523 IANZ Precision Handheld Thermometer

FLU.1523



Single channel Reference Thermometer with 5627A PRT (Platinum Resistance Thermometer) probe $\varnothing 1/4"$ x 12" ($\varnothing 6.35\text{mm}$ x 305mm long). Temperature Range: -30°C to +420°C. PRT resolution: 0.001°C. Trending function to determine when temperature is stable. 25 memory locations. IANZ Calibrated.

Fluke 572-2 Infrared Thermometer

FLU.572-2



Infrared Thermometer. Temperature range: -30° to 900°C. Accuracy: $\geq 0^\circ\text{C}$: $\pm 1^\circ\text{C}$ or $\pm 1\%$ of the reading, whichever is greater; $\geq -10^\circ\text{C}$ to $< 0^\circ\text{C}$: $\pm 2^\circ\text{C}$; $< -10^\circ\text{C}$: $\pm 3^\circ\text{C}$. Target size: 1/60 of distance, minimum spot size $\varnothing 19\text{mm}$, via dual laser sighting. Display resolution 0.1°C. Adjustable emissivity and predefined emissivity table. Temperature display options: Max, min, differential and average. External probe with K type thermocouple to set emissivity. Temperature range: max 400°C. Data storage: 99 recordings. Data output: USB cable and software supplied for data download, analysis and reporting.

TACHOMETER

Hioki FT3406 Digital Tachometer HIO.FT3406



Digital Tachometer with autoranging, measuring up to 100,000 RPM. Units of measure: RPM or RPS. Provided with reflective tape for optical measurement. Can be converted to direct connection with provided contact adaptor. Analogue output: 0-1Vfs. Tripod available on request. Mains and battery powered.

DATA LOGGERS

Escort Humidity & Temperature Logger – set of 5 ESC.HUM-KIT



Cost effective set of 5 temperature and humidity loggers. Relative Humidity: 0 to 100%, accuracy: $\pm 2\%$ at 25°C. Temperature: -20° to 60°C, accuracy: $\pm 0.3^\circ\text{C}$, resolution: 0.1°C. Stores 32,000 readings. Includes USB programming base and software for programming and downloading data.

Escort Five Channel Temperature Logger ESC.4 EXT



Five channel temperature logger (1 internal) with 3m long temperature sensors. Range: -20° to 60°C. Accuracy: $\pm 0.5^\circ\text{C}$. Resolution: 0.1°C. Stores 30,000 readings. Includes USB programming base and software for programming and downloading data.

Escort Humidity & Temperature Logger ESC.HUM/EXT



Temperature and Humidity Logger. Relative Humidity: 0 to 100%, accuracy of $\pm 2\%$ at 25°C. Temperature: -20° to 60°C, accuracy: $\pm 0.3^\circ\text{C}$, resolution: 0.1°C. Stores 24,000 readings. Includes USB programming base and software for programming and downloading data.

DATA LOGGERS – CONT'D

Hioki LR5001 Temperature & Humidity Loggers –Set of 5 HIO.LR5001-Kit HIO.LR5092



Compact pocket-sized loggers to record temperature and humidity. Also comes with an easy-to-see display screen. Ideally suited for both short and long-term recording with simple process to obtain data, even while loggers remain in place. Use the included software to easily graph and print data and calculate maximum, minimum, and average values. Temperature range: -40°C to 85°C. Accuracy: $\pm 0.5^\circ\text{C}$ at 0° to 35°C. Humidity range: 0% to 100% rh. Accuracy: $\pm 5\%$ rh at 20 to 30°C / 10 to 50% rh. Recording Interval: from 1 second to 60 minutes, 15 options to choose from. Storage 60,000 data points each. Continuous measurement even during battery replacement (30 second limit). Data transfer without interrupting the recording. Communication Adapter provided to house logger for wirelessly transferring data to. Then connect Adapter to PC via USB for data upload. IP54 Splash-proof rating. Battery life: Approx. 3 months with 1-minute recording intervals; Approx. 20 days with 1-second intervals. Optional extra: **Hioki LR5092 Data Collector:** Wirelessly transfer data from all 5 loggers onto this handheld unit (while they remain in place and logging) then upload the data to a PC using USB or SD card.

Hobo Five Channel Temperature Logger HOB.UX120-014M



Five channel data logger for measuring and logging temperature. One internal temperature sensor (ambient) and four 3m type K thermocouple probes supplied. Easy-to-view LCD display confirms logger operation and battery status. Programmable start, stop, and restart push buttons or start at a preset time. Comes in a weatherproof case suitable for indoor and outdoor use. Thermocouple temperature range: -260 to 980°C. LCD screen displays probe and ambient temperatures. On-screen alarms notify you if temperatures exceeds high or low thresholds. Memory: up to 1.9M readings. Software supplied for programming and download via USB.



DATA LOGGERS – CONT'D

Graphtec 10 Channel Data Logger

GRA.GL220
GRA.GL240



NEW

Portable, hand held, battery operated 10 channel data logger. 4.3" TFT colour LCD display for setting up and graphical display of logged data. DC current: 4-20mA (with shunt). DC voltage ranges: GL220: 20mV to 50V (GL240: 20mV to 100V). Thermocouples: J, K, T, R/S, B, E, N and W. 4 Pulse or Logic channels with cable supplied. Maximum sampling rate: 10ms (1 channel), 20ms (2 channels), 50ms (3-5 channels), 100ms (6-10 channels). Create your own units of measure by scaling inputs. Memory capacity: GL220: 2GB internal, USB port for external flash drive. (GL240: 4GB plus extra SD memory card slot, up to 32GB). Software supplied for customising and downloading data. USB interface.

Yokogawa MV2020 Twenty Channel Logger

YEW.MV2020



Twenty Channel Data Logger that accepts wide variety of inputs including thermocouples and RTD's. 10.4" TFT colour display for setting up and graphical display of logged data. DC voltage ranges: $\pm 20\text{mV}$ to $\pm 50\text{V}$. Maximum sampling rate: 125ms. Thermocouples: J, K, T, R, S, B, E, N, W, L, U and WRe. RTD's: Pt100 and JPt100. Triggers include alarm, external contact, time and calculated data. 400MB internal memory, 2GB CF card. Detachable input terminals for easy wiring set-up. Supports data collection over ethernet networks. 2 USB ports: 1 for external flash drive, 1 for direct PC connection.

Hioki 8841 8 Analogue, 16 Logic Channel Memory Recorder

HIO.8841



8 analogue, 16 logic (digital) channel memory recorder. 10.4" colour TFT display for setting up and waveform display. Maximum sampling rate of 1 micro-second. Analogue input channel ranges: 10mV to 50V per div, 10X div, 400V DC or 240V ACrms max. All settings and waveforms can be saved to memory card, waveforms can be saved as binary, text or bmp files. Trigger functions: level, window in, window out, voltage drop, rms level, cycle, logic pattern trigger 1, 0 or x (disregard). Input coupling: DC, GND, AC. Logic probes optional. Thermal printer fitted. On-screen help function. USB card adaptor included. Software supplied for data analysis.

CALIBRATION SERVICES



TechRentals® is an IANZ endorsed Calibration Laboratory and offers both IANZ Endorsed and Traceable Calibrations. Choose TechRentals® as your Calibration provider as we offer the following:

- ▲ A wealth of experience over a wide range of electronic test equipment, offering you superior technical advice and support
- ▲ Calibration reports can be tailored to meet the individual needs of your Quality system and the particular instrument
- ▲ Reminders are sent each year when your calibration is next due
- ▲ Calibration dates can be pre-booked to minimise down time
- ▲ One stop calibration service – most equipment is calibrated in house, but where necessary we will manage the external calibration process. Our experience in efficient and cost-effective overseas shipments and documentation will save you time and money
- ▲ In many instances we can rent you a replacement instrument while your equipment is being calibrated or repaired. Enjoy a **25% rental discount** while we complete the calibration or repair

IANZ Endorsed Calibration: Having your calibration completed by an IANZ accredited Laboratory provides you the confidence our Laboratory has undergone a rigorous independent technical review, assessing the competence and capability of personnel, calibration equipment used and the systems to support the calibration process and reports. This annual audit is performed by International Accreditation of New Zealand (IANZ), who in turn are accredited and audited by the International Laboratory Accreditation Cooperation (ILAC).

Traceable Calibrations: Certify that your instrument has been calibrated with calibrated references traceable to a national standard. The systems to support this calibration process are internally audited.



OUR NEW CALIBRATION CAPABILITIES:

Temperature and Humidity Calibrations

Typically your humidity meter calibration has been limited to one temperature point only. Not Any More! We can now calibrate these at your required humidity and temperature combinations. And we can also calibrate water activity meters.

- Temperature range: +10 to +55°C
- Relative humidity range: 5 to 95%
- Dewpoint range: -28 to +54°C
- Equipment size: up to 350 x 350 x 310mm
- Multiple loggers/recorders at the same time
- IANZ Accredited Calibrations
- Get your calibration done in New Zealand!

New Temperature Calibration Bath

Our improved IANZ endorsed capabilities are:

- Extended temperature range: -40 to +130 degrees
- Increased probe diameter (<25mm) and immersion depth (<480mm)
- Ability to calibrate multiple probes or loggers at the same time
- Lower temperature uncertainties
- IANZ Accredited Calibrations



INSTRUMENTS CALIBRATED



INSTRUMENT TYPE	IANZ ENDORSED	TRACEABLE
AC Power Quality Loggers/Analysers	✓	✓
Anemometers (vane, pitot & hotwire)	✓	✓
Balometers (HVAC flow-hoods)	✓	✓
Data Loggers	✓	✓
Electrical Safety Testers (PAT, leakage, RCD, insulation, earth bond & flash test)		✓
Function Generators	✓	✓
Humidity RH Meters & Thermohygrographs	✓	✓
Lux Meters (Lighting)		✓
Manometers & Barometers (digital & liquid incline)	✓	✓
Mass Flow Meters including Rotameters		✓
Medical Air Samplers	✓	✓
Medical Test Equipment		✓
Multi-Meters and Clamp-Meters	✓	✓
Optical Tachometers & Stroboscopes	✓	✓
Oscilloscopes		✓
Pitot Tubes – Type S and Standard	✓	✓
Process Calibrators	✓	✓
Refractometers		✓
Relay Test Sets	✓	✓
Sample Pumps Calibrators		✓
Spirometer 3L Reference Syringes		✓
Stopwatches & Timers		✓
Thermometers (Immersion & Air)	✓	✓
Thermometers (Infrared)		✓
Thermostats (Immersion & Air)	✓	✓
Tympanic Thermometer Calibrators		✓
Vibration Meters		✓



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