

# RENTAL SOLUTIONS GUIDE Test & Measurement







AUSTRALIA NEW ZEALAND MALAYSIA SINGAPORE

2023



#### Message From The CEO

TechRentals continues to thrive and grow as a leading provider of test and measurement solutions by providing quality products with flexible rental solutions from industry leading brands. We have been hard at work updating our ever-expanding fleet to ensure your rental experience exceeds expectations. Our expert technicians work diligently to find the right testing solution for your requirements and provide ongoing support throughout your rental period.

Over the past 12 months, in a fast-paced and ever-changing technological landscape, staying ahead of the curve has been more important than ever. We

have invested and launched our brand new website, which provides an improvement in user experience and improved brand image. Our new Site Assessment category was launched, with a standalone Cal Lab assembled in our Melbourne office and we are proudly the official Equipment Provider partner of the Australasian Land & Groundwater Association (ALGA).

The 2023 edition of the Rental Solutions Guide captures an extensive range of test and measurement equipment. However, if there is anything you require that isn't listed, please call us as we are constantly adding new products to the fleet. We look forward to partnering with you in the exciting year ahead.

#### Yours sincerely,

David Gallagher, CEO

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## **10 Reasons** Why You Should Rent

#### Stretch Your Budget

Test equipment is often used just some of the time. Rental allows you to pay for it only when you use it, as well as stretching your budget by accessing more equipment than you could if you purchased it outright.

#### Utilise Operating Expense

Test equipment is expensive often sitting on a shelf collecting dust – not an effective use of your valuable business capital. Rental allows you to free up cash for other parts of the business where it can be used to generate additional profits.

#### **3** Conduct Product Research Before Purchasing

It is not always clear immediately which make and model will fulfil your requirements best. Trialling it on casual rental gives you hands-on experience to guide purchase decisions.

#### Recover Costs Quickly

Generally rental payments are fully tax deductable and the expense can be recovered far more quickly than the tax allowances for ongoing asset depreciation.<sup>†</sup>

### **5** Eliminate Running Costs

The expense of maintaining, calibrating and warehousing your test and measurement equipment can be high. With rental you avoid these costs, as well as freeing up storage space within your premises.

### 6 Cost Allocation is Simplified

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.

#### **7** Respond to Sudden Demands

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

#### 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 also avoids the potential cost of owning equipment that can be quickly superseded.

#### Preserve Credit

Renting avoids the potential cost of utilising credit facilities such as an overdraft or credit cards, which are often used for equipment purchases.

#### Technical Support

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

<sup>†</sup>Please ensure you obtain independent professional taxation advice.



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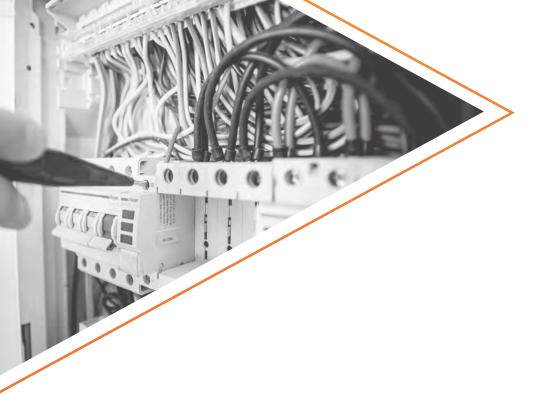
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- Pg. 25-26 E & H Field Strength Meters
- Pg. 26 EMC & Power Disturbance Simulators

### **Multimeters & Electrometers**

→ See also Data Loggers on page 100-103



#### Fluke 233 Digital Multimeter with Remote Display FLU,233 (1224) AU

The removable display has a range of 10 meters and allows the user flexibility when the meter and the display need to be in separate places. Features temperature, True-RMS AC voltage and current for accurate measurements on non-linear signals, can measure up to 1000VAC and DC, up to 10A (20A for 30seconds), and features a capacitance range of  $10,000\mu$ F.



#### Fluke 28II EX Intrinsically Safe True-RMS Multimeter FLU,28II-EX (1239) AU/MY/SG

Intrinsically Safe Multimeter is a completely sealed IP67 rated case. For use inside and outside of hazardous zones. Measures up to 1000V, 10A AC and DC with true-RMS for accurate measurement on non-linear signals. Frequency measurements to 200kHz, resistance, conductance, diode test, capacitance, and temperature. Results are displayed on the bright, 4-1/2 digit LCD (20,000 counts).



#### Fluke 87-5 Industrial True-RMS Multimeter with Thermometer FLU,87-5 (1205) MY/SG

Unique function for accurate voltage and frequency measurements on adjustable speed True-rms AC voltage and current for accurate measurements on non-linear signals. Built-in thermometer. Measures up to 1000VAC and DC. Measures up to 10A (20A for 30 seconds). 10,000uF capacitance range. Frequency to 200kHz and % duty cycle. Peak capture to record transients as fast as 250µs. 4½ digit mode.

We offer a calibration service on selected equipment. To find out more, contact us today.



#### Multimeters & Electrometers (cont'd)



### Keysight 34461A Digital Multimeter 6½ Digit Truevolt KEY,34461A MY/SG

Precision 6.5 digit multimeter. 100% drop-in 34401A compatibility, graphical views of your measurement results, long-term trends and measurement histograms for a statistical view. Control, capture and view your DMM's data on your PC. Measures noise and injected current, input bias current, AC RMS (3Hz to 300kHZ), DC and AC V (100mV to 1000V), resistance (100 $\Omega$  to 100M $\Omega$ ), frequency, period, continuity, diode (5V), current and temperature. Using TrueVolt technology the analogue to digital converter displays results on a clear 11cm hi-res display.



#### Simco-Ion FMX-004 Electrostatic Fieldmeter SIM, FMX-004 (1245) AU

Compact electrostatic fieldmeter used for locating and measuring static charges. Its pocket size and 3-button operation makes it convenient and easy to use. Auto range switching up to 30kV, digital and bar graph display with ± indicators, with audible alarm.



#### Metriso SRM3000 EPA Resistance Measuring Kit

MET,SRM3000 (1246) AU

Measuring Kit with electrodes is a digital high impedance meter used to measure point-to-point resistances and to check leakage resistances of persons, shoes, mats and floor systems in an ESD area.

### **Function Generators**

→ See also RF Signal & Sweep Generators on page 29.



#### Keysight 33612A 80MHZ 2 Channel Waveform Generator KEY,33612A (1612) AU

80MHz, 2 channel waveform generator, sine, square, pulse, ramp, triangle, Gaussian noise, PRBS and arbitrary waveforms. Capable of modulation, sweep, burst, waveform summing and combining. Maximum output into  $50\Omega$ , 1mVpp to 10Vpp. Up to 120MHz sine and Gaussian noise at <= 4 Vpp. Memory is 4M Samples deep.

### **Digital Storage Oscilloscopes**



#### Keysight DSOX3024A Oscilloscope 200MHz 4 Channels KEY,DSOX3024A (1350) AU

4 channel 200MHz digital storage oscilloscope. Sampling rate 2G/s (4G/s half-channel interleaved mode). 2Mpts memory depth, waveform update rate 1 million waveforms/s, sensitivity 1mV/div to 5V/div. Pass/fail masks can be automatically created based on an input reference waveform or on a PC then imported via USB, also store and remove waveforms via USB.



### Keysight MSO6104A 1GHz Digital Oscilloscope with Logic KEY,MSO6104A (1320) AU

1GHz 4 + 16 channel mixed signal oscilloscope (MSO). 4Gsa/s. XGA Colour display updates 100,000 waveforms/s with 256 levels intensity. 4 analogue channels & 16 logic channels. Deep memory. 8 digit frequency counter function. Triggering includes video, HDTV, I2C, SPI, LIN, CAN, & USB. FFT analysis included. LAN, USB, GPIB, & XGA interfaces standard. NATA Certified.



Learning to operate unfamiliar equipment costs you time and can lead to errors. Save time and reduce your real costs. Discover our Configuration and Download solutions on page 79.

#### Digital Storage Oscilloscopes (cont'd)



#### Fluke 200MHz 4 Channel ScopeMeter 190-204/S FLU,SCOPEMETER 204 (1361) AU/MY/SG

200MHz 2.5GS/s (1.25GS/s 4ch), 4 channel digital oscilloscope. Features Persistence mode, Connect-and-View triggering for intelligent, automatic triggering on fast slow and complex signals. 10,000 points per trace waveform capture (scope mode), USB host port for direct data storage, automatic capture and replay of 100 screens. Roll mode gives 30,000 points per channel for low frequency signal analysis, TrendPlot paperless recorder. Isolated inputs and safety rating CAT III 1000V/CAT IV 600V.

### **LCR Meters**



#### Hioki 3532-50 5MHz LCR Meter HIO, LCR 3532-50 (1290) AU

Frequency range 42Hz to 5MHz. 5ms high speed measurements. Basic accuracy of ±0.08%. Memory for 30 sets of measurement conditions, including comparator values. Includes correlation correction function, interactive touch panel operation and enlarged display function. Applications include laboratory use for evaluation of operating characteristics, production line use or R&D. Measurement data captured by a personal computer can be displayed graphically by using standard spreadsheet software.

### **Probes and Accessories**



### Fluke 80i-110s AC/DC Current Probe

Current clamp for oscilloscopes which uses a Hall effect cell for the measurement of DC or AC current. Measures currents from 0.05 to 100A peak. A thumbwheel can be used to reset zero for adaption to the measurement environment. The clamp can be used with any measurement instrument which has a BNC input and an impedance of  $1M\Omega$ , <100pF. Maximum conductor diameter, 11.8mm.

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### **DC Power Supplies & Loads**

BK MR PVS 600-8.5 Power Supply BK PVS 600-8.5 MB (8121) AU

Multi-ranging DC power supply allowing any combination of the rated 600 V and 8.5 A up to the maximum output power of 3000 W.



#### Keysight N6702A Low Profile Modular Power System Mainframe KEY.N6702A MY/SG

Modular power system mainframe comes with 2 x N6762A precision DC power modules (100 watts), 1U high. Each modules capable of 0 to 50V, 0 to 3A. GPIB, LAN, and USB, interfaces standard, and LXI compliance.



#### Kikusui PLZ1003W Electronic Load

#### KIK,PLZ1003W (8110) AU

1000 watt electronic load. Voltage range 1.5 to 120V. Current range 0 to 200A. Provides constant current, resistance, voltage, and power modes (CC/CV/CR/CP). A multiple number of setting conditions can be stored in memory. Sequence function allows setting conditions to be changed automatically. Applications include characteristic or lifetime tests of a variety of DC voltage sources such as switching power supplies, primary and secondary batteries or as burn in loads.



#### Sorensen DCS 150V, 20A DC Power Supply SOR,DCS150-20E (8130) AU

0-150V, 20A, 3KW. Applications range from manufacturing test and burn-in of automotive components, avionics electronics, telecommunications and consumer products to beam steering, process control, laboratory R&D use. Remote control via LAN or RS232.



#### Sorensen DCS60-50, 60V 50A Power Supply SOR,DCS60-50 (8140) AU

60V 50A DC 60V 50A DC supply provides 3kW of DC power for test and measurement applications. Ideal for research, product development, production test, Automated Test Equipment (ATE), electroplating, burn-in, and other bulk power applications. Provides the user the ability to operate multiple units in series or parallel and is subject to regulatory approvals CE, CSA. Has protection features such as over voltage protection, current limit, and over temperature protection. Features: Constant voltage with automatic crossover and mode indication. Constant current. Remote sense, 1 V line loss compensation. Isolated analogue programming.



#### BK 1902B DC Power Supply BK,1902B MY/SG

Multi-ranging laboratory grade DC Power Supply. Voltage 1-60 V and Current 0 - 15A. USB interface with PC software for remote control and external timed programming. Maximum output power of 900 W.

### **TV Test Equipment**

→ See also Network Analysers/Antenna and Cable Test on page 31-33.



#### Rover HD Tab 7 EVO Lite CATV, SAT & TV Analyser ROV,HD TAB 7 LITE (1730) AU

For the installation, maintenance and commissioning of terrestrial, satellite and cable TV systems DVB T/C/S/S2. The HD TAB 7 LITE can perform measurements that include power level, MER, BER, noise margin, SNR, Error Constellation chart, network and streams IDs as well as MPEG4 HD programs for DVB-T & C. Also includes ROVER AUTODISCOVERY system which automatically detects and selects analogue and digital COFDM/QAM TV signals in both measurement and spectrum mode. Foxtel approved.modifications and data logging.

### **Electronic Calibrators**

→ See also Industrial Process Calibrators on page 90-97.



Fluke 5500A Multi Product Calibrator with NATA Calibration FLU,5500A-NATA (1660) AU FLU,5500A MY/SG

Calibrator sources direct voltage & current, alternating voltage and current, with multiple waveforms and harmonics, 2 simultaneous voltage outputs or voltage & current. Simulates power with phase control, resistance, capacitance, thermocouples and RTDs. Selectable ranges include the following outputs Vdc from 0 to 1.02kV, Vac from 1mV to 1.02kV with output from 10Hz to 500kHz. AC current from 0.01 $\mu$ A to 11A with output from 10Hz to 10kHz. DC current from 0 to 11A. Resistance values from short circuit to 330M $\Omega$ . Capacitance values from 330pF to 1,100 $\mu$ F. Temperature t/c B, C, E, J, K, L, N, R, S, T, U, RTD Pt385 100 $\Omega$ , Pt3926 100 $\Omega$ , Pt3916 100 $\Omega$ , Pt385 200 $\Omega$ , Pt385 500 $\Omega$ , Pt385 1k $\Omega$ , Ni120 120 $\Omega$  and, Cu427 10 $\Omega$ .



#### Genrad 1433F 111kΩ 7 Decade Resistance Box GR 1433F-NATA (1680) AU/MY/SG

Seven decades by  $0.01\Omega$  to  $111k\Omega$ . Accuracy  $0.01\% + 0.002\Omega$ . Useful for platinum resistance thermometer calibration. NATA calibrated.



#### IET Resistance Temperature Detector Simulator RTD-250 GR,RTD-250 (1658) AU

20 to 1,121.10  $\Omega$ , 5 decades, accuracy (ppm) 200, resolution 10 m  $\Omega$ .

### **Gauss/Tesla Meters**



#### FW Bell Gauss/Tesla Meter BEL,4190 (1969) AU

Handheld digital ELF gauss meter. Maintains accuracy regardless of orientation. 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 0.1mG/.01 uT.



#### FW Bell 5180 Gauss/Tesla Meter BEL,5180 (1960) AU/MY/SG

Magnetic measuring equipment, portable gaussmeter. Built-in software eliminates the need for complex calibration procedures. Key features include Auto Zero, Min/Max/Peak Hold, Auto Range and Relative Mode. Allows the user to select Gauss, Tesla or Ampere/Meter readings. With Hall effect transverse probe STD18-0404. Frequency bandwidth DC - 20kHz, range from 0 up to 30 kG with a basic accuracy of 1.1% (FS). Analogue output (+/-3V FS) and USB interface. Battery operated.

### **E & H Field Strength Meters**

 $\rightarrow$  See also Radiation Monitoring & Protection on page 150.



#### Holaday HI-3604 E & H Survey Meter ELF HOL,HI-3604 (1945) AU/MY/SG

Low frequency field meter. Designed to evaluate electric and magnetic fields associated with 50Hz power lines. Frequency range 30 to 2,000Hz. Measures magnetic fields from 0.1 milligauss to 20 gauss. Measures electric fields from 1 volt/meter to 200 kilovolts/ meter. LCD display. 127 reading data memory.



#### Holaday HI-3627 Magnetic Field Meter HOL.HI-3627 (1980) AU

Three orthogonal field sensors. Dynamic range 0.2mG~20G. True RMS detection. Frequency range 5Hz to 2kHz with an in-built 30Hz high pass filter. Meets requirements of the Swedish protocol and the IEEE P-1140 protocol.

New items are being added to the inventory constantly, so if you can't see what you're looking for, please call us on **1800 632 652**.



#### E & H Field Strength Meters (cont'd)



0.515 =

#### Narda NBM-520 'E' Field Strength Meter and Probe EF1891 NAR,NBM-520 (1925) MY/SG

Field strength meter with EF1891 'E' field probe. Detects electric fields from 3 MHz to 18 GHz, covering fields generated by broadcasting, telecoms, radar and any other transmission sources within this range. Dynamic range from 0.6V/m to 1,000V/m. Applications include measuring field strengths to comply with general safety regulations and actual radiated power. Includes fibre optic cable with optical to electrical converts for remote monitoring.

#### Narda NBM-550 'E' Field Strength Meter and Probe EF1891 NAR,NBM-550 (1930) AU

Measures the field strength of non-ionising radiation from various transmission facilities. This includes mobile phone and broadcast towers, to determine radiation exposure to nearby workers and the general public. Can be used to make precise measurements to establish human safety, particularly in workplace environments where high electric field strengths are likely to occur. It also includes a nondirectional isotropic probe for applications in the frequency range 3MHz to 18GHz, with a probe interface that automatically detects probe parameters for simple operation. Features: Large graphical display. GPS interface with automatic storage of position and measurement data. Built-in memory stores up to 5000 measurement results. Audible warning with programmable alarm threshold.

### **EMC & Power Disturbance Simulators**



### Schaffner 438 30kV Static Discharge Generator SFN,438 (8375) AU

Generates an electrostatic charge in a range from 2 to 30kV. This instrument is in a 'gun' form. Has a removable discharge network which can be interchanged with other (optional) impedance networks. Performs test to IEC61000-4-2 (AKA, IEC 1000-4-2) standards.



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TR Hirecom's Push-to- talk-over-Cellular (PTToC) solution, **RAPID**, leads the way in giving you nationwide access to your teams throughout Australia. Either one-to-one or oneto-many, you can communicate with your team using our RAPID Radio next generation solution and experience the superior audio clarity and system performance. Managing your team over a wide area has never been easier or more cost effective.





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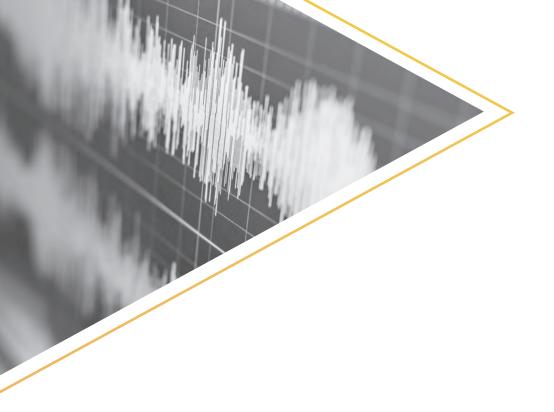
Security: High level of security features

and protocols.

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\*Telstra Website

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### **RF Signal & Sweep Generators**

→ See also Function Generators on page 19



Keysight N5181B MXG X-Series 6GHz RF Analog Signal Generator KEY,N5181B (2328) AU

MXG-X RF Analog Signal Generator, 9k to 6 GHz, -144 to +19dBm. Features fast switching, low phase noise, pulse, and narrow pulse, AM, FM, phase modulation and sweep. Applications include R&D, receiver and component testing. 1000BaseT LAN, LXI, USB 2.0, and GPIB interfaces.

### **Spectrum Analysers - High Frequency**



### Keysight N9344C 20GHz Spectrum Analyser with Tracking Generator KEY, N9344C-TG (2537) AU/MY/SG

9kHz to 20GHz with 5MHz to 7GHz tracking generator. -144dBm displayed average noise level (DANL), <0.95s sweep time for 20GHz full span. Average continuous power, +30dBm for 3 minutes maximum. Flexible remote control via USB/LAN. User memory 64MB, able to store approximately 14,000 traces.



### Keysight N9344C 20GHz Spectrum Analyser with GPS KEY,N9344C (2538) AU

9kHz to 20GHz with GPS. -144dBm displayed average noise level (DANL), <0.95s sweep time for 20GHz full span. Average continuous power, +30dBm for 3 minutes maximum. Flexible remote control via USB/ LAN. User memory 64MB, able to store approximately 14,000 traces.



#### Anritsu MS2712E 4GHz Spectrum Analyser opt GPS, LTE, + ANR,MS2712E-09-31+ (2560) AU

Handheld with GPS is ideal for field spectrum monitoring, broadcast proofing, RF & microwave measurements, and Wi-Fi & wireless network measurements. You can store up to 2,000 traces and setups on-board or on a USB flash drive. Set-up time is minimised and information is effectively organised with the Trace Save-on-Event and one-button envelope creation features. Features: Dynamic range 102dB. DANL -162dBm. GPS tagging of saved traces. Gated Sweep.

# **Radio Frequency**

Pg. 29 RF Signal & Sweep Generators

Pg. 29-30 Spectrum Analysers - High Frequency

- Pg. 31-33 Network Analysers/Antenna & Cable Test
- Pg. 33 Communication Test Sets
- Pg. 34 Power Meters RF

Pg. 34 Antennas

#### Spectrum Analysers - High Frequency (cont'd)



#### Anritsu MS2712E 4GHz Spectrum Analyser with Tracking Generator & GPS

ANR,MS2712E-20-31 (2560) AU

Handheld 4 GHz Spectrum Analyser with Tracking Generator and GPS is ideal for field testing of spectrum monitoring, broadcast proofing, RF & amp; microwave measurements, and Wi-Fi & amp; wireless network measurements. Can store up to 2,000 traces and setups on-board or on a USB flash drive. Set-up time is minimised and information is effectively organised with the Trace Save-on-Event and one-button envelope creation features. Features: Tracking generator -50 dBm to 0 dBm in 0.1 dB steps. Dynamic range 102dB. DANL -162 dBm. GPS tagging of saved traces.



#### Anritsu MS2724C 20GHz Spectrum Analyser with GPS ANR.MS2724C (2510) MY/SG

Handheld is ideal for field testing of spectrum monitoring, broadcast proofing, RF & amp; microwave measurements, and Wi-Fi wireless network measurements. Comes with Coverage mapping (RSSI) options, Interference Analyzer (Spectrogram) options and Channel Scanner options. Dynamic range 104 dB, DANL -160 dBm, stores up to 13,000 traces and setups on-board or on a USB flash drive.



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### Network Analysers/Antenna & Cable Test



#### 3Z RF Vision Antenna Alignment Tool 3ZT,RFV-2000 (2145) AU

This tool replaces a compass, GPS, and range finder. Effective, reliable and ensures that installers perform jobs as indicated in RF design specifications. Use for accurate antenna alignment to prevent coverage gaps, network performance degradation, loss of voice quality and traffic. Features a built in HD camera which provides augmented reality line of sight image, reporting capabilities and an easy to use GUI.



#### Keysight E5071C-260 ENA Series Network Analyser

KEY,E5071C (2744) AU

2 port, 9kHz to 6.5GHz network analyser is a fast, accurate, and versatile solution to RF component testing. Incorporates an integral S-parameter test set and 85032F calibration kit. The E5071C-260 is suitable for RF evaluation tests concerning component manufacturing and is deal for R&D engineers, wireless designers, and aerospace/defence contractors. Features: Wide dynamic range: >123 dB dynamic range at test port (typical). Low trace noise: 0.004 dB rms at 70kHz IFBW. Fast measurement speed, 41ms. High temperature stability, 0.005dB/°C.



#### Anritsu MW82119B 2,100MHz PIM Master with Site Master Option ANR,MW82119B-2100 (2198) AU

Passive Intermodulation (PIM) analyser with measurement frequency 2,100 MHz and Site Master (cable and antenna analysis) options. Portable battery-operated, high power for the major wireless standards. Verify PIM performance at difficult to access sites such as Remote Radio Head (RRH) installations or indoor Distributed Antenna Systems (DAS). PIM measurements include PIM vs time, sweep PIM, distance to PIM (DTF), 1-port phase and smith chart.



#### Anritsu MW82119B 850MHz PIM Master with Site Master Option ANR,MW82119B-850 (2199) AU

Passive Intermodulation (PIM) analyser with frequency, Cellular 850MHz band and Site Master (cable and antenna analysis) options. Portable battery-operated, high power for the major wireless standards. Verify PIM performance at difficult to access sites such as Remote Radio Head (RRH) installations or indoor Distributed Antenna Systems (DAS). PIM measurements include PIM vs time, sweep PIM, distance to PIM (DTF), 1-port phase and smith chart.

#### Network Analysers/Antenna & Cable Test (cont'd)



#### Anritsu S331E 4GHz Sitemaster Cable & Antenna Tester ANR,S331E (2180) AU

Cable and antenna analyser, frequency range 2Mhz to 4GHz. Measures return loss, VSWR, cable loss, and Distance To Fault. Suitable for legacy networks in addition to the new 3G and 4G networks being installed. Applications include cable & antenna installation and maintenance for wireless service providers.



#### Anritsu S331L 4GHz Sitemaster Cable & Antenna Analyser ANR,S331L MY/SG

Cable and antenna analyser, frequency range 2Mhz to 4GHz. Built in power meter 50MHz to 4GHz, -33dBm to +20dBm. Measures return loss, VSWR, cable loss, and Distance To Fault. Suitable for legacy networks in addition to the new 3G and 4G networks being installed. Applications include cable & antenna installation and maintenance for wireless service providers, contractors, military, aerospace, defence, and public safety applications.



### Anritsu S332E Sitemaster including Spectrum Analyser ANR,S332E (2175) AU

2MHz to 4GHz and spectrum analyser 100KHz to 4GHz. DANL -152dBm.

Measures return loss, VSWR, cable loss, and Distance To Fault. N(f) Type port. Analysis software containing DTF and Smith chart tools included. Complete with calibration standard, AC/DC adaptor, and 12VDC car adaptor. Cable & antenna installation and maintenance for wireless service providers, contractors, military, aerospace and defence, and public safety applications.



## Anritsu S332E Sitemaster Including Spectrum Analyser and Opt 431,31,509,27

#### ANR,S332E-CMAP-MOD (2165) AU/MY/SG

2MHz to 4GHz and spectrum analyser 100KHz to 4GHz. DANL -152dBm. Options included, indoor outdoor Coverage Mapping, GPS Receiver, Channel scanner and AM/FM/PM Analyser. Measures return loss, VSWR, cable loss, and Distance To Fault. Analysis software containing DTF and Smith chart tools included. Applications include cable, antenna, installation and maintenance, spectrum analysis, channel scanning, coverage mapping, AM/FM/PM demod for wireless service providers, contractors, military, aerospace and defence, and public safety applications.



#### Anritsu S820D Microwave Sitemaster 25MHz to 20GHz ANR, S820D MY/SG

Microwave antenna and cable test set. Portable single port analyser, providing return loss (SWR) insertion loss and distance to fault measurements in the frequency range of 25MHz~20GHz. Unit comes standard with RS232 interface, Smith chart and software management tools, AC/DC and automotive adaptor. A comprehensive range of precision waveguide components and adaptors are available.



#### Anritsu Microwave Site Master Handheld ANR,S820E (2149) AU/MY/SG

Microwave antenna and cable analyser, frequency range 1MHz to 20Ghz with 110dB dynamic range. Coaxial and waveguide system measurements include 1-port Return Loss, VSWR, Cable Loss, Distance-To-Fault and VSWR, Smith Chart, transmission and phase measurements. Unit comes standard with USB interface, smith chart and software management tools. Supplied with K(m) type port (compatible with 3.5mm and SMA), the S820E Sitemaster also includes "Classic Mode" which allows former users of the S8X0D series to become immediately productive with a minimal additional effort. A range of waveguide calibration components are separately available to rent.



#### Anritsu Sitemaster Waveguide Components ANR,WAVEGUIDE-ADAP (2190) AU/MY/SG

Calibration components and wave guide to co-ax adaptors for Anritsu S820x Sitemaster. Set includes 1/8 and 3/8 shorts, termination, and waveguide to co-ax adaptor.

### **Communication Test Sets**



#### General Dynamics R8000B Communications Analyser GD,R8000B (2380) AU

A compact communication system analyser which is designed to monitor and service radio communications equipment. It also generates and receives signals and measures modulation and frequency. The R8000B performs a variety of tests on AM, FM, PM, and optional digital standards P25, DMR, NXDN, and TETRA radio transceivers. A full-featured instrument which acts as a spectrum analyser, signal generator, sensitive measurement receiver, oscilloscope, and much more. With high spectral purity, it is a lightweight and truly portable solution to effective communications system analysis. Features: Frequency range 250 kHz to 1 GHz. 50W 5 min, 150W max. Less than 6.4 kg and has an 8.4" colour LCD screen. DANL is -140dBm (50Ω input termination).

### **Power Meters - RF**



#### Keysight E4416A EPM P-Series Power Meter KEY, E4416A MY/SG

Power meter, for peak, average, peak-to-average ratio and time-gated measurements. 100µW to 25W (-70dBm to 44dBm), 9 kHz to 110GHz (power sensor dependent), 4 digit display - watts, dBm, dB (rel). Analyser Software for complete pulse and statistical analysis. 8 predefined wireless configurations (GSM, EDGE, NADC, iDEN, Bluetooth™, IS-95 CDMA, W-CDMA and cdma2000), Comes with E9322A Peak & Average Power Sensor (50MHz to 6GHz, 1.5MHz bandwidth, -45dBm to +20dBm at Normal Mode).



#### Keysight E4418B EPM Series Single Channel Power Meter KEY, E4418B MY/SG

RF Power meter for average power measurements. 100µW to 25W (-70dBm to 44dBm), 9kHz to 110GHz (power dependent), 4 digit display - watts, dBm, dB (rel). Comes with E9300A Average Power Sensor (50MHz to 18GHz, -60dBm to +20dBm at Normal Mode).

### **Antennas**



#### Anritsu Dipole Antenna Kit

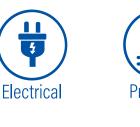
ANR, ANTENNA (1834) AU MP534A dipole antenna 25 to 520MHz and MP651A 470 to 1700MHz.

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#### **Directional Yagi Antenna** ANT, DIRECTIONAL YAGI (1829) AU

Various directional Yagi antennas. Frequency rangers from 824 M (UHF) to 2.17 GHz (UHF).



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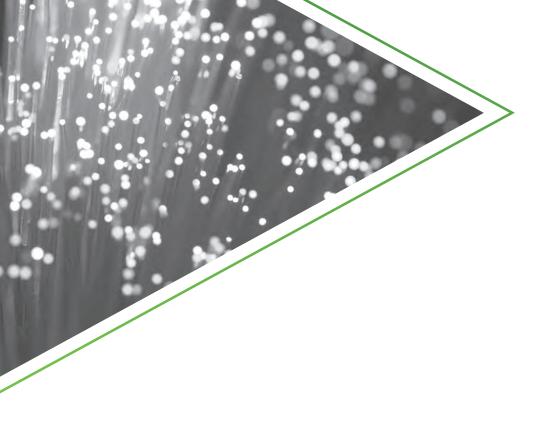
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Panametrics



# Data and Telecommunication

Pg. 37-38 LAN Cable Testers Pg. 40-42 LAN/WAN Analysers Pg. 43 Light Sources & Power Meters Pg. 44-45 Fusion Splicers Pg. 46-47 OTDR & Fibre Inspection

### **LAN Cable Testers**



#### TESTPRO CV100-K50 Copper Cable Certifier AEM,CV100-K50 (3277) AU

Supports testing and certification for network deployments up to 40 Gigabit Ethernet for Cat 5e, 6, 6A, 7, 8 or Class I/II cabling system. The electrically centered test plug offers a frequency range of 3000 MHz which exceeds the Cat 8, Class I/II 2000 MHz requirement.



#### Fluke DSX-5000 Cable Analyser 1GHz Class FA FLU,DSX-5000 (3278) AU/MY/SG

1GHz cable analyser copper test solution enables testing and certification of twisted pair cabling for up to 10 GigE deployments and will certify shielded and unshielded structured cabling systems from Cat 3, to 7A and Class C, to FA at Level V accuracy. 9 second Cat 6 autotest. Built in Alien Crosstalk testing capability. PLA004 (Cat 6A / Class EA), CHA004 (Cat 6A/Class EA) adapters and LinkWare PC reporting software included.



#### Fluke DSX-8000 Cable Analyser 2GHz Class FA FLU,DSX-8000 (3254) MY/SG

Cable analyser copper test solution enables testing and certification of twisted pair cabling for up to 40 GigE deployments and will certify shielded and unshielded structured cabling systems for Cat 5E,6,6A, 7A, 8 and Class C I/II, to FA at Level V accuracy. 8 second Cat 6 autotest. Built in Alien Crosstalk testing capability. PLA004 (Cat 6A / Class EA), CHA004 (Cat 6A / Class EA) adapters and LinkWare PC reporting software included.



#### Fluke CertiFiber Pro MM Optical Loss Test Set FLU,DSX-MM (3269) MY/SG

Multimode optical loss test set modules (CertiFiber Pro Multimode OLTS modules) for the Versiv DSX-5000. Provides Tier 1 certification at 850 and 1300 nm in 3 seconds. A set reference wizard ensures correct reference setting. Encircled Flux compliant as required by ANSI/TIA and ISO/IEC. Measures fibre optic attenuation, length, and propagation delay. Includes built in VFL and Linkware software.

#### LAN Cable Testers (cont'd)



#### Set of Fluke DSX-PC6 Patch Cord Adapters FLU,DSX-PC6 (3259) AU

Enables you to use a DSX CableAnalyzer™ to make sure that patch cords comply with ANSI/TIA and ISO/IEC standards. The adapters have RJ45 jacks that Fluke Networks selects specifically for tests on Cat 6 patch cords.

#### NO IMAGE AVAILABLE

### Kit of Encircled Flux MM Test Reference Leads for the DSX-MM FLU,DSX-MM EF LEADS MY/SG

Kit consists of Encircled Flux (EF) compliant test reference leads for the folitlowing fibre networks: ST 62.5um (OM1) and SC, LC 50um (OM3 & 4). Suitable for Fluke CertiFiber Pro Optical Loss Test Set.



#### Fluke CertiFiber Pro MM-SM Optical Loss Test Set B FLU,DSX-MMSM B (3263) AU/MY/SG

Multi and singlemode (CFP-Q-ADD) optical loss test set modules for the Versiv DSX-5000. Provides Tier 1 certification at 850, 1300, 1310 and 1550nm in 3 seconds (for 2 wavelengths). A set reference wizard ensures correct reference setting. Encircled Flux compliant as required by ANSI/TIA and ISO/IEC. Measures fibre optic attenuation, length, and propagation delay. Includes built in VFL and Linkware software. Linkware software.



#### Fluke CertiFiber Pro SM Optical Loss Test Set FLU,DSX-SM (3264) MY/SG

Optical loss test set modules (CertiFiber Pro Singlemode OLTS modules) for the Versiv DSX-5000. Provides Tier 1 certification at 1310 and 1550 nm in 3 seconds. A set reference wizard ensures correct reference setting. Measures fibre optic attenuation, length, Includes built in VFL and Linkware software.

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To view the full range of survey & spatial equipment we offer see pages **153-155** 



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### **LAN/WAN Analysers**



#### NetAlly LinkRunner 10G Ethernet Tester NET, LR-10G (3211) AU

Simplifies testing and configuration of copper and fiber ethernet networks, streamlining workflows by combining essential functions of installation, triage, network validation and troubleshooting through layers 1-7. Accelerates deployments, speeds up problem identification, and improves the efficiency and effectiveness of network installers and operations teams. Features: LANBERT, Qualify premise cabling for carrying Multi-Gig and 10Gig Ethernet (requires LR-10G or EXG-300 at end point). Layer 1-7 AutoTest enables any technician to find network problems. Monitor networks for intermittent issues, every minute for up to 24 hours. Validate up to 90W 802.3bt PSE with TruePower loaded PoE test.



#### NetAlly Etherscope EXG-300 Network Expert NET.EXG-300 (3212) AU

A imulti-technology, all-in-one handheld network analyzer that enables engineers and technicians to deploy, maintain and document Wi-Fi and Ethernet access networks. Supports MultiGig networks from 10/100/1000Mbps to 2.5/5/10G and 802.11a/b/g/n/ac/ax. Also known as, Wi-Fi versions 1, 2, 3, 4, 5, 6/6E.



#### NetAlly Etherscope EXG-200 Network Expert NET, EXG-200 (3213) AU

A multi-technology, all-in-one handheld network analyser that enables engineers and technicians to deploy, maintain and document Wi-Fi and Ethernet access networks. Supports MultiGig networks from 10/100/1000Mbps to 2.5/5/10G and 802.11a/b/g/n/ac. The AirMapper Site Survey application enables you to perform a Wi-Fi survey of an indoor or outdoor location.



#### NetAlly AirCheck G2 NET,AIRCHECK G2 (3219) AU

Handheld wireless tester that allows users to quickly verify and troubleshoot 802.11 a/b/g/n/ac networks . Intuitive user interface and management platform provides actionable intelligence to remove the complexity of wireless troubleshooting. Fully controllable over IP. Features: Site Survey (heat maps). Interference detection. Channel scanning. Connectivity tests. Perf performance testing. Identify: Spotty connections, dead zones, slow speeds, unauthorized access, rogue access points and POE.



#### VeEX Ethernet Services Test Set 10G VEE,MX150X (3214) AU

A self-contained Ethernet services test solution for Layer 1 to 4. Required by field technicians to install, verify, maintain and troubleshoot Metro Ethernet links, Business services, Internet Access and other packet-base services up to 10 Gbps. Ethernet Testing includes BERT, RFC2544, Throughput, Y.1564, Optical Lane BERT, Loopback, PCS Analysis, Multiple Stream (32), IP Connectivity and IPv6. Ethernet Layer-4+ Testing: V-PERF 1GE/10GE Line Rate TCP Throughput per RFC6349.



#### VeEX Ethernet Services Test Set 100G VEE,TX300-SUB (3216) AU

Ethernet test module. Fast troubleshooting and comprehensive analysis of transmission problems can be performed using its common graphical user interface. Novice users benefit from the easy-to-use GUI, while experienced users will appreciate an array of advanced features. Applications include Installation, commissioning, monitoring and maintenance of Ethernet.



#### VeEX CM3000 Cable Modem Network Analyser VEE, CM3000-S (3247) AU

Analyses upstream and downstream network performance for business, bundled services and validates the effectiveness of DOCSIS 3.0 services. Includes sweep, spectrum analysis and automated proof-of-performance testing.



Follow @TechRentals on Instagram and stay up-to-date on Test and Measurement news, application notes, and case studies.

#### LAN/WAN Analysers (cont'd)



#### Viavi OneExpert CATV 620V HFC Tester VIA,ONX 620 (3248) AU

An approved signal analysis meter for verifying and troubleshooting network performance on the NBN and Telstra HFC network. Specific to the Australian market and has been released initially as a TAP down (RF only); now DOCSIS v3 enabled, inquire as to Dv3.1 capability. Multitouch, interface and OneCheck automated tests with a simple dashboard with clear pass/fail results. Features automatically built Channel Plans, "Session Expert" which identifies issues and assists in their resolution and downstream scan including MER/BER in 60sec.



#### Viavi SmartClass Ethernet Tester 10M-1G VIA, SMARTCLASS ETH-1 (3221) AU/MY/SG

For the installation, turn up and maintenance of Ethernet IP services up to 1 Gbit electrical or optical. This kit includes a Loopback device for performing RFC2544 acceptance testing, throughput, latency, frame loss, back-to-back frame and jitter. Applications include performance assessment of Carrier Ethernet services, activation and maintenance of metro Ethernet networks, deployment of active Ethernet (point-to-point) access services, switched networks, traffic generation and QoS verification.



#### Viavi SC 4800 Ethernet Tester 10M-1GE VIA, SC 4800 ETH (3215) AU

For the installation, turn up and maintenance of Ethernet IP services up to 1 Gbit electrical or optical. This kit includes a Loopback device for performing RFC2544 and Y.1564 (EtherSAM) acceptance testing, throughput, latency, frame loss, back-to-back frame and jitter. Applications include performance assessment of Carrier Ethernetservices, activation and maintenance of metro Ethernet networks, deployment of active Ethernet (point-to-point) access services, switched networks, traffic generation and QoS verification.

### Light Sources & Power Meters



#### Fluke FTK1000 Multimode Fibre Optic Light Source & Meter FLU,FTK1000 (3365) AU

Light source is multimode 850nm and 1300nm. Power meter has 850/1300nm multimode and 1310/1550nm single mode. Manage results and print reports via Power meter memory, PC and supplied software.



#### JDSU/Viavi SmartClass OLP-87 PRO Fiber PON Power Meter & VIP JDSU,OLP-87 PRO (3350) AU/MY/SG

TFTTx/PON power meter with P5000i inspection probe. Used for qualification, activation, inspection and troubleshooting of B-PON, E-PON, and G-PON networks. The FiberChek software and P5000i probe allow for pass/ fail fibre inspection analysis and reporting. Ideal for end-of-line testing, activation, and maintenance of all FTTx/ PON signals. The through-mode capability can simultaneously measure voice, data, and video signals on fiber at 1490 and 1550nm downstream and 1310nm burst mode upstream. Supplied with various tip adapters please inquire.



## Kingfisher KI-28010 Single Mode APC Light Source and KI-2600 Power Meter

KIN, KI28010-2600 (3361) AU

Singlemode light source KI-28010 and power meter KI-2600. Compatible with APC and PC singlemode networks. Wavelengths 1310, 1550 and 1625nm. Memory with text, timestamp and USB dump, real-time PC reporting software. Autotest provides fast, easy and automatic multi wavelength loss testing.

#### Data and Telecommunication

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### **Fusion Splicers**



#### Fitel S123M12 Ribbon Fusion Splicer FIT,S123M12 (3312) AU

Hand-held 12-core ribbon fibre fusion splicer. Protection sleeve shrink time is 35 seconds, while splicing requires only 15 seconds for 12 core ribbon fibre allowing up to 160 splicing cycles (splicing/heating) using the 2 battery packs installed in the main body. Includes cleaver and thermal jacket stripper.



### Fitel S179 Core Alignment Fusion Splicer and Cleaver FIT, S179 (3313) AU

Hand-held, core-alignment fusion splicer for single and multimode fibre, includes S326 cleaver. 6 s splice time, 9 s heating time, and losses of 0.02 dB and 0.01 dB on single and multimode fibre respectively. Features include 4.3-inch LCD touch screen, 3+1 LED lights illuminate entire splicing chamber for improved visibility in low-light and Intentional high attenuation splice function, splice loss of 0.1 dB to 15 dB(0.1dB step) can be made for an inline fixed attenuator.



#### Fujikura FSM70R+ Ribbon Fusion Splicer and Cleaver FUJ,FSM70R+ (3309) AU

Typically splice time 11 seconds and sleeve shrink time 29 seconds. Detachable work table and arc-free calibration system. Includes CT-50 cleaver and thermal jacket stripper.



#### Fujikura FSM70S+ Core Alignment Fusion Splicer and Cleaver FUJ,FSM70S+ (3317) AU

Single fibre core alignment fusion splicer and CT50 cleaver. Typical splice losses of 0.02dB and 0.01dB on single and multimode fibre respectively. Automated tension test, wind and heater cover, 6 second Ultra Fast splice time, 14 second heat time and 20,000 splicer result storage.



#### Fujikura FSM70S Core Alignment Fusion Splicer and Cleaver FUJ,FSM70S (3318) AU/MY/SG

Single fibre core alignment fusion splicer and CT30A cleaver. Typical splice losses of 0.02dB and 0.01dB on single and multimode fibre respectively. Automated tension test, wind and heater cover, 7 second splice time and 14 second heat time..



#### Fujikura FSM90S+ Single Core Alignment Fusion Splicer and Cleaver FUJ,FSM90+ MY/SG

Single fibre core alignment fusion splicer and CT50 Bluetooth cleaver. Typical splice losses of 0.02dB and 0.01dB on single and multimode fibre respectively. Automated tension test, wind and heater cover, 7 second splice time and 10 second heat time. Automated cleaver blade management.second splice time and 14 second heat time.

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### **OTDR & Fibre Inspection**



#### Anritsu MT9085A Access Master SM and MM OTDR ANR MT9085A SM-MM MY/SG

850/1300 nm (29/28dB) and 1310/1550 (39/37.5dB). Singlemode port is SC/APC. Intelligent analysis software identifies problem splices, connectors and even macrobends. Full 1×64 PON support. Store up to 1,000 traces internally (much more using USB), drop and drag results to PC.



#### JDSU/Viavi MTS-2000 OTDR FibreComplete JDSU,MTS-2000-FCOMP (3335) AU/MY/SG

Multi-Test Platform with FiberComplete<sup>™</sup> singlemode module is ideal for field technicians looking to perform traditional fibre qualification tests such as bidirectional Insertion Loss (IL), acceptance testing, and general maintenance on metro and PON-based FTTx networks. Comes with a power meter, a fibre inspection probe, and an Optical Time Domain Reflectometer (OTDR) module. Will measure Optical Return Loss (ORL), simplify troubleshooting in FaultFinder mode, and perform on-board, automated NBN test sequences. Features: 1310, 1550, and 1625 nm wavelengths at 37, 35, and 35 dB dynamic range (respectively). Performs IL, ORL, and OTDR from one optical port. Real-time continuity check and automatic product pairing. Fewer connections/disconnections significantly reduces testing time.



### Viavi MTS-4000 Multi and Singlemode OTDR VIA, MTS-4000 MMSM (3332) AU

Multi and Singlemode OTDR, 850/1300nm and 1310/1550nm with a SC connector and dynamic ranges 26/24 dB and 37/35 dB respectively. The fibre module is housed in the 9" touch screen MTS-4000 mainframe designed for the installation, turn-up and maintenance of fiber optic networks. Features the Smart Link Mapper function which offers the user an easy to follow block diagram as well as the OTDR trace, helping novice and expert Fiber Technicians alike.



#### Viavi MTS-4000 Singlemode OTDR VIA.MTS-4000 SM (3334) AU

Singlemode OTDR 1310/1550/1625nm with dynamic ranges 40, 40 and 38 dB respectively. Includes the MA2 fibre module, housed in the 9" touch screen MTS-4000 mainframe and is capable of point to point and up to 32x splitter FTTx/PON testing. Features the Smart Link Mapper function which offers the user an easy to follow block diagram as well as the OTDR trace, helping novice and expert Fibre Technicians alike. Supplied with a P5000i VIP and launch lead.



#### Fluke Networks FI-1000 FiberInspector Kit FLU, FI-1000-KIT (3338) AU

Enables you to quickly inspect and certify fibre end-faces inside ports or patch cords. It's 2-second automated PASS/FAIL certification eliminates human subjectivity. \*Requires Versiv mainframe to operate such as the DSX-5000 (with or without fibre modules) or Optifiber Pro.



#### Fluke Optifiber Pro Quad OTDR FLU,OPTIFIBER-PRO Q (3344) AU/MY/SG

Multi and singlemode OTDR, wavelengths 850, 1300, 1310 and 1550nm, dynamic range 28, 30, 32 and 30dB respectively. Designed for testing, troubleshooting and certifying multi and singlemode fibre optic networks. Smartphone user interface, shortest event and attenuation deadzones, LinkWare download and reporting software included.



### **Cable & Pipe Tracers and Fault Locators**

→ See also Underground Services Location on page 128.



#### C.Scope DXL4 and SGV4 Cable and Pipe Locator CSC,DXL4-SGV4 (3719) AU/MY/SG

Cable and pipe avoidance and location tool with depth measurement. Simultaneous dual 33+131kHz frequency will assist in the detection of smaller buried pipes and cables such as telecoms, cast iron and street lighting spurs. 4 available power levels up to 1 watt and depth detection approximately 3 meters (depending on soil type and operating mode). Four detection modes; Power, Radio, Generator and Allscan. Features a Dynamic Swing Sensor to aid in cable and pipe location.

# **Electrical Power**

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#### Fluke Cable Locator FLU,2042 (3602) AU

Ideal for tracing cables in walls and underground, locating fuses/ breakers on final circuits as well, and many other applications. Kit comprises a transmitter and receiver in a carry case. Voltage measurement range 12 to 400V. Frequency range 0 to 60Hz. Transmitter output signal 125kHz. Transmitter voltage 0 to 400V AC/ DC. Depth location 0 to 2.5m. Receiver voltage detection range 0 to 0.4m. The receiver has a torch for working in dimly lit areas.



#### Cable & Pipe Tracers and Fault Locators (cont'd)



#### Megger EZ-Thump 12kV Thumper & TDR Power Cable Fault Locator MEG, EZ-THUMP12 (3610) AU

A compact and light weight portable cable fault locations system ideally suited either for use in a "satellite" fault locating concept for remote areas that may have less frequent faults, when ease of operation, light weight and economics are important, or for hard to access inner city locations. Incorporates a 12kV Hipot tester, time domain reflectometer (TDR), and surge generator. Can be powered from an AC supply or internal batteries (3h recharge time provides 30m of thumping). Surge generator produces a 500J, 0 to 12kV at 12mA pulse. Kit includes the Digiphone Plus pin-pointer with surge wave receiver to locate faults while thumping.



#### Megger TDR2000/2RM Dual Channel TDR Cable Fault Locator MEG,TDR2000/2RM MY/SG

Time Domain Reflectometer cable fault locator. User selectable ranges from 0 to 50m up to 20km, minimum resolution 0.1m. Dual cursor measurement. Internal memory for 15 traces. Megger "Tracemaster" software supplied. RS232 interface for PC communications. High resolution LCD display. Battery powered. Dust and shower proof to IP54.



#### Megger TDR2000-3P Advanced Dual Channel TDR MEG,TDR2000-3P (3606) AU/MY/SG

Time Domain Reflectometer cable fault locator. User selectable ranges from 0 to 50m up to 20km, minimum resolution 0.1m. Dual cursor measurement. Internal memory for 15 traces. Megger "Tracemaster" software supplied. High resolution LCD display. Battery powered. Dust and shower proof to IP54. This system can operate on live cables.

### **Electrical Testers**

→ See also Current Clamps, Probes & Accessories on page 61.



### Fluke 9062 Phase Rotation Indicator

FLU,9062 (3503) AU

Provides rotary field and motor rotation indication with the benefits of contact-less detection indication of 3 phase rotation using test leads supplied or can be used to determine motor rotation on synchronous and asynchronous 3 phase motors.



## Martindale Phase Sequence & Continuity Indicator 100 to 600V, 50/60Hz

MAR, PSCI424-585 (3502) AU

Check the presence and sequence of the phases on 3ph circuits. Provides a visual indication of loss of phase or incorrect sequence. Supplied in 2 forms. Probe style; the connection to the tester is via 3 insulated cables to 3 fused test probes, 1 with an insulated crocodile clip. Plug style; a 16A, 4 pin (3ph & earth, BS4343) plug is fitted to the tester. Use as a socket tester prior to plugging in 3ph equipment.



#### Megger Detex Phasing Tester MEG, DETEX MY/SG

Provides bright LED indication for easy visibility indoors or where lighting conditions are poor. This two-pole phasing tester may be used on grounded and ungrounded ac systems to check high-voltage fuses, test for correct phase connections and test for theabsence of high voltage on deenergizedlines or apparatus. Voltage Range: 4.16 to 34.5kV.



Learning to operate unfamiliar equipment costs you time and can lead to errors. Save time and reduce your real costs. Discover our Configuration and Download solutions on page 79. Watch how-to/information videos on any piece of equipment displaying this symbol. Visit the TechRentals YouTube page at www.youtube.com/TechRentals



#### **Electrical Power**

### Electrical Testers (cont'd)



### Seaward PV200 Solar PV Tester with Irradiance Meter SEW, PV200+KIT (8761) AU/MY/SG

Comes with PV Tester, irradiance meter and solar cert software. It is a solar commissioning tester, with I-V curve tracing, in accordance with IEC62446 & IEC 61829.Perform earth continuity, insulation resistance (auto short circuit test and point-to-point), AC/DC voltage measurement, Open circuit voltage up to 1000VDC. Short circuit current up to 15ADC. Comes with current clamp up to 40A and Solar Survey 200R to record real-time irradiance, ambient temperature and PV module temperature. Can be paired with Android device via NFC for field data analysis.



SEW,SOLAR-PRO (8762) AU/MY/SG

Solar Utility Pro Kit 1500V/30A, 1000V/40A, maximum power 45kW. Test multiple strings in parallel up to 1500V/up to 40A. Tests open circuit voltage (VOC), short circuit current (ISC), irradiance (W/m<sup>2</sup>), ambient temperature & more. Recording up to 999 full sets of string data.



#### PVE PVPM1500X I-V Curve Tracer

PVE, PVPM1500X (8763) AU

Solar IV-curve tracer for PV modules/strings/arrays, up to 1500V and 20ADC. Measuring ranges: Voltage: 25V/100V/500V/1500V, Current: 2A/5A/10A/20A. Temperature: -40°C ±100°C with Pt1000 and Irradiance: 0 - 1300W/m<sup>2</sup> (Standard sensor). Continuous long-term measurements of I-V-curves in selectable time intervals. Resolution 0.01V - 0.25V, 0.005A - 0.01A (depending on selected range). Up to 8 hours battery life.



#### Megger DCM1500S Solar PV Clamp Meter MEG, DCM1500S (8764) AU

Measures up to 2000VDC and 1500VAC (using the PVHV Leads), and 1500AAC or DC. Ideal for use in the installation, maintenance, monitoring and testing of photovoltaic systems and standard AC or DC electrical equipment. Supplied with standard 4mm leads, PVHV1 (4mm) and PVHV2 (MC4PV) HV lead sets.

### PAT Testers & RCD Testers



### Megger PAT150 Battery Operated Appliance Tester MEG, PAT150 (2601) AU

This instrument does the full range of PAT tests required. Includes 10 mA & 30 mA portable RCD testing. Does 'substitute' and mains powered leakage testing. Light weight, portable, and battery operated.



### Megger PAT420 Testing and Tagging System MEG, PAT420 (2600) AU/MY/SG

Portable appliance tester. Tests to AS3760. Stores data on USB memory stick. includes a barcode scanner and label printer.



#### Megger RCDT330 Residual Current Device Tester MEG,RCDT330 (2618) AU

Tests standard, DC, selection and programmable RCDs. Ramp testing. Auto (remote) testing. Auto sequence test feature. 3ph safe. Enables testing on 110V centre tapped supplies. Performs 1/2I, 1xl & 50xl tests on RCDs rated at 10mA, 30mA, 100mA, 300mA, 500mA & 1,000mA on general and selective (time delayed) RCDs. Weatherproof to IP54. USB interface for test results download.

### **Micro-Ohm Meters & Earth Testers**



#### Fluke 1625 KIT GEO Earth Ground Tester FLU,1625-KIT (2650) AU/MY/SG

Measure total earthing resistance (RA) with 3 or 4-pole Fall of Potential method, selective earth resistance measurement and 4-pole soil resistivity testing ( $0.001\Omega$  to  $19.99k\Omega$ ). Performs stakeless ground loop measurements ( $0.001\Omega$  to  $199.9\Omega$ ). Includes automatic frequency control to minimise interference effects. Battery powered.

#### Micro-Ohm Meters & Earth Testers (cont'd)



### Fluke 1630 Earth Ground Clamp

Earth ground loop testing and continuity testing without breaking the circuit. Ground loop resistance range  $0.025\Omega$  to  $1.5K\Omega$ . Ground leakage current measurement range 0.2mA to 1000mA. Current measurement range 0.2A to 30A. Logs and stores measurements for on screen recall. LCD display. Battery powered.



#### Megger DET2/3 Earth Tester

MEG,DET2/3 (2656) AU/MY/SG

Complete with ETK50C kit. High resolution of 1Ω, ideal for large earth (ground) systems. High accuracy for earth (ground) electrode grid and soil resistivity tests. Test in accordance with BS 7430 (earthing/ rounding), BS-EN-62305 (Lightning Protection), IEEE Standard 81 and Railway Applications



### Megger DLRO10HDX Micro-Ohm Meter

MEG, DLRO10HDX (2668) AU/MY/SG

Simple rotary switch selection of five test modes, including auto start on connection. The unit is powered from either its rechargeable battery or mains. Capable of delivering 10A into measurements up to  $250M\Omega$ and 1A into measurements up to  $2.5\Omega$ . The duration of each test may be up to 60s. Memory storage for test results up to 200 records Applications ranging from railways and aircraft to resistance of components in industry.



### Megger DLRO10X Digital Low Resistance Ohm Meter $10A/0.1\mu\Omega$ -2K $\Omega$ MEG,DLRO10X (2663) AU/MY/SG

Self contained fully automatic (with manual option) micro-ohm meter, selecting the most suitable test current up to 10Adc. Range  $0.1\mu\Omega$  to  $2k\Omega$ , resolution  $0.1\mu\Omega$ . Internal memory for 700 tests. Download software supplied. RS232 communications to PC. LCD display. Rechargeable battery.



#### Megger DLRO200 200A Micro-Ohm Meter MEG,DLRO200 (2664) AU/MY/SG

Digital low resistance ohmmeter that measures resistances between  $0.1\mu\Omega$  and  $1\Omega$  m at high currents. Used to test circuit breaker and switch contacts, busbar joints, and other applications where high current is needed. Can operate in three modes: In continuous mode it will monitor a resistance over a period of time. In normal mode it will test a current at the push of a button. In auto mode, once the desired current is selected and leads are connected, it will start testing, which is a handy mode for testing busbar joints. Features: Provides test currents from 10A to 200A DC. Includes 5m lead set with 2 x 50mm2 current leads and 2 x potential leads (with clips). On board memory for up to 300 test results and notes. RS232 port to download stored results or for real time output to a printer.



#### Megger DLRO100XB 100A Micro-Ohm Meter MEG, DLRO100XB (2669) AU

100A lightweight, mains and battery operated digital low resistance ohmmeter. Unit is supplied with 5m kelvin lead set, DC clamp and Terminal adapters (to connect own lead set by customers). Measurement range from  $0.1\mu\Omega$  to  $1.999\Omega$  with resolution  $0.1\Omega$ . Applications include testing switchgear and circuit breaker contact resistance, busbar and cable joints, wire and cable resistance, bond testing in various industries like utilities, manufacturing, transport and aviation.



### Megger DLRO600 Digital Micro-Ohm Meter - High current MEG, DLRO600 (2665) AU

Test current range 10A to 600Adc. Measurement range  $0.1\mu\Omega$  to  $1\Omega$ , resolution  $0.1\mu\Omega$ . Current cables 2x5m. Internal memory for 300 tests. Download software supplied. RS232 communications to PC. LCD display.



#### Megger DLRO Wind Turbine Lightning Protection Test Lead Set MEG,DLRO-100LEAD (2662) AU

For Megger DLRO 10 series digital micro-ohm meters. Specially designed for measuring resistance of lightning protection circuit between wind turbine blade tip and ground. Kelvin clip and hook ends on 100m cable reel. 5m DH2 lead with duplex hand spikes and hook end.

#### Micro-Ohm Meters & Earth Testers (cont'd)

### Power Analysers, Loggers & Recorders



#### Megger DLRO Lead Set Current & Voltage Leads MEG, DLRO-LEADSET (2666) AU

For Megger DLRO digital micro-ohm meters. Potential spike lead set x2 and current clip lead set x2. Leads are used to separate the C & P connections. This avoids the erroneously high readings taken due to a high resistance contact. Current clip lead set 2m (242041-7) and potential spike set 2m (242021-7).



#### Megger MOM2 Micro-Ohm Meter MEG, MOM2 (2660) AU/MY/SG

Lightweight (1 kg), handheld micro-ohm meter. Up to 220A test current, autoranging from 999 u $\Omega$  to 1000 m $\Omega$  FS. Rechargable batteries provide 2200 measurements for Imin = 50A, or 800 for Imin = 100A. Memory for 190 recorded measurements, downloadable via Bluetooth with provided software. Kelvin probes included.

7 profound



### Elspec G4500 Portable Quality Analyser with GPS Receiver ELS,G4500 (8750) AU

Measures, stores and analysers (continuously) waveform signals. Includes G4500 with 4 x 3000A Flexible Current Clamps and GPS Receivers. Suitable for applications like Utilities (transmission, distribution, generation) and Energy Consumer (critical power, industrial, commercial, etc.)

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#### Fluke MDA-550 Motor Drive Analyser 4 Channel FLU.MDA-550 (8745) AU

A motor drive analyser designed to monitor and troubleshoot VFD (or VSD) motor systems. Features 4 channels, measurement to the 51st harmonic, 3 x voltage probes with 1000V input range, 3 x current clamps 40~400A switchable, SVS-500 shaft voltage set with brushes, extension rod and magnetic base including high frequency probe. All CAT IV 600V/CAT III 1000 V safety rated.

### Your job, no matter how big or small is covered with our **Bigger Fleet.**



#### Fluke 345 Power Quality Clamp Meter FLU,345 (8739) AU

Ideal for measurements on switching loads such as variable frequency drives, electronic lighting and UPS systems. Low-pass filter and high EMC immunity design make unit ideal for noisy environments. 600V CAT IV rated, 1400A AC, 2000A DC. Measure and log harmonics, inrush current, ripple current on battery systems. Analyse data and generate reports with included Power Log software.

New items are being added to the inventory constantly, so if you can't see what you're looking for, please call us on 1800 632 652.



#### Power Analysers, Loggers & Recorders (cont'd)



#### Fluke 435 3-Phase Power Quality & Energy Analyser FLU,435 (8738) AU/MY/SG

Suits a broad range of AC mains studies. Includes 4 x 600/6000A AC CTs. A unique energy loss calculator provides the ability to monetarily quantify energy losses. Supplied with Fluke Power Log Software for detailed data analysis and report generation. Optional accessory: FLU,I5SPQ3 (3 x i5s 5A AC current clamps).



#### Fluke 438 Power Quality & Energy Analyser FLU,438 MY/SG

Suit a broad range of ac mains studies. Includes 4 x 600/6000A AC CTs. A unique energy loss calculator provides the ability to monetarily quantify energy losses. Motor Analyser function provides analysis of speed, torque, mechanical power and calculate motor efficiency without mechanical sensors. Supplied with Fluke Power Log Software for detailed data analysis and report generation. Optional accessory: FLU,I5SPQ3 (3 x i5s 5A AC current clamps).



#### Fluke 1738 Power and Energy Logger FLU,1738 (8736) AU/MY/SG FLU,1738-1500 MY/SG

3 phase power logger with Fluke Connect® mobile app. Includes 4 x 1500 A flex probes (1 A to 150 A 100 mA resolution, 30 mA accuracy) and 4 x 6000 A 1 m flex probes. Copy logged files to a USB memory stick. Measures to 50th harmonic. Capture transients. Can be powered off phase one if required. 4 h backup battery operation. 1000 V CAT III/600 V CAT IV. Colour Touch Screen. Displays real-time waveforms and FFT.

#### Fluke 1777 Power Quality Analyser FLU,1777 (8732)) AU/MY/SG

Automatically measures power and power quality parameters. At a glance power quality and power health parameters. Capture high-speed transients at up to 8kV. Powers directly from the measurement circuit without a line chord. Many communications options. USB, WiFi, Ethernet 7 cellular interface options. Includes internal GPS module for timing.



#### Fluke i40s-EL 3x40A CTs for secondary msmt 1777 or 1738 FLU,140S-EL (8736)) AU

The current lamp-on transformer is used for low current measurement as an accessory to the Fluke 1738 or 1777; suitable for making measurements up to 40A, and also measures accurately on 1A and 5A secondary current transformers. The i40s-EL jaw is capable of being clamped on current conductors up to 15mm in diameter.



#### Fluke VR1710 Single-Phase Voltage Quality Recorder FLU,VR1710 (8720) AU

Single phase power quality analyser. Records RMS, transients, flicker & harmonics up to the 32nd. Selectable logging periods from 1s to 20min. Provides continuous recording with no gaps. Includes software for download, analysis and automatic reporting.



#### Hioki PW3360-21 Clamp On Power Logger with Harmonic Measurement HI0.3360-21 MY/SG

Power logger, supports single to three phase 4 wire circuits. Supplied with 3x500A CTs 5/10/50/100/500A ranges 0.3% rdg+0.01% fs and 3x5000A Flexible CTs 50/500/5000A ranges 2% rdg+0.3% fs. Has a built in battery and can also be powered by the line voltage. Provides harmonic measurement upto the 40th harmonic. Has plug in SD card. Is recongnized and a diskdrive when connected to a computer. Includes analysis software.



#### Hioki PW3198 Power Quality Analyser including 3 x 1,000A, 1 x 200A AC/DC & 4 x 5,000A Flex CTs HIO.3198 (8732) AU/MY/SG

Can record voltage, current, pf, f (Hz), kVA, kVAr, kW, harmonics (THD and individual to 50th order), flicker (IEC6100-4-15), and inrush current. Transient overvoltage can also be measured up to 6kV peak at 2M samples per second. Meets the CAT IV safety standard and international standard IEC 61000-4-30 Edition 2 Class A. Supplied with analysis software (Hioki 9624 PQA-HiVIEW) for reporting, compliance, and record management. Features: Four isolated voltage channels rated CAT IV/600V RMS AC or DC. 2GB memory. Total energy, tariffs, max demands, transient, and sub-cycle disturbances. Includes 3 x fixed 1000A AC CT, 4x flexible 500A/5000A CT, and 1x 200A AC/DC CT.

#### Power Analysers, Loggers & Recorders (cont'd)



#### Hioki PQ3198-94 Power Quality Analyser HIO, PQ3198-94 (8733) AU/MY/SG

Premium Power Quality Analyzer in accordance with the IEC61000-4-30 Class A standard for demanding applications. Includes 4 x CT7045 6000A AC flexible CTs and 4 x CT7742 2000A AC/DC CTs. Ideal for AC mains studies as well as solar inverter evaluations. Supplied with PQ ONE power quality analysis software for detailed data analysis and report generation.



Hioki CT7116 6A AC Current Sensor (Set of 4) HIO,CT7116 (8743) AU/MY/SG

6A AC Current Sensor suitable with Hioki PQ3198-94 (set of 4 supplied).



### Hioki CT7116 6A AC Current Sensor HIO,CT7116 (8788) AU

6A AC Current Sensor suitable with Hioki PQ3198-94



#### Hioki 9694 Clamp-on CT 5A (Set of 3 or 4) HIO.9694CT5A (8789) AU/MY

Rated primary current 5A AC. Amplitude accuracy  $\pm 0.5\%$  rdg.  $\pm 0.2\%$  FS (at 45 to 66Hz), 66Hz to 5kHz  $\pm 1\%$  or less. Max circuit voltage 300V RMS/insulated wire. Core jaw 15mmØ. Size mm: 46w  $\times$  21d  $\times$  135h, cord length 3m.



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## Fluke 90I-610S 1A to 600A AC/DC Current Probe FLU,90I-610S MY/SG

Compatible with any Fluke scopemeter test tool, power harmonics analyser, oscilloscope, multimeter or other voltage measurement device that has the following feactures: BNC input connectors or if using a meter a BNC to banana plug adapter PM9081/001 (included) lets you use this probe with your DMM.



#### Fluke i5sPQ3 AC Current Clamps, 5A (3 x i5S per set) FLU,I5SPQ3 (8790) AU/MY/SG

A pack of 3 pieces of the i5s 5A AC current clamps, specially configured to provide low current accuracy while taking measurements on secondary current transformers. CAT III 600 V (For insulated conductors only). Suits the Fluke 435 and other instruments with BNC inputs.

### **Current Clamps, Probes, & Accessories**

- → See also Electrical Testers on page 51-52
- → See also Power, Analysers, Loggers & Recorders on page 57-61



Elspec Current Clamps (4 x 1-6A Mini Clamps) ELS,MINICLAMPS (8752) AU

Set of 4 x a-6A Mini Clamps suitable for Elspec G4500 unit.



### Fluke 376 True-rms AC/DC Clamp Meter with iFlex FLU,376 (8770) AU/MY/SG

1,000A AC and DC current measurement with fixed jaw. 2500A AC current measurement with the 45cm iFlex flexible current probe. 1000V AC and DC voltage measurement. Voltage and current measurements are true rms. Includes ability to measure frequency, resistance and capacitance. Rated CAT IV 600V and CAT III 1000V.

### Insulation Testers & Meggers to 20kV



#### EA Technologies UltraTev Plus Partial Discharge Detector EAT,ULTRATEVPLUS (8410) AU/MY/SG

Multi-function Partial Discharge (PD) Instrument. It measures accurate PD activity using the UltraTEV detector and an ultrasonic detector. It gives you an objective measure of the level of activity. Will display PD severity level. The kit includes the Ultradish for measurement of overhead assets.



#### Fluke 1577 Insulation Terster $2G\Omega$ FLU,1577 (8420) AU

True RMS Multimeter, Autoranging. User selectable test voltages up to 1000V. Measurement range .1M  $\Omega$  to 600M  $\Omega$ .



### Fluke 1587 Insulation Multimeter

Insulation: measurement range: 0.01M to  $2G\Omega$ . Test Voltages: 50V, 100V, 250V, 500V, 1,000V Multimeter: Voltage 1mV to 1,000VAC/DC, current 0.01mA to 400mA AC/DC, resistance 0.1 $\Omega$  to 50.0M $\Omega$ , capacitance 1nF to 9999µF, frequency 0.01Hz to 99.99kHz.



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#### Fluke 1587FC Insulation Multimeter FLU,1587FC (8422) AU

Will test to  $2GO\Omega$ . Includes Fluke Connect capability.50V, 100V, 250V, 500V & 1000V Insulation test capability. Using Fluke Connect can do PI/DAR, store, Temperature Compensation & VFD low-pass filter



#### Fluke 1663 FVF Installation Tester FLU,1663FVF (2615) AU/MY/SG

Provides the following tests: Continuity test under 200mA, Loop Impedance without triggering an RCD can be set for 10,30,100,300,500,650mA & 1A. Insulation resistance measurement under 500V. Measure earth plug resistance by earth rods (Rods not in kit). Voltage measurements.



#### Kikusui TOS-5101 10kV AC/DC Hipot Tester KIK,TOS-5101 (8430) AU/MY/SG

Hipot testing up to 10kV in either DC or AC. Digital voltmeter and ammeter, digital timer. Window comparator for more reliable pass/fail judgement. Automatic discharge of device under test in DC test mode. Equipped with Key Lock and Interlock functions for greater safety.



#### Megger PD SCAN MEG,PD-SCAN (8417) MY/SG

An on-line partial discharge (PD) handheld scanner for detecting defects in medium and high voltage systems. Used for fast verification of partial discharge activity in MV and HV plants. Besides the partial discharge sensors, also a temperature and humidity sensor will be supplied. The device has two internal sensors (TEV, airborne acoustic) and can also be operated with various types of external sensors (TEV, HFCT, airborne acoustic, contact probes). Three PD measurement methods in one device. Comes with Set 4 accessories - full accessories.

#### Insulation Testers & Meggers to 20kV (cont'd)



#### Megger MIT525 5KV DC Insulation Resistance Tester MEG,MIT525 (8426) MY/SG

Measures to  $20T\Omega$  at 5kV. Tests include PI, DAR, DD, SV and ramp test. Li-ion battery with rapid charge, mains operation possible while battery is charging. Advanced memory with date/time stamp. Noise filter rejects up to 3mA noise. PowerDB Lite asset management software supplied with unit for download of test data to a PC.



#### Megger MIT1025 10kV DC Insulation Resistance Tester MEG,MIT1025 (8427) AU/MY/SG

10kV Insulation Resistance Tester (IRT) capable of resistance measurements up to 20TΩ. Testing options include Polarisation Index (PI), Dielectric Absorption Ratio (DAR), Dielectric Discharge (DD), Stepped Voltage (SV) and ramp test. Has a CATIV 600 safety rating and dedicated voltmeter function (30V to 660V). Also features a rapid charge Li-ion battery with the ability to take measurements on a flat battery when connected to mains power. Features: Noise filter - rejects up to 3mA noise. Advanced memory includes time/date stamping of results. High altitude operation up to 3000m. PowerDB Lite software for download of test data to PC.



#### Metrel EV Charger Tester including Instaltest-XD & EVSE Adapter MET,INSTALTEST-XD-EV (2610) AU

INcludes the Metrel Instaltest-XD and 1532 XA EVSA adapter. provides electrical safety and functional testing of EVSA. It tests Mode 3 with type 2 connectors Testing a 3 phase load up to 13A. This pair of instruments can test state by state electrical and functionality testing of EVSE charging stations with the push of a button. Using the supplied MESM software.



#### Omicron MPD 600-1 Single Channel PD Measurement System OMI,MPD600 (8411) AU

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.

### Oil, Hipot, and VLF Testers above 20kV



#### High Voltage Inc PFT301 30kV AC HiPot Tester HIV, PFT301CM (8452) AU/MY/SG

Portable HiPot 0~30kVac 1kVA resistive/capacitive load: 33mA. Duty cycle at 1kVA 1h on 1h off 700VA continuous. Tests the integrity of items including insulating materials, isophase bus duct, switchgear, transformers, vacuum bottles & interrupters, vacuum switches, automatic circuit reclosers, bushings, fuses, arrestors, circuit breakers, transformers, capacitors, motor and generator windings.



#### High Voltage Inc PFT-503CM 50kV AC Hipot Test Set HIV,PFT503 (8453) AU/MY/SG

Single, portable (34kg) unit suited for testing overhead apparatus, vacuum bottles and interrupters, switch gear, bus duct, motorized vacuum switches, reclosers, bushings, fuses and arrestors, linemans safety products, small transformers, electrical components and motors. This 3kVA model features capacitive load compensation enabling full load testing with a power draw of 1.5kVA while operating from a conventional line input. 60mA output current capability.



#### High Voltage Inc PFT-1003CMF 100kV AC Hipot Test Set HIV,PFT1003 (8456) AU

Portable (16kg control unit, 39kg HV tank) hipot tester, 100kV, 50Hz, rated 3kVA into capacitive loads. Features continuously adjustable output voltage, external safety interlock, zero start safety interlock, self resetting over current protection, guard/ground return mode, HV on/ off and main power push button ruggedized meters and with glass windows that eliminate static buildup.



#### Oil, Hipot, and VLF Testers above 20kV (cont'd)



#### HV Diagnostics HVA TD60-MC Portable Tan Delta Management System

HVD, HVA TD60-MC (8464) AU

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 inservice.

### HV Diagnostics HVA30 30kV-15mA DC/VLF High Voltage Insulation Dielectrics Test Set

HVD, HVA30-DC/VLF (8461) AU

VLF and DC test capabilities combined in one unit (20kg). Suitable for testing cables (XLPE, PE, EPR, PILC etc), capacitors, switchgear, transformers, machines (IEEE 433), insulators and bushings. VLF (0.1Hz to 0.02Hz), DC (±), cable fault conditioning (burning) and sheath/jacket testing modes all included. Fully automatic or manual cable test sequences complying with International Standards/Guides such as IEEE 400.2, VDE 0276 and CENELEC. True symmetrical sinusoidal, load independent, output waveform across the full load range. Real-time display of actual output wave form. Easy to use, ergonomic, menu guided, large backlit user interface. Large output load capability (up to 5uF). Automatic and integrated load capacitance measurement with optimum frequency selection. Storage of test results for later retrieval or download to a PC/Laptop.



#### HV Diagnostics HVA60 60kV VLF/DC Test Set HVD,HVA60-DC/VLF (8462) AU/MY/SG

VLF and DC test capabilities combined in one unit (60kg). Suitable for testing cables, capacitors, switchgear, transformers, machines, insulators and bushings. VLF (0.1Hz to 0.02Hz), DC (±), cable fault conditioning (burning) and sheath/jacket testing modes all included. Fully automatic or manual cable test sequences. True symmetrical sinusoidal, load independent, output waveform across the full load range. Real-time display of actual output wave form. Large output load capability (up to 5uF). Automatic and integrated load capacitance measurement with optimum frequency selection. Storage of test results for later retrieval or download to a PC/Laptop. For a more comprehensive understanding of insulation condition perform tan delta testing at the same time with optional accessory HVD, HVA TD60.



#### HV Diagnostics/B2HV HVA94 94kV VLF Test Set HVD,HVA94 (8463) AU

VLF, DC and Jacket/Sheath testing. Sinusoidal: 0-94kV peak, 0-66kV rms. DC:  $\pm$  0-90kV and Squarewave: 90kV. Capable of testing cables up to 3,300m - 1µF at 0.1Hz and 61kV rms, 0.85µF at 0.1Hz and 66kV rms. The variable output frequency allows the testing of even much longer cables. 0.01 ... 0.1Hz in steps of 0.01Hz (default 0.1Hz) - auto frequency selection. Stores 50 test records.



#### Megger OTS80PB Transformer Oil Tester MEG,OTS80PB (8450) AU/MY/SG

Test voltage 80kV max at 61.8Hz. Fully automatic operation. Rechargeable batteries. RS232C interface.



#### Megger VIDAR Vacuum Circuit Breaker/Interrupter Tester MEG,VIDAR MY/SG

Checks the integrity of vacuum interrupter/ circuit breaker. User defined voltage selection, with extensive voltage range. Follows ANSI/IEEE standardized DC test methods. A suitable test voltage (DC) is applied to breaker, for PASS/FAIL results.



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### **Transformer Testers**



#### Megger 3Ph TTR & Winding Resistance Tester MEG,MWA330A (8550) MY/SG

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. Includes 18m test leads, which means once the test leads are connected, the instrument performs the full range to transformer tests without the need for test lead reconnection or a separate switch box. Includes a built-in touch-screen PC which will produce PDF reports via USB memory stick, and a built-in printer.



#### Omicron Testrano 600 Three Phase Transformer Tester OMI,TESTRANO600 (8551) AU

Enhanced package. portable, three-phase test system which supports all common electrical tests on single- and three-phase power and distribution transformers. Tests include Transformer turns ratio (TTR) / exciting current, DC winding resistance, Demagnetization, OLTC scan / dynamic resistance measurement (DRM). Supplied with laptop and PTM advanced software.



#### Megger TTR100-1 Handheld Transformer Tester MEG,TTR100-1 MY/SG

A handheld, robust, lightweight and battery operated instrument. Suitable for turns ratio, phase displacement, excitation current, vector group, winding resistance and polarity.



Omicron Franeo 800 Sweep Frequency Response Analyser OMI, FRANEO 800 (8554) AU

Standard package with PTM software. Fully compliant with the IEC 60076-18 and IEEE C57.149 standards. Suitable for power transformer testing and rotating machines testing & monitoring.



#### Omicron CT Analyser Current Transformer OMI,CTANALYZER (8555) AU/MY/SG

Tests protection and metering CTs according to IEEE and IEC standards. Measures phase-angle, ratio, winding resistance, excitation/ saturation, residual magnetism, and burden impedance. Results of the assessment are received as a "pass or fail" decision within seconds due to the automated testing process. Features: Field verification up to the 0.1 accuracy class. Compact and lightweight (< 8 kg). High noise immunity for on-site testing.



#### Omicron Dirana Transformer Insulation Moisture Analyser OMI, DIRANA (8557) AU

Provides accurate and reliable condition assessment of insulation in power transformers, paper-mass insulated cables, bushings, and instrument transformers (CTs/PTs). The DIRANA utilises Dielectric Frequency Response (DFR) to determine the moisture content of oil-paper insulated power and instrument transformers. Features: Non-invasive measurement process. FDS and PDC+ algorithm for fast testing. Results defined by IEC 60422. Comes with laptop featuring pre-loaded software.



#### Omicron SB2 Switch Box for CT Analyser OMI,CTSB2 (8556) AU

An accessory for the CT Analyser which allows automatic testing of multi-ratio current transformers. Up to six connections for the secondary side of the current transformer



### Wika GIR-10 SF6 Gas Detector

WIK,GIR-10 (5909) AU

Gas detector based on infrared technology. Responds only to SF6 gas, therefore not sensitive to humidity and common VOC. Fast response time. Smallest concentrations of up to 0.6 ppmv can be detected. Applications include Locating and quantifying leakages at SF6 gas filled equipment, Determination of leak rate for final inspection of SF6 gas. filled equipment

## **Circuit Breaker Testers**



**Current Injectors** 

## Omicron Cibano 500 Circuit Breaker Test System OMI,CIBANO 500 (4676) AU/MY/SG

Complete with advanced package circuit breaker tester for medium and high voltage circuit breakers. Suitable for Timing tests, Static contact resistance test and Dynamic contact resistance test. Supplied with Primary Test Manager Software ideal tool for the diagnostic testing and condition assessment of circuit breakers.

Megger INGVAR Primary Current Injection Test System

Primary injection testing system consists of a Control Unit and a

Unit is capable of up to 5000A output current with special cables(not

supplied). Suitable for switchgear and CT commissioning, ground

Current Unit. Up to 1600A output current with cables supplied.



## Omicron CPC 100 Multi-functional Primary Test System OMI,CPC100PTS (4620) AU/MY/SG

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: OMI,CPCU1 (with or without OMI,CPSTEP) OMI,CPSB1 OMI,CP-TD1 OMI,CPCB2.

## Omicron CP CB2 Current Booster OMI,CPCB2 (4605) MY/SG

Combined with the CPC 100, the CP CB2 boosts the output current of a CPC 100 from 800A to 2000A.



## Omicron CP CU1 Multi-Purpose Coupling Unit for PC 100 OMI,CPCU1 (4623) AU

Combined with the CPC 100, the CP CU1 is a measurement system for line impedances & k-factors of overhead lines or power cables, mutual coupling of parallel lines, ground impedances of large substations and coupling of power lines into signal cables. This test system overcomes the problem of power system frequency interference that has previously made it necessary to use extremely large, high-power equipment to carry out these measurements.



## Multi-Amp MS-2 High Current Test Set

grid, circuit breaker testing and more.

MEG.INGVAR (4603) AU/MY/SG

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.



## Omicron HGT1 Handheld Grounding Tester OMI,HGT1 (4625) AU

Handheld meter to measure ground impedance, step and touch voltages. Applications include measuring Fall of Potential at locations outside the substation to determine the ground impedance and measuring step and touch voltages at multiple locations using the CPC 100 and CP CU1.

## Current Injectors (cont'd)



Omicron CPSB1 Switch Box OMI,CPSB1 (4621) AU Switch Box to allow fully automated 3 phase transformer testing, accessory for the CPC100.



# Omicron CP TD12 Capacitance and Tan Delta Add-on OMI, CP-TD12 (4624) AU

An accessory for CPC 100 for performing power/dissipation factor and capacitance measurements. Suitable to determine a wide range of electric and dielectric parameters: Power factor, dissipation factor (tan d), Capacitance, Exciting current, Watts / power (P, Q, S), Inductance, Impedance, Current, Phase angle, Quality factor.



#### Omicron CP TD15 Capacitance and Tan Delta Add-on OMI.CP-TD15 (4625) AU

An accessory for CPC 100 for performing power/dissipation factor and capacitance measurements 15KV. Suitable to determine a wide range of electric and dielectric parameters: Power factor, dissipation factor (tan d), Capacitance, Exciting current, Watts / power (P, Q, S), Inductance, Impedance, Current, Phase angle, Quality factor.



#### Omicron CP CR600 Compensating Reactor OMI.CP-CR600 (4626) AU

A compensating reactor for the CP TD12 and TD15. Allows testing of the insulation quality of generators, motors and other systems with high capacitances up to 1°F at rated frequency. Used with CPC 100 + CP TD12/15 for dissipation factor (tan delta) and power factor measurements.

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## **Protection Relay Testing System**



## Omicron CMC 356 Advanced Protection Relay Test Set OMI,CMC356 (4656) AU/MY/SG

Protection relay test set with 6 current sources (6 x 32A/430VA, 3 x 64A/860VA or 1 x 128A/1000VA), 4 voltage outputs (4 x 300V or 1 x 600V), 4 x binary outputs, 10 x multifunctional binary inputs (dry/wet) and Generator Combination Cable for wiring convenience. The voltage and output channels are adjustable in amplitude, phase and frequency. All outputs overload and short-circuit proof. Laptop included, preloaded with Test Universe software (Advanced Protection + Transducer).



## Omicron CMC 356 Enhanced Protection Relay Test Set OMI,CMC356\_ENHANCED (4659) AU/MY/SG

Protection relay test set with 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), 4 x binary outputs, 10 x multifunctional binary inputs (dry/ wet) and Generator Combination Cable for wiring convenience. The six current and four voltage output channels are continuously and independently adjustable in amplitude, phase and frequency. All outputs overload and short-circuit proof. Laptop included, preloaded with Test Universe software Enhanced protection package.



## Omicron Arc 256X Arc Flash Initiator OMI.ARC256X (4658) AU

CMC accessory designed to simulate an arc using a xenon tube. It has a 6m (19.7 ft) long connection cable it is connected to the external interface socket of the CMC test set, which provides both the supply voltage as well as the signal that will trigger the flash.



Learning to operate unfamiliar equipment costs you time and can lead to errors. Save time and reduce your real costs. Discover our Configuration and Download solutions on page 79.



## Omicron CMC 356 Basic Protection Relay Test Set OMI,CMC356-BASIC MY/SG

Protection relay test set with 6 current sources (6 x 32A/430VA, 3 x 64A/860VA or 1 x 128A/1000VA), 4 voltage outputs (4 x 300V or 1 x 600V), 4 x binary outputs, 10 x multifunctional binary inputs (dry/wet) and Generator Combination Cable for wiring convenience. The voltage and output channels are adjustable in amplitude, phase, and frequency. All outputs overload and short-circuit proof. Laptop included, preloaded with Test Universe software .



## Omicron CMC 356 Advanced Protection Relay Test Set +61850 OMI,CMC356\_61850 (4657) AU

Protection relay test set with 6 current sources (6 x 32A/430VA, 3 x 64A/860VA or 1 x 128A/1000VA), 4 voltage outputs (4 x 300V or 1 x 600V), 4 x binary outputs, 10 x multifunctional binary inputs (dry/wet) and Generator Combination Cable for wiring convenience. The 6 current and 4 voltage output channels are continuously and independently adjustable in amplitude, phase and frequency. All outputs overload and short-circuit proof. Includes IEC61850 software package (GOOSE, Sampled Values, IEDScout, SVScout). ELT-1 and LLO-2 options not included. Laptop included, preloaded with Test Universe software (Advanced Protection + Transducer) and IEC61850 package. Optional accessories: OMI,CMA156-6PCA OMI,C-PROBE1 OMI,CMGPS



## Omicron GPS time reference OMI,CMGPS588 (4663) AU

Synchronisation unit is an antenna-integrated GPS controlled time reference. Optimised for outdoor usage and works as a grandmaster clock according to IEEE 1588-2008/ IEEE C37.238-2011 Power Profile.



## Megger (Programma) Sverker780 Relay Test Set MEG,SVERKER780 (4673) AU/MY/SG

Relay test set for 1ph protective relay equipment. Three phase relays can be tested 1 phase at a time or by synchronising more than one unit. Current ranges to 100A with full load current to 250A. AC outputs to 250V & DC outputs to 300V. In-built capacitor and resistors for current output phase shifting. In-built timer, ammeter, and voltmeter. Measures phase angle, PF, and impedance. USB communications and control interface.

# ELECTRICAL POWER

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## **Battery Management Systems**



#### Hioki 3554 Battery HiTester HIO.3554 (8270) AU/MY/SG

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  $1\mu\Omega$ , necessary for high capacity batteries (of at least 500Ah). Includes Hioki 9460 clip type temperature leads.



## Hioki BT3554-52 Battery Tester HIO,BT3554-52 (8271) AU/SG HIO,BT3554 MY

Takes on-the-spot measurements of the internal resistance, and voltage of lead-acid batteries, for UPS and similar applications, without taking it offline. Instantaneous results and easy data management with mobile app( GENNECT Cross) or PC (GENNECT One). Up to 6,000 data sets can be saved. Pass, Warning, or Fail results using comparator function. Comes with Z3210 wireless adapter to communicate with smartphones or tablets via GENNECT Cross App.



# Megger Torkel 950 Battery Discharge Tester MEG,TOR950 (8279) AU/MY/SG

Works with 7.5V to 500V battery systems and can discharge at up to 220A (15kW maximum power). It can be programmed for constant current, constant power, constant resistance or user defined load profiles. The kit includes a 200ADC current clamp allows on-load testing. Tests are controlled by a built in PC and results can be copied to a USB memory stick.

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## Battery Management Systems (cont'd)



## Megger (Programma) TXL870 Extra Load Unit PRO,TXL870 (8277) AU/MY/SG

Optional accessory for the PRO,TORKEL-840 battery load unit. Adds up to an extra 112A load capacity to a discharge test (15.8kW maximum). Operates as a slave in combination with a PRO,TORKEL-840 battery load unit.



#### Megger BVM300 Battery Voltage Monitor MEG, BVM300 (8275) AU

0~5VDC and 0~20VDC 1mv resolution. 1% accuracy daisy chained 31 channel voltage datalogger. Integrates with the Torkel controller to give cell by cell voltage measurement. If the battery string fails a load test the individual battery that is the culprit can be easily identified. These two instruments combineed together meet the test standards IEEE450, IEC896-1, IEEE 1188-1996 & IEC896-2.



# Megger (Programma) TORKEL 860 Battery Load Unit PRO, TORKEL-860 MY/SG

Portable (22kg, 38kg with accessories and transport case) battery discharge load unit. Works with 12V to 480V battery systems and can discharge at up to 110A (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 can be PC controlled and results reviewed using the included TORKEL Win software. The load current can be extended with the optional accessory PRO,TXL870.

# **SETUP AND DOWNLOAD**

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## Fluke DSX-5000 Cable Analyser

#### Setup:

- Company name
- Site
- Tester
- Setup of certification test limit
- Cable type/fibre type

## **Results Downloaded:**

- Raw Fluke Linkware files
- Linkware software
- PDF report results

Our experienced technicians can provide you with downloaded data on a USB drive to help you with unfamiliar equipment. This includes everything you need for a quick setup such as PDF files, raw data files, and the appropriate software.

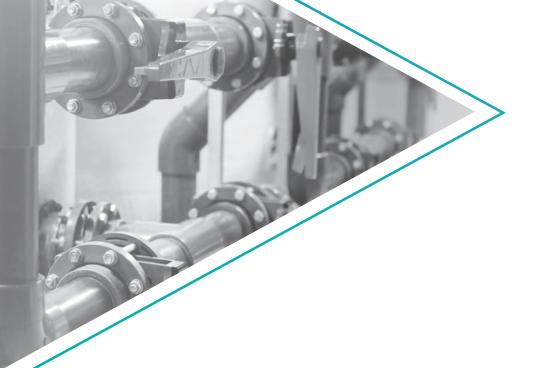
Once you nominate the appropriate technical information, we take care of the rest. The downloaded files can be promptly forwarded to you, or collected at an arranged time that's more convenient.

Equipment marked with the 😳 symbol is available to rent with this service. Fees vary depending on the complexity of operation and the level of detail involved.

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# **General Industrial**

- Pg. 81 Temperature Meters/IR Thermometers
- Pg. 82-83 Infrared Thermal Imaging Cameras
- Pg. 84 Endoscopes, Borescopes & Visual Inspection
- Pg. 87 Tachometers/Stroboscopes
- Pg. 89-90 Laser Rotational Shaft Alignment
- Pg. 90-97 Industrial Process Calibrators
- Pg. 97-99 Wet & Dry Block Calibrators
- Pg. 99 High Speed Wave Recorders
- Pg. 100-103 Data Loggers
- Pg. 103-105 Pressure Vacuum Gauges/Recorders
- Pg. 106-108 Flow Meters for Liquids and Gases
- Pg. 109 Combustion, Flue & Industrial Gas Analysers

## **Temperature Meters/IR Thermometers**



# Fluke 54-2B 2 Channel Data Logging Temperature Meter with FlukeView

FLU,54-2B-FVF (4507) AU/MY/SG

Dual input digital thermometer with data logging. Will take most TC inputs. Accuracy  $\pm 0.05\%$  of reading  $+0.3^{\circ}$ C. 500 point logging with date & time stamp. Also records min, max or avg. Logged data can be reviewed on meter or downloaded to PC using software included. Supplied with 2 x 1m K type thermocouple leads -200 to 800°C.



## Fluke 1524 NATA Precision Handheld Thermometer FLU, 1524 -NATA 15 EC (4512) AU

Precision portable, electronic thermometer with trending, memory for logging 15,000 data and time stamped measurements and 25 readings with statistics. Includes 5615-12 PRT probe, maximum immersion length 305mm, diameter 6.35mm. Temperature range -200 to 420°C.



# Fluke 572-2 High Temperature Infrared Thermometer FLU,572-2 MY/SG

Temperature measurement range from -30 to 900°C with USB interface. 60:1 distance to spot ratio with dual laser sighting for fast, accurate targeting. Adjustable emissivity and predefined emissivity table. Accuracy of  $\pm 1^{\circ}$ C for reading from 0 to 950°C, display resolution 0.1°C. Stores 99 data points, data output via USB cable, comes with software for viewing and reporting.



## Fluke 63 Infrared Thermometer to 535°C FLU,63 (4525) AU/MY/SG

Non-contact mini IR thermometer with 12:1 distance to spot ratio and a temperature range from -32 to 535°C. Delivers 1% accuracy and 0.5% repeatability with laser targeting.

## **Infrared Thermal Imaging Cameras**



#### Flir T640 Thermal Imaging Camera FLI,T640 (45656) AU

High performance thermal imaging camera with on-board 5MP visual camera, 640 x 480 thermal resolution, IFOV 0.68, 8X continuous zoom, time lapse and GPS are just a few of its many features. Temperature range -40 to 2,000°C. Calibration certificate to 1,000°C provided. If certification to 2,000°C is required, please inquire.



#### FLIR E76 Infrared Thermal Imaging Camera FLI, E76 (4573) AU

Temperature range20 to 650°C, IR resolution 320 x 240, 30Hz. Display 10cm 640 x 480 touchscreen, 1-4 continuous digital zoom, video recording, Wi-Fi, USB and Bluetooth enabled. IFOV 1.31 mrad. Image modes include infrared, visual, MSX and picture-in-picture. Features Laser-assisted auto or manual focus, laser distance measurement, moisture, insulation, measurement alarms and GPS image tagging. Applications include electrical distribution, mechanical (belts, rollers, couplings, gaskets/seals, compressors etc), product development, HVAC/R, automotive.



## Flir E75 Infrared Thermal Image Camera FLI,E75 (4574) AU/MY/SG

Temperature range -20 to 650°C, IR resolution 320 x 240, 30Hz. Display 10cm 640 x 480 touchscreen, 1-4 continuous digital zoom, video recording, Wi-Fi, USB and Bluetooth enabled. Image modes include infrared, visual, MSX and picture-in-picture. Features Laser-assisted auto or manual focus, laser distance measurement, moisture, insulation, measurement alarms and GPS image tagging. Applications include electrical distribution, mechanical (belts, rollers, couplings, gaskets/ seals, compressors etc), product development, HVAC/R, automotive.



## Flir E60 MK-II Infrared Thermal Image Camera FLI,E60-II (4575) AU

Temperature range -20 to 650°C, IR and MSX resolution 320 x 240, 60Hz. IFOV 1.36 mrad. 2 and 4x digital zoom. Visual image 3.1mpix, built in LED lamps, laser locator, scalable IR picture in picture. Video recording, touch screen, composite video out, Wi-Fi, and USB. Infrared camera applications include electrical distribution, mechanical (belts, rollers, couplings, gaskets/seals, compressors etc), product development, HVAC/R, automotive. Bluetooth support for voice annotations and selected Extech equipment. PC software provided. Mobile app available.



#### Fluke Ti480 PRO Infrared Camera FLU, TI480 PRO (4564) AU/MY/SG

Temperature range -10 to 1,000°C, 640 x 480 thermal resolution (1280 x 960 with SuperResolution mode) and 0.93 mRad. Wireless connectivity to PC, Apple or Android. Image capture still or video with live streaming capabilities. MultiSharp focus provides image focus throughout the field of view and a built-in laser distance meter displays the distance from your target.



#### Fluke TiS60+ Thermal Imaging Camera FLU.TIS60+ (4585) AU/MY

Temperature range -20 to 400°C, IR resolution 320 x 240, 9Hz, IFOV 1.86mrad, 3.5 inch LCD screen, fixed focus. IR-Fusion, captures a digital visible light image at the same time as an infrared image. The camera blends the two images together, pixel for pixel, in a single display.



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## EVIDENT OLYMPUS

## **Endoscopes, Borescopes & Visual Inspection**

→ See also Pipeline & Cavity Inspection on page 130-131.



#### Olympus IPLEX GL 2m x 4mm Handheld Videoscope OLY.IPLEX-GL 2.4 (5175) AU

2 meter, 4mm diameter handheld videoscope has the following features: Daylight viewing monitor. 60fps for smooth video and still imagers. Dynamic image optimisation, reduces halation, balances exposure and optimises gain quality. Noise reduction, minimises noise and ensures accurate colour reproduction. Constant video recording and video bookmarking. Wireless image sharing (with iOS app "IPLEX IShare" only).

#### Olympus IPLEX GL 3.5m X 6mm Handheld Videoscope OLY,IPLEX-GL 3.5-6 (5176) AU/MY/SG

3.5m x 6mm diameter handheld videoscope has the following features: Daylight viewing monitor. 60fps for smooth video and still imagers. Dynamic image optimisation, reduces halation, balances exposure and optimises gain quality. Noise reduction, minimises noise and ensures accurate colour reproduction. Constant video recording and video bookmarking. Wireless image sharing (with iOS app "IPLEX IShare" only). Optional UV and IR light sources.



# Olympus IPLEX RX 3.5m x 4mm Videoscope with Measurement OLY, IPLEX-RX (5184) AU

Battery powered videoscope. 3.5m x 4mm insertion tube, 4 way, 130° articulation and 120° FOV. Stereo Measurement functions, Distance, Point-to-line, Depth and Area. Applications include inspection of heat exchangers, turbines, gearboxes, automotive parts and aircraft. Still and video recording to USB flash, approx 3,400 images and 30 mins per 1GB.



## Olympus IPLEX RT 7.5m Portable Industrial Videoscope OLY, IPLEX-RT 7.5 (5186) AU/MY

Battery powered videoscope. 7.5m insertion tube, 6mm diameter, 4 way, 100° articulation and 120° FOV. Applications include inspection of heat exchangers, turbines, gearboxes, automotive parts and aircraft. Still and video recording to USB flash, approx 3,400 images and 30 mins per 1GB.

## Olympus IPLEX GT 7.5m x 6mm Portable Industrial Videoscope OLY, IPLEX-GT 7.5 (5185) AU/MY/SG

Designed for the visual inspection of heat exchangers, turbines, gearboxes, automotive parts, aircraft, and other industrial machinery. This lightweight videoscope comes with a 7.5m long, 6mm diameter tungsten braided insertion tube. Record still images and video simultaneously with Smart Video. Features: 8" LCD monitor. Easy-to-use touch screen and hot key controls. Smart Video. TrueFeel articulation. Compliant to MIL-STD-810G.

# The Portable, Powerful Videoscope

## IPLEX G Lite industrial videoscope

- Lightweight, rugged, and goes almost anywhere
- Clear, bright images aid in your decision-making
- Make your inspections fast and efficient



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- Infrared Thermal Imaging Cameras
- Wet and Dry Block Calibrators
- Laser Rotational Shaft Alignment
- Flow Meters for Liquids & Gases
- Endoscopes Borescopes Visual Inspection



## **Tachometers/Stroboscopes**



Chadwick Helmuth 135M-12 Strobex Blade Tracker CHA, 135M-12 (5250) AU

To suit Chadwick Helmuth Vibrex 2000 kit. For setting the timing on helicopter rotor blades.



## Hioki FT3406 Contact/Non Contact Tachometer HIO,FT3406 MY/SG

Speed range for non-contact measurement is 30 rpm to 99,990 rpm, and contact base measurement is 15 rpm to 19,999 rpm. Contact adaptor included for mechanical connection to rotating shaft, and rim wheel adaptor included for linear speed measurement. Analogue output: 0-1 V DC FS with 2% accuracy. Internal battery or external AC operation.



## Monarch PLT200-KIT Digital Contact/Non Contact Tacho MON,PLT200-KIT (5214) AU/MY/SG

Hand held digital contact/non-contact tacho kit. Ranges optical/ non-contact 5 to 200,000 RPM, contact 0.5 to 20,000 RPM. Display 5 digits, 5 alpha numeric LCD. Non contact operating range 90cm, tripod mounting. Direct contact tips and contact wheel supplied. Programmable for IPM, FT/M, YPM, cm/M, m/M, RPM, RPS, RPH and Totaliser up to 200,000. Output TTL pulse.

We offer a calibration service on selected equipment. To find out more, contact us today.



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Our experienced team of technicians can eliminate equipment turnaround time issues with our new on-site service. This hassle-free option allows periodic testing and calibration to be completed without the equipment ever leaving site. Let our team come to you and avoid unnecessary freight and equipment downtime.

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**Electrical Calibration** 



11

5





**IR** Temperature Calibration

**Dimensional Calibration** 

High Voltage Safety Testing

Safety Equipment Inspection





## Fixturlaser ECO Laser Base Shaft Alignment System FIX.ECO MY/SG

Measurement resolution to 0.01mm. Shaft diameter range 25 to 175mm using an extension chain 25 to 450mm. Maximum distance between measurement units 3m. Horizontal Shaft Alignment, Vertizontal Moves for fast alignment process, additional features include Soft Foot Check, Target Values and Tolerance Table. Wireless configuration. 1,000 measurement can stored in JPEG and notes format. Alignment can be monitored in real time. 8h of continuous operation from Li-lon bat.



## Pruftechnik Optalign Smart RS5 Optical Alignment System PRU.OPT-RS5 (4940) AU

Optical alignment system with 5 axis precision sensors. Includes Target, thermal growth and dial gauge input. Multipoint measurement. Spacer and cardan shaft measurment. Compact magnetic brackets. Reliability centre software included.



## Pruftechnik Optalign Touch Standard Optical Alignment System PRU,OPT-TOUCH-STD (4940) AU/MY/SG

Complete with 5 axis precision sensors. Includes target, thermal growth and dial gauge input. Multipoint measurement. Spacer and cardan shaft measurement. Compact magnetic brackets. Reliability centre software included.



## Pruftechnik Tension Chain and Tip Rod Kit PRU, ACC-KIT (4941) AU

Kit of addtional tension chains and tip rods for Pruftechnik Laser shaft alignment system.

(1300 790 480)

www.trcalibration.com.au

## Laser Rotational Shaft Alignment (cont'd)



# Easy-Laser System® XT660 Shaft with Display Unit EAS, XT660 MY

Dot laser technology with single axis TruePSD 20x20mm detectors. Measurement resolution of 0.001mm with max measurement distance up to 20m. Shaft diameter range 20 to 150mm, using extension chain up to 450mm. Alignment for Horizontal & Vertical Mounted Machines 3 Machine Train Alignment, Check base twist, Check bearing play, Check soft foot and Documentation. 16 hours operating time. Includes Easy-Laser XT11 and 8" touch screen display unit (has built-in 13 MP camera for documentation), extension chain, Hexagon wrench and measuring tape.

## **Industrial Process Calibrators**



## Beamex MC6 Multifunction Calibrator NATA Certified BEA, MC6 (4727) AU

NATA certified MC6 provides calibration capability for pressure, temperature, electrical and frequency signals with HART communication and Document Calibrator option included. Performs as a field-entry device (FED) allowing for the recording of non-calibration related maintenance results. Pressure modules included, -1 to 20 bar and 600 bar. DC voltage & current, frequency, and pulse measurement. RTD, thermocouple, and resistance simulation & measurement. Pressure accuracy EXT-600 bar 0.007% FS + 0.01% Rdg, INT-20 bar 0.005% FS + 0.01% Rdg, temperature coefficient ±0.001 % Rdg/°C outside 15 to 35°C.



## Beamex MC6 Multifunction Calibrator NATA Certified -C BEA,MC6-C (4727) AU

Provides calibration capability for pressure, temperature, electrical, and frequency signals. HART communication and CMX light software provided. Calibration results can be stored or printed. Performs as a field-entry device (FED) allowing for the recording of non-calibration related maintenance results. Fluke dry well communication firmware and pressure modules, barometric, 0 to 100m, -1 to 20, 0 to 160, and 600 bar included.



## Beamex MC6 Multifunction Calibrator NATA Certified -K2 BEA,MC6-K2 MY/SG

NATA certified MC6 provides calibration capability for pressure, temperature, electrical and frequency signals with HART communication and Document Calibrator option included. Performs as a field-entry device (FED) allowing for the recording of noncalibration related maintenance results. Pressure modules included, -1 to 2 bar, -1 to 20 bar and Barometric (hand pumps included). DC voltage, current, frequency, and pulse.



#### Beamex External Pressure Module BEA, MC6-PM (4731) AU BEA, PRESSURE MODULE MY/SG

External pressure modules compatible with MC6, MC5, MC4, MC2 MC5-IS, MC2-IS and MC5P calibrators. Various rangers available, please inquire.



#### Druck DPI 611-2-NATA 2 Bar Pressure Calibrator DRU, DPI611-2-NATA (4736) AU DRU, DPI611-2 MY/SG

Fully self-contained pressure test and calibration system combines pressure generation, signal measurement and loop power. Generates from 95% vacuum to 2 bar/30 psi pneumatic pressure with 0.0185% FS accuracy. Calculates PASS/FAIL errors and documents results. User Guide stored in the memory of the instrument, 3-touch set-up for any application.



Learning to operate unfamiliar equipment costs you time and can lead to errors. Save time and reduce your real costs. Discover our Configuration and Download solutions on page 79.

## Industrial Process Calibrators (cont'd)



#### Druck DPI 611-20-NATA 20 bar Pressure Calibrator DRU, DPI611-20-NATA (4748) AU DRU, DPI611-20 MY/SG

Fully self-contained pressure test and calibration system combines pressure generation, signal measurement and loop power. Generates from 95% vacuum to 20 bar/300 psi pneumatic pressure with 0.0185% FS accuracy. Calculates PASS/FAIL errors and documents results. User Guide stored in the memory of the instrument, 3-touch set-up for any application.



## Druck DPI612 70Bar Pressure Calibrator DRU, DPI612-70 MY/SG

Fully self-contained pressure test and calibration system combines pressure generation, signal measurement and loop power. 0 to 70 bar, accuracy 0.005%FS. Calculates Pass/Fail errors and documents results. User Guide stored in the memory of the instrument, 3-touch set-up for any application.



## Druck DPI612 100 Bar Pressure Calibrator DRU,DPI612-100 MY/SG

Fully self-contained pressure test and calibration system combines pressure generation, signal measurement and loop power. 0 to 100 bar, accuracy 0.005%FS. Calculates Pass/Fail errors and documents results. User Guide stored in the memory of the instrument, 3-touch set-up for any application.



## Druck DPI 612 NATA 200 bar Pressure Calibrator DRU, DPI612-200-NATA (4766) AU

Fully self-contained pressure test and calibration system combines pressure generation, signal measurement and loop power. 0 to 200 bar, accuracy 0.005 %FS. Calculates Pass/Fail errors and documents results. User Guide stored in the memory of the instrument, 3-touch set-up for any application.



## Druck DPI612 350 Bar Pressure Calibrator DRU, DPI612-350 MY/SG

Hydraulic pressure calibrator including pump and current voltage standard. Pressure range 0-350bar (5000psi) +/- 0.005% FS. Voltage input +/- 30VDC +/-0.018% rdg +/- 0.005% FS. Current input +/-55mA +/-0.018% rdg +/- 0.005% FS. Temperature -10~30°C +/-1°C (ambient) switch open/ closed. Voltage output 10VDC +/-0.1% or 24 V +/-1%. Current output 0~24mA +/-0.018% rdg +/- 0.006% FS. Data logger -8Gb. mA step & ramp configurable. Pressure port G 1/8 female (Quick-to-fit connection) and 1/8 NPT female adaptors, includes flexible hose kit. Pressure relief valve attached. Comes with rechargeable battery and charger.



## Druck DPI612 700 Bar Pressure Calibrator DRU, DPI612-700 MY/SG

Fully self-contained pressure test and calibration system combines pressure generation, signal measurement, and loop power. Generates from 0 to 700 bar/10,000 psi hydraulic pressure with 0.005% FS accuracy. Calculates PASS/FAIL errors and documents results. User Guide stored in the memory of the instrument, 3-touch set-up for any application.



## Druck DPI620 GENII 350 Bar Pressure Calibrator DRU, DPI620-350 MY/SG

Advanced modular pressure calibrator with HART. Includes hydraulic pressure station with 1/8 BSP(G) or 1/4 NPT test port and 350 bar gauge and absolute pressure module, accuracy 0.005 and 0.015 %FS respectively. Provides simultaneous measurement and source capabilities for the setup, testing and calibration of process instruments including transmitters, transducers, gauges/Indicators, switches, proximity detectors, counters, RTDs, thermocouples and valve positioners.



## Druck PV411A Multifunction Hand Pump Kit DRU, PV411A (4789) AU/MY/SG

Provides up to 700 bar hydraulic, 40 bar pneumatic pressures and vacuum to -950mbar. Built-in stroke adjuster, lower pressure fine control and tamper proof overpressure protection.

## Industrial Process Calibrators (cont'd)



## Emerson AMS Trex Device Communicator with HART EME, AMS TREX-LH (4792) AU/MY/SG

Intrinsically safe HART device communicator. 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 segment characteristics for easy troubleshooting. L "Device Communicator Plus Communication Module" and H-"HART".



## Emerson AMS Trex Device Communicator with HART & FFbus EME,AMS TREX-LF (4793) AU/MY/SG

Intrinsically safe HART and Foundation fieldbus device communicator. Technicians can 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".



#### Emerson 475 Hart Communicator EME.475 MY/SG

Will configure, test, and diagnose your HART<sup>®</sup> and Foundation FieldBus devices. Able to communicate with any device, by any manufacturer. Intrinsically safe. Easy upgrade over the Internet. Interfaces with AMS PC Suite Software.



#### Softing BC-700-PB Profibus Tester 5 PB-T5 SOF, PROFIBUS-5 (4722) AU

A powerful diagnostic and troubleshooting tool for testing cables, measuring signals and analysing the communication of PROFIBUS networks. It's battery-powered and provides a graphical display, allowing for quick results when working in stand-alone mode. In addition, the BC-700-PB supports the export of test results for advanced analysis.

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#### Fitting Set with 700 Bar Hose FIT.HP MY/SG

Fitting set (max pressure = 10,000 psi) for pressure calibrators. Comes with 700 Bar Hose, 20 bar Hose and varous connectors. Female connector sizes: 1/4 inch BSP & NPT; 1/8 inch BSP & NPT; 3/8 inch BSP & NPT; 1/2 inch BSP & NPT.

## NO IMAGE AVAILABLE

## Fitting Set With 20 Bar Hose FIT, LP MY/SG

Fitting set for pressure calibrators. Comes with 20 bar Hose and varous connectors. Female connector sizes: 1/4 inch BSP & NPT; 1/8 inch BSP & NPT; 3/8 inch BSP & NPT; 1/2 inch BSP & NPT.



## Fluke 725 Process Calibrator FLU,725-NATA (4784) AU FLU,725 MY/SG

Dual measure/source process calibrator. Measure DC 30 V, resistance 3200 $\Omega$ , 24mA and more. Source/simulate DC 10V, 24mA, 3200 $\Omega$ , 12 types of TCs and 7 types of RTDs. Power transmitters with internal loop supply. View input and output values with split display.



# Fluke 726 Process Calibrato with NATA Certification FLU,726 MY/SG

Precision multifunction process calibrator designed specifically for the process industry with broad workload coverage, calibration power, and accuracy in mind. Measures and sources almost all process parameters and can calibrate almost anything. Will also interpret results without the help of a calculator and store measurement data for later analysis.

Watch how-to/information videos on any piece of equipment displaying this symbol. Visit the TechRentals YouTube page at www.youtube.com/TechRentals

## Industrial Process Calibrators (cont'd)



## Fluke 753 Documenting Process Calibrator FLU,753 MY/SG

Provides simultaneous source and measure volts, mA, thermocouples, RTDs, frequency, ohms and pressure to calibrate transmitters. It can power transmitters during test, using loop supply with simultaneous mA measurement; measure/source pressure; create and run automated as-found/as-left procedures to satisfy quality programs or regulations; record and document results. Holds up to a full week of downloaded procedures and calibration results. Features include autostep, custom units, user entered values during test, one-point and two-point switch testing, square root DP flow testing, programmable measurement delay etc.



## Fluke 754 Documenting Process Calibrator with HART FLU,754 (4781) AU/MY/SG

Handheld, multi-function documenting process calibrator with HART communication. Designed for the calibration, maintenance, and troubleshooting of test sensors, transmitters, and other instruments. Allows for the testing of all common process parameters including volts, mA, Resistance Temperature Detectors, thermocouples, frequency and ohms. Compatible with all Fluke 700Pxx pressure modules, this device also allows for custom units, user-entered values during test, one and two-point switch testing, square root DP flow testing, and programmable measurement delays. Features: Simultaneous source and measure capabilities. Create and run automated as found/as-left procedures. AutoStep - set an automated sequence of steps (with a delayed start if required). Records and documents results.



#### Fluke 773 Milliamp Process Clamp Meter FLU,773 (4779) AU

Measure 4 to 20mA control lines, PLC loops, transmitters or any 4 to 20mA line without breaking the loop. Capable of 0 to 20.99mA and 24 to 100mA with clamp. Source and simulate mA and voltage signals in circuit. 4 to 20mA scaled o/p.



## Fluke 789 Process Meter FLU,789 PROCESSMETER (4786) AU/MY/SG

Multimeter with 2 to 20mA sink and source capability. HART  $250\Omega$  resistor, 20mA drive into 1,200 $\Omega$ . Simultaneous mA and % of scale readout on mA output. 25% manual step plus auto step and auto ramp on mA output. Min/max/average/hold/relative modes. Dual display. Accuracy, VDC 0.1% +1, VAC 0.7% +2, mA DC 0.05% +2, frequency 0.005% +1.

## Wet & Dry Block Calibrators



## Fluke 9103 Dry Block Temp Calibrator -25 to 140°C FLU,9103 MY/SG

Dry well calibrator, temperature range -25 to 140°C. Is stable to  $\pm 0.02$ °C, and its display is calibrated to an accuracy of  $\pm 0.25$ °C at all temperatures within its range. Insert type A with hole sizes; 1/16", 1/4", 3/8", 3/16", 1/8", and 1/2".



## Grant GR150-S5 Temperature Bath NATA Certification GRA, GR150-S5-NATA (4820) AU

Water/oil bath and circulator for calibrating temperature probes and analytical procedures. Temperature ranges from ambient to 100°C with water and 150°C with silicon oil. Requires 3L oil (not supplied). Stability 0.005°C, uniformity 0.02°C and display resolution 0.1°C. Tank size 300mm W x 150mm D x 150mm H. Features include digital temperature controller and display, timer, alarms, offset adjustment and more.

New items are being added to the inventory constantly, so if you can't see what you're looking for, please call us on 1800 632 652.



## Wet & Dry Block Calibrators (cont'd)

FLU,9170-R MY/SG



## Fluke 9170 Dry Block Temperature Calibrator-45 to 140°C NATA Certified FLU,9170-NATA (4825) AU

Achieves extremely low temperatures reaching -45°C in normal room conditions. Has a large LCD display, numeric keypad, and an onscreen menu which allows the user experience to be easy and intuitive. The display shows the block temperature, cut-out temperature, stability criteria, and ramp rate. Comes with software that enables completely automated calibrations of RTDs, thermocouples, and thermistors. Metrology Wells have four different preprogramed calibration tasks that allow up to eight temperature set points with ramp and soak times between each. Delivers exceptional uncertainty budgets and is perfect for a variety of pharmaceutical and other applications. Features: Display accuracy of  $\pm 0.25^{\circ}$ C full range. Temperature range -45°C to 140°C. Stability  $\pm 0.005^{\circ}$ C full range. Immersion depth 160mm (6.3 inches). Well diameter 30mm (1.18 inches).



## Jofra CTC-1205A Dry Block Temperature Calibrator 1200°C JOF.CTC-1205A (4818) AU

Range 100 to 1,205°C. Accuracy  $\pm 2^{\circ}$ C, stability  $\pm -0.1^{\circ}$ C. Immersion depth 110mm (with insulation plug 137mm). Supplied with insert with hole sizes 3.5, 5, 7 and 10mm.



## Jofra CTC-660A Dry Block Temperature Calibrator 28 to 660°C JOF,CTC-660A (4832) AU/MY/SG

Range of 28 to 660°C. Accuracy ±0.85°C, stability ±0.08 °C and resolution of 0.01, 0.1 or 1°C. Immersion depth 115mm. Supplied with insert M01 (hole sizes, 9, 5, 6, 4, 4, 3mm). With Nata Certification. Various insert sizes available, please inquire.





# Jofra CTC-650A Temperature Calibrator JOF,CTC-650A MY/SG

Exceptionally fast and has deep immersion depths of 110mm (4.3 inch). Heats up to the maximum temperature in just 20 minutes. Temperature range: 33 to 650°C. Accuracy: 0.9°C. Stability: 0.1°C. Multi-Hole insertion tube: 1/4″, 1/8″, 3/8″ and 3/16″.

## Jofra CTC-1200A Temperature Calibrator JOF, CTC-1200A MY/SG

Compact temperature calibrator. Lightweight, portable for lab and general use. Temperature range: 572 to 2200°F (300 to 1205°C). Excellent Performance Characteristics. Accuracy: ±4.0°F (±2.0°C). Stability: +1.0°F (+0.5°C). Stability Time: 20 minutes. Display in F or C to 0.1 resolution. Fast cooling and heating. User-selectable Slope Rates for controlled. Thermo switch testing. Self Diagnostics includes Semi-Auto Switch Test and Hysteresis Test. Size of thermowell/insert: 6.5mm & 10mm. 1/4" probe. 1/2" probe.

## **High Speed Wave Recorder**



## Hioki MR8847-53 8 Analogue 16 Logic Channel Memory Recorder

HIO, MR8847-53 (4122) AU/MY/SG

Complete with 8 analogue and 16 logic channels (16 logic probes supplied). High-speed 20MS/s, Fully Isolated Memory recorder. Analog unit 8966 has max input of 400VDC. Analog unit 8966 has maxium rated voltage to ground: 300VAC/DC.



## Hioki MR6000-01 8 Analogue, 16 logic channel Memory Recorder

HIO, MR6000-01 (4122) AU

20M Sample 8 channels 12bit maxium rated voltage to earth: 300V AC, DC,16 logic channels with voltage detection probes 150V or 15V threshold . Touch screen display with PC remote operation.

## **Data Loggers**



## DataTaker DT80 5 to 15 Channel Logger with USB Memory Stick Download DE,DT80 MY/SG

Measures voltage, current, resistance and frequency. Up to 15 analogue (±30V) sensor inputs. Each channel is independent and supports: one isolated 3-wire or 4-wire input, or two isolated 2-wire inputs, or three common referenced 2-wire inputs. 12 flexible digital channels. Expandable to 300 analogue inputs. Store up to 10 million data points in user defined memory.



# DataTaker DT80M 5 to 15 Channel Logger with Built in Modem DE,DT80M (4234) AU/MY/SG

Includes a built in GSM modem for internet access to the device supports 2G and 3G networks (GSM/GPRS/EDGE/WCDMA). Measures voltage, current, resistance and frequency. Up to 5 analogue (±30V) sensor inputs. Each channel is independent and supports: one isolated 3-wire or 4-wire input, or two isolated 2-wire inputs, or three common referenced 2-wire inputs. Store up to 10 million data points in user defined memory. Generally used at sample rates of 1Hz and slower.



## DataTaker DT80 Expansion Module DE,DTCEM MY/SG

Channel expansion module for DT80 data loggers. Adds 20 full datataker channels to the logger.



# Datataker DT85 48 Channel Logger with USB Memory Stick Download DE,DT85 (4233) AU

Analogue inputs 32 isolated and 48 single ended inputs. 2 x 4 digital input types. 2 x serial sensor ports, Modbus capability, 4 x SDI12 channels, USB memory stick interface for easy data and programming etc. Operating time on the internal battery is 1s sample 2.4h. 5s sample 3 days, 1min sample 1 month.



#### Grant Squirrel 2020 Data Logger GRA,SQ2020-1F8 MY/SG

Measure voltage, current, and resistance. 16 single-ended inputs or 8 differential inputs. 2 high voltage channel (60 v). Includes SquirrelView software for logger configuration and USB data transfer. Stores up to 14 million data.



## Hioki LR8431-20 10 Channel Memory Logger HIO,LR8431-20 (4280) AU/MY/SG

10 Channel Memory Logger with isolated channel to 60VDC which will take thermocouples. 10ms sampling USB interface and USB memory stick. Logging software included. Log directly to memory stick. Includes battery for 2.5hrs continuous operation.



## Hioki Kit of Three 9322 Differential Probe High Voltage True RMS Interface

HIO,9322-KIT (4119) AU

Used with many memory recorders, eg. Hioki 8835. Operating modes 3. DC mode for waveform monitor output DC to 3MHz, AC mode detection of power surge noise 1kHz to 10MHz. Rectified true RMS output of dc & ac voltages. 40Hz to 100kHz response speed 200ms or less. Max voltage DC 2kV, ac 1kV CATII, AC/DC 600V CATIII, balanced differential input 1/1,000 divider.



# Keysight 34980A Multifunction Switch/Measure Unit KEY,34980A MY/SG

34980A multifunction switch/measure unit is a flexible, reliable switching and data acquisition platform. Suitable in design verification, automated test and data acquisition. 8-slot mainframe with 21 mix-andmatch plug-in modules. Scans up to 1000 ch/sec. Built-in 6½ digit DMM.LAN, USB 2.0, and GPIB connectivity, BenchLink data logger software for easy data collection and analysis. Includes 34934A Quad 4x32 Reed Matrix, 34937A, 32 channel form C/Form A general purpose switch and 34952A multifunction module with 32-bit DIO, 2-ch D/A and totalizer.

## Data Loggers (cont'd)



## Testo Saveris 2-H2 Temperature Humidity Loggers Kit of 10 TES,SAV2-H2-10KIT (4250) AU

Kit of 10 includes a preconfigured WiFi hotspot so the 10 loggers will save their data to the cloud. The logged data is available on line. The temperature sensor  $0 \sim 40^{\circ}$ C  $\pm 0.3^{\circ}$ C. Humidity sensor  $0 \sim 100\% \pm 2\%$ RH. 4mm diameter remote probe.



## Testo Saveris 2-T3 Temperature Loggers Kit of 10 TES,SAV2-T3-10KIT (4253) AU

Kit of 10 includes a preconfigured WiFi hotspot so the 10 loggers will save their data to the cloud. The logger data is available online. The temperature sensors are type K thermocouples 0.9m.



## Testo 174H Temperature and Humidity Logger Kit of 20 TES,174-KIT20 (4252) AU

-20~70D °C  $\pm 0.5$  °C 0~100%RH±3% (2~98%RH). 160000 readings up to 1min sample rate. 1 year battery life (@15min intervals).



#### Testo 175-H1 Temperature & Humidity Logger TES,175-H1 (4251) AU/MY/SG

Large Display. 3 year battery life, 1 million sample memory. RH 0~100% ±2%, temp -20~50°C ±0.4°C. Includes USB interface to download data.



## Testo 184 G1 Temperature, Humidity & Acceleration Data Loggers - Kit of 10 TES, 184G1-KIT10 (4252) SG

Kit of 10 Temperature, Humidity & Shock Loggers. Simple to use with a tamperproof design. -20~70°C, 0~100%RH & 0~27g. HACCP Certified. Has built in USB port and will download to android or apple via USB. Battery life: 120 days (at +25 °C and 15 min. meas. cycle). Includes software for download of data to a PC. A PDF report with the transport data is created immediately on connection of the testo 184 G1 data logger to the USB.

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## Testo 184H1-KIT5 Temperature & Humidity Data Logger Kit of 5 TES, 184H1-KIT5 (4252) MY/SG

Simple to use with a tamperproof design. -20~70° C, 0~100% RH. HACCP Certified. Has built in USB port and will download to Android devices using NFC. Battery life 120 Days (15min sampling). Includes software for download of data to A PC. Saves data by default to a PDF file.

## **Pressure Vacuum Gauges/Recorders**



## Crystal XP2i Digital Logging Pressure Gauge 7 Bar NATA Calibrated CRY,XP2I-100-NATA (4340) AU

CRY,XP2I-100 MY/SG

Range -1 to 7 bar (100 psi) Nata certified pressure gauge. Accuracy, ±0.1% of reading between 20 to 100% of full scale, ±0.02% of full scale between 0 to 20% of full scale. Generation 3 gauges have 32,000 point logging capacity at intervals from 1 second to 18 hours, ULP (Ultra Low Power) setting allowing logging for 1 year and PSV/PRV (Pressure Safety/Pressure Relief Value) mode increasing measurement rate to approx. 8x per second. Gen 2 gauges have 6,000 points and logging intervals from 1 second to 18 hours. Logs actual pressure, average pressure, average pressure with peaks and, on demand. Intrinsic and safety ratings registered under IECEx, ATEX and DNV standards.



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## Pressure Vacuum Gauges/Recorders (cont'd)



## Crystal XP2i Digital Logging Pressure Gauge 20 Bar NATA Calibrated CRY,XP2I-300-NATA (4341) AU

Range -1 to 20 bar (300 psi) Nata certified pressure gauge. Accuracy, ±0.1% of reading between 20 to 100% of full scale, ±0.02% of full scale between 0 to 20% of full scale. Generation 3 gauges have 32,000 point logging capacity at intervals from 1 second to 18 hours, ULP (Ultra Low Power) setting allowing logging for 1 year and PSV/PRV (Pressure Safety/Pressure Relief Value) mode increasing measurement rate to approx. 8x per second. Gen 2 gauges have 6,000 points and logging intervals from 1 second to 18 hours. Logs actual pressure, average pressure, average pressure with peaks and, on demand. Intrinsic and safety ratings registered under IECEx, ATEX and DNV standards.



#### Crystal XP2i Digital Logging Pressure Gauge 70 Bar NATA Calibrated CRY,XP2I-1K-NATA (4342) AU CRY,XP2I-1K MY/SG

Range 70 bar (1K psi) resolution 0.1m bar. Accuracy is 0.1% of reading, down to 20% of the range. Vacuum accuracy 0.25% of -1 bar (-14.5 psi). Generation 3 gauges have 32,000 point logging capacity at intervals down to 125 msec (in PSV mode). Generation 2 gauges have 6,000 point logging capability at intervals from 1 sec. Logs actual pressure, average pressure, average pressure with max and min and on demand. 1/4 NPT connector. Intrinsic and safety ratings registered under IECEx, ATEX and DNV standards.



## Crystal XP2i Digital Logging Pressure Gauge 138 bar NATA CRY,XP2I-2K-NATA (4343) MY/SG

138 bar (2,000 psi) Nata certified pressure gauge. Accuracy, ±0.1% of reading between 20 to 100% of full scale, ±0.02% of full scale between 0 to 20% of full scale. Generation 3 gauges have 32,000 point logging capacity at intervals from 1 second to 18 hours, ULP (Ultra Low Power) setting allowing logging for 1 year and PSV/PRV (Pressure Safety/ Pressure Relief Value) mode increasing measurement rate to approx. 8x per second. Gen 2 gauges have 6,000 points and logging intervals from 1 second to 18 hours. Logs actual pressure, average pressure, average pressure with peaks and, on demand. Intrinsic and safety ratings registered under IECEx, ATEX and DNV standards.



# Crystal XP2i Digital Logging Pressure Gauge 206 Bar NATA Calibrated

CRY,XP2I-3K-NATA (4343) AU CRY,XP2I-3K MY/SG

206.8 bar (3,000 psi) Nata certified pressure gauge. Accuracy, ±0.1% of reading between 20 to 100% of full scale, ±0.02% of full scale between 0 to 20% of full scale. Generation 3 gauges have 32,000 point logging capacity at intervals from 1 second to 18 hours, ULP (Ultra Low Power) setting allowing logging for 1 year and PSV/PRV (Pressure Safety/ Pressure Relief Value) mode increasing measurement rate to approx. 8x per second. Gen 2 gauges have 6,000 points and logging intervals from 1 second to 18 hours. Logs actual pressure, average pressure, average pressure with peaks and, on demand. Intrinsic and safety ratings registered under IECEx, ATEX and DNV standards.



## Crystal XP2i Digital Logging Pressure Gauge 690 Bar NATA calibrated

CRY,XP2I-10K-NATA (4344) AU CRY,XP2I-10K MY/SG

690 bar (10,000 psi) Nata certified pressure gauge. Accuracy, ±0.1% of reading between 20 to 100% of full scale, ±-0.02% of full scale between 0 to 20% of full scale. Generation 3 gauges have 32,000 point logging capacity at intervals from 1 second to 18 hours, ULP (Ultra Low Power) setting allowing logging for 1 year and PSV/PRV (Pressure Safety/Pressure Relief Value) mode increasing measurement rate to approximately 8x per second. Gen 2 gauges have 6,000 points and logging intervals from 1 second to 18 hours. Logs actual pressure, average pressure, average pressure with peaks and, on demand. Intrinsic and safety ratings registered under IECEx, ATEX and DNV standards.



## Crystal XP2i Digital Logging Pressure Gauge 1 bar NATA CRY,XP2I-15-NATA (4338) AU

Range; -1 to 1 bar (15 psi) NATA certified pressure gauge. Accuracy; ±0.1% of reading between 20 to 100% of full scale and ±0.02% of full scale between 0 to 20% of full scale. Generation 3 gauges have 32,000 point logging capacity at intervals from 1 s to 18 h, ULP (Ultra Low Power) setting allowing logging for 1 year and PSV/PRV (Pressure Safety/Pressure Relief Value) mode increasing measurement rate to approx 8x per second. Gen 2 gauges have 6,000 points and logging intervals from 1 s to 18 h. Logs actual pressure, average pressure, average pressure with peaks, and on demand. Intrinsic and safety ratings registered under IECEx, ATEX, and DNV standards.

## **Flow Meters for Liquids and Gases**



#### Panametrics PT900 Ultrasonic Flowmeter GE,PT900 (6100) AU/MY/SG

Portable non-contact liquid flowmeter using transit time principle. Includes thickness gauge and 2 sets of transducers, one 12.5mm to 50mm the second 50mm to 600mm diameters & temperatures -20 to 210°C with clamping fixtures. Flow velocity range 0.03 to 12.2m/s. Accuracy typically 1%. Data logging to internal memory, accessed as external drive when plugged into a PC via USB. Setup and monitoring using Android device. Rechargeable NiMH batteries and AC power supply/charger. Typical battery life ~ 14 hours.

# DISCOVER SUPERIOR PERFORMANC GE PT900 ULTRASONIC FLOWMETER

Easily determine the flow volume of a full pipe so you can make informed decisions around your plant expansion.

- Non-invasive measurement technique
- Accuracy within 1% of reading
- Touchscreen Android tablet included
- Wireless Bluetooth tablet-to-transmitter communication
- IP 65 transmitter transducer
- Measures temperatures -20 to 210 degrees Celsius



## GE PT900E Ultrasonic Liquid Flow Energy Meter GE, PT900E (6104) AU/MY/SG

Portable non-contact liquid flowmeter using transit-time principle. Includes thickness gauge and 2 sets of transducers, one 12.5mm to 50mm the second 50mm to 600mm diameters & temperatures -20 to 210°C with clamping fixtures. Flow velocity range 0.03 to 12.2m/s. Accuracy typically 1%. Data logging to internal memory, accessed as external drive when plugged into a PC via USB. Setup and monitoring using Android device. Rechargeable NiMH batteries and AC power supply/charger. Typical battery life ~ 14 hours. Supplied with Energy measurement option to calculate energy flow rate and totalized energy using Analogue I/O. RTD temperature transmitter with range -10 to 150°C.



#### GE PT900 High Penetration Transducers GE,PT-CRR05 (6101) AU

The fixture is suitable for pipe larger than 150mm up to 1m. Transducer type #591 suitable for pipes from 150mm pipe to larger sizes -40-130°C.



## GE Panametrics Large Pipe Transducer Set GE,PT9-CRR-05-NT MY/SG

Transducer for PT900 flowmeter for pipe larger than 600mm diameters. Comes with PT9-CRR-05-NT pair of 0.5MHz transducers (-40 to150°C) and additional chain for pipe sizes up to 1200mm.



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## Flow Meters for Liquids and Gases (cont'd)



## Panametrics PT878GC Ultrasonic Gas Flow Meter PAN, PT878GC-01-MY MY/SG

Portable non-contact gas flowmeter using transit-time principle. For operation with ultrasonic transducer-kits (PAN,GC-RL302 & PAN,GC-RL319) - available separately. Compatible with metal or plastic pipes in the range 20 to 300mm. Suitable for use with compressed air, natural gas and other gases. Readout for flow velocity, actual or standard volumetric flow or mass-flow in numerical or graphic format. Internal logging for 100K flow data points. Infrared communications port for download to PC or printer interface. Rechargeable battery for 8h continuous operation.



## Panametrics PT878GC-01 Ultrasonic Gas Flow Meter Kit PAN, PT878GC-01-KIT (6152) AU

Portable non-contact gas flowmeter using transit-time principle. Compatible with metal or plastic pipes and supplied with transducer kit in the range 20~300mm. Suitable for use with compressed air, natural gas and other gases. Readout for flow velocity, actual or standard volumetric flow or mass-flow in numerical or graphic format. Internal logging for 100K flow data points. USB communications port for download to PC. Rechargeable battery for 8h continuous operation.



## Polysonics Hydra SX30 Dual Frequency Doppler Liquid Flowmeter POL, HYDRA-SX30-2 (6132) AU

Dual frequency doppler ultrasonic non-contact flowmeter. Velocity range 0.06 to 10m/s, accuracy ±1%. Pipe size range 12 to 5,000mm diameter. Data logging for 90,000 points, with PC software and interface cable for download via RS232C interface. Transducer temperature range -40 to 122°C. Analogue output 4 to 20mA. Battery operated, 12h continuous use (8h recharge).

## **Combustion, Flue & Industrial Gas Analysers**

→ See also Environmental Gas & Vapour Meters on page 151.



#### Novatech O<sub>2</sub> and CO<sub>2</sub> Analyser/Transmitter NOV, 1637-5 (5954) AU

Oxygen and carbon dioxide analyser for packaging atmosphere, general industrial and research use. Oxygen sensor reading 1ppm to 100% with 1% accuracy. NDIR carbon dioxide analysis 0 to 100%  $\pm$ 3% of full scale. 2 x 4 to 20mA outputs, 1 common & 3 selectable alarm relays. Gas connection 1/8 Swagelok. Flow rate with internal pump 100 to 500cc/min. AC operation.



## testo 340 Portable Flue Gas Analyser TES,340 (5915) AU/MY/SG

Includes O2, CO (h2 compensated), CO2 (calculated), NO & NO2 sensors. 335 mm engine probe suitable for diesel and boiler testing with temperate probe, 350 mm pitot tube, Bluetooth printer, and easy emission software.



## testo 350 Flue Gas Analyser TES,350 AUMY/SG

With built in Peltier gas preparation (chiller). Measures O2, CO, NO, NO2, and SO2 concentrations. Calculates CO2 concentration. Ranges: O2 0-25% vol, CO with H2 compensation 0-10,000 ppm, NO 0-4,000 ppm, NO2 0-500 ppm, SO2 0-5,000 ppm.. Comes 0600 7555 Engine probe with temperature up to +1,000 °C. Bluetooth printer & easy emission software. Battery and AC mains operation.

Learning to operate unfamiliar equipment costs you time and can lead to errors. Save time and reduce your real costs. Discover our Configuration and Download solutions on page 79.



# -10 °C 20 -20 °C 30 -20 °C 30 -30 °C 40.

## **Material Hardness Testers**



#### GE DynaMic Rebound Hardness Tester GE, DYNAMIC (4936) AU

Makes hardness testing quick and easy. The simple operation of this unit allows the user to position the impact devices and read the hardness value, all in a matter of seconds. Provides readings in HV, HB, HRC, HRB, HS, HL, and M/mm2. This advanced unit will compensate for changes in testing direction. The Data Logger model can internally store hardness values along with statistical information. Features: Measurements can be conducted in any direction without the need for calibration. Rebound hardness testing standardised according to ASTM A956 and DIN 50156. Ergonomic, lightweight design (0.3kg). Test attachments for curved surfaces. Applications: Solid, coarse-grained components. Machine parts made of steel and cast aluminium alloys. Large series parts during production. Heavy forgings.

# Physical Measurement

Pg. 111 Material Hardness Testers

- Pg. 111-114 Non-Destructive Testing
- Pg. 115 Force Gauges
- Pg. 115 Load Cells
- Pg. 116-117 Vibration Analysis
- Pg. 118 Speed Measurement

## **Non-Destructive Testing**

→ See also Non-Destructive Testing on page 164-171



## Defelsko 6000 Ferrous & Non Ferrous Coating Thickness Tester DEF, POS-6000 (4870) AU/MY/SG

Ferrous/Non Ferrous metal coating thickness tester with storage of up to 100,000 readings. Supplied with external probe, calibration standards and carry pouch. Measurement range 0 to 1500µm or 0 to 60 mils (selectable). Tolerance ±1µm +1% of reading 0-50µm, ±2µm +1% greater than 50um. Resolution 0.1µm. Backglow display, HiLo limits audible & visible alerts when measurements exceed specified limits. Continually displays updates average, standard deviation, min/ max thickness and number of readings while measuring. Built in USB, Bluetooth and Wifi for downloading readings.

We offer a calibration service on selected equipment. To find out more, contact us today.



## Non-Destructive Testing (cont'd)



# PosiTector 200 B & C Ultrasonic Coating Thickness Gauge DEF, POS-200ADV (4880) AU/MY/SG

Ultrasonic coating thickness gauge with type B & C Probes. Measures coating thickness over wood, concrete, plastics, composites etc. Will measure up to 3 individual layer thickness in a multi-layer system and features a graphic readout. Supplied with both B, 13 to 1000 $\mu$ m for wood, plastic and composites and C probes 50 to 3800 $\mu$ m for coatings on concrete, fibreglass etc. Accuracy is  $\pm 2\mu$ m +3% of reading.



## Defelsko Positest Pull Off Adhesion Tester for Concrete & Metal DEF, POSITEST (4895) AU

Measures the force required to pull a specified test diameter of coating away from its substrate using hydraulic pressure. Pressure is displayed in both MPa and PSI on a precision dial indicator and can be related to the strength of adhesion to the substrate. Suitable for coatings on both metal and concrete surfaces. Conforms with standards ASTM D4541 and ISO 4624.



## Mitutoyo Pro360 Digital Protractor model 950-317 MIT, PRO360 (4907) AU

Measures inclination values on an easy-to-read LCD. Measurements are generated by an electronic gravity sensor. Full 360° range (90° x 4). Alternate reference (zero), reading hold. Display remains upright to view at all angles. (950-317, Pro 360 Model). Accuracy:  $\pm 0.1^{\circ}$ Level  $\pm 10^{\circ}$ , Plumb  $\pm 10^{\circ}$ ,  $\pm 0.2^{\circ}$  Maximum error, Repeatability:  $\pm 0.1^{\circ}$  and Resolution: 0.1°.



## Olympus 27mg Pocket Thickness Gauge OLY,27MG (4910) AU

Range 1~500mm, fast min mode. Resolution 0.01mm. Probe operates -20~150°C.



## Olympus 38DL Ultrasonic Thickness Gauge OLY,38DL (4905) AU

Performs non-destructive measurements. Supplied with D790-SM and D7906-SM transducers suitable for steel. Capable of THRU-COAT and Echo-to-Echo measurements on painted and coated surfaces. This handheld device is commonly used to measure the remaining thickness of pipes, tubes, tanks, pressure vessels, hulls, and other structures affected by corrosion or erosion. Colour transflective VGA screen, Rugged design for IP67. Data logging capability.



#### Olympus 38DL Thickness Gauge Probe OLY,38DL PROBES (4908) AU

Probes suitable for Olympus 38DL thickness gauge: 1 x M2008 Probe 1 x M202-RM Robe 1 x M1036 Probe 1 x M109-RM Probe



## Mitutoyo SJ-210-NATA Surface Roughness Tester MIT,SJ210-NATA (4906) AU

Comprises LCD display and a detachable detector/drive unit. Parameters measured in Ra, Rq, Ry, Rz, Rt, Rp, R3z, Rk, Rpk, Rvk, S, Sm, Pc, mr, Mr1, Mr2, A1, A2, Vo units. Ranges: 350, 100, 50um & 10um, resolution from 0.01~0.4um. Tip radius 5mm. Data output. NiCd batteries.



## PCWI 30kVDC Porosity (Holiday) Detector PCW,DC30 (4885) AU

Detects pinholes in coatings above 150µm on metal substrates such as pipes and tanks. 0-30kV, 3.5 digit LCD display with battery indicator, display of voltage level. Alarm indicated on front panel, supplied with rechargeable battery, 10h charger, probe handle with neon and 2m length cable, 60mm connector for flat brushes, 7m earth cable with clamp, fan brush, 250mm flat brass wire brush, 450mm probe extension. Dry conditions.

Watch how-to/information videos on any piece of equipment displaying this symbol. Visit the TechRentals YouTube page at www.youtube.com/TechRentals

## Non-Destructive Testing (cont'd)



## PCWI 40kV Pulse Porosity (Holiday) Detector PCW,P40-PULSE (4890) AU

Pulse porosity (Holiday) detector. Detects pinholes in coatings and wrapping above 150µm on metal substrates such as pipes and tanks. Can be used on dry or wet surfaces. 0~40kV output, 4 digit LED display of voltage, alarm sensitivity setting between dry and wet. Supplied with rechargeable battery, 10h charger, red probe handle and 2m length of rubber coated cable, 60mm connector for flat brushes, 7m earth cable with clamp, fan brush, 250mm flat brass wire brush, 450mm probe extension and 80mm probe extension.

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## **Force Gauges**



#### Mecmesin AFG-1000NALC Digital Force Gauge MEC, AFG-1000NALC (4428) AU

Range 0 to 1,000N accuracy 0.1%. 5 digit back lit display. Peak data sampling rate 5kHz. 120% overload warning, display invert (reverse) function, dual max, max tension & max compression plus current reading. Outputs: analogue, RS232 & Mitutoyo. Accessories: test hook, compression plate, 130mm & 30mm extension rods, rotary coupling. Mounting tapped holes x 2, M5 x 0.8 x 5.5mm deep max. Optional smart sensors can be used, such as TW60 static torque wrench.

## **Load Cells**



## Futek IHH500 Pancake Load Cell 2T Capacity FUT,IHH500-2T (4416) AU

TheIHH500 display & LCF500-FSH02968 loadcell operate at up to 20 tonnes (50,000lb) in compression and tension. The IHH500 handheld display is a logging microcontroller which can store up to 21000 points, it is powered by a rechargeable battery which can last for up to 30 hours depending on battery condition and load. It will operate from its mains charger if needed. The system has a simple 'Tare' function and can display 'Max Hold' using a single front panel key. The lead that connects the loadcell to the display is 1.6 Meters long. The load is connected via M33x2-Threads. There are two eye bolts supplied with the system, however the eye bolt capacity is 7 ton. The software is supplied on a USB flash drive/dongle.



## Futek IHH500 Pancake Load Cell 20T Capacity FUT,IHH500-20T (4418) AU

The IHH500 Display & LCF500-FSH02968 loadcell operate at up to 20 tonnes (50,000lb) in compression and tension. The IHH500 hand held display is a logging microcontroller which can store up to 21,000 points, it is powered by a rechargeable battery which can last for up to 30 hours depending on battery condition and load. It will operate from its mains charger if needed. Has a simple 'Tare' function and can display 'Max Hold' using a single front panel key. The lead that connects the loadcell to the display is 1.6 Meters long. The load is connected via M33x2-Threads. There are two eye bolts supplied with the system, however the eye bolt capacity is 7 ton. The software is supplied on a USB flash drive/dongle.

## ENHANCE WORKER SAFETY

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## **Vibration Analysis**

→ See also Sound, Noise & Vibration Monitoring on page 146-147.



## Bently Nevada TK3-2E Proximity Probe Test System BEN,TK3-2E (5085) AU/MY/SG

Simulates shaft vibration and position for calibrating proximity probes. Uses a removable spindle micrometer assembly to check the transducer system and position monitor calibration. Features a universal probe mount that accommodates probe diameters. (5 mm to 19 mm).



#### ESS Gecko Ground Vibration Logger ESS.GECKO-BLAST (5020) AU

Includes audible and visible alarm. Will operate continuously to supplied battery and solar panel. 32bit ADC 3 axis vibraphone built in. Includes GPS receiver for accurate timne stamping and location information. Will record PPV excedence data for assessing vibration of structures. Will record 1 year of data at 100sps. D ata format Miniseed, industry standard for seismic data. Will timestamp alarm events with waveform and frequency data.



## GCDC High Impact USB Accelerometer Data Logger X500-2 GCD,X500-2 (5055) AU

USB impact accelerometer provides 3 axis 512Hz sampling. Built in 2G micro SD card. 500g sensors.



## Madgetech 5g Transient Shock Transport Logger MAD, TSR101-EB-5 (5000) AU

Includes a 5g triaxial Accelerometer. The extended battery option gives a 30 day battery life. It also includes the magnetic mount kit. Records detail of all shocks above a user selectable threshold from 1 Hz to 1024 Hz. Has a total of 340k measurements per axis. Resolution .01g accuracy 0.2g.



## Profound Vibra Ground Vibration Logger PRO, VIBRA (5023) MY/SG

Designed for long-term ground vibration logging. Ideal for applications in the construction industry where safety and environmental considerations must be taken into account. Includes a geophone and remote alarm with flashing light (for loud environments), and comes bundled in an IP65 rated case. Download of data is possible without interrupting ongoing measurements and the unit is configured to meet DIN 4150 (part 2, 3 and SBR - part A and B) Vibration in buildings - effects on structures and effects on persons in buildings standards. Features: Remote monitoring possible with alarms and reports sent via email. Up to four weeks operation on 3 x D cell batteries. Velocity range 0 to 100 mm/s. Smart alarm (frequency dependent on velocity according to DIN 4150). USB interface.



## Rion VA-12 Vibration Analyser RIO, VA-12 (5040) AU/MY/SG

Includes magnetic pickup type. Stores measurements. Measures acceleration, velocity and displacement. Displays in either time or frequency domain. Display rms, peak and crest factor. Uses FFT to display power and vibration spectrum. Stores memory to SD.



# TMS Portable Vibration Calibrator including Wobulator Option TMS,9110D-WOB (5080) AU/MY/SG

A compact and completely self-contained unit, suitable for electromechanical testing over a wide range of frequencies and amplitudes. This vibration reference source from TMS operates with digital closed loop control, for enhanced stability and accuracy. Applications Include: Field validation of vibration sensors, proximity probes and vibration monitoring equipment. Accelerometer checking. Velocity transducer testing. Calibrating data collectors and vibration switches. Features: Wide frequency range 7Hz to 10kHz (420 to 600,000 CPM). Internal memory (500 records). USB flash drive output. Customisable calibration certificates compliant with ISO 17025. Accelerometer calibration as per ISO 16063-21.

## **Speed Measurement**



## Stalker PRO II Radar Speed Gun Kit Including Large Display STA, PROII-KIT (5722) AU

Includes a radar gun, tripod & large 3.5 digit display with 20cm high digits. Includes 4 modes of operation; Carnival, Baseball, Tennis, and Vehicle modes. Operates at up to 1290 kph.

# SATELLITE PHONE COMMUNICATION SOLUTIONS



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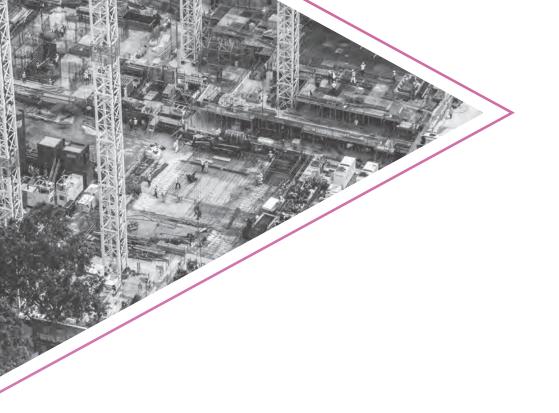


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# Construction

- Pg. 121-124 Air Conditioning & Air Flow
- Pg. 125 Air Conditioning Valve Balancing
- Pg. 125-128 Concrete Testing Equipment
- Pg. 128 Underground Service Location
- Pg. 129 Utility Leak Detection
- Pg. 130-131 Pipeline & Cavity Inspection
- Pg. 132 Laser Levels

## **Air Conditioning & Air Flow**



## Alnor EBT731 Balometer Electronic Balancing Tool ALN,EBT-731 **MY/SG**

Features a detachable multi-purpose digital manometer that can be used with the following test and balance tools, such as pitot, static pressure probe or a 16-point velocity matrix. Volume Range: 25 to 2,500 ft cube/min (42 to 4250 m cube/h) with capture hood. Velocity Range:25 to 2,500 ft/min (0.125 to 12.5 m/s) with velocity matrix. Unit comes with 2ft x 2ft,2ft x 4ft and 1ft x 4ft hoods.



# Alnor EBT731-STA Electronic Micromanometer ALN, EBT-731-STA **MY/SG**

Features a detachable multi-purpose digital manometer, capture hood stand and a Smart Tablet loaded with LogDat<sup>™</sup> Mobile App to enable remote display and logging of data. The EBT731-STA can also be used with the following test and balance tools, such as pitot, static pressure probe. Volume Range: 25 to 2,500 ft cube/min (42 to 4250 m cube/h) with capture hood. Unit comes with 2ft x 2ft,2ft x 4ft and 1ft x 4ft hoods.



## Druck DP1705 Manometer 0 to 20kPa DRU,DP1705 (5808) AU/MY/SG

Handheld digital manometer range 0 to 20kPa, accuracy 0.2%. Displays all common engineering units.



## Druck DPI705 Pressure Gauge 7 Bar ABS DRU, DPI705-7BARA (5816) MY/SG

Handheld digital pressure gauge range 0~7bar absolute, with remote sensor, accuracy 0.1%. Displays all common engineering units.

## Air Conditioning & Air Flow (cont'd)



#### testo 417 100mm Vane Anemometer TES,417 (5839) AU

Vane an emometer 100mm head. Display velocity and temperature. Has averaging function to measure ducts. 0.3~20m/sec  $\pm$ (0.1m/s + 1.5% mv) Temperature 0~50°C  $\pm$ (0.5°C). 50Hr battery life.



## testo 420 Air Balancing Flow Hood System TES.420 (5825) AU/MY/SG

Includes 610x610, 360x360, 305x1220, 610 x 1220 hoods and stand and 500mm pitot tube. Measures 40~4000m 3 /hr ±3%, Temperature 0~70°C ±0.5°C -20~0°C ±0.8°C, 0~100%RH ±1.8%+3%Rdg, Differential Pressure -120~120Pa ±2%Rdg+.05Pa. Kit includes a stand and an Android or iPhone app can be downloaded for one man remote operation. Kit includes 500mm pitot tube.





## testo 420 Differential Pressure Instrument TES,420DP (5814) **AU**

Used for volume flow measurements, pitot tube measurements and pressure measurements for air conditioning and ventilation systems. Measuring ranges: Flow velocity: 0 to 14m/s, Pressure (absolute pressure): 70 to 110 kPa, Pressure (differential pressure): -120 to +120 Pa. Resolution: Flow velocity: 0.01 m/s, Volume flow: 1 m<sup>3</sup>/h. Pressure (absolute pressure): 0.1 hPa/0.1 mbar/0.01 kPa, Pressure (differential pressure) 0.00001 hPa/0.00001 mbar/0.0001mm H2O/0.000001 in H2O. Storage temperature: -20 to +60°C, operating temperature: -5 to +50°C.



## testo 400 Logger with Temperature/Humidity/Absolute Pressure Hot Wire Probe

TES,400-HW (5840) AU

Includes a Bluetooth extendable probe 0635-1571 measures Temperature -20~70°C, Humidity 5~95%, Abs Pressure 700~1100Hpa & Hot Wire air velocity 0~50m/sec. Extension 57cm~100cm. The instrument itself has Differential Pressure -100~200Pa and Absolute Pressure -700~1100HPa. Extensive communications capability including email, bluetooth, PC management software and even teamviewer for remote control.



# TSI VelociCalc 100mm Vane Anemometer with Volume Display TSI,8324 MY/SG

With 100mm head, supplied with handle and 900mm articulated telescopic extension. Velocity measurement range 0.25 to 30m/s  $\pm$ 1%; temperature measurement range 0 to 80°C  $\pm$ 0.5°C. Volume display range 0 to 4.36 x 106m<sup>3</sup>/h with input for circular or rectangular duct dimensions. Variable time-constant; sample statistics average, max and min; and "sweep" mode for extended continuous sampling. Internal memory for single point measurements or time-based data logging, for up to 2849 samples and 1,000 test IDs, with serial interface, cable and software for data download. Direct data acquisition [polling] from PC terminal modes. Battery powered with auto-power-off, and optional AC adaptor.



## TSI VelociCalc 100mm Anemometer TSI,5725 (5838) AU

100mmm reversible vane anemometer and temperature probe. Logs 12700 samples Displays velocity and temperature. Calculates volumetric flow rate when user inputs duct shape and size or area. Anemometer accuracy 1.0% of reading +/-0.02m/sec. Temperature Accuracy +/-1.0DegC. NATA calibration certificate included.



## Air Conditioning & Air Flow (cont'd)



## TSI 8710 DP-CALC Differential Micro-Manometer TSI,8710 (5813) AU

Micro-manometer for static or differential pressure, velocity, volumetric flow, atmospheric pressure and temperature. With statistical analysis, density correction, K factor and automatic actual/standard flow calculation. Differential pressure range ±3735Pa. Velocity display to 41m/s (range depends on probe). Supplied with static tip, pitot tube, velocity matrix and temperature probe. Datalogging (1,000 point) with RS232C interface and software. Rechargeable cells or AC adaptor.



#### TSI TA465A Multi-Function Ventilation Meter TSI, TA465A MY/SG

Portable, hand held, Multi-Function Ventilation Test Instruments. It comes with differential pressure. It also comes with the 966 articulate probe which measures air velocity, temperature and humidity. Calculations include air flow, heat flow, turbulence, wet bulb and dew point temperature. Velocity Measurement Range: 0 to 9,999 ft/min (0 to 50 m/s) Accuracy:  $\pm 3\%$  of reading or  $\pm 3$  ft/min ( $\pm 0.015$  m/s) Resolution: 1 ft/min (0.01 m/s) Temperature Measurement Range: 14 to 140°F (-10 to 60°C) Accuracy:  $\pm 0.5^{\circ}$ F ( $\pm 0.3^{\circ}$ C) Resolution: 0.1°F (0.1°C) Humidity Measurement Range: 0 to 95% RH Accuracy:  $\pm 3\%$  RH Resolution: 0.1% RH.



## TSI 9565A VelociCalc Air Conditioning Efficiency Meter TSI,9565A (5849) AU/MY/SG

Efficiency measurement system for HVAC and related work, with hot wire anemometer, static and differential pressure, temperature and humidity measurement with heat flow efficiency calculation. Velocity (hot wire) 0 to 50m/s, accuracy ±3%. Temperature -10 to 60°C, accuracy ±0.3. Wet bulb temperature 5 to 60°C. Relative humidity 0~95%RH, accuracy ±3%. Dewpoint -15 to 49°C. Static/differential pressure -3,735 to 3,735Pa, accuracy ±1%. Battery operated. USB & Bluetooth download.



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## **Air Conditioner Valve Balancing**

→ See also Data Loggers: Testo Temperature & Humidity Loggers on pages 102 - 103



## Tour & Anderson Scope Balancing Meter 1000kpa TA, SCOPE (5801) AU/MY/SG

Digital flow balancing instrument with color display. For cooling water valve balancing in air conditioning plants and similar applications. Allows for balancing of all hydronic valve types. Differential pressure range -0.5 to 20.5m water gauge at a total pressure of less than 200m. Resolution 0.001m. Flow resolution 0.001l/s. Battery operated.

## **Concrete Testing Equipment**

→ See also Endoscopes, Borescopes & Visual Inspection on page 84 and 171.



# Elcometer 331-SH Cover Meter with Half Cell Measurement ELC,331-SH (4919) AU

Displays the depth and orientation of the reo bars. Standard search head. 40mm diameter bar depth 15 to 95mm. 8mm diameter bard depth 8 to 70mm. Rechargeable battery allows 32h of continuous operation (20h with backlight). Autosizing of bars or orthogonal measuring of bar sizes. Internal storage of readings of depth of cover in batches which can be downloaded to PC with supplied software. XP and Vista supported.



## Hilti PS250 Ferroscan System HIL,PS250 (4921) AU

Portable, quick and easy to use for detecting rebar and other ferrous objects in concrete structures. Provides accurate on-site rebar location, depth and diameter with the PSA100 monitor. Scans can be evaluated on the monitor or transferred to a PC or laptop for further evaluation and report generation. Portable wireless operation, easy integrated LCD display makes setting up the scan easy while providing information over the scan process. Fast data download via infra red beam from scanner to monitor. Convenient Scanner stores up to 9 image scans and 30m of Quickscans.

## Concrete Testing Equipment (cont'd)



## Proceq GPR-Live PRO Concrete Ground Penetrating Radar PRO,GPR-LIVE-PRO (4922) AU/MY/SG

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. Software supplied with iPad for easy analysis of data on-site. Addtional capabilities like Pro time-slice view, 3D view, Data sharing and reporting, augmented reality and secure cloud features are available.



## Proceq GPR-Live Concrete Ground Penetrating Radar PRO,GPR-LIVE(4923) AU

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 Basic app supplied with iPad for easy analysis of data on-site.



## Proceq Resistivity Meter PRO, RESIPOD (4925) AU

Can determine the likelihood of corrosion and the corrosion rate in concrete. 0 to 1,000 k $\Omega$  measurement range. USB interface, USB charging. Waterproof.



## Proceq Profoscope Rebar Locator & Cover Meter PRO, PROFOSCOPE (4926) AU/MY/SG

Rebar locator and covermeter. Short range measurements to 95mm. +/-3mm accuracy. Long range 185mm accuracy  $\pm$ 4mm. The unit will determine the position of the rebars, the mid point between rebars, Concrete cover, estimation of bar diameter & the orientation of the rebar. Powered by 2 x AA batteries. Battery life 15h with backlight 55h without.



## Proceq PL-200PE Ultrasonic Concrete Test System PRO, PL-200PE (4927) AU

Can determine depth of perpendicular cracks, slab thickness from a single side and it can also locate and measure voids, pipes, cracks parallel to the surface. It will estimate the 'internal' compressive strength of the concrete.



## Proceq SilverSchmidt UN Concrete Test Hammer PRO,SIL-UN (4928) AU

Requires no corrections for angle of test, simple one button operation, datalogging capability with USB download with detailed reporting capability. Impact Energy 2.207Nm. Compressive strength range 10~170MPa. Battery Life >1000 Impacts before recharging is required.



#### Defelsko Positest Concrete Moisture Meter DEF, POS-CMM (4950) AU/MY/SG

Concrete moisture meter using the electrical impendance to measure concrete moisture. Designed to do area scans the kit includes a telescopic extender. Measure 0~6% moisture content of concrete, 0~4% carbide method equivalent or 0~100% RH. Accuracy  $\pm 0.5\%$  moisture content of concrete.



#### Protimeter Moisture Measurement System PRO,MMS-PLUS (4955) AU

Moisture meter for detection of moisture in non conductive solid materials such as wood and masonry. Two measurement modes, search for qualitative measurements and measure mode for precise and localised moisture content. Supplied with pin type probes, deep wall probes, hygrometer probe and extension cord for RH, ambient temperature or dew point temperature. Hygrostick probe supplied for surface temperature measurement. Logging software and RS232 computer interface supplied.

## Concrete Testing Equipment (cont'd)



#### Protimeter Moisture Measurement System PRO,MMS2 (4956) AU

Moisture meter for detection of moisture in non conductive solid materials such as wood and masonry. Two measurement modes, search for qualitative measurements and measure mode for precise and localised moisture content. Supplied with pin type probes, deep wall probes, hygrometer probe and extension cord,for RH, ambient temperature or dew point temperature. Hygrostick probe supplied for surface temperature measurement. Also includes IR measurement capability. Logging software and USB interfacecomputer interface supplied.

## **Underground Services Location**

→ See also Endoscopes, Borescopes & Visual Inspection on page 84 and 171.



## C.Scope DXL4 and SGV4 Cable and Pipe Locator CSC,DXL4-SGV4 (3719) AU/MY/SG

Cable and pipe avoidance and location tool with depth measurement. Simultaneous dual 33+131kHz frequency will assist in the detection of smaller buried pipes and cables such as telecoms, cast iron and street lighting spurs. 4 available power levels up to 1 watt and depth detection approximately 3 meters (depending on soil type and operating mode). Four detection modes; Power, Radio, Generator and Allscan. Features a Dynamic Swing Sensor to aid in cable and pipe location.



# Vivax VLOCPRO2 Pipe & Cable Location System VIV, VLOCPRO2 MY/SG

Pipe and cable locator with intuitive menu system, colour display, peak, null, left/right and orientation (compass) response to support your preference. Configured with 6 location frequencies, power and radio modes. 10 W transmitter can apply the location signal by connection, induction and signal clamp. Depth detection up to 6 to 9 m in broad-peak mode.

## **Utility Leak Detection**



## Fluke ii900 Ultrasonic Industrial Imager FLU,II900 (3805) AU/MY/SG

Displays the location and magnitude of compressed air leaks. Operates from 2kHz~52kHz will detect leaks of .0025L/sec at 7bar from 10m. Sunlight readable display. Frequency band selection. 6hrs of battery life. Recharge time 3hrs.



# UE Systems UP3000 Digital Ultrasonic Leak Detector UES, UP3000 (3810) AU

Ultrasonic inspection system. Displays dB levels. Readings can be stored and downloaded. A tone generator is supplied together with a stethoscope probe and a rubber focusing probe. Interface software to download readings is also supplied.



# UE System UP9000 Digital Ultrasonic Leak Detector UES, UP9000 MY/SG

A complete digital ultrasonic inspection and information storage/ retrieval system. With the acoustic isolating headphones and frequency tuning, background noises such as machinery and plant are filtered out making it easier to pinpoint any leaks. The range of quickly interchangeable modules as well as the balanced pistolgrip design make the Ultraprobe 9000 useable in a wide variety of situations and perfect for many different tasks.



## **Pipeline & Cavity Inspection**



## Camtek Cavity/Bore Hole Pan Tilt Camera CAM,CAMERA PT (5127) AU

Complete with a Sony HD image sensor housed in a waterproof casing (8 bar, 80m) with 360/180 degree pan tilt capability and 120 degree FOV with LED lighting. Diameter of 50mm, length of 150mm and is attached to 100 meter soft cable specifically designed for vertical deployment. Features include a 20cm colour LCD monitor with video output, file playback, video capture (MEG4) and can be powered via mains or on board battery. The unit also has a text overlay function with built in keyboard.the GE,EVEREST CA-ZOOM to operate.



#### GE Everest PTZ-140 Camera Head GE EVEREST PTZ-140 (5129) AU

140mm diameter colour camera module (fits through a 140mm opening) and features a 360°pan, 234° tilt, 36x optical and 12x digital zoom, high-intensity lighting and waterproof packaging to 45m or 4.5 bar (65 psi). Requires the GE,EVEREST CA-ZOOM to operate.



## GE Everest PTZ-70 Camera Head GE, EVEREST PTZ-70 (5130) AU

70mm in diameter (fits through a 76mm opening) and features 10x optical zoom and 4x digital zoom for a total of 40x zoom. Eight 5-watt LED lights with variable intensity control, 360° continuous pan direction and 270° tilt capability. Waterproof to 45m or 4.5 bar (65 psi). Requires the GE,EVEREST CA-ZOOM to operate.



Learning to operate unfamiliar equipment costs you time and can lead to errors. Save time and reduce your real costs. Discover our Configuration and Download solutions on page 79.



#### GE Everest Ca-Zoom GE, EVEREST CA-ZOOM (5131) AU

Ca-Zoom and hand-held controller is a portable, case-mounted, camera controller with real-time, multitasking software operating system which supports file storage on 64MB of internal flash memory and CompactFlash removable storage media. Provides for integrated image capture and full motion video recording capabilities, onboard file manager and annotation. Includes connectors for camera, handheld controller, video input/output, USB streaming, and keyboard for text generation. Supplied with 30m camera head cable and extension pole 1.8 to 3.6m. Camera heads must be chosen separately, see model GE, EVEREST PT-70 and GE, EVEREST PTZ-140.



# Wohler VIS-350 Service Camera Visual Inspection System 30m WOH, VIS350 PLUS MY/SG

30 meter compact colour video inspection system with 26mm forward facing camera head waterproof according to IP68 (up to 3 bar-30m depth) and a 40mm Pan Tilt colour camera, waterproof according to IP67 (up to 1m) with a viewing angle of 120 degrees. Adjustable illumination, camera orientation/gravity and degree of inclination display, 8.9kHz sonde in each camera detectable with the L-200 locator down to approximately 1.5m (depending on soil type). Memory storage 1hr/Gb. Applications include damage analysis in water/drainage/sewer pipes, inspection of hollow spaces, ventilation, machines, control panels, exhaust systems and production surveillance.



# Wohler VIS-350 Service Camera Visual Inspection System 30m WOH, VIS350-PT (5142) AU

30m compact colour video inspection system with 26mm forward facing camera head waterproof according to IP68 (up to 3 bar-30m depth) and a 40mm Pan Tilt colour camera, waterproof according to IP67 (up to 1m) with a viewing angle of 120 degrees. Adjustable illumination, camera orientation/gravity and degree of inclination display, 8.9kHz sonde in each camera detectable with the L-200 locator down to approximately 1.5m (depending on soil type). Memory storage 1hr/ Gb. Applications include damage analysis in water/drainage/sewer pipes, inspection of hollow spaces, ventilation, machines, control panels, exhaust systems and production surveillance.

## Construction

Laser Levels

## FLUKE

## The invisible threat... now you can see



#### Topcon RL-SV2S Dual Grade Laser TOP, RL-SV2S (1088) AU

Dual grade laser is Ideal for grading carparks and trenches with 1 or 2 slope directions. Designed for a wide range of tasks, can be used for horizontal, sloping and vertical laser applications. Slopes up to 5% can be used in either the X or Y axis. Turn it on its side and use it for alignment and layout tasks as well. With an operating range of more than 800m (diameter), IP66 rating and 65h operating time with rechargeable batteries, the RL-SVS2S grade laser is tough enough for any job. Features: Dial-in grade setting. Grade matching (manual slope). Hi Alert. Warning on LS (Hi alert, battery). Electronic beam masking. Vertical setting. Vertical alignment. Remote control (range 200 m) RC-60.



#### Topcon RL-SV2S Dual Grade Laser TOP, RL-SV2S (1088) AU

Ideal for grading carparks and trenches with 1 or 2 slope directions. Designed for a wide range of tasks, the RL-SV2S can be used for horizontal, sloping and vertical laser applications. Slopes up to 5% can be used in either the X or Y axis. Turn it on its side and use it for alignment and layout tasks as well! With an operating range of more than 800 metres diameter the Topcon RL-SV2S will cover every task.



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## **Fluke ii910 Precision Acoustic Imager**

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

• Partial discharge detection: ii910 allows you to detect Corona and Partial Discharge even when there is no direct line of sight.

• SoundSight<sup>™</sup> technology: translates the sounds that it hears into a visual representation so that you can easily scan and quickly locate problem areas.

• **PDQ Mode™:** provides a relative severity of a discharge, so that you can determine whether action is required after Partial Discharge has been detected.



# **Survey & Spatial**

Pg. 135 Robotic Total Stations

Pg. 136 Laser Scanners

- Pg. 138-139 GPS Network Rovers For use inside CORS Telstra areas
- Pg. 140 GPS Bases & Rovers For use outside CORS Telstra areas
- Pg. 141 Mapping GPS
- Pg. 141 Traverse Kits
- Pg. 142 Optical & Digital Levels
- Pg. 142 Bipods & Tripods

## **Robotic Total Stations**

All robotic kits include prism, tablet controller and rangepole. Complimentary tripods and bipods on request.



## Topcon LN-150 Robotic Total Station TOP,LN150 (5441) AU

Entry-level robotic accurate to a few mm with 100m range. An extremely easy to use Robotic Total Station ideal for those needing high accuracy. Range 0.9 to 130 m, accuracy +/- 3mm. Easy operation for the non-surveyor. Features: Self Leveling for easy setup. Setup over a point, or observing 2+ known points. Uses the same easy to use Magnet Field software as the Topcon GPS systems. Ideal for pick-up or layout to a few mm accuracy.



## Trimble S5 1" Robotic with TSC7 Controller TRI,S5\_1SEC\_TSC7 (5444) AU

The Trimble S5 offers the ideal package of exclusive Trimble features and proven technology to help you work efficiently and accurately. Features: TSC7 Controller with 7" screen and Trimble Access. Trimble DR Plus for long range reflectorless and superior accuracy. MultiTrack Target "Traklight ". One second angular accuracy.



# Trimble S9 1sec Monitoring Robotic Total Station TRI,S9\_1SEC (5447) AU

Designed for monitoring, tunnelling, and other highly specialised applications. Features: 1 second angular accuracy. High precision EDM. Complete with Vision and Finelock.



## Leica TS16 1" Robotic Total Station with CS20 Controller LEI,TS16\_1SEC\_CS20 (5438) AU

Leica TS16 is benchmark for surveying accuracy. Whether you want to stake-out an object on a construction site, need accurate measurements of a tunnel or a bridge, or survey a parcel of land - you need reliable and precise data. Automatically adjusting to any environmental conditions, the Leica Viva TS16 locks onto your, and only your, target. Features: The latest CS20 controller with Leica Captivate, Powersearch for finding your prism easily, Reflectorless range greater than 500m, 1 second angular accuracy.

## Survey & Spatial

## **Laser Scanners**

All laser scanner kits include carbon fibre tripod & tablet controller. Complimentary heavy wood tripods on request.



Leica BLK360 Laser Scanner LEI.BLK360 (1040) AU

Captures the world around you with full-colour panoramic images overlaid on a high-accuracy point cloud. Simple to use with the single push of one button, the BLK360 is the smallest and lightest imaging laser scanner of its kind. Anyone who can operate an iPad can now capture the world around them with high resolution 3D panoramic images. Requires Cyclone desktop software, see next page.



## Trimble X7 Laser Scanner

TRI,X7 (1036) **AU** 

A new all-in-one laser scanning solution. The scanning system delivers powerful performance with simple operation. This is ideal for the surveyor, and non-surveyor alike. Features: Export a combined Point Cloud straight from the tablet in the field. Automated survey grade self-leveling. Trimble Registration Assist for automatic registration. Complete with Tripod and T10 Tablet



#### Leica RTC360 Laser Scanner LEI,RTC360 (1038) AU

Simply the fastest, most productive and most powerful laser scanner on the market. Highly portable, highly automated, intuitive and designed for maximum productivity. Use the included iPad to automatically record your moves from station to station to pre-register your scans in the field without manual intervention. Features: Capture 2 million points per second. Full Dome HDR imagery in 1 minute. Full High Res scans in less than 2 minutes. Vis, inertial, compass, altimeter and GPS sensors. Requires Cyclone desktop software, see next page.



New items are being added to the inventory constantly, so if you can't see what you're looking for, please call us on 1800 632 652.



# NOISE & VIBRATION MONITORING

When compliance is critical to your project's success, partner with Australia's most trusted local supplier of environmental monitoring equipment rentals.

Discover easy and efficient rental solutions for all your noise and vibration monitoring essentials on **pages 146 - 147 of the catalogue.** 

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## **GPS Network Rovers**

For use inside CORS-Telstra Areas

These Kits include CORS-Telstra access, tablet controller & rangepole. Complimentary bipods on request.



## Leica GS16 Network Rover with Controller LEI.GS16-NET (5327) AU

A compact and self-learning GNSS smart antenna. Featuring Leica's RTKplus GNSS engine, this receiver is able to be more selective about what signal it uses and intelligently adapts to changing conditions by selecting the optimal signals to deliver the most accurate positions. Paired with Leica's SmartCheck RTK quality control, the GS16 offers some of the highest standards in GNSS measurement. Includes a CS20 controller running Leica Captivate software and rangepole.



## Leica GS18 T Network Rover with Controller LEI,GS18T-NET (5328) AU

You no longer need to hold the pole vertical to level the bubble with the new Leica GS18 T, the fastest and easiest-to-use GNSS smart antenna and RTK rover. This latest innovation combines GNSS and inertial micro units (IMUs) to be the first true tilt compensation solution immune to magnetic disturbances and is calibration-free. Measure hard to reach points such as pipe inverts, building corners, posts etc. Survey and Stakeout with far greater speed than ever before. Features: CS20 controller with Leica Captivate. Tilt Compensation for up to 20% quicker operation. Superior under canopy performance



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# Topcon HiPerSR Network Rover with Controller TOP, HIPERSR-NET (5330) AU

A lightweight and completely integrated GNSS receiver (GPS plus Glonass) for real-time cm level accuracy anywhere within a GPS network where there is mobile signal. It is an ultra-lightweight and easy to use network rover. Weighs only 800gm and has an IP67 environmental rating means you can rely on its performance even in the harshest conditions. Ultra-lightweight and easy to use network rover for simple or complex surveyin surveying tasks. This 100% integrated receiver operates cable-free, with no antennas, battery doors or connectors to worry about. It connects via Bluetooth to the FC-5000/FC-6000 controller running Magnet Field software. Features: Easiest to use and lowest rental rate of any GNSS Rover. Ideal for a non-surveyor wanting simple site positioning. Lightweight with carbon fiber pole. Ideal for simple pick-up and stakeout surveying tasks. Large 7" map display.



# Topcon HiPerSR Network Rover with Controller, Pocket 3D TOP, HIPERSR P3-NET (5331) AU

A lightweight and completely integrated GNSS receiver (GPS plus Glonass) for real-time cm level accuracy anywhere within a GPS network where there is mobile signal. It is an ultra-lightweight and easy to use network rover. Includes Pocket3D software.



## Trimble R12 Network Rover Controller TRI,R12 ROVER-NET (5333) AU

Building upon the foundation laid by the R10-2 and HD-GNSS, the Trimble R12 GNSS receiver is engineered for improved performance in challenging GNSS conditions. Push your GNSS surveying further than you ever thought possible with Trimble's latest developments in GNSS signal management. Features: TSC7 Controller with Trimble Access. Trimble's new ProPoint processing engine better maintains high GNSS performance in sky-obstructed urban and natural environments. Includes VRSNow network RTK access.

## **GPS Bases and Rovers**

For use outside CORS-Telstra Areas.

Base-only or Rover-only kits available. Base kits includes long-life battery and tribrach. Rover kits includes tablet controller and rangepole. UHF radio licences available for short term rents. Complimentary bipods on request.



#### Trimble R10-2/R12 UHF Base TRI, R10 BASE-UHF (5342) AU

R10/R12 Base receiver sits on a tripod and broadcasts UHF corrections. Features: Includes Trimble R10/R12 Base receiver with internal 2W UHF radio. Complete with tribrach, adapter, short pole, 6AH battery. Together with a Trimble UHF Rover this RTK kit allows cm level position outside of GPS network and Telstra coverage areas. Use with optional Trimble TDL450 UHF repeater for long range work.



#### Trimble R10-2/R12 UHF Rover with Controller TRI.R10 ROVER-UHF (5344) AU

Collect more accurate data faster and easier - no matter what the surveying job or the environment, with the Trimble R10-2/R12 GPS / GNSS System. Built with powerful technologies like Trimble HD-GNSS, this unique system provides Surveyors with a powerful way to increase productivity in every job, every day. Features: TSC7 Controller with Trimble Access. Trimble HD-GNSS processing engine enables surveyors to measure points more quickly.



#### Trimble TDL 450H UHF Repeater TRI.REPEATER-UHF (5346) AU

450H repeater can typically rebroadcast the Trimble R10-2 signal another 5 to 8km from the Base station. Features: Digital display. 2W to 35W output (ACMA license required). Typically place 5 to 10m from the Base, or where the base radio becomes weak.

## **Mapping GPS**



# Trimble R2 RTX Rover with Controller TRI,R2-RTX (5371) AU

A compact, durable GNSS receiver that provides an easy-to-use solution for GIS or survey professionals who need to collect highly accurate data in a wide range of geospatial applications. Combined with the Trimble T7 and Trimble Access, or BYO own field tablet and software, this is an easy to use rover solution. Perform DGPS work outside of Telstra areas with Trimble RTX corrections delivered via satellite data link. RTX works anywhere on land with a good view of the sky, down to 2cm horizontal 5cm vertical. Can also receive UHF radio corrections. Optional backpack mount available.

## **Traverse Kits**

High precision prisms, holders and tribrachs. These kits allow you to achieve the best possible accuracy with your total station. Swap target and robotic for easy reverse measurements. Leica kit includes 2 sets. Trimble kit includes 1 set.



## Leica Traverse Kit with 2 Targets LEI, TRAVERSE (1166) AU

Can be used with the Leica Robotic Total Stations for use as a backsight or for precise traversing. Features: Matches the height of the Leica Instruments. Easy backsights or false centre traversing. Contains 2 x Targets, laser plummets in a single carry case. Provided with 1 or 2 Heavy Duty Tripods if needed.



## Trimble Traverse Kit TRI, TRAVERSE (1168) AU

The Trimble Traverse Kit can be used with the S-series Robotic Total Station for use as a backsight or for precise traversing and surveying tasks. Features "Matches the height of the S-Series Robotics " Easy backsights or false centre traversing " Provided with a Heavy Duty Tripod if needed.



# **Optical and Digital Levels**



#### Leica LS10 Digital Level LEI,LS10 (1082) AU

Alleviates demanding levelling tasks on any site. Automated functions and industry-leading 0.3mm accuracy allow users to easily demonstrate their measuring skills while effectively completing any project. The entire measurement process is made more efficient with LS10 digital level. Common levelling errors, like misreading the staff or transcription mistakes, are worries of the past. Features: 1mm accuracy based on a 1km double levelling run. 3.6" colour touch screen. 1.8 to 110m range

# **Bipods and Tripods**



**Need an extra set of legs?** All of our kits are available with a manufacturer tripod or rangepole rod. Additional bipods, tripods & staffs are complimentary with any corresponding survey equipment rental – simply let our team know when you book.

# DUST MONITORING

# Ensure Worker and Community Health with TechRentals' **Dust Monitoring Solutions**

With bad air quality causing health problems for workers, community complaints, and the closure of sites, it is important to monitor the amount of dust your work site is producing.

TechRentals can provide easy to deploy and cost-effective dust monitoring equipment! The equipment is tested and fully assembled with all the accessories needed. We also have technical support available to help answer any questions you may have.

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You can view the full range of our dust monitoring equipment on **pages 147 - 148** of the catalogue.



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# **Airborne Dust & Particle Meters**



#### Aerqual Dust Sentry Profiler Outdoor Dust Monitor AER, DUST-PROFILER (5851) AU

Will monitor data and store the information in the cloud. This instrument will log PM1 200ug/m3 range, PM2.5 2000up/m3 range, PM10 5000up/m<sup>3</sup> range 5000ug/m3 & TSP range 5000ug/m<sup>3</sup>. Accuracy +/-5ug/m<sup>3</sup> + 15% of reading. Lowest detection limit <1ug/m<sup>3</sup>.



#### TSI 8530 DustrTrak II Desktop Aerosol Monitor TSI,8530 (5873) AU/MY/SG

Portable dust and particle monitor, light scatter photometer. Measures concentrations of a single dust fraction corresponding to either PM1, PM2.5 or PM10. Aerosol concentrations .001~ 150mg/ m3. Used for industrial/occupational hygiene surveys, indoor air quality monitoring, outdoor environmental monitoring, baseline trending and screening etc. Includes AutoZero Module



#### TSI DustTrak DRX 8533 Aerosol Monitor TSI,8533 (5870) AU/MY/SG

Portable dust and particle monitor, light scatter photometer. Measure concentrations corresponding to PM1, PM2.5 and PM10. Aerosol concentrations .001 to 150mg/m<sup>3</sup>. Used for industrial/occupational hygiene surveys, indoor air quality monitoring, outdoor environmental monitoring, baseline trending and screening etc. Will size particles in 4 sizes PM1, PM2.5, PM4 and PM10. Includes AutoZero Module



# TSI 8533-ENC Outdoor Enclosure for DustTrak with Pervasive Telemetry

TSI,8533-ENC (5876) AU

Outdoor enclosure for TSI DustTrak 8530 or 8533. Includes internal batteries, AC power adaptor and Pervasive Telemetry.



#### TTSI Aerotrak Handheld Particle Counter 9306 V2 TSI,9306 AU/MY

Generates Pass/Fail reports for ISO 14644-1, EU GMP Annex1 and FS209E. Count particle sized 0.3~25um, flow rate 2.83L/min. Counts 6 channel sizes. Includes data storage and download.

# **Environmental & OHS**

Pg. 145 Airborne Dust & Particle Meters

Pg. 146-147 Sound, Noise & Vibration Monitoring

Pg. 148-149 Gas Dectectors

- Pg. 150 Radiation Monitoring & Protection
- Pg. 151 Environmental Gas & Vapour Meters
- Pg. 152 Air Quality & Heat Stress
- Pg. 153 Moisture & Humidity Meters
- Pg. 154 Water Quality Meters
- Pg. 155 Water Samplers/Pumps
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# Sound, Noise & Vibration Monitoring

→ See also Vibration Analysers on page 116-117.



#### ARL NGARA Environmental Noise Logger ARL,NGARA (5690) AU

Class 1 environmental noise logger designed for unattended monitoring that offers full measurement flexibility. Can be configured to record all sound continuously so noise data can be post-processed. Also capable of providing logged data, WAV data, and alarm/triggered details. The on-board LCD and push-button interface makes for simple control and configuration of the logger. Features: Class 1 Sound Level Meter. Includes Class 1 Acoustic Calibrator. 20 to 120dB measurement range. A and C frequency response. Capable of storing raw audio data to USB storage.



# ARL NGARA Environmental Noise Logger with Modem ARL,NGARA-4G (5691) AU

A Class 1 environmental noise logger designed for unattended monitoring. Offers full measurement flexibility. Can be configured to record all sound continuously so noise data can be post-processed. Is also capable of providing logged data, WAV data, and alarm/ triggered details. Includes a 4G modem and provides email alarms for noise exceedance. Full data upload to the Noise Cloud is an option. Solar Panels for extended deployment are available. Features: Class 1 Sound Level Meter, includes Class 1 Acoustic Calibrator, 20 to 120dB measurement range, 4G modem with email alarms included, solar panels for extended deployment available. Option for Noise Cloud.



#### Profound Vibra Cloud Ground Vibration Logger PRO.VIBRA-CLOUD (5025) AU

Designed for long-term ground vibration logging. It is ideal for applications in the construction industry where safety and environmental considerations must be taken into account. Includes SMS alarms and is IP65 rated. Cloud access optional. Download of data is possible without interrupting ongoing measurements and the unit is configured to meet DIN 4150 (part 2, 3 and SBR - part A and B), 'Vibration in buildings - Effects on structures' and 'Effects on persons in buildings' standards.



#### Profound Vibra Wireless Alarm PRO, VIBRA-ALARM (5026) AU

Add one or more visual alarms to a PRO,VIBRA-CLOUD. These rechargeable alarms wirelessly link with one or more Profound ground vibration monitors. With a 5/8" mounting thread these alarms can be mounted on a standard tripod.



#### Geophone Mounting Plate - Ground/Floor PRO, VIBRA-MPLATE (5027) AU

Machined Stainless Steel Mounting plate for Geophone when deployed on horizontal surface. Ball joint allows geophone to be levelled. 3 reversable feet. Rounded end for deployment on hard surfaces. Spike end for deploment on soft surfaces, such as soil or through carpet.



#### Rion NL52EX SLM with NX42RT Octave and 1/3 Analyser RIO,NL52EX-NX42RT (5670) AU

Type 1 Sound Level Meter, including the Octave and 1/3 Octave measuement option NX42RT. Can be used to check NC levels for compliance checking. Includes a NATA calibrated calibrator. All data is saved to an SD card.



#### NTI XL2+M2230 Sound Level Meter & Acoustic Analyser NTI,XL2+M2230 (5605) MY/SG

Type 1 Sound Level Meter & Acoustic Analyzer, includes real time analyser with 1/1 or 1/3 octave-band resolution. Build in FFT Analyzer, Polarity, Delay Time and Audio Analyzer. Frequency 5Hz to 20kHz, sound pressure level up to 137 dB. All data is save to SD card. Standards compliance check to IEC 61672, IEC 60651, IEC 60804, IEC 61260.

# **Gas Detectors**



#### BW GasAlertMicroClip X3 confined space 4 Gas Detector BW,MICROCLIP (5937) AU/MY/SG

Microclip X3. Continuous LCD shows real time gas concentrations. Simple 1 button operation. Measures: H2S 0 to 100ppm (1ppm resolution), CO 0 to 500ppm (1ppm resolution), O2 0 to 30% (0.1% resolution) and combustible gases 0 to 100% LEL (1% resolution Methane), 0 to 5% v/v (0.1% resolution). Alarms: visual, vibrating and audible (95dB), Low, High, STEL, TWA and OL (over limit). Lithium polymer battery life 12hrs (typical) recharge time <3hrs.



#### BW Bump & Logging Download for BW,MICROCLIP BW,BUMP (5938) AU/MY/SG

Automatic calibration testing and data management system for the BW microclip gas detection equipment. Carries out fully automatic "hands-free" calibration and functional bump test. It also enables data collected during operation of the BW microclip to be downloaded.



#### BW Clip 4

BW,CLIP4 (5933) AU

Multi-Gas detector kit 16 - Black. 2 year continuous runtime. Simple one-button operation H2S 0-100ppm, CO 0-1000ppm, O2 0-25% Volume, LEL 0-100%LEL



#### Draeger XZONE 5500 Area Gas Monitor - 4 Gas DRA,XZONE-5500 (5960) AU/MY/SG

In combination with X-am 5100 4 gas detector. Pumped area gas monitor with up to 120h battery life. Catalytic LEL, CO, H2S, O2.



#### MiniRAE 3000+ PID for VOC Detection RAE,MINIRAE3000+ (5906) AU RAE,3000 (5912) MY/SG

Photoionization Detector's (PID) extended range of 0 to 15,000 ppm. VOC reading range at 0 to 999.9ppm with resolution of 0.1ppm and range at 1,000 to 15,000 with resolution of 1ppm. Battery operated est. 16h of operation. Data logging: Standard 6 months at one-minute intervals.



#### RKI Eagle2 Gas Detector, Confined Space plus Photoionisation (PID) RKI,EAGLE2 (5930) AU

Measures 4 confined space gasses  $CH_4$ ,  $O_2$ ,  $H_2S$  and CO plus a PID. Alkaline 18 hours or Ni-MH 20 hours capability. Powerful long-life pump up to 38m range. Low flow pump shut off and alarm. Datalogging standard. IrDA communications port. Autocalibration/ single gas calibration. Internal hydrophobic dust filter. External probe with hydrophobic filter. Ergonomic RFI/EMI/chemical/weather resistant enclosure. Intrinsically safe design, CSA approval.



BW IntelliDox Bump and Calibration Station for BW,CLIP4 BW,INTELLIDOX-CLIP4 (5931) AU Bump and Calibration station for BW Clip4.

> Learning to operate unfamiliar equipment costs you time and can lead to errors. Save time and reduce your real costs. Discover our Configuration and Download solutions on page 79.

### **Radiation Monitoring & Protection**

→ See also E & H Field Strength Meters on page 25-26.



#### HPI Cypher 5000 Digital Radiation Alert Monitor HPI CYPHER5000 (5583) AU

Alpha, Beta, Gamma and X-ray radiation monitor. Meter, LED, audible

indication and detachable probe. Range 0.1 to 1,000,000 CPM; Accuracy 1% or 2 digits.



#### Narda RadMan 2XT ICNIRP 1998/Occupaytional NAR,RADMAN-2XT (5558) AU

Personal occupational limit monitor and leakage detector for monitoring RF signals in mobile, telecom, broadcast and industrial applications. Easy to use: 5G Ready, mounting adaptor for harnesses with safety lanyard, integrated automatic sensor test, highly visible alarm LEDs, loud buzzer plus vibration alarm, 800h of operation on a single charge. Compliant: Wide frequency monitoring up to 60GHz, ICNIRP compliant for frequencies 900kHz to 60GHz, ICNIRP 2020 compliant for frequencies above 27MHz, detection of short pulsed signals, data logger for permanent recording



#### Narda RadMan Personal RF Field Radiation Monitor NAR, RADMAN (5557) AU/MY/SG

Personal occupational limit monitor and leakage detector for monitoring RF signals in mobile, telecom, broadcast and industrial applications. Frequency range H field 27MHz to 1GHz; E field 1MHz to 40GHz. 5G Ready

# **Environmental Gas & Vapour Meters**

→ See also Combustion, Flue & Industrial/Gas Analysers on page 109.



#### Aeroqual Logging Ozone Monitor - Indoor Air Quality Use AER,500L (5958) AU

Portable ozone monitor fitted with low concentration-range detection head. Operating range 0~0.5ppm ozone with display in ppm or mg/ m<sup>3</sup>. Gas sensitive semiconductor (GSS) sensor for accurate low-level measurements, T90 response approximately 100s. Operation from mains power supply or battery pack (4h operation). Internal data logging for 8000 points with software and cable for download to PC, or data logging direct to PC. Application for indoor air quality measurements.



#### Ionscience Gascheck G3 Helium Leak Detector ION,GASCHECKG3 (5907) AU/MY/SG

Microthermal conductivity gas detector. Reading in cc/s, g/yr, mg/m<sup>3</sup> or ppm. Detects most gases however particularly suited to ammonia, argon, butane, helium, hydrogen & SF6. Calibrated against Helium. Battery Life 40h. Sensitivity (cc/s) He 1x10-5, CH<sub>4</sub> 5x10-5, R12 5x10-5, Ar 1x10-4. Accuracy 5% of displayed reading + 1 digit. Response 1s. Flow rate 2cc/min. Operating -20 to 60°C.



#### PPM HTV-M Formaldehyde Meter PPM,HTV-M MY

Portable Formaldehyde meter for measuring airborne formaldehyde in the workplace. Electrochemical sensor, with internal pump for rapid response. Operating range 0 to 10 ppm with readout on 4 digit LCD display. Kit includes field calibration standard. Operates from 9V alkaline battery or dc adapter if used as a continuous data logger. The mini USB allows data to be downloaded to PC using the htV-m software.



#### RAE Systems PPB PID VOC RAE, PPB3000 (5928) AU

Handheld volatile organic compound (VOC) gas monitor. Its Photoionisation Detector's (PID) extended range of 1 ppb to 10,000 ppm makes it an ideal instrument for applications from HazMat/Homeland Security, industrial hygiene, to Indoor Air Quality and military applications.



Watch how-to/information videos on any piece of equipment displaying this symbol. Visit the TechRentals YouTube page at www.youtube.com/TechRentals

### **Air Quality & Heat Stress**



#### TSI Q-TRAK IAQ Monitor CO<sub>2</sub>, CO Temperature & Humidity Logger TSI,7575 (5862) AU/MY/SG

Complete with IAQ probe model 982. Measures CO2 0~5000ppm  $\pm$ 3%, temperature 0~60°C  $\pm$ 0.6 degC, humidity 0~95%  $\pm$ 3%, CO 0~500ppm  $\pm$ 3% and barometric pressure 517. 15~930.87mmHg  $\pm$ 2%. Calculates dew point, wet bulb and percent outside air. Displays 5 measurements simultaneously. User selectable logging interval and start stop times. Stores 39 days data at 1min intervals 56,035 data points. This unit also has external thermocouple measurements.



#### Fluke 975 AirMeter Indoor Air Quality Monitor FLU,975 MY

Indoor Air Quality (IAQ) monitoring, measure temperature, humidity,  $CO_2$  and CO concentrations. Humidity range 10 to 90%, temperature range -20 to 50°C. CO measurement range 0 to 500 ppm and  $CO_2$  range 0 to 5000 ppm. Dew point temperature and wet bulb temperature is calculated. Data logging for 25,000 data point with 1min to 1h interval. Comes with USB cable for download interface and software viewing and reporting. Battery operated.



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# **Moisture & Humidity Meters**



#### GE Panametrics PM880 Industrial Moisture Analyser PAN, PM880 (5911) AU

Intrinsically safe moisture analyser for compressed air systems, noncorrosive gases & hydrocarbons such as natural gas (IS certification to ATEX and CSA). Displays dew point, moisture concentration, pressure & temperature. Dew point calibrated measurement range -80 to 20°C with data to -110°C. Pressure range 7 to 69 Bar limited by sensor, gauge and safety-valve (operating range from 5µHg). Temperature range -30 to 70°C. Gas flow operating range from static to 10,000cm/s velocity. Supplied with compact sample system with gauge, safety-valve, sampling valves and fittings (1⁄4″ Swagelok). Data logging of up to 100K moisture points, with infrared port and software for download. Battery powered only (15-24h operation) with second battery and charger (note charger is not IS).



#### testo 635-2 Humidity, Temperature & Dewpoint Meter TES,635-2 (5859) AU

Portable humidity meter fitted with robust stainless probe with sintered filter-cap for general or duct measurements to 120°C, and fast-action K-type surface temperature probe. Displays relative humidity, absolute humidity, dew point, degree of humidity, enthalpy, temperature, and differential temperature (dewpoint~surface). Operating range 2~98%RH (±2%). Air temperature -20~120°C (±0.2/0.5). Surface temperature -60~300°C (±0.1). Internal memory for 10,000 values with USB interface, cable and software for download and presentation. Battery operated.



# testo 635-2 Temperature & Dewpoint Meter for Compressed Air Systems

TES,635-2-HPD (5912) AU/MY/SG

Portable humidity meter fitted with 0636 9836 HPD pressure dewpoint probe for measurements in compressed air systems, -60 to +50°C tpd, 0~100%RH. Internal memory for 10,000 values with USB interface, cable and software for download and presentation. Battery operated. Maximum pressure 15bar.

### **Water Quality Meters**



#### HI-9829 WQM 4m Cable - Temp, EC, pH, ORP, DO & Turbidity HAN,9829-4M (6026) AU

For discharge and surface waters requiring the measurement of Turbidity the HI-9829 is the go to instrument. A compact submersible sonde integrated onto a 4m cable that measures Turbidity temperature, electrical conductivity, pH, oxidation reduction potential and dissolved oxygen. Supplied calibrated with calibration report. Field replaceable C size alkaline batteries. Automatic data logging to the meter. Compatible flow cell included in pump kits.



#### TPS 90FL-T Multi-function Water Quality Meter & Logger TPS,90FL-T (6000) MY/SG

Field meter and logger for water quality measurements. Configured with independent probes for pH, conductivity/salinity (TDS)/ temperature, dissolved oxygen (DO) and turbidity. Cables 5m with probe holder and safety harness. LCD display readout with simultaneous display of all measurements. Manual, "notepad" storage or automated data logging for up to 1,808 sets of readings by time and date. RS232C interface, with WinTPS software included. Supplied with rechargeable battery, and clip-lead for operation from a 12V source such as a car battery.



#### Hamilton Beverly Dissolved Oxygen Meter

HAM, BEVERLY (6040) AU

Designed for dissolved oxygen measurement in at-line and laboratory use in small and midsize breweries as well as in the beverage industry to provide excellent reliability in a rugged design, and purpose built to handle the environmental extremes encountered in everyday brewing operations.

# Water Samplers/Pumps



#### Hach AS950 Water Sampler HAC,AS950 (6650) AU

Advanced water sampler for fully programmed collection. Samples

are collected in up to 24, 1 litre disposable plastic containers based on a set time period. Fitted with NEMA 4X, 6, (IP67) sealed controller featuring a built-in pump.

## **Lux Meters**



# Hagner EC1-X Lux Meter NATA Calibrated HAG, EC1-X (5600) AU

Digital illuminance meter with NATA certification. Measures from  $0.1\sim200,000$  lux. Has a remote measurement head on 2m cord. Accuracy  $\pm 3\%$  of range  $\pm$  last digit. Battery operated.



#### Topcon IM-2D Lux Meter NATA Calibrated TOP,IM-2D-NATA (5606) AU/MY/SG

Digital illuminance meter with NATA certification. Measuring range from 0.1~19,999lx. Accuracy 5%, ±1 digit. Autoranging with silicon sensor. Battery operated.



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#### Lux Meters (cont'd)



#### Hioki FT3424 Digital Lux Meter HIO,FT3424 MY/SG

Complete with manual and auto ranging capability. 4 digit LCD

("2000") for 5 measuring ranges: 20/200/2,000 lux in 1-count steps, 20,000 lux in 10-count steps, and 200,000 lux in 100-count steps with accuracy of  $\pm$ 3% of reading. Response time in autorange mode is 5s, and in manual mode it is 2s. Features autozero, hold, and backlight functions with delay for taking readings in low light. Memory function with 99 storage can be downloaded to a PC via USB connection. Analogue output - 2V/range FS. Connection cable to allow separation of sensor unit and meter provided. Battery powered.



#### Hioki FT3425 Digital Lux Meter HIO.FT3425 MY/SG

Complete with manual and auto ranging capability. 4 digit LCD ("2000") for 5 measuring ranges 20/200/2,000lx in 1-count steps, 20,000lx in 10-count steps and 200,000lx in 100-count steps with accuracy of +/- 3% of reading. Response time in autorange mode 5s & 2s in manual range mode. Autozero, hold, backlight function with delay for taking reading in low light.Memory function with 99 storage, can be downloaded to PC via USB connection. Analogue output - 2V/ range FS. Connection cable to allow separation of sensor unit and meter provided. Battery powered.

## **Weather Stations**

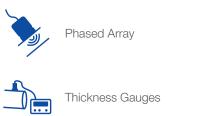


#### Vaisala WXT536 Weather Transmitter

VAI,WXT536 (5886) AU A fully Solid-State Weather Transmitter. It measures: Wind Speed, Wind Direction, Rainfall, Temperature, Humidity and Air Pressure.

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# **Groundwater**



#### QED Miropurge Kit - 60m QED,MPKIT-60M (6620) AU

Allows you to reliably conduct industry standard low flow groundwater sampling to a depth of 60m. The Solinst Tagline is easier to clean and safer to handle than bare wire hangers. The laser etched markings every 5cm cable allows you to accurately position the pump at the correct depth. The kit includes: QED MicroPurge MP10 controller with gas hoses. QED Sample Pro Bladder Pump, with push fit fittings. Solinst 100m Tagline. Solinst 100m Tagline. Air Compressor or CO2 Regulator and Cylinder. Consumables available including Sample Pro Replaceable Bladders, Bonded LDPE Twin-Tubing, HDPE Tubing for PFAS sampling and CO2 cylinders. Add an In-Situ AquaTROLL WQM and a Solinst Interface meter for the full low flow sampling solution.



#### QED Miropurge Kit - 180m QED,MPKIT-180M (6630) AU

Specialist low-flow pumping kit for deeper wells. QED MP10H with gas hoses. 300 psi Nitrogen Regulator. QED ST1102PM Stainless Steel Well Wizard. 250m Solinst Tagline. SS Weighted Drop Tube assembly for 100m drop tube. Consumables available including Bonded LDPE Twin-Tubing, 1/2" LDPE Drop Tube, Swagelok Ferrules and Nitrogen cylinders. Add a water quality meter and 250m Solinst 101D Drawdown meter for the full low flow solution.



#### Solinst 401 Mk4 Peristaltic Pump SOL, PERI-PUMP (6640) AU

Provides the simplest solution for sampling ground water where the depth to water is less than 8m. Flow rates as low as 40mL/min up to 900mL/min are possible when used with 3/8" silicone tubing in the pump head and 1/4" down well tubing. Supplied with SLA battery, charger.

# Environmental Site Assessment

Pg. 159 Groundwater Pg. 161 Water Quality Pg. 162 Gas

#### Groundwater (cont'd)



#### 60m Solinst 122 Interface Meter - IP SOL, IP-122-60M (6730) AU

Has the functions of a water level meter with the added ability to gauge the thickness of floating and sinking product (LNAPL & DNAPL). This IP has a 10mm width PVDF flat tape with laser marked meter, centimetre and millimetre markings. Certified Intrinsically safe to ATEX standards, the grounding tape must be used in potentially explosive atmospheres. Used for gauging the depth to water in groundwater bores it is an essential instrument when conducting low flow sampling.



# 250m Solinst 101D Water Level DrawDown Meter SOL,WLM-101D-250M (6740) AU

Water Level Meter with Drawdown functionality is used for measuring the water level in deeper bores. The Drawdown functionality is useful when you want to limit the maximum drop in the water while purging or pump testing. Has a combined on/off and sensitivity adjustment dial. The probe is 16mm in diameter by 137mm long, rated to 300m submersion and connected to a 10mm wide flat laser marked tape. The unit is powered by an easily replaceable 9V alkaline battery.



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Water Quality



#### Eutech TN100 Turbidity Meter EUT, TN100 (6028) AU

The microprocessor-based waterproof TN100 meter is an easy-touse turbidimeter that meets the rigor of rugged field applications. It is a ""must -have"" for anyone monitoring turbidity on the go. Using an Infrared light source. it delivers laboratory accuracy with a resolution of 0.01 NTU across an extended range of up to 20 NTU (Nephelometric Turbidity Units). Turbidity Range: 0 to 1000 NTU. IP67 Waterproof and dustproof, and it floats.. Cleaning and maintenance is simple. Automatic Push-Button Calibration (4 points) for unprecedented full-range accuracy. Sturdy carrying kit complete with 4 calibration standards, 3 empty cuvettes, batteries and comprehensive instruction manual.



# AquaTROLL 500 with pH/ORP/EC/DO/Temp sensors INS,AT500(6030) AU

A multiparameter water quality meter measures Conductivity, pH, ORP, Dissolved Oxygen and temperature. A 5m cable connects the sonde to a Bluetooth communications device. Take readings in the Vu-Situ App on the included tablet or connect to your own device so you can email prepared low flow reports. The sensors are designed for long term use and have excellent stability. The optical dissolved oxygen sensor means long term stable operation without recalibration. A flow cell is included for low flow sampling.



#### Lovibond MD100 Chlorine Duo LOV,MD100-CL-DUO (6029) AU

A single parameter colorimeter for water quality analysis. This line of rugged, waterproof instruments is lightweight and ideal for field testing or for use in the laboratory. Chlorine is one of the most popular water quality testing parameters and the MD 100 Chlorine Duo Colorimeter offers a testing solution to fit a wide variety of industries and applications. Pre-programmed with three testing ranges for testing Free, Total and Combined Chlorine. All testing ranges use the DPD method and utilize tablet or VARIO Powder Pack reagents, depending on the range selected.

Gas



#### GA5000 Landfill Gas Analyser GEO,GA5000 (5908) AU

A landfill and contaminated land portable gas analyser, with available gas measurements of CH<sub>4</sub>, CO<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>S and CO. It is easy to use and calibrate, benefitting from our market leading reliability and helping you to standardise monitoring routines, whilst supporting environmental legislation compliance.



#### SEM5000 Laser Methane Detector GEO, SEM5000 (5905) AU

A portable methane detector used to improve reading accuracy and to reduce potentially harmful greenhouse gases. Thanks to patented laser technology, the Geotech SEM5000 is selective, specifically to methane and is able to detect emissions from 1-10000ppm or from 0.1% to 100% v/v concentration

#### MiniRAE 3000+ PID for VOC Detection RAE, MINIRAE3000+ (5906) AU RAE.3000 (5912) MY/SG

Photoionization Detector's (PID) extended range of 0 to 15,000 ppm. VOC reading range at 0 to 999.9ppm with resolution of 0.1ppm and range at 1,000 to 15,000 with resolution of 1ppm. Battery operated est. 16h of operation. Data logging: Standard 6 months at one-minute intervals.



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### **Flaw Detectors**



#### GE Mentor EM Dual Eddy Current Flaw Detector GE, MENTOR-EM-DUAL AU/MY/SG

GE Mentor EM Dual Eddy Current Flaw Detector. Dual Probe Module; Connectivity Module with USB and X & Y Encoder Inputs and TTL Outputs. Supplied with Weld Scan Kit contains:

- 632-266-008 ECLN--PRB 3/8" WLDSCN 4PL
- 632-265-009 ECLN--PRB 5/8" WLDSCN 4PL
- 632-134-000 ECP, 130P3, 82µH, 35KHZ-250KHZ
- 074-140-022 ECLN--CBL 4.9' DIFF



#### Olympus Epoch 650 Ultrasonic Flaw Detector OLY, EPOCH 650 AU/MY/SG

Designed to meet the requirements of EN12668-1. Full screen A-scan mode and Standard dynamic DAC/TCG and onboard DGS/AVG. Supplied with AM4R-8X9-70, CN4R-10, AM4R-8X9-45, AM4R-8X9-60, A550S-SM probes. Optional Gage View and Corrosion module software included.



#### Olympus MultiScan MS5800 Tube Inspection System OLY,MS5800-ER1U AU/MY/SG

A multi-technology system offering these technologies: Eddy Current, Magnetic Flux Leakage, Remote Field, IRIS Ultrasound. Suitable for Condensers, Feedwater Heaters, Heat Exchangers, Air Conditioners, Boilers, Air Coolers.



#### Olympus OmniScan MX2 Phased Array Flaw Detector OLY, OMNISCAN MX2 AU/MY/SG

Second generation OmniScan MX2 with 32:128PR phased array acquisition unit, including a UT conventional channel. Included weld software option, ToFD software option and Multigroup software option. Suitable for weld inspection, composite inspection, corrosion inspection etc...

# Non-Destructive Testing (NDT)

Pg. 165-166 Flaw Detectors

Pg. 166 Phased Array

.

- Pg. 167 PMI, XRF & LIBS Units
- Pg. 167-168 Hardness & Holiday Testers
- Pg. 168-170 Thickness & Coating Thickness Gauges
- Pg. 171 Videoscopes and Boroscopes

NDT Category is currently available in Malaysia & Singapore, however, if you are interested in NDT equipment and are outside these locations please don't hesitate to contact us.

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#### Non-Destructive Testing

#### Flaw Detectors (cont'd)



#### Olympus Nortec 600D Eddy Current Flaw Detector OLY,NORTEC 600D AU/MY/SG

EN-15548 compliant Eddy Current Flaw Detector. 10Hz to 12MHz frequency capacity. Automatic internal balancing (BNC connector). Weld Inspection Kit Containing 1 each of WLD-5-63, WLD-8-55, NEC-2236 SRSM-51020S/WLD, WLD-SAMPLE & CN16-4L-6 included.



#### GE/Krautkramer USM 36 Ultrasonic Flaw Detector GE,USM36 AU/MY/SG

USM 36 DAC Ultrasonic Testing Package with evaluation using AWS, DAC, JISDAC and TCG. Supplied with MB 4 S/Straight beam probe. MWB 45-4/ Angle Beam Probe, MWB 60-4/ Angle Beam Probe, MWB 70-4 / Angle Beam Probe and Probe MSEB 4-E TR-Prob. Applications include Weld Inspection, Precise Thickness Measurement, Inspection of Forgings and Inspection of Special Materials.

# NEW!

PMI, XRF & LIBS Units

#### Olympus Vanta Element Handheld XRF Analyser OLY, VANTA ELEMENT MY/SG

Handheld X-Ray Fluorescence (XRF) analyzer provides elemental analysis for alloy grade ID. Rugged and suitable for demanding PMI applications. Data exportable via USB.

# Hardness & Holiday Testers



#### Mitutoyo SJ-210-NATA Surface Roughness Tester MIT,SJ210-NATA (4906) AU/MY/SG

Comprises LCD display and a detachable detector/drive unit. Parameters measured in Ra, Rq, Ry, Rz, Rt, Rp, R3z, Rk, Rpk, Rvk, S, Sm, Pc, mr, Mr1, Mr2, A1, A2, Vo units. Ranges: 350, 100, 50um & 10um, resolution from 0.01~0.4um. Tip radius 5mm. Data output. NiCd batteries.



#### GE DynaMic Rebound Hardness Tester GE, DYNAMIC (4936) AU/MY/SG

Makes hardness testing quick and easy. The simple operation of this unit allows the user to position the impact devices and read the hardness value, all in a matter of seconds. Provides readings in HV, HB, HRC, HRB, HS, HL, and M/mm2. This advanced unit will compensate for changes in testing direction. The Data Logger model can internally store hardness values along with statistical information. Features: Measurements can be conducted in any direction without the need for calibration. Rebound hardness testing standardised according to ASTM A956 and DIN 50156. Ergonomic, lightweight design (0.3kg). Test attachments for curved surfaces. Applications: Solid, coarse-grained components. Machine parts made of steel and cast aluminium alloys. Large series parts during production. Heavy forgings.

# **Phased Array**



#### Olympus Cobra Scanner

OLY,COBRA SCANNER AU/MY/SG

Manaul scanner used with Omiscan Phased array units. COBRA

scanner holds up to two PA probes for inspections on pipes with outside diameters ranging from 0.84 in. to 4.5 in. (21 mm to 114 mm) Suitable to perform circumferential weld inspections on small-diameter pipes.



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#### Hardness & Holiday Testers (cont'd)



#### Elcometer 266 DC Holiday Detector ELC.266 AU/MY/SG

Can be used to test porosity on coatings up to 7mm thick and is ideal for inspecting coatings on pipelines and other protective coatings. Features a built-in voltage calculator which will determine and set the correct test voltage based upon the test standard and the thickness of coating being tested. Comes with a DC30 (0.5 - 30kV) DC probe handle.



#### Proceq Equotip Live UCI Hardness Tester PRO.EQUOTIP UCI AU/MY/SG

Portable Hardness Tester. Battery operated with test probe on a felxible lead. Probe type D is standard catering for most materials. Measurement Ranges: Steels 80-650 Brinell, 80-940 Vickers, 20-68 Rockwell C. Aluminium Castings 20-160 Brinell, Cast Iron 90-380 Brinell, Brass 40-170 Brinell, Copper Wrought Alloys 43-315 Brinell. Test hardness must not exceed 940 HV.

# **Thickness & Coating Thickness Gauges**



# Cygnus 1 Intrinsically Safe Ultrasonic Thickness Gauge CYG, 1 IS AU/MY/SG

Rugged, durable, shock-proof construction, stable calibration - linear accuracy - no zero adjustment. For use in Zone 0, Zone 1 hazardous areas, also approved for use in MINES. Supplied with heavy duty remote 2.25MHz x 13 mm ( $\frac{1}{2}$ ") diameter probe. Accuracy ±0.1mm (±0.004") or 0.1% of thickness measurement, whichever is greatest, when calibrated in accordance with Cygnus Instruments calibration procedure. Resolution 0.1 mm (0.005") or 0.05 mm (0.002").



#### Cygnus Underwater Ultrasonic Thickness Gauge CYG,UTG KIT AU/MY/SG

Rugged, durable, shock-proof construction, Stable calibration - linear accuracy - no zero adjustment. Heavy duty sealed unit with double 'O' ring protection. RINA Type-Approved (Certificate No. 2009DGPO787. Supplied with heavy duty remote 2.25MHz 13 mm (0.5") diameter probe. Accuracy 0.1mm (0.005") when calibrated in accordance in accordance with Cygnus Instruments calibration procedure. Resolution 0.1 or 0.05mm selectable (0.005 or 0.002").



#### Defelsko 6000 Ferrous & Non Ferrous Coating Thickness Tester DEF, POS-6000 (4870) AU/MY/SG

Ferrous/Non Ferrous metal coating thickness tester with storage of

up to 100,000 readings. Supplied with external probe, calibration standards and carry pouch. Measurement range 0 to 1500µm or 0 to 60 mils (selectable). Tolerance ±1µm +1% of reading 0-50µm, ±2µm +1% greater than 50um. Resolution 0.1µm. Backglow display, HiLo limits audible & visible alerts when measurements exceed specified limits. Continually displays updates average, standard deviation, min/ max thickness and number of readings while measuring. Built in USB, Bluetooth and Wifi for downloading readings.



#### PosiTector 200 B & C Ultrasonic Coating Thickness Gauge DEF, POS-200ADV (4880) AU/MY/SG

Ultrasonic coating thickness gauge with type B & C Probes. Measures

coating thickness over wood, concrete, plastics, composites etc. Will measure up to 3 individual layer thickness in a multi-layer system and features a graphic readout. Supplied with both B, 13 to 1000 $\mu$ m for wood, plastic and composites and C probes 50 to 3800 $\mu$ m for coatings on concrete, fibreglass etc. Accuracy is ±2 $\mu$ m +3% of reading.

We offer a calibration service on selected equipment. To find out more, contact us today.



#### Thickness & Coating Thickness Gauges (cont'd)



#### Olympus Ultrasonic Thickness Gauge including Transducers OLY,38DL (4905) AU/MY/SG

Performs non-destructive measurements. Supplied with transducers that can measure the thickness of steel, cast, corroded steel, rubber, fibreglass and composites. Comes with dual and single element transducers including D7906-SM, M1036, and M2008 M109-RM (including delay line M202-RM), and is capable of THRU-COAT®; and Echo-to-Echo measurements on painted and coated surfaces. This handheld device is commonly used to measure the remaining thickness of pipes, tubes, tanks, pressure vessels, hulls, and other structures affected by corrosion or erosion. Features: Thickness range from 0.08mm to 635mm. Colour transflective VGA screen. Rugged design for IP67. Data logging capability.



#### Olympus 38DL Thickness Gauge Probe OLY,38DL PROBES (4908) AU

Probes suitable for Olympus 38DL thickness gauge: 1 x M2008 Probe 1 x M202-RM Robe 1 x M1036 Probe 1 x M109-RM Probe



#### Olympus 27mg Pocket Thickness Gauge OLY,27MG (4910) AU/MY/SG

Range 1~500mm, fast min mode. Resolution 0.01mm. Probe operates -20~150°C.





#### Olympus IPLEX G Lite 3.5 meter Handheld Videoscope OLY, IPLEX-GL 3.5 AU/MY/SG

IPLEX G Lite 3.5 meter, 4mm diameter handheld videoscope. With an integrated control unit and LCD monitor for one handed operation. Intuitive icons for menu control, 130 deg articulation (up, down, right, left) and 120 deg FOV, HD still image and HD video recording capabilities, compliant to IP55 and insertion tube operable underwater to 3.5m (excluding stereo tip adapters not included).



#### Olympus IPLEX-GT 10 Portable Industrial Videoscope OLY, IPLEX-GT 10 (5103) AU/MY/SG

Battery powered videoscope. 10m insertion tube, 6mm diameter, 4 way, 90° articulation and 120° FOV. Applications include inspection of heat exchangers, turbines, gearboxes, automotive parts and aircraft. Still and video recording to USB flash, approx 3,400 images and 30 mins per 1GB.



#### Olympus IPLEX RT 7.5m Portable Industrial Videoscope OLY,IPLEX-RT 7.5 (5186) AU/MY/SG

Designed for the visual inspection of heat exchangers, turbines, gearboxes, automotive parts, aircraft, and other industrial machinery. This lightweight videoscope comes with a 7.5m long, 6mm diameter tungsten braided insertion tube. The insertion tube will withstand high temperatures, with 100°C articulation and a 120°C field of view. Handles bright and sharp still images as well as high quality movies, which can all be downloaded via USB. Navigating through the functions of the unit is simple with the InHelp<sup>™</sup> Inspection Assist Software and on-board instruction manuals. Features: Insertion tube temperature resistant up to 100°C. 6.5″ LCD monitor. Compliant to MIL-STD-810F/G, MIL-STD-461F, and IP55. Weighs just 2.9kg.



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#### **TechRentals - The Perfect Solution!**

TechRentals vast fleet of equipment offers a range of solutions to many markets. These include the Aviation, HVACR, Defence, Electrical, Mining, Mechanical and Telco markets. If you can't find the equipment you are looking for, our international partner network gives you access to an even larger and diverse inventory to help satisfy your requirements.

It is important to remember that renting is much more efficient than to purchase outright. This enables you to preserve capital for other parts of your business. Should you need to eventually own the assets, TechRentals offers a Rental Purchase Option. No matter your need, we will find the assets you require when you want them.



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