

## MFT-X1 Multifunction tester



- True Loop™ test with patented Confidence Meter™
- CertSuite™ compatible Bluetooth® result transfer
- Next generation 2-wire and 3-wire non-trip loop testing
- User upgradeable operating system
- High resolution 0.001Ω loop test
- Automatic volt-drop measurement
- Stabilised insulation test voltage
- Configurable RCD and EV auto-sequence tests
- Fast switch rechargeable plug-in battery pack
- Full colour TFT bonded display
- Re-designed lead set and carry case solution
- IP54 operational housing

### DESCRIPTION

The UK designed and built MFT-X1, introduces the first generation of platform based Multifunction electrical installation testers to the Megger MFT range.

Rated to CATIV 300 V, the MFT-X1 is designed for use on all single or 3-phase domestic, commercial and industrial electrical installations. The range of individual tests allow the user to complete all the electrical commissioning, routine maintenance and reporting/certification requirements for an installation, as well as aid detailed fault diagnostics.

### FEATURES

#### True Loop™

True Loop™ impedance testing is now a standard feature on the MFT-X1. The latest 3-wire non-trip loop testing technology, incorporated with the patented Confidence Meter™, offers an unmatched, reliable, accurate, stable and repeatable loop test solution to the user, allowing testing in the most hostile high noise conditions or close to the source of supply. The technology also removes the risk of RCD uplift whilst reducing typical test times – even on circuits protected by 6 mA or 10 mA protective devices.

#### Patented Confidence Meter™ technology

All loop impedance ranges are now supported by the Megger patented Confidence Meter™ technology, reducing typical test times for non-trip loop testing to around 7 seconds on quiet circuits, and providing optimised test times for loop impedance testing in difficult noisy supplies. The Confidence Meter™ shows the progress of the loop measurement and indicates the presence of noise on the circuit, removing erroneous values to give a stable and consistent result.

#### CertSuite™ compatibility

The MFT-X1 is the first fully integrated instrument for use on the CertSuite™ software platform. Test results can be tagged in the instrument and transferred directly to any test certificate or report open on an IOS® or Android® mobile device running the CertSuite™ App. Professional certificates and reports can be completed on-site by multiple users with the confidence the data is protected by the cloud-based application\*.

\*CertSuite is available on a monthly or yearly subscription.

#### High resolution loop impedance testing

The MFT-X1 now includes a high resolution, high current, 2-wire loop impedance test that, with the integration of the Confidence Meter™, provides accurate measurements down to 0.001Ω resolution, with PFC/ PSCC current calculation up to 50 kA.

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### RCD configurator

RCD testing can now be optimised with the RCD configurator, allowing the user to select only those elements of an RCD test required to be completed in the auto-RCD test mode.

### EV Charge point testing

Suitable for both EV charger installation testing with either RCD Type B or RDC protected charge points. The MFT-X1 in conjunction with the Megger EVCA adaptor can test all known EV chargers for installation or maintenance.

### Stabilised insulation test voltage

For the first time in any multifunction tester, the MFT-X1 incorporates a stabilised insulation test voltage, ensuring output voltage is accurate to within +2% +2 digits. This compares to the industry standard of +20% and so provides a more accurate test voltage without the risk of over-voltage damage to circuits or sensitive components.

### Current measurement

The MFT-X1 uses current clamps for current measurement using the optional Megger MCC1010 current clamp for measurement of AC currents from 1 mA to 1000 A.

### Operating system upgrades

A user upgradable operating system - using a standard microSD card - helps future-proofing the MFT-X1 against changing regulations or testing requirements.

### Display and user interface

The user interface utilises the flexibility of the high contrast 480 x 272 colour, TFT bonded display, with a monochrome black on white mode designed specifically for use in difficult lighting conditions.

Enhancing the colour coded test selection rotary dial, range selection is now replicated on the instrument screen, ensuring easy use in poor lighting environments. Hot keys for second level functions are clearly shown across the top of each screen and the second control dial provides users with a further quick selection option of any highlighted feature, even if wearing protective gloves.

Relevant information is clearly shown on the display, both before and after each test, in full colour, and includes the Confidence Meter™ progress bar, RCD ramp test progress as well as the insulation and continuity measurement bar graph. The new Voltage Widget, displays the L-N, L-E and N-E voltages.

### Always on with Modula battery technology

The Megger MFT-X1 can be used with either the Megger Li-ION battery pack, or the AA NiMH or Alkaline battery technologies\*. The unique battery pack solution enables the rechargeable 4 Ahr Li-ION pack to be swapped with the AA carrier module, providing the most flexible and fastest battery change solution in the industry. A smart fuel tank chip technology optimises battery status accuracy on the Li-ION pack.

\* Available after launch

### Graphical assistance

The instrument has context help to provide graphical circuit connection guidance for each of the measurements.

### Accessories

The MFT-X1 is shipped in a rugged, weather-proof carry case offering outstanding protection and flexible storage. Also included is a complete set of test leads to meet the wide range of connection challenges in modern electrical systems.



## MFT-X1

### Multifunction tester

#### FUNCTIONAL SUMMARY

<b>Voltage measurement</b>	
<b>Voltage range</b>	0.001 V to 2 V (mV range) 2 V to 600 V (V range), 1000 V DC (on-CAT rated circuits)
<b>Voltage type:</b>	Trms, AC, DC
<b>Phase sequence</b>	Automatic phase sequence testing on detection of valid three phase supplies
<b>Current measurement (non-contact)</b>	
<b>AC Trms</b>	Using optional accessories: MCC1010 current clamp
<b>Measurement Range</b>	MCC1010: 1 mA to 300 A
<b>Continuity/Resistance</b>	
<b>Measurement range Digital display</b>	0.01 $\Omega$ to 999 k $\Omega$ Auto-ranging
<b>Measurement Range Analogue arc</b>	0 $\Omega$ to 1 M $\Omega$ log scale
<b>Test voltage</b>	4 V DC to 5 V DC
<b>Test current (Nominal)</b>	>200 mA 0 $\Omega$ >< 2 $\Omega$ 10 mA Auto reduction on high resistance (actual current reported in display)
<b>Test polarities</b>	Forward polarity
<b>Buzzer resistance range</b>	> 0.01 $\Omega$ < 2 k $\Omega$
<b>Buzzer threshold</b>	0.3, 0.5, 1, 2, 3, 4, 5, 10, 20, 30, 40, 50, 100, 200 $\Omega$
<b>Insulation testing</b>	
<b>Measurement range Digital display</b>	0.001 M $\Omega$ to 999 M $\Omega$ Auto-ranging
<b>Measurement range Analogue arc</b>	0.001 M $\Omega$ to >1000 M $\Omega$ log scale
<b>Insulation test voltages</b>	50 V DC to 1000 V DC + Variable 50 V to 999 V
<b>Test current</b>	1 mA to 2 mA
<b>Stabilised output voltage</b>	Output test voltage stabilised to -0% +2% +2 V
<b>Loop impedance testing</b>	
<b>2 Wire – all modes</b>	
<b>Test types</b>	Mode 1: Non-Trip Mode 2: High current Mode 3: High resolution
<b>Resolution</b>	Non-Trip: 0.01 $\Omega$ High current: 0.01 $\Omega$ High resolution: 0.001 $\Omega$
<b>Voltage range</b>	Non-trip: 48 V AC to 280 V AC High current: 48 V AC to 550V AC High resolution: 48 V AC to 550 V AC
<b>Frequency range</b>	45 Hz to 65 Hz (all modes)
<b>Phases</b>	Non-trip: Single phase High current: Three phase High resolution: Three phase
<b>3 wire - non-trip</b>	
<b>Test types</b>	RCD (non-trip) RCD EV (non-trip on 6mA EV RDCs)

## MFT-X1

### Multifunction tester

<b>Resolution</b>	0.01 $\Omega$
<b>Voltage range</b>	48 V AC to 280 V
<b>Frequency range</b>	45 Hz to 65 Hz
<b>Phases</b>	Single phase
<b>Volt drop</b>	
<b>Volt drop calculation</b>	Requires Zref (Ze) and circuit current (I-vdrop)
<b>Accuracy</b>	Dependent on loop impedance accuracy
<b>RCD testing</b>	
<b>RCD types supported</b>	Type AC, A, B, AC(S), A(S), B(S)
<b>Auto RCD sequence</b>	1/2x I $\Delta$ n, 1x I $\Delta$ n, 2x I $\Delta$ n, 5x I $\Delta$ n, Ramp, 0°/180° (customer configurable)
<b>Ramp testing</b>	10 mA to 1000 mA
<b>RDC testing</b>	6 mA RDC
<b>Fault (Touch) voltage</b>	0 V to 253 V
<b>Earth testing</b>	
<b>2 wire</b>	2 wire earth resistance test

#### ORDERING INFORMATION

Description	Part number	Description	Part number
MFT-X1-BS Multifunction tester BS1363	1012-223	<b>Optional and replacement accessories</b>	
<b>Included accessories</b>		Multipurpose hard base carry case	1014-985
Switched test probe SP5		Blow moulded carry case (Polypropylene)	1013-453
Red test lead, probes, clips and grabbers		Switched test probe SP5	1002-774
Blue test lead, probe, clips and grabbers		Neck strap replacement	1013-454
Green test lead, probe, clips and grabbers		Li-ION battery 4400 mAh	1013-450
Li-ION battery 4400 mAh		8x AA Alkaline quick release battery module with AA cells	1013-452
Li-ION battery charge		SIA10 MAINS socket interface adaptor UK (boxed)	1014-300
SIA10 MAINS socket interface adaptor UK		Li-ION battery charge	1013-451
Neck strap		3 lead set RD/GN/BL non-fused (boxed)	1014-291
Multipurpose hard base carry case		3 lead pro set RD/GN/BL non-fused (boxed)	1014-292
Quick start guide		3 lead set RD/GN/BL fused 10 A (boxed)	1014-295
Calibration certificate		3 piece grabber set RD/GN/BL (boxed)	1014-299
		7 piece probe and clip set RD/GN/BL (boxed)	1014-301
		3 lead RD/GN/BL fused 10 A (boxed) – leads only	1014-304
		MCC1010 Current clamp	1010-516
		MSA1363 socket adaptor UK	1013-837
		LA-KIT Lamp adaptor kit	1014-833
		UKAS Calibration certificate	1013-460

#### SALES OFFICE

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ISO 9001  
The word 'Megger' is a registered trademark

**Megger** <sup>R</sup>