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.





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FUNCTIONAL SUMMARY

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

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

ORDERING INFORMATION

Description	Part number
MFT-X1-BS Multifunction tester BS1363	1012-223
Included accessories	
Switched test probe SP5	
Red test lead, probes, clips and grabbers	
Blue test lead, probe, clips and grabbers	
Green test lead, probe, clips and grabbers	
Li-ION battery 4400 mAh	
Li-ION battery charge	
SIA10 MAINS socket interface adaptor UK	
Neck strap	
Multipurpose hard base carry case	
Quick start guide	
Calibration certificate	

Description	Part number
Optional and replacement accessories	
Multipurpose hard base carry case	1014-985
Blow moulded carry case (Polypropylene)	1013-453
Switched test probe SP5	1002-774
Neck strap replacement	1013-454
Li-ION battery 4400 mAh	1013-450
8x AA Alkaline quick release battery module with AA cells	1013-452
SIA10 MAINS socket interface adaptor UK (boxed)	1014-300
Li-ION battery charge	1013-451
3 lead set RD/GN/BL non-fused (boxed)	1014-291
3 lead pro set RD/GN/BL non-fused (boxed)	1014-292
3 lead set RD/GN/BL fused 10 A (boxed)	1014-295
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

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