

# Electrical test instruments

**Megger**<sup>®</sup>  
Power on



# New products



## **DCM305E Earth Leakage Clampmeter**

- Designed to check earth leakage currents. See page 21



## **DET2/3 Advanced Earth (Ground) Tester**

- Robust instrument to measure earth Electrode Resistance and Soil Resistivity. See page 25



## **MFT1800 series multifunction installation testers**

- Offering increased functionality and better value. See page 14



## **AVO800 series multimeters**

- High end multimeters designed with the electrical contractor in mind. See page 18

## Power on for over 120 years

Since 1889 Megger, and its predecessor companies, has been helping electrical engineers keep the power on by developing and manufacturing portable test and measurement tools. Insulation testers were first to be developed; this led to the registration of the Megger brand as long ago as 1903. --

The original insulation testers came in two boxes, separating the voltage generation from the measurement circuit, to avoid electromagnetic interference problems. It was some time later that they were combined in a bakelite box with the iconic handle for driving the dynamo.

Five years later the low resistance ohmmeter (LRO) was invented, these became known the world over as Ducter testing. Housed in wooden cases, these testers had a long and admirable history, in fact Megger has been given an early LRO that was still in calibration in 2006.

**Trying to decide which Megger  
tester is best for you?**

**Call your local Megger  
distributor.**

In 1923 Megger was brought the idea of the multimeter by Donald Macadie. Measuring amps volts and ohms in a single instrument was revolutionary and the AVOMeter model 1 was born. 85 years later the last model 8 mark 7 came off the production line and in this catalogue Megger is launching the AVO830 range of multimeters.

George Tagg, working at Megger in the 1960's published a seminal paper on earth testing His work was concerned particularly with earth electrode systems that covered a large area. Today with the help of digital electronics, and revolutionary electronic components, Megger is continuing its mission of making your life easier by developing more powerful and safer testers that are light to carry, comfortable to hold and easier for you to use, helping you to Power on.

**They'll talk through your needs  
and the way you work and help  
you make the right decision for  
your business. Reach us at  
India.Sales@megger.com**

# Electrical test equipment

## Insulation and continuity testers

For electricians.....	4 to 6
For maintenance engineers.....	7
For power engineers.....	7 to 9
For communications engineers.....	28
Low resistance testers.....	10 to 13
Multifunction installation testers.....	14 to 15

## Residual current device tester

Single function.....	16
Multifunction Installation testers.....	14 to 16

## Power quality

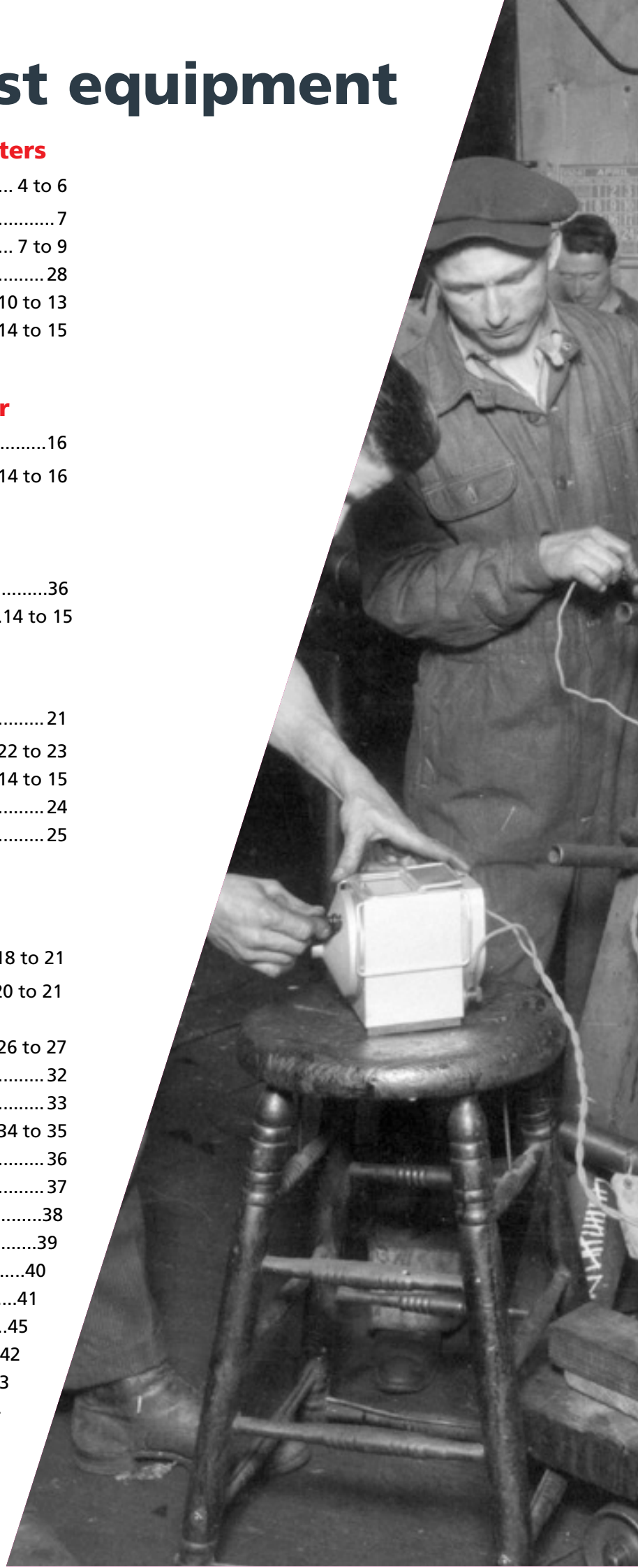
Power quality analyser.....	36
Multifunction Installation testers.....	14 to 15

## Earth testing

Earth leakage current clamp.....	21
Earth loop impedance testing.....	22 to 23
Multifunction Installation testers.....	14 to 15
Earth electrode resistance testing.....	24
Advanced earth testing and kits.....	25

## Other tester

Multimeters.....	18 to 21
Clamp meters.....	20 to 21
Fault locators or TDRs for electrical and communications engineers.....	26 to 27
Oil test set.....	32
Relay testing.....	33
Battery impedance tester.....	34 to 35
Power quality tester.....	36
Handheld online PD substation surveying.....	37
Cable fault location systems.....	38
Underground cable fault pin-pointing.....	39
Cable route tracing and identification.....	40
Cable height meters.....	41
Transformer turns ratio testers.....	45
Solar PV testing.....	42
Phase Sequence Indicator.....	43
Voltage detection.....	43 to 44



# Insulation and continuity testers

## MIT200 series

MIT200 Series is one of the smallest insulation testers available

Both products have a combination of digital readout and analogue display, using Megger's patented DART display technology. The display includes a clear, accurate digital readout, and an analogue pointer response for evaluating circuit charge and discharge characteristics.

The tough ABS instrument housing is designed to withstand the rigours of hard use, whilst small enough to drop into your pocket when not in use. A low battery warning indicator gives advanced warning of exhausted batteries.

### Insulation testing

- There is a choice of two or three test voltage ranges providing an ideal solution to most low voltage insulation testing applications
- Insulation measurement up to 1000 MΩ on all ranges
- Auto discharge ensures all circuits are safely discharged after testing
- 1000 V insulation test ranges have a high voltage warning prior to test voltage being applied

### Continuity testing

- Automatic continuity testing is performed at 200 mA to ensure compliance with international requirements. No need to press the test button
- All instruments will measure up to 100 Ω on continuity, of which 0-10 Ω is performed at greater than 200 mA
- Lead null is possible up to 9.99 Ω ensuring the ability to null fused test leads as well as standard leads
- Voltage protection should you touch a live circuit
- Continuity buzzer provides a means of rapid cable testing and circuit identification, with voltage protection should you accidentally touch a live circuit
- The buzzer operates at a 5 Ω threshold

## Accessories



1002-491  
Red and black probes and clips



1002-015  
2-wire 500 mA fused test lead set



1002-001  
2 wire test lead set



## Special features

- Exceptional value for money
- Pocket sized tester
- Live circuit protected

		MIT200	MIT210	MIT220	MIT230
Test voltage	1000 V		■		■
	500 V	■		■	■
	250 V			■	■
Insulation resistance to 1000 MΩ		■	■	■	■
Continuity measurement at 200 mA		■	■	■	■
Fast buzzer range		■	■	■	■
Voltage detection		■	■	■	■
Intelligent safety system		■	■	■	■
Display backlight		■	■	■	■
CAT III 600 V		■	■	■	■
Warranty upgradeable to 3 years FREE		■	■	■	■

## MIT300 series

### The Megger insulation testers are like no other tester you have used

#### The Megger insulation testers will take the bashing that testers receive when they are on site

They are rubber armoured and have an integral solid lid to protect the display. The heavy-duty hinge allows the lid to be locked away beneath when in use, making it easy to use and impossible to lose. And you don't need to pull out the test leads to shut the lid.

#### The Megger MIT insulation testers are easy to use and quick to learn

There are no buried functions, so it is easy to use these insulation testers. The colour coding helps test selection, speeding up testing time and helping you identify faults fast. The quick start guide in the lid keeps all the basic information at hand if you need it.

**Your safety is Megger's number one concern.** These safety features look after you and the tester

**Safety interlock to prevent unsafe connection of the test leads**

**Safe contact detector keeping you and your tester safe during continuity testing if it's accidentally connected to a live circuit**

■ **Live voltage warning alerts the user to a circuit voltage over 25 V when insulation testing**

■ **Safety lockouts –**  
 – Prevents continuity testing on live circuits  
 – Prevents insulation testing when circuit voltage is greater than 50 V

#### Hands free operation

MIT300 series insulation testers are well balanced to hang comfortably around your neck enabling hands free operation when you need it. The continuity test and buzzer start automatically when you connect to a circuit, saving you time. Insulation tests can be started using a switched probe or the test button on the front of the tester.



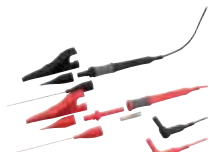
## Accessories



1002-491  
Red and black probes and clips



1002-001  
2-wire test lead set



1002-015  
2-wire 500 mA fused test lead set



1001-884  
Remote switched probe with special plug

		MIT300	MIT310	MIT320	MIT310A Analogue	MIT330
Insulation testing	250 V	■	■	■	■	■
	500 V	■	■	■	■	■
	1000 V		■	■	■	■
Test range	1000 MΩ	■	■	■	■	■
	1000 MΩ	■	■	■	■	■
	1000 MΩ	■	■	■	■	■
Continuity testing	Insulation limit alarm 0.01 MΩ to 1000 MΩ			■		■
	Continuity to 100 Ω	■	■	■	■	■
	Continuity buzzer	■	■	■	■	■
	Lead null to 9 Ω	■	■	■	<1/2 Ω	■
	Adjustable buzzer 1 to 100 Ω			■		■
	Audible buzzer disable			■		■
Voltage measurement	Volts AC/DC		600 V	600 V	600 V	600 V
	Resistance measurement			■		■
Features	10 Ω to 1 MΩ range			■		■
	10 Ω to 2 KΩ range				■	
Included accessories	Voltage warning	■				
	Default voltmeter		■	■	■	■
	Backlit display			■		■
	Backlit selector ranges			■		■
	Locking test button	■	■	■	■	■
	Auto power-down	■	■	■		■
	Switched test probe			■		■
	Data storage					■
	Download via USB port					■
	IP54 weatherproof	■	■	■	■	■
	Accepts rechargeable batteries	■	■	■	■	■
	2-wire lead set	■	■	■	■	■
	Free calibration certificate	■	■	■	■	■
	Warranty upgradeable to 3 years FREE	■	■	■	■	■

# Insulation and continuity tester for electrical and industrial maintenance

## MIT400/2 series

### Features include:

- Designed for the electrical and industrial markets
- Stabilised insulation test to -0% +2% test voltage (New)
- Variable insulation test voltage from 10 V to 1000 V (New)
- Single range, faster continuity testing from 0.01  $\Omega$  to 1 M $\Omega$  (New)
- Insulation testing up to 1000 V and 200 G $\Omega$  in a hand held instrument (New)
- Rechargeable options for mains and car charging (New)
- Insulation testing to 200 G $\Omega$  with Feedback control for tight test voltage control (New)
- 600 V Trms AC and DC voltage measurement
- Test result storage and Bluetooth® downloading
- Live circuit detection and protection
- CATIV 600 V application & IP54 environmental protection



A range of insulation and continuity testers in an ergonomic design with the latest measurement techniques and live circuit protection.

The MIT400/2 series insulation and continuity testers now have faster continuity testing and stabilised insulation test voltages for more accurate and productive installation testing.

Insulation testing has the addition of feedback control to stabilise the test voltage to less than +2% over voltage, for safer and more accurate measurement.

Variable test voltage is also available from 10 V to 1000 V.

Continuity testing is now fully automatic from 0.01  $\Omega$  to 1 M $\Omega$  with fast contact detection whilst continuously protecting against accidental contact with live circuits.

The MIT400/2 series and the diagnostic insulation tests, such as Polarisation Index and Dielectric Absorption Ratio, it offers, allow trending of the performance of motors. This makes it ideal for the engineer working in the industrial maintenance sector who needs to plan maintenance or some more solid evidence when taking a motor out of service.

## Accessories



1002-001  
2 wire test lead set



1006-513  
MIT2500 only



1002-015  
2-wire 500 mA fused test lead set



1007-464  
Charger kit MIT430/2 and MIT2500 only

# Hand-held insulation and continuity tester for higher voltage applications

**MIT2500**

- Tough enough for the industrial and electrical maintenance
- Insulation testing up to 2500 V and 200 GΩ in a hand held instrument (New)
- Guard terminal for high insulation resistance accuracy (New)
- Variable insulation test voltage from 50 V to 2500 V (New)
- Stabilised insulation test to -0% +2% test voltage (New)
- Single range, faster continuity testing from 0.01 Ω to 1 MΩ (New)
- Diagnostic testing with Polarisation Index (PI) and Dielectric Absorption Ratio (DAR)
- Rechargeable options for mains and car charging (New)
- Test result storage and Bluetooth® downloading
- Live circuit detection and protection
- CATIV 600 V application & IP54 environmental protection

The MIT2500 is the smallest 2500V hand held insulation tester on the market.

Additional "Variable Voltage" allows any voltage from 100V to 2500V to be selected.

Output voltage is stabilised to -0% +2% for accurate test measurement without risking over-voltage on the circuit.

Complete with Polarisation Index (PI) and Dielectric Absorption Ratio (DAR) testing, test result storage and downloading.



		MIT400/2	MIT410/2	MIT420/2	MIT430/2	MIT2500
Insulation test voltages	2.50 kV					■
	250 V , 500 V and 1 kV	■	■	■	■	■
	50 V and 100 V		■	■	■	■
	Variable from 10 V to 1 kV			■	■	
	Variable from 100 V to 2.5 kV					■
Insulation resistance to	200 GΩ	200 GΩ	200 GΩ	200 GΩ	200 GΩ	200 GΩ
	PI, DAR and timed		■	■	■	■
	Lock on	■	■	■	■	■
	Guard terminal					■
Continuity	0.01 Ω to 10 MΩ	100 Ω	■	■	■	■
	Auto reverse polarity		■	■	■	■
	Test lead null	> 10 Ω	> 10 Ω	> 10 Ω	> 10 Ω	> 10 Ω
Voltage measurement	600 V AC / DC	■	■	■	■	■
	mV AC / DC	■	■	■	■	■
Capacitance	Frequency measurement		15 – 450 Hz	15 – 450 Hz	15 – 450 Hz	15 – 450 Hz
	Capacitance 1nF -10 μF		■	■	■	■
Additional benefits	PASS / FAIL limit alarm		■	■	■	■
	Auto power down	■	■	■	■	■
	Can be powered by AA alkaline or NiMH batteries	■	■	■	■	■
	Recharger ready				■	■
	On-board memory			■	■	■
	Bluetooth® downloading and software			■	■	■
	2-wire silicone lead set	■	■	■	■	3 -wire sets
	Probe incorporating test button		■	■	■	■
	Safety	CAT IV 600 V	CAT IV 600 V	CAT IV 600 V	CAT IV 600 V	CAT IV 600 V
	Dust and weather-proof to IP54	■	■	■	■	■
FREE calibration certificate	■	■	■	■	■	
Warranty upgradeable to 3 years FREE	■	■	■	■	■	

# High voltage insulation testers

## MIT515 and MIT525

### High voltage insulation testers that have no equal.

Since 1903 Megger branded instruments have been setting the standard for insulation testing. This selection of testers represents our best yet. Offering the user IEC61010-1 Category IV 600 V safety, these testers are tough. So tough we have been able to rate them at IP65, meaning they are dust proof and immune to jets of water. Megger's unique dual case design means no compromises have to be made. They come in an easy to carry outer plastic case that they can take the bashing that you would expect when in use on site, while an inner case has all the fire retardant properties you require.

The whole range is simple to use. A quick-start guide is included in the lid of the tester, removing the need to carry bulky user manual, and explaining all the controls in detail. Adjustable timers and limit alarms are built in. There is large, clear, back-lit display. Information shown on the screen includes insulation resistance, the applied voltage, test current, capacitance, battery status and time constant. The elapsed time is also displayed through out the test, so you know where you are as the test proceeds. The display is back-lit to make it easy to read, whether you are working in bright sun light or a poorly lit area. The testers can be operated when plugged in to an a.c. supply or on the battery power, meaning that you are always in the position to get on with the job.

To ensure you are measuring what you think you are measuring and not surface leakage the Megger high voltage insulation testers, like many 5 kV and 10 kV insulation testers available, are fitted with a guard terminal.

However Megger actually specifies the performance of the guard terminal, so you know it really is doing its job correctly. Remember the guard terminal performance is an integral part of your measurement uncertainty.

- **Insulation test voltages from 50 V to 10 kV for maximum flexibility**
- **Insulation resistance measurement up to 35 TΩ to help predict insulation problems early**
- **Guard terminal function available to eliminate surface current effect**
- **High charge current available for measurement of inductive loads**
- **High noise immunity for measurement in areas of high electrical noise**
- **Tough construction**
- **Dual case design**
- **Diagnostic functionality**
- **Quick rechargeable battery and a.c. operation**
- **On-board test result storage**

10 kV testers are capable of measuring insulation resistance up to 35 TΩ and 5 kV testers up to 15 TΩ. This means that you are able to spot deteriorating insulation early, trend its deterioration and predict when it will need replacement, making for a truly planned approach to maintenance.

#### MIT515

For customers who require a simple high voltage insulation tester the MIT515 is the perfect service and maintenance tool. Tough and testing to 5 kV, the MIT515 does not offer all the testing flexibility of other instruments in the range but does offer popular test modes, basic and timed insulation resistance, polarisation index and dielectric absorption ratio. With safety features such as locking test leads, a test button that can't initiate a test by simply being knocked accidentally and operation to 3000 m with CATIV 600 V protection a user's safety is ensured. Megger testers have the merits of a stable voltage supply and high specification guard terminal to ensure accurate results.

#### MIT525

Electrical engineers requiring more diagnostic functions on their testers will find the additional sophistication of the MIT525 meets their needs. Offering testing to 5 kV, the test set features automatic insulation resistance testing polarisation index (PI), dielectric absorption ratio (DAR), they add step voltage (SV) dielectric discharge (DD) and a ramp test.





# High voltage insulation testers

## BM5200

### 5 kV insulation resistance tester

Megger BM5200 is a battery powered insulation tester with digital and analog arc display, designed for high voltage insulation resistance testing in the maintenance and servicing of cables, rotating plant machinery, transformers, switchgear and industrial applications.

DC insulation tests are performed at 250 V, 500 V, 1000 V, 2500 V, 5000 V. Insulation resistance measuring range is 100 k  $\Omega$  to 1000 G  $\Omega$ . Automatic discharge for capacitive circuits under test is provided and decaying voltage displayed.



- 1 T $\Omega$ , 1.4 mA, 5 kV digital insulation tester with digital and analog display.
- Five test ranges; 250 V, 500 V, 1000 V, 2500 V and 5000 V.
- Insulation, Polarization Index (PI) and variable timed test (t) modes.
- Selectable DC or AC (including frequency) voltmeter functions.
- Guard terminal to shunt surface leakage currents.
- CATIII 600 V safety rating.

## BM15, MJ15

### 5 kV analog insulation resistance testers



The BM15 and MJ15 are compact 5-kV insulation testers. They are very simple to use and provide a quick and accurate reading of insulation resistance. The instruments use an analog display with a maximum reading of 20 G $\Omega$ . The BM15 is powered by batteries. The MJ15 has an additional hand-cranked generator.

The instrument operation is extremely simple. A voltage range enables measurement of a.c. or d.c. conductor

- Four test voltages to 5 kV
- Dual power supply option
- Resilient mounted analogue scale for robustness
- Voltage range to 600 V indicates auto discharge
- Pass/fail overlays for rapid testing
- Single scale for insulation values to avoid operator error
- CAT III 300 V safety rating

potential. Four test voltages are available at 500 V, 1 kV, 2.5 kV and 5 kV. A choice of push buttons is supplied; a locking button simplifies long term testing, or a nonlocking version is preferred for maximum safety.

# Low resistance testers

## DLRO10 series

Low resistance testing, some times known as Ducter testing, is a method of checking the continuity of a bond, cable joint or busbar and confirming that there is as little energy loss across the test piece due to resistance as possible. Applications are extensive, from power engineering to aeroplane maintenance, and quality control to rail maintenance.

**DLRO10** is an entry level, low weight low resistance tester. It is fully automatic selecting the most suitable test current up to 10 A d.c. to measure resistance from 0.1  $\mu\Omega$  to 2000  $\Omega$ . It makes measurements with forward and reverse currents to cancel the effects of any standing voltages across the test sample and displays the results on a large bright LED display. It is powered by a purpose built NiMH rechargeable battery pack which can be swapped out while it is being recharged. The pack contains its own battery state indicator. DLRO10 testers are used extensively by London Underground for checking earth bonds in the dirty, damp environment that the tunnels under the city offer.

**DLRO10X** must be the most sophisticated low resistance tester on the market. Offering the same low weight and detachable, rechargeable batteries as the DLRO10, the DLRO10X has sufficient on-board memory for 700 sets of results and notes. Notes are made using the alpha-numeric keypad and can be downloaded to a computer. DLRO10X displays the forward and reverse readings and the average of the two on its LED screen with in 3 seconds. Amazingly the basic accuracy of the instrument is 0.2%. Among other applications one customer uses the DLRO10X for production quality control, putting its facility for real-time data transfer to good use.

**DLRO10HD** offers a different combination of features that may more closely meet your needs, housed in a tough poly propylene case, it is rated at IP54 when in use battery powered, and IP65 when the case is closed. It can be operated from both mains and battery and while re-charging.

Uniquely DLRO10HD also offers the ability to test at high or low power. This gives the potential of condition diagnosis and is particularly useful for measuring thick conductors, bonds and welding quality. DLRO10HD can output 10 A for 60 seconds in to 250 m $\Omega$

Augmenting Megger's DLRO10 and 10X range the **DLRO10HDX** combines ultimate simplicity of operation with a rugged IP65 case designed for stable ground and bench operation and provides memory storage. These units are powered from either rechargeable battery or mains power making it suitable for continuous testing in production line/repetitive use environments. Rotary switch controls are simple and easy to operate in all weather conditions and with gloved hands. A large, clear, backlit LCD display is easy to read from a distance. The DLRO10HDX provides significantly enhanced compliance and is capable of delivering 10 A into measurements up to 250 m $\Omega$  and 1 A into measurements up to 2.5  $\Omega$ . The duration of each test may be up to 60 seconds. The DLRO10HDX is rated CAT III 300 V provided the optional terminal cover is fitted to the instrument. Details of which can be found in the ordering information panel of this data sheet.

- Up to 10 A test currents
- Protection against accidental connection to a live circuit
- Automatic checks continuity of connections
- Multiple operating modes including fully automatic
- Option of high and low power testing
- Fast charge battery option
- Highly accurate continuity measurement



DLRO10 even come complete with a car charger

# Low resistance testers

## DLRO test leads fitted with duplex Connectors

Duplex connect test lead system for use with any Megger 10 A DLRO and BT51 instruments. The Megger DLRO duplex connect four terminal test lead system is designed to provide the most cost effective and convenient way to provide the user with all off the test lead terminations and lead lengths required for the many different applications encountered in low resistance testing.



At the centre of this unique test lead system is a bespoke connector allowing terminations such as kelvin clips or duplex test probes to be changed as required.

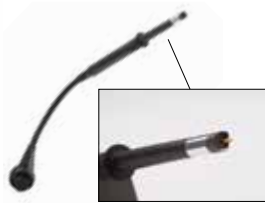


DLRO10HD offers a choice of high and low power testing

## Accessories



**1006-444**  
Duplex probe set 1.5 m with indicator light



**1006-448**  
Concentric duplex probe



**6380-138**  
Carry case for DLRO10 and accessories not DLRO10HD



**1000-809**  
Kelvin lead kit available in 30, 50 and 100 m length

		DLRO10	DLRO10X	DLRO10HD	DLRO10HDX	Resolution
Resistance Ranges		1.9999 mΩ	1.9999 mΩ	2.5000 mΩ	2.5000 mΩ	0.1 μΩ
		19.999 mΩ	19.999 mΩ	25.000 mΩ	25.000 mΩ	1 μΩ
		199.99 mΩ	199.99 mΩ	250.00 mΩ	250.00 mΩ	10 μΩ
		1.9999 Ω	1.9999 Ω	2.5000 Ω	2.5000 Ω	100 μΩ
		199.99 Ω	199.99 Ω	250.00 Ω	250.00 Ω	10 mΩ
		1999.9 Ω	1999.9 Ω	2500.0 Ω	2500.0 Ω	100 mΩ
Measurement mode	Manual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Automatic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Continuous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Inductive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Unidirectional		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Display		LED 4 1/2 digit	LCD backlit	LCD backlit	LCD backlit	
Results and data storage			<input type="checkbox"/>		<input type="checkbox"/>	
Weight		2.6 kg	2.6 kg	6.7 kg	6.7 kg	
Power supply	Mains	Optional	Optional	<input type="checkbox"/>	<input type="checkbox"/>	
	Rechargeable battery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Battery charging time		4 hr	4 hr	8 hr	8 hr	
Ingress protection rating				IP 54	IP 54	
Safety CATIII 300 V				<input type="checkbox"/>	<input type="checkbox"/>	
Safety CATIII 600 V		<input type="checkbox"/>	<input type="checkbox"/>			
Warranty upgradeable to 2 years FREE		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

# Low resistance testers

## DLRO100E, DLRO100X and DLRO100H

### 100 A, highly portable micro-ohmmeter with DualGround safety

Weighing only 7.9 kg this battery and, or mains powered units bring real portability for field measurement of contact resistance to IEC62271-100. Rated at CAT IV 600 V and weather and dust proofed to IP54, these ohmmeters are tough.



With a measurement range from 0.1  $\mu\Omega$  to 2  $\Omega$  with a resolution of 0.1  $\mu\Omega$ , high noise immunity and smooth dc output, the DLRO100 series offers all the test modes you would expect from a true micro-ohmmeter. Additional facilities include DualGround safety, internal memory, downloading, asset labelling and remote operation, depending upon model.

## DLRO200

### 200 A micro-ohmmeter

Provides the operator with high resolution, 0.1  $\mu\Omega$ , portable method of performing on-site low resistance measurements. The test current is variable from 10 A to 200 A respectively, in 1 A steps, enabling the user to perform all the required tests with a single instrument. The unit can be used to test circuit breaker contact resistance to IEC 62271-100, switch contacts, busbars, joints, splices, fuses and rail bonds. The full keyboard makes labelling and storing of results quick and easy. A large liquid crystal display provides all the information needed to perform a test; all test parameters and measurement results are displayed.



## BT51

### 2 A bond tester

Low resistance ohmmeter ideally suited for bond testing applications, i.e. aircraft frames. Four terminal method of measurement ranges 0-20.00 m $\Omega$  and 0-2000 m $\Omega$ . Test current is 2A.



For measurement of	DLRO200	DLRO100E	DLRO100X	DLRO100H
Test currents	10 A-200 A	10 A - 100A	10 A - 100A	10 A - 100A
Current steps	1 A	1 A	1 A	1 A
Max. test time at continuous	>10 min	10 min	10 min	10 min
Measurement range	0.1 $\mu\Omega$ -999.9 m $\Omega$	0.1 $\mu\Omega$ - 1.999 $\Omega$	0.1 $\mu\Omega$ - 1.999 $\Omega$	0.1 $\mu\Omega$ - 1.999 $\Omega$
Best resolution	0.1 $\mu\Omega$	0.1 $\mu\Omega$	0.1 $\mu\Omega$	0.1 $\mu\Omega$
Ripple free DC		■	■	■
DualGround			■	■
Remote control				■
Built-in printer				■
Result storage	■		■	■
Downloading to PC	■		■	■
Power supply				
Mains	■	■	■	■
Rechargeable battery		optional	optional	optional
Weight	14.5 kg	7.0 / 7.9 kg	7.0 / 7.9 kg	7.0 / 7.9 kg

# Low resistance testers

## Clips and leads for low resistance testing

Megger has launched a new range of duplex test leads making it possible to give customers more flexibility. One buys one set of tester end leads and attaches any of a selection of probes and clips to the tough duplex connector, one of which can house an LED indicator. Used with the DLRO10 series, the indicator will warn of connection to hazardous live voltages, indicate continuity, the completion of the test and passing or failing pre-set test limit.



FAR END	TESTER END	USED WITH	TEST CURRENT	SPECIAL FEATURE	LENGTH	PART NO.
Male duplex connector	2 hooks and plug	DLRO10 DLRO10X, DLRO10HD	10 A	Indicator LED in connection	1.5 m	1006-456
				Indicator LED in connection	3 m	1006-458
				Indicator LED in connection	6 m	1006-459
	2 hooks	DLRO10 DLRO10X, DLRO10HD	10 A		1.5 m	1006-452
					3 m	1006-454
					6 m	1006-455
					3 m	1007-023
			BT51		6 m	1007-024
		Female duplex connector with locking ring	DLRO10 DLRO10X, DLRO10HD	10 A	Lead extension	6 m
Duplex probe	Female duplex connector with locking ring	DLRO10 DLRO10X, DLRO10HD, BT51	10 A	P and C probe spacing 6 mm	0.4 m	1006-450
Right angle duplex probe				P and C probe spacing 10 mm	0.4 m	1006-449
Concentric duplex probe				P and C probe spacing 3.8 mm	0.4 m	1006-448
Kelvin clip				Clip capacity 40 mm	0.4 m	1006-447
Kelvin clip touch proof insulated				Clip capacity 52 to 75 mm	0.4 m	1006-451
Right angle duplex probe	2 hooks	BT51	10 A	In-line duplex locking connectors	3 m	1006-442
				In-line duplex locking connector	6 m	1006-443
Duplex probe	1 off 2 hooks and plug 1 off 2 hooks	DLRO10 DLRO10X, DLRO10HD	10 A	In-line duplex locking connectors, 1 with indicator LED	1.5 m	1006-444
Kelvin clip				In-line duplex locking connectors, 1 with indicator LED	3 m	1006-462
Kelvin clip touch proof insulated				In-line duplex locking connectors, 1 with indicator LED	3 m	1006-461
Heavy duty Kelvin 10 cm g-clamp	2 spades		100 A		5 m	242104-2-16
					8 m	242104-2-16
HD 60 mm current clips and 22 mm potential clips	2 hooks	DLRO100, DLRO200, DLRO600	600 A	25 mm <sup>2</sup> csa	5 m	1008-029
				50 mm <sup>2</sup> csa	5 m	1008-028
				70 mm <sup>2</sup> csa	10 m	6220-756
				95 mm <sup>2</sup> csa	15 m	6220-757

# Multifunction testers

## MFT1800 series

The MFT1800 series is tough



It won't go bang if it's connected across phases, when it's dropped, when it's used in the rain, when the wrong range is selected or when it's connected to live circuits - even with the test button locked on!

Dust and rain proof to IP54 the MFT1800 series offers CAT IV safety, meaning you can use it in any environment without a second thought. It can test to any IEC 60364 derived standard quickly, easily and safely. The tester is supplied in a tough carry case ready to work, complete with batteries, user guides and calibration certificate.

With a good selection of earth tests, 15 mA auto-reversing continuity testing, and Type B and 2 x IDN RCD testing, and automatic reverse polarity correction for live tests on-board the MFT1800 series is perfect for the testing you do.

### MFT Series

- 2 and 3 wire non-trip loop impedance range
- 2 wire Hi current loop including phase to phase testing
- Prospective fault current measurement up to 20 kA
- Insulation test at 100 V, 250 V, 500 V and 1000 V (dependant on model)
- Auto reverse continuity measurement 0.01  $\Omega$  to 9.99 k $\Omega$
- 10 mA to 1 A single and 3 phase RCD testing (no earth) (dependant on model)
- Type AC, A, S, B and programmable RCDs (dependant on model)
- ½ x IDN, 1 x IDN, 2 x IDN and 5 x IDN RCD tests (dependant on model)
- Auto RCD testing
- Phase rotation
- Earth electrode testing 2-pole/3-pole\*, ART\* and Stake-less techniques\* (dependant on model)
- Internal memory and Bluetooth® communications (MFT1835)
- EN61010 CAT IV safety rating and tough IP54 case

\* Requires optional earth test kit, ICLAMP/VCLAMP

## MFT1845

The MFT1845 offers a wide range of test functions, designed for all electrical installation testing and verification of low voltage building wiring and distribution testing scenarios. The MFT1845 is IEC 61010 CAT IV 300 V rated for safe connection anywhere within the LV network on single and 3 phase systems.

The unique modern testing styling allows it to be operated while stood on the floor, whilst up a ladder or platform, and optimised for hanging around the user's neck. Dual TEST and LOCK buttons - one pair at each end - makes the testers easy to operate left or right handed.

- Enhanced non-trip loop impedance measurement technology
- "Confidence meter" loop measurement analysis (patent pending)
- 2 and 3 wire non-trip loop impedance range
- 2 wire Hi current loop including phase to phase testing
- Prospective fault current measurement up to 20 kA
- Insulation test at 100 V, 250 V, 500 V and 1000 V
- Auto reverse continuity measurement 0.01  $\Omega$  to 100 k $\Omega$
- 10 mA to 1 A single and 3 phase RCD testing (no earth)
- Type AC, A, S, B and programmable RCDs
- ½ x IDN, 1 x IDN, 2 x IDN and 5 x IDN RCD tests
- Auto RCD testing
- Phase rotation
- Earth electrode testing 2-pole/3-pole\*, ART\* and Stake-less techniques\*
- Internal memory and Bluetooth® communications
- EN61010 CAT IV safety rating and tough IP54 case

\* Requires optional earth test kit, ICLAMP/VCLAMP

### New Loop Impedance testing technology:

The MFT1845 includes a new non-trip loop testing technology that:

- Prevents any influence the RCD may present to the total loop impedance value.
- Faster non-trip loop testing down to 8 seconds.

This technique also allows testing of loop impedance through 10 mA type AC and Type A RCDs.

### New "Confidence meter\*" measurement analysis (Patent pending)

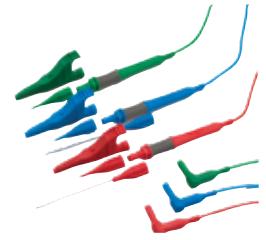
Overlaying the new non-trip loop impedance measurement is the new Megger "Confidence meter". As loop impedance values can be dramatically affected by circuit noise, the Confidence Meter displays the degree of confidence in the accuracy of the measured loop impedance. Using the digital ARC to indicate the analytical process, the measurement is continually monitored and adjusted when circuit noise is present, resulting in a dramatically improved and repeatable test result.



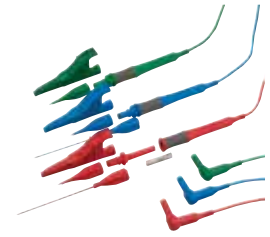
# Multifunction testers

		MFT1815	MFT1825	MFT1835	MFT1845
Insulation test ranges	1000 V	■	■	■	■
	500 V	■	■	■	■
	250 V	■	■	■	■
	100 V				
	Test voltage display	■	■	■	■
	Adjustable buzzer threshold				
Continuity and resistance range	200 mA	■	■	■	■
	15 mA				
	Easy lead null	■	■	■	■
	Auto-reverse continuity test	■	■	■	■
	Adjustable buzzer threshold	■	■	■	■
Loop testing ranges	2 and 3-wire no-trip test L-PE	■	■	■	■
	PSCC and PFC (20 kA max)	■	■	■	■
	L-PE 48 V to 280 V, 45 Hz to 65 Hz	■	■	■	■
	2-wire high current testing L-L and L-N	■	■	■	■
	Phase to Phase tests (L-L) 48 V to 480 V	■	■	■	■
	L-N 48 V to 280 V, 45 Hz to 65 Hz	■	■	■	■
	Confidence meter on loop test range				
	New loop impedance test method				
	Touch voltage display 0 – 253 V	■	■	■	■
RCD testing range	1/2 x IDN, 1 x IDN, 5 x IDN RCD test	■	■	■	■
	2 x IDN				
	1/2 I, 1, 5 x RCD test	■	■	■	■
	2 x I				
	0° + 180° phase angle	■	■	■	■
	30 mA, 100 mA, 300 mA, 500 mA RCD test	■	■	■	■
	10 mA, 1000 mA RCD test	10 mA	■	■	■
	Auto RCD testing	■	■	■	■
	Fast ramp test	■	■	■	■
	Type AC, A, S RCDs	■	■	■	■
	Type B (pure DC) RCDs				
	Programmable RCDs				
	3 phase RCD (no earth)				
Voltage frequency and phase rotation range	10 V – 600 V AC and DC voltage / Frequency 15 Hz – 400 Hz	■	■	■	■
	TRMS measurement				
	Phase rotation	■	■	■	■
Earth electrode tests (optional accessories may be required)	2-pole (Testleads)		Optional	Optional	Optional
	3-pole (Testleads)		Optional	Optional	Optional
	3-pole ART technique (ICLAMP & testleads)		Optional	Optional	Optional
	Stakeless method (ICLAMP & VCLAMP)		Optional	Optional	Optional
	Current measurement (ICLAMP)		Optional	Optional	Optional
Intelligent safety system	Test lockout	■	■	■	■
	Safe contact detector	■	■	■	■
	Live circuit warning	■	■	■	■
	Auto discharge	■	■	■	■
	Analogue arc display	■	■	■	■
Additional benefits	Bright easy-to-read display	■	■	■	■
	Auto power-down	■	■	■	■
	Rechargeable batteries / charger included				
	FREE calibration certificate	■	■	■	■
	SP5 Switched probe included	■	■	■	■
	Warranty upgradeable to 3 years FREE	■	■	■	■
	Dust and weatherproof to IP54	■	■	■	■
	On board memory with Bluetooth® download				
Safety rating	CAT IV 300 V	CAT IV 300 V	CAT IV 300 V	CAT IV 300 V CAT III 600 V	

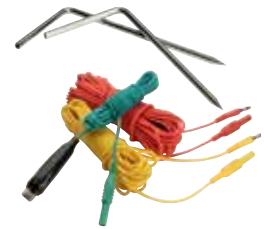
## Accessories



1001-991  
3-wire lead test set



1001-975  
3-wire 10 A fused test lead set



1001-811  
3-wire earth electrode test set



1001-012  
1000 A AC Current Probe

# RCD testers

## RCDT300 series

### The Megger RCD testers provide the full solution to RCD testing

The RCDT tests not only Type A and Type AC RCDs, but also the selective (time-delayed) variants of both types, performing ½I, 1I and 5I tests on RCDs rated at 30 mA, 100 mA, 300 mA and 500 mA tested at 0° or 180°.

The RCDT320 offers additional tests for RCDs rated at 10 mA and 1000 mA.

Touch voltage is measured at the start of a test, and will automatically inhibit if it exceeds the preset level.

Touch voltage inhibit is selectable from 25 V to 50 V.

#### Save your valuable time

RCDT320 offers additional time saving features.

Auto RCD testing – RCDT320 will automatically cycle through the ½I, 1I and 5I tests at 0° or 180° recording the results, so you can stay with and reset the RCD. This means the job gets done faster, saving not only your time but your legs as well!

Ramp testing to measure the trip current of an RCD – the test current is slowly increased from ½I to 1I+10%. The trip current is held on the display, making it quicker and easier to diagnose nuisance tripping.

RCDs on 110 V (55 V - 0 - 55 V) centre tapped site supplies can be tested by the Megger RCDT320 due to its wide operating voltage range of 50 V to 280 V.

#### Your safety is Megger's number one concern

These RCD testers have built in safety features to look after you and the tester –

- **Safety interlock to prevent unsafe connection of the test leads**
- **Test inhibit, if the supply voltage exceeds 280 V**
- **3 phase safe – even when connected across phases, both you and the tester will remain safe**
- **LED connection indicators display correct test lead connection, making sure it is right first time**

#### Megger RCD testers are so easy to use and quick to learn

- **There are no buried functions, so they are easy to use**
- **The colour coding helps test selection, speeding up testing time and helping you identify faults fast**
- **The quick start guide in the lid keeps all the basic information at hand when you need it**

#### Megger RCD testers will take the bashing that testers receive when they are on site

They are rubber armoured and have an integral solid lid to cover the display.

The lid has a heavy-duty hinge that locks away underneath when in use, making it easy to use and impossible to lose.

And you don't need to pull out the test leads to shut the lid.



### Special features

- Thick rubber armoured case
- Clear LED polarity indicator
- Large, easy to read display
- Super grip test-leads with lock on croc clips
- Tough
- Easy to use
- Safe
- Weatherproof to IP54
- Hands free auto-RCD testing
- USB downloading on RCDT330



## RCDT300 series accessories

### Use the 'Ramp Test'

Use the 'ramp test' to identify nuisance tripping RCDs.

An overly current sensitive or faulty RCD can cause nuisance tripping of the RCD, which can be very difficult to locate. A current clamp meter is not fast enough. By testing with a ramp test, the test current is slowly increased until the RCD trips. The tester displays the trip current in milliamps (not the trip time). If this is too low, replace the RCD.



**1003-132**  
2 wire test lead set



**1002-490**  
Red, blue and green probes and clips



**1001-977** 2-wire 10 A fused test lead set



RCDT testers come complete with calibration certificate in a tough carry case

## Features



Heavy duty hinge locks away underneath



Clear range selector for poor light conditions



Clear LED polarity indicators help you get the right wiring and test lead connection



Shutter mechanism makes it easy to use the right leads

		RCDT310	RCDT320	RCDT330	
<b>RCD testing</b>	1/2l, 1l, 5l RCD trip time test	■	■	■	
	Selective breakers	■	■	■	
	Type A and AC breakers (1/2l, 1l, 5l)	■	■	■	
	Programmable RCD			■	
	30, 100, 300, 500 mA RCDs	■	■	■	
	10, 1000 mA RCDs		■	■	
	RCD trip current test (RAMP)		■	■	
	Auto RCD test		■	■	
	0°/180° polarity selection	■	■	■	
	Touch voltage selectable	■	■	■	
	Max touch voltage (25 V/50 V)	■	■	■	
	Operating range 100 to 280 V	■			
	Operating range 50 to 280 V		■	■	
<b>Features</b>	3-Phase safe	■	■	■	
	Large clear display	■	■	■	
	Backlight		■	■	
	Battery status indication	■	■	■	
	Auto power down	■	■	■	
	Fuse blown indication	■	■	■	
	Data storage			■	
	Download via USB port			■	
	IP54 weatherproof	■	■	■	
	IEC61010-1 CATIII 300 V	■	■	■	
	EN61557	■	■	■	
	<b>Accessories included</b>	UK mains test lead	■	■	■
		2 wire test lead with probes and clips		■	■
<b>Warranty upgradeable to 3 years FREE</b>		■	■		
<b>Free calibration certificate</b>		■	■		

# Multimeters for electricians

## AVO800 series

### Sophisticated multimeter

- Voltage and current, with TRMS, resistance, conductance, capacitance, frequency and temperature measurement
- Choice of input impedance without changing test ranges for fast and safe detection of unintentionally coupled voltages
- Integrated non-contact live circuit detection with high and low sensitivity settings
- Reading capture tools including minimum, maximum, average, manual and auto hold, smoothing and low pass filtering to ensure you get the measurement you need.
- Phase sequence detection
- CAT IV 600 V and CATII 1000 V
- Dust and weather proof to IP64

Specifically designed for the electrical engineer and profession electrician, this range of tough, high quality multimeters offers the perfect selection of functions required. Useful innovations such as the high and low impedance switching allow a quick and safe method to identify capacitively coupled, ghost, voltage. The introduction of the dual sensitivity non-contact voltage detector helps you identify a live circuit at a distance and then to pinpoint the exact conductor or circuit.

Exceptionally the AVO830 series multimeters offer phase sequence detection to prevent miss connection and the consequent damage to motors and generators.

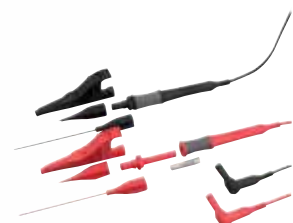
These functions are in addition to the fact that this range offers a 10,000 count display with a basic accuracy of 0.01% accuracy, and shuttered 4mm inputs to ensure that the right connections are made every time.



### Accessories



1002-001  
2 wire test lead set



1002-015  
2-wire 500 mA fused test lead set

# Multimeters for electricians

## AVO410



### Basic multimeter

- Voltage and current, with TRMS, resistance capacitance and frequency
- Auto ranging with the option for manual range selection
- Max and min measurement with data hold
- Tough rubber holster
- CAT IV 600 V safety rating

## AVO210



### Basic multimeter

- Small light and easy-to-use
- Auto ranging with manual over-ride
- Non-contact voltage sensor
- Max and min measurement and data hold function

		AVO835	AVO830	AVO410	AVO210
Current measurement	A ac (Overrange 20s)	10 (15)	10 (15)	10	10
	TRMS	■	■	■	
Voltage measurement	A dc (Overrange 20s)	10 (15)	10 (15)	10	10
	V ac	1000	600	750	750
	TRMS	■	■	■	
	V dc	1000	600	1000	1000
Basic accuracy		0.10%	0.10%	0.50%	1.00%
Resistance measurement		0.01 Ω to 50 MΩ	0.01 Ω to 50 MΩ	0 to 60 MΩ	0 to 20 MΩ
Continuity	Buzzer	■	■	■	■
Conductance measurement		0.1 nS to 60 nS	0.1 nS to 60 nS		
Diode measurement		1 mV to 2.8 V	1 mV to 2.8 V	10 mV to 3 V	10 mV to 2 V
Capacitance measurement		1 nF to 20 mF	1 nF to 20 mF	0 to 6.00 mF	0 to 2.00 mF
Frequency measurement		5 Hz to 100 kHz	5 Hz to 100 kHz	0 to 60 MHz	0 to 20 MHz
Phase rotation		■	■		
Temperature		■			
Non contact live circuit detection		hi/lo sensitivity	hi/lo sensitivity		■
Input impedance		10 MΩ or 10 kΩ	10 MΩ or 10 kΩ	10 MΩ	10 MΩ
Display		10,000 count	10,000 count	6,000 count	2,000 count
	Analogue arc	■	■		
	Backlight	■	■	■	
Ranging	Auto	■	■	■	■
	Manual	■	■	■	■
Data capture	Max min hold	■	■	■	
	Average	■	■		
	Manual and auto hold	■	■	■	
	Noise suppression	■	■		
	Smoothing	■	■		
	Low pass filter	■	■		
	Relative	■	■		
	Relative (%)	■	■		
Low Z capacitance	■	■			
Terminals	Shuttered	■	■		
Weight	g	442	442	522	320
Warranty upgradeable to 3 years FREE		■	■	■	■
Ingress protection		IP54	IP54		
Safety rating		CAT IV 600 V & CAT III 1000 V	CAT IV 600 V	CAT IV 600 V	CAT III 600 V

# Clamp meters

## DCM1500

### 1500 A trms clamp multimeter

- DC and AC current measurement up to 1500 A
- True RMS measurement for greater accuracy
- Large jaw size improves safety when working with uninsulated conductors
- 750 V AC and 1000 V DC
- Resistance, continuity and frequency measurement
- Peak, minimum, maximum and data-hold functions

The DCM1500 is the perfect clamp multimeter for electrical engineers working in the industrial and power sectors. It is supplied ready for use with a pouch and test leads.



## DCM330

### 200 A AC open jaw clamp multimeter

- 200 A AC open-jaw current measurement
- 0.1 V to 1000 V auto-ranging AC and DC voltage measurement
- 0.1  $\Omega$  to 20.00 M $\Omega$  Resistance range
- Continuity buzzer and diode check
- Non-contact detection of AC voltage
- CATIV 600 V

The Megger DCM330 is suitable for use anywhere where there is a requirement to measure a.c. current in single unshielded conductors less than 16mm diameter, AC / DC voltages up to 1000 V, or resistances up to 20 M $\Omega$ .



## DCM320

### 400 A AC clamp multimeter

- 20 M $\Omega$  resistance range
- Continuity buzzer
- Auto-ranging
- Auto off to conserve batteries

The DCM320 is a low cost data hold current clamp and multimeter. It is supplied complete with test leads, batteries and carry case.



## DCM340

### 600 A AC / DC, 600 V AC / DC clamp multimeter

- DC current range
- Frequency counter
- Analogue bar graph
- Back light
- Large jaws
- Auto off to conserve batteries

The DCM340 is an AC and DC current clamp and multimeter that offers exceptional value and is particularly suited to solar PV commissioning. It is supplied complete with test leads, batteries, user guide and carry case.



# Clamp meters

## DCM305E

### New DCM305E!

TRMS leakage and load current

- Versatile, very high resolution AC current clamp for identifying the cause of nuisance tripping and locating problem circuits
- 6 auto or manual ranges: 6mA (1 µA resolution), 60 mA, 600 mA, 6 A, 60 A and 100 A
- Low pass filter to aid stability of readings.
- Auto, peak and data hold features for working in those difficult to access areas

The DCM305E is designed for the fault finding electrician. With the ability to measure earth leakage values as low as 0.001 mA, identifying problems that cause the nuisance tripping of RCDs or RCBOs is simple and straightforward.

With its high resolution and low pass filtering system the differential earth leakage is measure by placing the clamp around the live and neutral of the meter tails or each circuit in a distribution board. This

## DCM310

### 400 A AC clampmeter

- Easy to read
- Manual operation
- Low cost
- Tough

This easy to use clampmeter is ideal to rapidly check the current flowing with the minimum of fuss.



### Earth leakage and diagnostic clamp

eliminates the influence of parallel paths and permits the problem circuit to be identified for remedial action.

Furthermore the DCM305E can help discriminate between the sources of high leakage current, whether it is intentional, requiring some form of load spreading, or unintentional either due to a faulty installation or a faulty appliance. With a peak hold capability, leakage spikes caused by appliance switching can also be easily identified.



	DCM305E
Measurement function	TRMS leakage and load current
Ranges	6.000 mA, 60.00 mA, 600.0 mA, 6.000 A, 60.00 A 100.0 A
Maximum resolution	0.001 µA
Ranging	auto or manual
Low pass filter	50 to 60 Hz
Maximum Jaw diameter	40 mm
Hold features	peak, auto and data
Safety rating	CAT III 300 V

## Accessories



1002-001  
2-wire test lead set



1002-015  
2-wire 500 mA fused test lead set

		DCM305E	DCM310	DCM320	DCM330	DCM340	DCM1500
Current ranges	A AC	6.000 mA, 60.00 mA, 600.0 mA, 6.000 A, 60.00 A, 100.0 A	20 A, 200 A, 400 A	20 A, 200 A, 400 A	200 A	60 A, 400 A, 600 A	400 A, 1000 A, 1500 A
	True rms	■					■
Voltage ranges	A DC					60 A, 400 A, 600 A	400 A, 1000 A, 1500 A
	V AC			200 V, 600 V	200 V, 1000 V	400 V, 600 V	400 V, 750 V
Resistance ranges	True rms						■
	V DC			200 V, 600 V	200 V, 1000 V	400 V, 600 V	400 V, 1000 V
Resistance ranges	Ω			200, 2 k, 200 k, 2M 20 M	200, 2 k, 200 k, 2M 20 M	400	400
	Continuity buzzer			■	■	■	■
Frequency measurement						■	□
Diode check					■		
Other features	Auto-ranging			■	■	■	■
	Backlight					■	■
	Data hold	■	■	■	■	■	■
	Max / min hold	■	■			■	■
	Conductor size	40 mm	27 mm	27 mm	16 mm	35 mm	51 mm
	Safety rating	CAT III 300 V	CAT III 600 V	CAT III 600 V	CAT IV 600 V	CAT III 600 V	CAT IV 600 V

# Loop impedance tester

## LTW series

### 2 wire non-tripping earth loop impedance tester

The loop test is performed with only 2 test leads. This can be either:

- Phase to Earth
- Phase to Neutral
- Phase to Phase

Testing is simple. There is no need for a third wire which could cause confusion in identifying the part of the circuit under test.

#### Non-trip loop testing

LTW series testers will not trip working RCDs of 30 mA, using the Non-trip loop test setting.

#### Noise detection on non-trip tests

LTW uses sophisticated noise detection circuitry which continually monitors the supply during a loop test to ensure the accuracy of the result has not been affected by electrical noise from plant and services.

Two operational modes are available:

- Performs a 10 second test and if noise is detected a warning is displayed.
- Automatically extends a test to improve the accuracy.

#### High current loop testing

For supplies that are not RCD protected the high current test is recommended, as there is no risk of tripping the RCD.

#### Auto start

An auto-start function will start the loop test running as soon as the test leads are connected, means much faster testing.

#### Three-phase safe

The instruments will operate on a wide range of electrical voltages.

#### High resolution test

LTW425 offers a high current, high resolution loop test to three decimal places (0.001 $\Omega$ ).

#### PFC Display

All instruments can calculate up to 20 kA and the LTW425 can calculate up to 40 kA using the 0.001 high current, resolution test range.



The popular LTW325 comes complete, ready for work

## LT300

### High current earth loop impedance tester

Measure a wide range of frequencies with the LT300



The LT300 offers high current loop testing over a wide range of frequencies and supply voltages with simple, fast, two wire operation.

#### Frequency range

Supply frequency is indicated upon connection and the LT300 will automatically set to the supply frequency either 16 Hz, 33 Hz, 50/60 Hz, 125 Hz or 400 Hz. Testing will commence automatically.

#### Loop measurement

Two loop impedance ranges are provided.

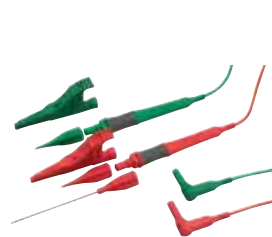
20  $\Omega$  - Resolution to 0.01  $\Omega$

200  $\Omega$  - Resolution to 0.1  $\Omega$

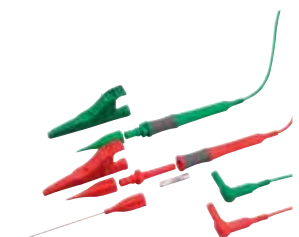
#### Supply voltage

Operational supply range extends from 50 V to 550 V (400 V @ 16 Hz), with a warning for voltages over 330 V highlighting accidental phase to phase connections on a nominal 230 V system.

## Accessories



1001-976  
2 wire test lead set



1001-977  
2-wire 10 A fused test lead set



6220-832  
Euro mains test lead set

# Earth resistance testers

## Four pole earth electrode and soil resistivity tester

### DET4T

- 2, 3 and 4 pole testing selected by turning a switch
- Extended test range to 200 k $\Omega$  option
- Dry cell or rechargeable versions
- User selectable test frequency and voltage option
- Attached Rod Technique (ART) option Stakeless measurements option
- Automatic circuit checking
- Comes with Power DB Lite earth testing forms that do the calculations for you
- Backlit display
- Weather and dust proof to IP54
- Safety rated CAT IV 100V
- Complete with lead and stakes packed in a hard wearing carry case
- Delivered with a FREE calibration certificate

The tough and easy-to-use DET4TD2 and its rechargeable counterpart the DET4TR2 are a popular choice with contractors. Capable of performing 2,3, and 4 pole measurements these instruments are ideal for testing both ground electrode systems, and soil resistivity.

### DET4TC2 and DET4TCR2

The DET4TC2 and its rechargeable counterpart the DET4TCR2 are advanced ground testers capable of performing 2,3, and 4 pole measurements. these instruments may be further enhanced with the addition of an ICLAMP and VCLAMP. The ICLAMP will allow the user to perform A.R.T. (Attached Rod Technique) measurements, removing the need to disconnect an electrode from a system to test it. Using both an ICLAMP and a VCLAMP will allow stake-less measurements, perfect for locations where driving auxiliary stakes is not practical.

The addition of variable test frequency allows the user to move away from problem noise frequencies, and extended resistance ranges extending soil resistivity capabilities.

DET4TD



## Three pole earth electrode tester

### DET3T

- 3-pole earth electrode testing and bond testing
- Attached Rod Technique (ART) option
- Selectable 25 V or 50 V output
- Complete with lead and stake kit
- Simple one button operation
- Hardwearing carry case
- Delivered with calibration certificate
- IP54 rated

### DET3TD

The DET3TD is a popular choice with contractors due to their toughness. Capable of performing 2 and 3 pole measurements these instruments are great for testing both installation and lightning protection ground electrode systems. The instrument is tough in every way, built to work in the roughest of outside conditions, and built to give the user a high level of electrical safety. This is demonstrated by specifications such as IP54 ingress protection, high noise immunity, and CAT IV safety.

### DET3TC

The DET3TC, is like the DET3TD however, with the addition of an ICLAMP adds the capability of performing A.R.T. (Attached Rod Technique) measurements, removing the need to disconnect a single electrode from a system to be able to measure it.



6320-245  
Professional earth  
test kit



# Earth resistance testers

## DET14C and DET24C

### Clamp-on earth electrode tester

DET14C and DET24C induce a test current into earth systems and measure earth resistance in multi earth installations without the need to disconnect the earth connection.

These earth clamps offer major advances in safety and access. A CAT IV 600 V rating combined with an automatic current warning to reduce risk of user disconnecting electrode with a hazardous current flowing. The unique elliptical head shape and short body length give unrivalled access to awkwardly sited electrodes.

### Features

- Elliptical clamp shape with 39mm x 55mm inner jaw dimensions
- Low maintenance flat jaw interface
- CAT IV 600 V safety
- Automatic noise current warning safety feature
- Resistance and current ranges - auto ranging
- Automatic noise filter function



DET14C flat jaw interface makes for long service life



Elliptical jaw improves access

		DET4TCR2	DET4TC2	DET4TR2	DET4TD2	DET3TC	DET3TD	DET14C	DET24C	DET2/3
Test techniques available	4 pole resistivity test	■	■	■	■					Calculated
	3 pole electrode	■	■	■	■	■	■			■
	4 pole electrode test with ART	■	■			■				■
	2 pole bond test	■	■	■	■	■	■			■
	Stakeless test	■	■					■	■	■
Power	Rechargeable	■		■						■
	Dry cells		■		■	■	■			
Warnings	Excessive noise	■	■	■	■	■	■			■
	Potential spike resistance high	■	■	■	■	■	■			■
	Current spike resistance high	■	■	■	■	■	■			■
Resistance range	Resolution	0.01 Ω - 200 kΩ 0.01 Ω	0.01 Ω - 200 kΩ 0.01 Ω	0.01 Ω - 20 kΩ 0.01 Ω	0.01 Ω - 20 kΩ 0.01 Ω	0.01 Ω - 2.0 kΩ 0.01 Ω	0.01 Ω - 2.0 kΩ 0.01 Ω	0.05 Ω - 1.5 kΩ 0.01 Ω	0.05 Ω - 1.5 kΩ 0.01 Ω	0.01 Ω - to 20.00 kΩ
	Earth current range	0.5 mA to 35 A						■	■	0.00 to 2.00 A
	0.5 mA to 19.9 A	■	■			■				
Test frequency		94, 105, 111 and 128 Hz	94, 105, 111 and 128 Hz	128 Hz 128 Hz	128 Hz 128 Hz	128 Hz 128 Hz	128 Hz 128 Hz	1390 Hz 1390 Hz	1390 Hz 1390 Hz	10 to 200 Hz 0.5 steps
Noise rejection 40 V peak to peak		■	■	■	■	■	■			50 V p to p
Test results storage								■	■	■
Downloadable test results									■	■
IEC61010-1 safety rating		CAT IV 100 V	CAT IV 100 V	CAT IV 100 V	CAT IV 100 V	CAT IV 100 V	CAT IV 100 V	CAT IV 600 V	CAT IV 600 V	CAT IV 300 V
Weather- and dust-proof to IP54		IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54
Warranty upgradeable to 3 years FREE		■	■	■	■	■	■	■	■	■
Power DB earth testing forms		■	■	■	■	■	■	■	■	■



# Earth resistance testers

**DET2/3**

## Advanced Earth (Ground) Tester

The Megger® DET2/3 automatic earth (ground) test instrument is robust, compact and designed to measure earth Electrode Resistance and Soil Resistivity. It provides a full range of test methods and excels at the four terminal method of measurement, which eliminates the resistance of the current circuit from the measurement.

The DET2/3 is a reliable instrument for use on large or more complex earth systems, which include communications earth systems and difficult test environments. It can be used to test in accordance with BS 7430 (earthing / grounding), BS-EN-62305 (Lightning Protection), IEEE Standard 81 and Railway Applications.

Soil Resistivity measurements are used to establish the optimum electrode design and site, as well as archaeological and geological investigations.

## Features

- High resolution of 1 mΩ, ideal for large earth (ground) systems
- Versatile test modes
- High accuracy for earth (ground) electrode grid and soil resistivity tests
- Rechargeable battery power that can last all day with a fast re-charge
- Robust instrument with IP65 protection
- Automatic test frequency selection, with filters and high current features
- Diagnostic trace display
- Data storage
- Large colour display that shows numeric and graphical results



## Earth Testing Kits (ETK)

This is the professional Cable kit to complete earth electrode testing and soil resistivity surveys. This all new design is housed in a holdall for easy/ neat storage and is well protected and is easily transportable. Much care has been taken to produce a family of kits to meet a variety of needs.

The new design is tougher, lighter, and better than previous products. In use the reels have a smoother action and are far more manageable with less chance of snagging, saving time and improving the user experience. The test leads in the reels can be linked in a daisy chain together offering the user the opportunity of longer distances but in easily manageable sections.

- Can be used with any of the DET2/2, DET2/3, DET3, DET4 Megger earth testers.



- An assortment of lengths are available 30, 50 & 100 metres
- Lightweight
- Large comfortable handles for easy wind and unwind
- Clips on reels to retain earth spikes/ pins
- Ability to daisy chain, offering longer lengths

# Two channel cable fault locators

## TDR2000/3 and TDR2010

### Two channel cable fault locators

When chasing faults on paired metallic cables in applications such as telephony and CATV you can't do better than the TDR2000 series. It is a highly portable, high resolution, compact, dual channel TDR with a large colour screen making fault location easier by allowing trace comparison.

With a best resolution of 0.1m the TDR2000 series has a 20km maximum range, depending on the velocity factor selected and the cable type. Five output impedances are available (25, 50, 75, 100 and 125 ohms). There is an Auto Impedance matching feature and velocity factor can be adjusted from 0.2 to 0.99. TDR2000 series maximises the use of its large colour display, 800 px x 480 px, to help you locate your fault faster and identify it more accurately.

- Comprehensive dual channel capability with dual aspect display.
- Ultra-fast pulse for near end fault identification
- Guidance to potential fault.
- IP54 rating offers real life working.
- Designed for use on all metallic paired cables.
- Trace tagging a label or description to be added to saved traces (TDR2010 and TDR2050)



## TDR2050

Offering a CATIV 600 V safety rating, the TDR 2050 is perfect for chasing down fault on power circuits such as street lighting. Its IP54 rating means that it is perfectly at home working in the wind and rain of the real world. The step function trace improves the near-end performance of the TDR2050 as it prevents the trailing edge of the pulse masking faults.

	TDR500/3	TDR1000/3	TDR1000/3P	TDR2000/3
Range Capability	0.2 m to 5 km	0.2 m to 5 km	0.2 m to 5 km	0.2 m to 20 km
Shortest pulse width	2 ns	2 ns	2 ns	2 ns
Number of channels	1	1	1	2
Blocking filter	Built in	Built in	Built in	Built in
Memory function	Trace Hold	Trace hold with live trace overlay	Trace hold with live trace overlay	100 trace memory with downloading
Auto power off	User set	User set	User set	User set
Auto fault find				■
Trace tagging				
Step function				
Distant dependant gain				
Auto end find				
Rechargeable				■
Test leads	Miniature clip	Miniature clip	Miniature clip	Miniature clip
Safety rating	CAT III 300 V	CAT III 300 V	CAT III 300 V	CAT III 300 V
IP rating	IP54	IP54	IP54	IP54

# Single channel cable fault locators



Auto find takes you to the first major event on the cable, press the button again and you are taken to the next disturbance. The find end function identifies the end of the cable and measures its length.

Distance dependant gain is useful if you are working with longer cables as the gain is increased along the returning signal to compensate for the attenuation due to distance. This means that far-end fault has a similar amplitude as if it were a near-end fault.

## TDR1000/3 series

### Single channel cable fault locators

Using a Time Domain Reflectometer (TDR) is a well established method for finding the location of faults in metallic power or data cables. In the past TDRs have had a reputation of being expensive and difficult to use but now, the Megger TDR1000/3 series has put paid to that.

An AUTO selection option, fast pulse and built in blocking filter ensures that the most effective selection depending on the range required, helping rapid diagnosis of the TDR trace. In addition on the TDR1000/3 and TDR1000/3P, dual cursors allow complete flexibility, giving the operator full control and instant indication of distance between two points.

- Accurate and easy fault finding because of resolution as low as 0.1 m
- Ultra fast 2 ns pulse for near end fault identification
- Trace hold and comparison not TDR500/3
- Auto selected output impedance (between 25, 50, 75 and 100 Ω)
- Power blocking filter not required

TDR2000/3P	TDR2010	TDR2050
0.2 m to 20 km	0.2 m to 20 km	0.2 m to 20 km
2 ns	2 ns	2 ns
2	2	2
Built in	Built in	Built in
100 trace memory with downloading	100 trace memory with downloading	100 trace memory with downloading
User set	User set	User set
■	■	■
	■	■
		■
		■
■	■	■
10 A fused standard clip	Miniature clip	10 A fused standard clip
CAT III 300 V	CAT III 300 V	CAT IV 600 V
IP54	IP54	IP54

# Insulation and continuity testers for communications engineers

## MIT480/2 Series

A range of insulation and continuity testers designed for the communications markets and electrical installations. Developed to an ergonomic design with the latest measurement techniques and live circuit protection; the MIT480/2 has faster continuity testing and stabilised insulation test voltages for more accurate and productive installation testing.

Insulation testing has the addition of feedback control to stabilise the test voltage to less than +2% (+2V) over-voltage, for safer and more accurate measurement.

As well as offering all the functionality of the standard MIT400/2 models, the MIT480/2 series is now fitted with three terminal connection to allow the connections to be made simultaneously and tests switched between the 3 pairs A-B, A-E or B-E. All measurements, except mA, are possible across all three pairs.

Variable test voltage is also available from 10 V to 500 V in 1V steps.

Continuity testing is now fully automatic from 0.01 ohms to 1 M $\Omega$  with fast contact detection whilst continuously protecting against accidental contact with live circuits.

- **Designed for the Telecommunications, Cable TV and electrical markets**
- **Three terminal testing for Telecommunications (A-B-E or T-R-G) and 3 phase electrical measurement, 3 terminal switching – no need to disconnect test leads**
- **Stabilise insulation test to -0% +2% of selected test voltage**
- **Variable insulation test voltage from 10 V to 500 V in 1 V steps**
- **mA measurement for low current measurement applications**
- **Single range, faster continuity testing from 0.01  $\Omega$  to 1 M $\Omega$**



- **Insulation testing up to 500 V and 100 G $\Omega$  in a hand held instrument**
- **500 V gated test to prevent accidental testing of lower voltage networks at high voltage.**
- **600 V Trms AC and DC voltage measurement**
- **Test result storage and Bluetooth® downloading**
- **Live circuit detection and protection**
- **CATIV 600 V application & IP54 environmental protection**
- **Rechargeable options for mains and car charging**



INSULATION RANGES	MIT481/2	MIT485/2
<b>Insulation ranges</b>		
50 V / 100 V / 250 V / 500 V	■	■
Variable 10 V to 500 V		■
$\mu$ A button (Leakage)	■	■
Lock button on M $\Omega$	■	■
REN Telephone count (discharge)	■	■
> 500 V Gated Operation	■	■
<b>OHMS Ranges</b>		
Continuity 0.01 $\Omega$ - 10 M $\Omega$	■	■
Isc: 200 mA R $\leq$ 4 $\Omega$	■	■
Isc 20 mA	■	■
Difference measurement [REL]	■	■
Lead null (<10 $\Omega$ )	■	■
<b>Voltage function</b>		
AC / DC Volts 600 V	■	■
mV AC / DC range	■	■
TRMS	■	■
Frequency measurement 15 - 400 Hz	■	■
Input impedance	10 M $\Omega$	10 M $\Omega$
<b>Capacitance</b>		
Capacitance 0.1 nF - 10 $\mu$ F n n	■	■
Distance by $\mu$ F (Open loop) n n	■	■
REN calculation	■	■
<b>Other features</b>		
Current measurement mA AC/DC	■	■
PASS/FAIL on limit alarms		■
A/B/E or T/R/G switching	■	■
Number of terminals	3	3
On board memory	■	■
Bluetooth® and software		■
Recharger ready		■
AA Alkaline or NiMH	Both	Both
CAT IV / 600V	■	■
<b>Accessories</b>		
Silicone leads (R,B,G)	■	■
Switched probe supplied	■	■

# Electrical safety testers

## PAT100 series

### Battery powered electrical safety tester



- Simple tick or cross, pass or fail indication with measurement display
- Safe testing of IT and surge protected devices
- Battery powered with rechargeable option
- Plus many additional features on PAT150

**PAT120** is the toughest, simplest and most economical electrical safety tester available that gives results that conform to the local regulations description.

Organising tests in to three test groups, Earthed, Double Insulated and Power and Extension leads, enables the correct sequence of tests to be performed automatically without the user's intervention, keeping testing simple and reducing test times. Pass limits are fixed. The default insulation test is 500 V d.c. but when testing IT or surge protected equipment 250 V d.c. can be selected at the start of the test.

To make testing easier, the connections required for each test are shown in the lid of the PAT120. Another key difference from ordinary testers is the detachable neck strap that makes testing simpler when there is no convenient surface on which to work and makes the tester easier to carry with the test leads, report books etc.

**PAT150:** On the other hand, as a stand-by tester for when you are asked if you "can just test" by a client PAT150 and PAT150R can't be bettered. Like all Megger products they are built to be really tough and the complete kit is supplied in a hard protective case which will occupy minimal space.

The PAT150s offer the functionality of testers that are almost twice the price. They will test both 10 mA and 30 mA portable RCDs as well as Class I, Class II and extension leads and power cords. Surge protected devices and IT equipment are safe-guarded by insulation testing at 250 V and leakage testing at 40 V. The quick test function allows individual testing of continuity; insulation and mains powered leakage testing as well as checking the output of SELV circuits. Performing a mains powered differential leakage test has the benefit that the equipment will function during the test sequence.

The mains supply can be checked for voltage and for socket polarity by the PAT150s. You can configure the test durations and pass limits to suit your applications, and the bond lead resistance can be nulled out to reduce measurement errors. The PAT150 is powered by standard 1.5 V AA cells while the PAT150R incorporates internal charging NiMH cells.



		PAT120	PAT150	PAT150R
Insulation test	500 V	■	■	■
	250 V	■	■	■
Earth bond test	200 mA	■	■	■
Earth leakage options	250 V	■	■	■
	500 V	■	■	■
Alternative leakage	Substitute	■	■	■
	Differential		■	■
	Touch current		■	■
Functional test	240 V	■	■	■
Test lead null			■	■
Automatic test sequence	Class I (earthed)	■	■	■
	Class II (double insulated)	■	■	■
	Extension lead and power cords	■	■	■
	Portable RCD	■	■	■
Manual tests	Continuity		■	■
	Insulation		■	■
	Main powered leakage		■	■
	SELV measurements		■	■
Combined continuity, earth bond and insulation test lead		■	■	■
On-board battery re-charging				■
FREE calibration certificate		■	■	■

# Electrical safety testers

## PAT400 series

Two new electrical safety testers with full database functionality based on the well received PAT300 series. The PAT 400 series introduces a new level of convenience and speed to PAT testing using on-board test results storage.

Testing to the latest edition of the Code of Practice for the In-Service Inspection and Testing of Electrical Equipment includes differential, touch and alternative or substitute earth leakage tests. The PAT400 series offers sufficient memory for the test results of 10,000 assets with the proven long duty cycle, testing simplicity and speed of the PAT300 series. In use the PAT400 series has a large bright colour screen for clear test results and simple navigation through the menus.

The menus have been simplified to make operation faster and more intuitive. Five soft-keys give direct access to frequently used functions making navigation through the menus even faster and the tester even more productive, offering a greater return on investment.

The PAT400 series provides quick and easy access to records in the database and the data can be downloaded using a standard USB memory stick. For rapid data entry the PAT400 series has a choice a large QWERTY or QWERTZ keyboard, this helps to reduce typing errors. To speed up testing still further there is the option of a low cost barcode scanner and barcode label printer.



**PAT410** perfect for those happy to bond test solely at

200 mA. The smallest, lightest of the PAT400 series weighs only 2.7 kg.

**PAT450** in addition to the three bond tests and 230 V operation this tester offers 1.5 kV and 3.0 kV flash testing and a quick test facility which allows repeated use of a single test, making the perfect tool for hire and repair workshops

## PAT300 series

An easily portable desktop appliance tester for testing the safety of portable electrical equipment to meet health and safety regulations. The PAT300 series are fully featured testers with dedicated test buttons for direct access to tests. They are designed for customers who do not require the complexity of a fully configurable database of clients and results within the tester but do need a complete range of functions to allow automatic or manual testing of the widest range of electrical assets. There are two products in the range – the PAT320 and the PAT350. The PAT350 is identical to the PAT320, with the addition of flash-test capability for use in environments such as manufacturing, production or tool-hire shops.

Simple push-button operation make the PAT300s fast and intuitive in use. All regulatory test requirements are supported, including Class I and Class II, IEC power leads, extension leads and full tests for portable RCDs. An automatic mode is available for Class I and Class II testing. In automatic mode, the tests proceed sequentially through bond, insulation and operation, indicating a pass or fail at each test. If a fail occurs, testing is stopped. When manual testing, each test is preceded by a selection screen where the test parameters are selected, such as bond test current, insulation test volt- age or leakage test type. These diagnostic buttons provide direct access to any test individually, allowing single tests to be performed following repair or a suspect result.

Accessories supplied with all models include a combined earth-bond and insulation test lead, an adaptor for testing extension leads, and a carry-case.



# Electrical safety testers

## Accessories



1000-768  
415 V adaptor lead (4-pin) to SC (CEE7/7) (16 A)



6220-639  
110 V Extension lead adaptor



1000-771  
415 V adaptor lead (5 pin) to SC (CEE7/7) (16 A)



1001-047  
Barcode reader, USB



1005-423  
Pass/fail barcode label printer (USB)



		PAT320	PAT350	PAT410	PAT420	PAT450
Supply	230 V with supply measurement	■	■	■	■	■
Earth bond/continuity	200 mA	■	■	■	■	■
	10 A	■	■	■	■	■
	25 A	■	■	■	■	■
Insulation test	Bond lead null	■	■	■	■	■
	250 V	■	■	■	■	■
Alternative leakage tests	500 V	■	■	■	■	■
	Substitute	■	■	■	■	■
	Differential	■	■	■	■	■
Functional test	Touch current	■	■	■	■	■
	VA measurement	■	■	■	■	■
Extension lead tests	Earth bond	■	■	■	■	■
	Insulation	■	■	■	■	■
	Polarity	■	■	■	■	■
Portable RCD tests	½ x IDN, 1 x IDN, 5 x IDN at 0° and 180°			■	■	■
Flash test	1.5 kV and 3.0 kV		■			■
Other features	Low-profile light weight	■	■	■		
	Auto test routine	■	■	■	■	■
	Manual testing	■	■	■	■	■
	Configurable tests times	■	■	■	■	■
	Selectable pass limits	■	■	■	■	■
	Fuse check	■	■	■	■	■
	Large colour display	■	■	■	■	■
	Data handling	10,000 record on-board storage			■	■
Supplied accessories	Download to USB memory stick			■	■	■
	USB barcode scanner and printer option			■	■	■
	Carry case with lead storage pouch	■	■	■	■	■
	Combined continuity, earth bond and insulation test lead	■	■	■	■	■
	Red extension lead adaptor		■	■	■	■
	Flash test lead					■
	Calibration certificate			■	■	■

# Oil test sets

## OTS60PB and OTS80PB

### 60 kV and 80 kV portable automatic oil test sets



Weighing in at only 16 kg the OTS60PB is the lightest, most portable oil test set available. Meanwhile the OTS80PB is the most flexible test set because it offers more power in a test set which weighs less than 21 kg. Featuring the same easy-empty vessel and quick-drain chamber design as the laboratory models, the large, bright, colour screens are easy to read in sun light. Features like the electrode precision lock and ultra fast HV switch off time are particularly important for instruments that may not be used in the ideal environment. The OTSPBs can be configured to match the users needs. 60 kV manual oil test set.

- Light-weight, rugged, portable instruments for measuring insulating oil breakdown voltage
- Lock in precision - oil vessel with lockable adjustment
- Bright 3.5 inch colour display visible out doors
- Suitable for mineral, ester and silicon oils
- Trip detection circuit with direct measurement of voltage and current
- Ultra fast (<10  $\mu$ s) HV switch off time

## Super-user kit

### OTS super-user kit



Offer 2 sizes of test chamber and a selection of electrode and impeller types.

## OTS60SX

### 60 kV semi automatic oil test set



The OTS60SX is a lightweight, semi-automatic, oil dielectric strength test set. The instrument is suitable for field use and can be powered from a range of mains supplies. The maximum 60 kV output allows tests to be performed on oil from a wide variety of electrical installations including transformers, circuit breakers and other equipment. The operation of the test set is extremely simple and the results are displayed on a bright LED display. A selection of vessels allows the instrument to be configured for a variety of test standards.

- Lightweight portable unit for field use
- Simple, semi-automatic operation
- Suitable for all oil breakdown testing to 60 kV
- Automatic 1 minute timer for easy withstand testing

## VCM80D and VCM100D

### Digital voltage checker for oil test sets up to 80 kV and 100 kV

Designed for checking the output voltage of the OTS AF and OTS PB test sets, these checkers show the output voltage in digital read out and this can be compared with the instrument reading.





# Relay testing

Distribution systems are protected by increasingly complex relays which require testing. Since the 1970s the Sverker series of relay testers has been class leaders, being small, light and simple to operate. Over the years more features have been added to enable the testing of more complex relays resulting in the variable phase shift and frequency features of the Sverker 780.



## SVERKER900

### Relay and substation test system

SVERKER900 is the engineer's ultimate test box that addresses the increasing need for three-phase testing capability in electrical distribution substations, renewable power generation stations and industrial applications. The intuitive user interface is presented on the LCD touch screen. It has a powerful combination of current and voltage sources and a versatility of measurement possibilities.

The SVERKER900 is specifically designed for basic, manual three-phase secondary testing of protection devices. In addition, various primary testing can be performed, since the current and voltage sources can be series- and, or parallel connected to allow for up to 105 A AC or 900 V AC output. All three current and four voltage sources can be individually adjusted with respect to amplitude, phase angle and frequency. The fourth voltage source allows for testing of numerical relays that needs a reference voltage simulating the busbar.

## SVERKER750 and SVERKER780

### Multifunction single phase relay test system



The SVERKER750 and SVERKER780 feature many functions that make relay testing more efficient. The measurement section can display, in addition to time, voltage and current Z, R, X, S, P, Q, phase angle and  $\cos \phi$ . The voltmeter can also be used as a 2nd ammeter when testing differential relays. All values are presented on a single easy-to-read display. Directional protective equipment can be tested efficiently by means of the built-in variable voltage source.

The SVERKER780 has a continuous phase shift function and adjustable frequency. Automatic reclosing devices can also be tested.

Both units are available in an optional impact resistant and waterproof (IP65) high density plastic-case with wheels and retractable handle.

## SVERKER650

### Single phase relay testing unit



The SVERKER650 enjoys a well-earned reputation for reliability and convenience. Compact and powerful, it provides all of the functions needed for secondary testing of any types of single-phase protection now available. It features logical design, and it is extraordinarily easy to learn and use.

Its compact design and low weight makes it extremely portable. Accessories for SVERKER650 includes a test lead set and a rugged transport case and the ACA120 voltage source which makes it easier to test directional relays.

# Battery Impedance Tester

## BITE<sup>®</sup>2, BITE<sup>®</sup>2P

The BITE2 and BITE2P Battery Impedance Test Equipment determines the condition of lead-acid and nickel-cadmium cells up to 7000 Ah. The BITE2 and 2P will measure changes in a battery's internal chemistry due to aging effects. These effects can be caused by plate corrosion, plate shedding, plate sulfation, dry out, carbonation, negative plate depolarization and more.

The BITE2 and 2P test current supports testing of VLA batteries in addition to VRLA batteries.

The BITE2 and 2P has a measurement speed of 3 seconds per cell and per strap. This means faster testing. A built-in printer allows on site printing of recorded data.

The BITE2 and BITE2P are ideal for flooded lead acid batteries in substation applications.

Measures cell impedance, cell voltage, ripple current, terminal connection resistance, inter-cell resistance as well as string continuity, Inter-cell connections resistance, AC ripple.

- Determines condition of lead-acid and NiCD cells up to 7000 Ah
- Tests large VLA batteries
- On-board Pass/Warning/Fail indications
- On-line testing
- Checks charger condition by measuring ac ripple current
- Includes Power DB LITE software
- Measurements in 3 seconds
- The perfect NERC Tool

## ACCESSORIES

*Bar Code Scanner: Scan your battery strings, no programming required.*



*Flex CT: Measure ripple currents around large busbars.*



*Extension Probes: Ideal for those tight areas.*



*Hydrometer: Measure specific gravity of flooded cells and import directly into your Power DB database.*



*Mini CT: Measure ripple and test current in tight locations.*



# Battery Impedance Tester

## BITE<sup>®</sup>3

The BITE3 will measure changes in a battery's internal chemistry due to aging effects. These effects can be caused by plate corrosion, plate shedding, plate sulfation, dry out, negative plate depolarization and more.

The BITE3's auto cell strap detection means no complicated programming. Just enter a string name and the BITE3 does the rest. It tests parallel strings without the need of segmentation.

The BITE3 is ideal for parallel strings. It's the perfect tool for telecom applications.

The BITE3 measures cell impedance, cell voltage, inter-cell connection resistance and ripple current. The BITE3 also measures float current. This allows you to detect conditions that can lead to a thermal runaway.

The built-in spectrum analyzer allows you to determine the source of the ripple current by examining its frequency.

- **Determines health of lead-acid cells**
- **Automatically detects cells and straps without programming**
- **Test parallel strings without sectionalizing**
- **Measures float current as well as ripple current.**
- **Built in spectrum analyzer for locating faulty chargers.**
- **View results on screen**



## ACCESSORIES

*Kelvin Leads: Easily connect to terminal lugs.*



*Flex CT: Measures escape current on parallel strings. NO NEED TO SEGMENT*



*Lighted Extension Probes: Ideal for those tight dark areas.*



*Expanded Duplex Pistol Probes. Perfect for rooms with split battery strings. (6' between pistols)*



*AC Power Supply. Operate your BITE3 off of an AC source.*



*The Current Transformer kit for the BITE 3 is for measuring the current in noisy battery systems and to measure "escape current" in parallel battery strings.*



# Power quality testing

With the increased sophistication of electrical and electronic equipment, and new micro generation systems being added to the grid, there is now more than ever attention being paid to the quality of supply. Power quality surveys on electrical noise, lamp flicker, load balancing, power factor correction and motor in-rush studies can all be carried out with Megger power quality analysers.

## MPQ2000

### Portable Power Quality Analyzer



- IEC61000-4-30 Class A compliance
- Powered off of phase A voltage ac/dc
- 1000 Vac and 1000 Vdc range
- Real time scope and DVM
- Connection verification
- On-board data analysis

The Megger MPQ2000 Power Quality Analyzer is a highly intuitive, advanced portable 3-phase analyzer, delivering unmatched capability in a NEMA4 IP54 weatherproof enclosure. View RMS data, waveforms, demand data, phase angles, harmonics, unbalance, flicker and more in real time with the MPQ2000 scope mode and DVM mode. When data needs to be recorded, the MPQ2000 record verification automatically identifies the current clamps, recognizes their range and verifies the unit is connected properly. Simply connect it and push the record button.

The MPQ2000 can record for extended periods of time because of its massive memory. It utilizes an SD card which makes expanding the memory as easy as installing a new SD card. The recorded data can be viewed on the unit's color VGA display. The data can be transferred to the high-power Megger PQ Power Quality Analysis software via USB cable, USB stick, Ethernet, or directly from the SD card.

The free software, which requires no license, optimizes the MPQ2000 to locate the power quality phenomenon such as lighting issues, computer problems, tripping breakers, and much more. It offers advanced charting, advanced waveform and advanced harmonic analysis.

## MPQ1000

### Handheld Power Quality Analyzer



- Automatic CT recognition
- Automatic connection verification
- On-board data analysis
- SD card and USB stick support
- 1000 V ac and 1000 V dc range
- Scope and DMM modes
- CATIV @ 600 V
- IEC61000-4-30 Class A compliant

The Megger MPQ1000 Power Quality Analyzer is an advanced handheld 3-phase analyzer. It is a highly intuitive analyzer that delivers unmatched capability in a smart ergonomic platform. View RMS data, waveforms, demand data, phase angles, harmonics, unbalance, flicker and more in real time with the MPQ1000 scope mode and DVM mode. When data needs to be recorded the MPQ1000 record verification will automatically identify the current clamps, recognize their range and verify the unit is connected properly. Simply connect it and push the record button. The MPQ1000 can record for extended periods of time because of its massive memory. It utilizes an SD card, which makes expanding the memory as easy as installing a new SD card. The recorded data can be viewed on the MPQ1000 color VGA display or the data can be transferred to the high power Megger PQ Power Quality Analysis software via USB cable, USB stick, Ethernet or directly from the SD card.

	MPQ1000	MPQ2000
Voltage inputs	3 with common neutral	4
Current inputs	4	5
Battery powered	■	■
Powered off of A phase		■
Case type	Hand held	Weather-proof
Weight in kg	1.8	2.3

# Handheld online PD substation surveying system

## UHF PD Detector

- Non-invasive tool for online PD measurements in MV and HV substations
- Large color touch-screen for easy operation
- Dual channel system for direct comparison between two sensors
- Synchronization with power frequency via internal, mains or external sensor for PRPD pattern recognition



The UHF PD Detector is the ideal tool for quick, non-invasive surveys in MV and HV substations and should be part of the toolkit for all maintenance and service teams. Due to its high measurement bandwidth, the UHF method provides accurate local online partial discharge (PD) measurements on HV components such as cable end-terminations, surge arrestors, voltage transformers and isolators.

MV switchgear surveys can also be carried out using radio frequencies in combination with TEV and HFCT sensors. The phase resolved PD pattern (PRPD) display helps to identify type of defect and, importantly, differentiate the noise from the PD signal. Noise can affect PD readings, leading to a false interpretation of the results and unnecessary component replacement. The noise handling capability of the Megger UHF PDD ensures a true reading of PD, eliminating false positives, so that only failing components are identified for replacement.

The handheld unit can either be operated using a keypad or using the large 6" colour touchscreen. It has a battery life of over 10 hours. Its features and performance make the UHF detector the most unique and cost-effective unit of its kind.



TECHNICAL DATA	UHF PDD
<b>Frequency range</b>	
UHF	150 ... 1000 MHz
RF	100 kHz ... 70 MHz
<b>Sensitivity</b>	-90 dBm
<b>Display</b>	color touchscreen, 640 x 480 px
<b>Internal memory</b>	10 GB
<b>Power supply</b>	
Charger	Input voltage 100 ... 240 V, 50/60 Hz, output voltage 12 VDC
Internal battery	Li-Ion 7.4 V/ 12.25 Ah
Battery life	>10 hours
Charging time	± 6 hours
<b>IP rating</b>	IP 65; IP 67 (in transport case)

### RECOMMENDED ACCESSORIES

UHF Sensor for permanent installation



# Cable fault location systems

The fundamental objective of any cable fault location system is to provide quick, effective, accurate and safe fault location, resulting in reduced system outages and "Customer Minutes Lost". Megger's fault location systems help you quickly find the location of the underground fault.

## EZ-Thump3, EZ-Thump4 and EZ-Thump12

### Highly portable fault location system



Weighing less than 33 kg the EZ-Thump series are the most portable fault location systems on the market. It utilises the "Easy Go" test system, which is easy to operate, interprets the results and requires minimal training to find faults. On-board is a TDR with a 7.6 km range and arc reflection at 3, 4 or 12 kV respectively for pre-locating. For pinpointing, EZ-Thump offers a surge energy of 500 j, DC testing for breakdown detection and insulation resistance

measurement. The units are operated from line or the internal battery. They can fit in the boot of a car, making them ideal for a flexible, quick response fault finding strategy.

- Compact, lightweight, all-in-one, rugged portable cable fault locating system
- Battery and AC line operation; field-replaceable battery
- Automatic cable end, fault location, and sectionalizing (optional in certain markets)
- Single-stage capacitor surge discharge: 500 J @ 4 kV model; 500 J @ 12 kV model
- Dual-stage capacitor surge discharge: 500 J @ 1.5 kV & 3.0 kV @ 3 kV model
- Up to 94 mA current, depending on voltage
- F-OHM safety feature to ensure safe grounding
- HiBrite color display for outdoor visibility
- TDR LV prelocation of very low resistance faults and cable interruptions
- ARM® prelocation of high resistance/flashover faults
- Fault pinpointing, high- and low-resistive fault
- Sheath testing and sheath fault locating

## SFX8-1000

### 8 kV fault locating system



With an output surge of 1000 J and voltages of up to 8 kV SFX8-1000 is the perfect for finding faults on low and medium voltage cables. For pre-location ARM, ICE modes can be used with the TDR having a maximum range of 160 km. The pre-location unit TeleflexSX can be battery operated and stand alone or integrated with the surge unit on the wheeled mounting frame.

- Testing and fault location system up to 8 kV
- Different fault location methods available
- Portable, lightweight and cost-effective

## ST16

### Portable Cable Fault Location System

This neat, compact system can be powered by on-board batteries or main supply. It utilises the "Easy Go" test system, which is easy to operate, interprets the results and requires minimal training to find faults. Proof test at 8 or 16 kV, surge energy 1500 J, features ICE, ARC reflection (ARM), decay and sheath test modes.



# Underground cable fault pin-pointing

These are used in conjunction with a surge generator or sheath fault locator pulsed energy source to find the exact location of a fault.

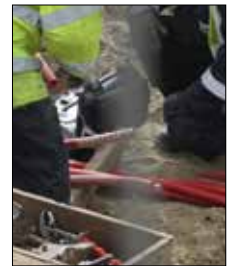


## digiPHONE+

### Surge wave receiver for acoustic and electromagnetic fault pin-pointing

This instrument sets the standard, by integrating audio and electro-magnetic functionality in to one simple to understand, colour display. Combining two new technologies for efficient noise suppression, it offers exceptional acoustic performance which lets pass only the fault noise. This means it is possible to lower the surge energy and to find faults in noisy environments. The operator's hearing is protected by auto proximity mute, turning off the head set as a hand approaches the sensor handle and turning it on again once mechanical oscillations have ceased, and limiting the earphone output to 84 db(A).

Cable tracing is simplified using the left right indicator keeping the sensor over the cable while the compass indicated the direction to the fault and the digital readout displays the distance to the fault.



## digiPHONE+ NT set

### Multi purpose pin pointer set

This set combines capabilities of the digiPHONE+ and ESG NT allowing the user to carry a single instrument to locate cable faults and sheath faults in their vehicle.



# Cable route tracing and identification

## EasyLoc

### Utility services detection and location system

A fast and easy-to-use system for the detection and tracing of underground cable runs and pipe networks. The receiver unit displays the signal level and has a max marker to help with location. The operator is given both aural and visual confirmation of location. EasyLoc also gives an approximate depth measurement.

- **Avoid cable damage and help to minimize costly accidents and inconvenient delays**
- **Depth measurement at the push of a button, even without a transmitter**
- **33 kHz – compatible with other location systems**
- **Large display with automatic backlight**
- **Quick and simple to operate**



## CI/LCI

### Reliable cable selection for energised and de-energised cables

The CI & LCI are cable identifiers that single out a specific cable in a trench within a group. The consequences of cutting the wrong cable can be fatal. The CI will safely identify a de-energized primary HV cable within a group of energized or de-energized cables. The LCI will also identify the cable on energized low voltage cables. The transmitter sends a pulsed signal, which the CI and LCI use to detect the correct cable. Pulsing the signal allows the operator to distinguish between their signal and background noise. The receiver uses green LEDs to clearly confirm the correct cable, which is generally accompanied by maximum signal strength. This double confirmation provides the user with maximum confidence in the result. The transmitter can operate on 120 VAC or internal battery. The standard combination kit (for HV & LV cables) includes a 6" flexible clip-on probe, and two touch sensors for all applications where a clip-on cannot be used.





# Cable height meters

## CHM Series

### Cable height meters

The CHM Series of Cable Height Meters utilize ultrasonic techniques to determine the height of up to six overhead cables and wires. The instruments are designed to address specific measuring requirements on cables up to 75 feet (23 m). The CHM600 (C/N 659600) and CHM600E (C/N 659600E) are designed primarily for power cable applications, while the CHM2000 is designed for telecommunication applications.

The Cable Height Meters emit short bursts of sound which originate from the cone shaped transmitter. The microprocessor in the instruments calculates the elapsed time for the bursts of sound to be reflected from the cable back to the instruments. The result can be displayed in either feet and inches or meters. However, before the final measurement can be displayed, the air temperature must be measured because the speed of sound varies at approximately 0.2 percent per degree Celsius.

A temperature sensor, mounted at the front of the instruments, senses the actual air temperature. This information is sent to the microprocessor and incorporated into the algorithm. The distance is then displayed in meters or feet and inches depending on which was selected.



### Features and Benefits

- **Ease-of-use — Simple, three button operation ensures fast, effective measurements with a minimum of operator training.**
- **Compact size — Its light weight and hand-held portability allows easy transport and multiple measurements.**
- **Inherently safe — No physical connection to cables or wires required to obtain measurement.**
- **Battery condition indicator — Shows the battery warning symbol when the battery voltage falls to approximately 6 volts.**
- **Automatic power off — Conserves battery power when idle after three minutes.**
- **Calibration and maintenance free operation — Minimal down time.**
- **Pre-selectable measuring modes — Will read in either meters or feet and inches for universal use.**
- **Six cable measurement capability — Handles almost any field application.**
- **Quicker measurement of cable height — Saves time and money.**
- **Dramatically reduces measuring time**
- **Inherently safe**
- **Designed for ease-of-use**
- **Hand-held portability**
- **Calibration and maintenance free operation**
- **No physical connection to cables or wires**
- **Measures the height of up to six overhead cables**

# Solar PV and earth leakage testing

## PVK300 series

### Photovoltaic kits



PVK300 kits supply all the instrumentation you require in addition to your MFT to site, commission and test a solar PV installation to IEC62446, packed in a single pouch.

PVK320 includes an auto-ranging, CAT IV, 10 A d.c. AVO410 multimeter that allows the short circuit current of a panel to be read directly, as well as the PVM210

PVK330 includes the DCM340 a 600 A a.c./d.c clamp multimeter which speeds the measurement of array strings with out the need for disconnection. It can also measure d.c. voltages to 600 V.

	PVK320	PVK330
AVO410 CAT IV multimeter	■	
DCM340 Clamp multimeter		■
PVM210 Irradiance meter	■	■
MC3 to MC4 adaptor testleads	■	■
MC4 to 4 mm plug testleads	■	■

## PVM210

### Solar PV testing Irradiance meter

- Single unit for one handed use increasing safety on ladders and roofs
- Perfect for measurement of incident light for PV panel short circuit current calculation
- 1999 W/m<sup>2</sup> range on 3<sup>3</sup>/<sub>4</sub> digit LCD display
- Camera mount fixing for accurate placement

The pocket-size PVM210 is perfect for use on sloping roofs or at the top of ladders because it has the solar detector built in to the top. This is enhanced by its large clear display and hold function.

It is used for initially choosing optimum position for a PV installation and for measuring the solar power for the calculation of short circuit current to confirm the performance of the PV panel for certification.

On the rear of the meter is a universal camera thread that allows mounting for precise readings if required, also a protective pouch is included with each instrument.



# Phase Sequence Indicator and Voltage Finder

**PSI410**

## Phase sequence indicator



The Megger PSI410 phase rotation indicator provides rapid indication of correct phase sequence utilising a three bi-coloured LED display and a specific audible tone. Clockwise rotation is indicated by clockwise rotating green LEDs with a continuous tone and counter clockwise rotation has counter clockwise rotating red LEDs and a warbling tone.

The unit has been designed to provide a slow rotational speed of the display to allow easy recognition of the direction of rotation.

Dual phase colour coding has been adopted for the PSI410 to allow ease of use on both Brown / Black / Grey and Red / Yellow / Blue colour coded supplies.

The PSI410 also features a triple bi-coloured LED display that indicates that all three phases are present. A green LED indicates the

phase is present while a red LED shows a missing phase connection. The unit has a tough case designed for an industrial environment and is supplied with long fused test leads with croc-clips and prods.

The PSI410 is self powered from the supply and requires no batteries.

- LED clockwise and counter clockwise phase rotation indication
- Audible indication of direction
- Phase condition LEDs
- Fused test leads
- Dual phase colour identification
- CAT IV 600 V
- Warranty upgradeable to 3 years FREE

## VF2 and VF3

### Volt finder with torch



VF2 offers a simple means of identifying live conductors, and blown fuses, combined with a bright torch.

VF3 offers a more accurate sensor and an even brighter torch.

## XTL

### Extension test lead and coil

- 30 metre and 50 metre versions
- Suitable for direct R2 measurements
- Easy to re-wind cable with tangle-free cable guide
- Compact and light design
- Compact extension test lead for direct R2 measurements so eliminating the need for crossover connections.
- The furthest point in the circuit can be easily verified, and every earth point on the circuit checked for integrity prior to energising.



	CODE
50 m extension lead, green, with connection with croc clip	XTL50
30 m extension lead, green, with connection with croc clip	XTL30

# Proving unit, Voltage detector, Voltage and Socket tester

## MPU690

### Proving Unit

Good practice demands that a two-pole tester is proved on a known live source or proving unit both before and after use.

The Megger MPU690 is a convenient method to prove the safe operation of all two-pole testers and Drummond test lamps.

- Capable of testing two-pole voltage detectors and test lamps due to 10 W output
- Step voltage LEDs indicate voltage being generated. 50 V, 100 V, 230 V, 400 V and 690 V
- Generates a.c. waveform for a true test
- Compact design that has an integral magnet for attaching to the cabinet encourages routine safety checks
- Automatic on and off conserves batteries
- Low battery indication gives ample warning to replace batteries
- Warranty upgradeable to 3 years FREE



## DETEX

### Voltage detector

The Detex range of testers is ideal for determining the presence of voltage, be it phase to earth or phase to phase. A verification unit is available to ensure safe operation. Voltage detectors are suitable for voltages from 2.3 kV to 550 kV. Models are available with electronic LED and audible indication or neon indication.



DETEX Voltage detectors are available in seven models that cover a range from distribution class to transmission line voltages up to 550 kV

## TPT320

### Voltage tester

- AC / DC voltage from 12 to 690 V
- Continuity
- Phase rotation
- LCD / LED display
- CAT IV 600 V rating



The new TPT320 features LED and LCD displays that provide both AC and DC voltage measurement from 12 to 690 volts. In addition, a continuity range of 0 to 500 k $\Omega$  is included.

Designed to be used on RCD and RCBO protected circuits without causing tripping, the unit also has the ability to indicate phase rotation, has an audible sounder to confirm continuity as well as the presence of voltage. With a built in high power LED torch, IP64 case and CAT IV 600 V safety rating, the TPT320 is the ideal site tool to conform with current safe isolation procedures. An additional safety feature is the ability to indicate the presence of voltage even in the event of the internal battery being exhausted.

## MST210

### Socket tester

The Megger MST210 Socket Tester is a convenient, compact plug-in style tester designed to identify wiring faults at UK 13A 3-pin power sockets. Over 17 combinations of wiring fault can be identified including missing wires and incorrect or reversed connections.



Faults are signalled by 3 bright LED's on the front of the unit, with a simple diagnosis chart for typical errors included on the label next to the LED's. 2 green LED's signal a correctly wired socket, and a third red LED identifies a fault.

If either green LED fails to light, or the red LED comes on, a fault is present and will require further investigation.

- Easy to use
- Simple and effective identification of faulty wiring at sockets
- Identifies 17 missing wire and wrong connection combinations

# Transformer turns ratio test sets

## TTR

### 3-Phase transformer turns ratio test sets

TTR series of instruments are designed for accurately measuring the turns ratio of single and three phase, two and three winding power CTs, VTs, PTs and phase shifting transformers.

TTR instruments make testing easy with “quick test mode” (where little nameplate information is required) or “automatic mode” where a transformer nameplate information is entered and all taps and windings can be tested sequentially tap by tap and phase by phase. Results are stored and/or downloaded to a test report format or CSV file for easy printing.

#### TTR™100 Handheld TTR



- Single- and three-phase transformer testing (up to 1 MVA)
- Lightweight, handheld
- Battery powered, line rechargeable
- Tests turns ratio, phase displacement, excitation current, winding resistance
- and polarity
- RS232 for data transfer and printing
- Stores 200 test results and 100 user-defined transformer test settings

#### TTR™25 Handheld TTR



- Simple, one-button operation
- Lightweight, handheld
- Battery powered (AA or LR-6)
- Tests turns ratio, excitation current, and polarity
- Ability to record via optional printer
- Rugged metal connectors on leads and unit

#### TTR SPECIFICATION

MODEL	FEATURES	DISPLAY	KEYBOARD	INTERNAL PRINTER	RATIO
TTR25	Single phase, handheld, battery	B/W LCD	Alpha-numeric	No – RS232	20,000:1
TTR100	Single phase, handheld, rechargeable battery, automatic phase comparison	B/W LCD	Alpha-numeric	No – RS232	20,000:1

# About Megger

The first insulation test set “Megaohm meter” was invented by Sydney Evershed (Evershed & Vignoles Limited). The MEGaohm metER was branded as “Megger” in 1903. Since branding, Megger has grown and evolved to become the leading manufacturer of portable substation testing equipment. Insulation testing and the word ‘Megger’ are synonymous in the electrical test industry, a position only maintained by continually designing world class products.

## Working with customers

Megger believes that by working closely with customers it can deliver the best customer solutions and after-sales service today, and in the future. Megger is committed to anticipating client needs by listening to customers and industry specialists while continually investing in innovative research and development, design engineering and manufacturing techniques.

Our strategy is to produce all our products with a single brand name, Megger. The advantages to you are that you know the products and software will work well together, and all the products have a similar yet distinctive ‘look and feel’ with their dark and light grey casings. We don’t waste colour on trying to make our test instruments pretty – we reserve it for useful functions such as range selectors and displays. Our design engineers come from many different nations, and they regularly exchange ideas and tips with colleagues from other countries. That means you get

the latest innovations, one of the reasons that Megger products are so advanced

- 1895 - First insulation test set invented by Sydney Evershed
- 1903 - Megger trademark registered
- 1923 - First multimeter with Amps, Volts and Ohms (AVO)
- 1965 - First low-weight tan delta/power factor insulation test set
- 1980 - First transformer ohmmeter with tap-changer discontinuity detection
- 1991 - Merger of the Megger Group (Megger, Biddle, Multi-Amp)
- 1995 - First dynamic resistance measurements for on-load tap-changers
- 1997 - First dielectric frequency response analyzer for insulation diagnostics in the field
- 2009 - First portable 30 kV insulation test set
- 2010 - Megger patent on individual temperature correction of measured tan delta/power factor values
- 2010 - Megger patent on automatic detection of tan delta/power factor voltage dependence
- 2013 - First 5 kV and 10 kV insulation resistance tester with 4 mA noise rejection and firmware filtering
- 2014 - First 15 kV insulation resistance tester with 8 mA noise rejection and 5% accuracy up to 3 TΩ
- 2015 - First multi-function transformer and substation test system with apps-based user interface

## Stay connected with Megger

Follow us on Twitter  
at [www.twitter.com/meggeruk](http://www.twitter.com/meggeruk)



Watch our videos on YouTube  
at [www.youtube.com/meggeruk](http://www.youtube.com/meggeruk)



Find us on Facebook  
at [www.facebook.com/meggerindia](http://www.facebook.com/meggerindia)



Or visit our website at  
[en.megger.com](http://en.megger.com)



## Don't miss out!

The warranty of many Megger products can be upgraded to three full years free of charge, simply by registering the purchase of the product. So you can register your product cost FREE allowing us to give you full technical support and a free three-year warranty.

# About Megger

## Made in UK

Most of our products are manufactured in Dover, Kent, United Kingdom. A 2000 m<sup>2</sup> building next to the roundabout as you enter Dover. As a professional electrician, you have a right to demand the very best electrical test equipment. By specifying Megger, not only will you get the best, but you'll also be supporting a great British success story.



## Engineered for electrical contractors

Our engineers actively participate into regulars committees, meetings with all the big trade associations around the world, training organisations and government organisations, to understand from first hand the needs of electrical contractors. So when new legislation or rules are introduced, you can count on Megger to put your interests first, because Megger products help customers all over the world, to improve their efficiency, reducing costs, and meeting standards.

It operates globally with dedicated field sales teams and distributors located all over the world and manufacturing plants in Germany, United States, Sweden and the United Kingdom.

The commitment of Megger to industry is reflected in its technical leadership and in being the first to design and introduce many key and innovative solutions to the markets.

## Calibration and repair services

Megger offers a full Repair and Calibration accredited to ISO9001:2008. Our trained repair technicians use only production spare parts and the latest test equipment to ensure that we give customers the highest standard of service for any instrument.

For information on having your instrument calibrated or repaired please contact us here <https://megger.com/>



## Working beside our customers

Megger celebrate and participate of many events around the globe, so please be aware of all our activities in our website here <https://megger.com/> to attend at our Technical Days, Calibration Days, Seminars, Webinars and Exhibitions near you. Get the benefit to share and learn from the experts to keep the Power on.



## Certified to ISO 9001:2008 and ISO14001:2004

Megger offers a full Repair and Calibration accredited to ISO9001:2008. Our trained repair technicians use only production spare parts and the latest test equipment to ensure that we give customers the highest standard of service for any instrument.

For information on having your instrument calibrated or repaired and to obtain a Returns Authorisation number please complete the specific form in our website.



Technical specifications are subject to change without notice.



### Multifunction installation testers MFT1800 series

- The tough all-in-one tester that offers even more convenience.



### DET2/3 Advanced Earth (Ground) Tester

- Robust instrument to measure earth Electrode Resistance and Soil Resistivity.



### Multimeters for electrical engineers AVO800 series

- High end specialist multimeters that offer the features you will use.



### DCM305E Earth Leakage Clampmeter

- Designed to check earth leakage currents.

#### Megger (India) Private Limited

211, Crystal Paradise Mall,  
Off Veera Desai Road, Andheri (w),  
Mumbai - 400 053, India.  
T +91 22 26740468  
F +91 22 26740465  
E [indiasales@megger.com](mailto:indiasales@megger.com)

[en.megger.com](http://en.megger.com)

I&C Catalogue 2018

The word 'Megger' is a registered trademark

Copyright © 2017 Megger Limited, Archcliffe Road, Dover CT17 9EN, United Kingdom.