MFT1735
Multifunction Tester



- **Simple colour-coded test selection and large clear backlit display for ease of use**
- **Two and three wire non-trip loop testing for RCD protected circuits**
- **Internal memory and Bluetooth® communications**
- **Type-B RCD and 3-phase RCD testing for industrial applications with no Earth**
- **3-terminal earth test and stakeless testing for spike resistance measurement ****
- **EN61010 CATIV safety ratings and tough IP54 case**

DESCRIPTION

The MFT1735 instrument is designed for testing low voltage electrical installations to BS 7671. It provides all the tests required to complete the necessary electrical certification for industrial, commercial and domestic fixed wiring installations, including:

- System voltage and frequency measurement (TRMS).
- Insulation test at 100 V*, 250 V, 500 V and 1000 V

  Including input protection against live circuits up to 600 V even when insulation test is locked-on
- Continuity resistance at 200 mA or 15 mA

  Automatic – no need to press TEST so leaving both hands free to hold probes.
- Resistance range up to 100 kΩ

  With fast continuity buzzer and selectable thresholds
- Non-trip loop test

  Earth loop test
  2 and 3 wire non-trip range
  2 wire Hi current including phase to phase
- Prospective fault current measurement

  Up to 20 kA
- RCD testing including:

  Type AC, A, S, B* and programmable RCDs
  $^1/_2$ x I, 1 x I and 5 x I
  3-phase RCDs
  Fast ramp test
  Auto-test routine
  Fault (Touch) voltage display
- Earth testing

  2-pole,
  3-pole
  ART
  Stakeless techniques

All instruments are IEC 61010 CAT IV 300 V rated for connection to low voltage systems with no protective device, so safe for connection anywhere on the system up to the source transformer without risk of damage from large transient spikes.

The unique modern styling allows it to be operated while stood on the floor, a ladder-shelf or platform, hung around the neck or hand-held. Dual TEST and LOCK buttons – one pair at each end – make the testers easy to operate with either the left or right hand.

Quick to pick up and use, the rotary controls are colour coded to make range selection easy and fast. They also reduce the chance of using the wrong function or range. The large crystal clear backlit display uses the patented Megger digital/analogue arc, providing indication of fluctuating readings while the dual digital readout shows precise values of key measurements simultaneously with the test parameters, such as the output voltage on insulation testing as well as the resistance value in MΩ.

Visible and audible safety warnings are paramount when testing high-energy systems, and the MFT1735 range includes full input protection and safety warnings when a hazardous voltage is present. If live voltages exist on a circuit during insulation or continuity testing, the voltage is displayed on the screen. If this voltage exceeds a safe level, further testing is inhibited and a warning beep sounds.

The MFT1735 features internally rechargeable batteries and charger with a charge time of less than 4 hrs, so reducing the cost of ownership

Fully compliant with all requirements of IEC 60364 derived standards including BS 7671, the new MFT includes all the latest measurement technology in a lightweight compact design and fully protected and usable on single phase and 3 phase installations.

New measurement functions include two and three wire non-trip loop test technology for RCD protected circuits, comprehensive testing of RCDs including type B and the latest clamp-on techniques for earth testing.

The MFT1735 includes built in memory and Bluetooth® communications for downloading of memory using Megger Download Manager (supplied) for simple form filling of test results using the optional Megger PowerSuite® software.

The new MFT1735 has been designed for tough environments and ultimate reliability. Features include a rubber over mould for extra protection and grip, IP54 protection against dust and water and an EN61010 Cat IV safety rating. Its class leading input protection ensures the new MFT can withstand accidental misuse and voltage transients when other testers can't.

All this in an intuitive and easy to use instrument with no hidden menus or complicated screens. Tests are easily selected using the colour coded rotary switches with results clearly displayed on the high contrast dual measurement backlit display.

Included with the instrument are a standard 3-wire leadset and a mains test lead, a switched probe for fast and easy testing, a full 12-month calibration certificate and warranty upgradeable to 3 years. The MFT is supplied in a robust moulded case with plenty of additional space for optional extras like a few tools and the earth electrode test kit, comprising 2 spikes and 3 long test leads.

** requires optional accessory for some ranges

SPECIFICATIONS

Insualtion test

Output voltage	-0% +20% at rated load or less
Voltage display	±3% ±3 digits ±0.5% of rated voltage
Short circuit current	1.5 mA nominal test current
Test current on load	1 mA at min pass values of insulation

Measurement accuracy

1000 Volts	10 kΩ ~ 999 MΩ	±3% ±2 digits
500 Volts	10 kΩ ~ 500 MΩ	±3% ±2 digits
	>500 MΩ	±10% ±4 digits
250 Volts	10 kΩ ~ 250 MΩ	±3% ±2 digits
	>250 MΩ	±10% ±4 digits
100 Volts	10 kΩ ~ 100 MΩ	±3% ±2 digits
	>100 MΩ	±10% ±4 digits

Continuity / resistance

	0.01 Ω ~ 99.9 Ω	±2% ±2 digits
	100 Ω ~ 99.9 kΩ	±5% ±2 digits
Open circuit voltage	5 V ±1 V	
Test current (0 Ω ~ 2 Ω)	205 mA ± 5 mA	
	15 mA ±5 mA (user selectable)	

Loop test

Live to earth supply	48 V ~ 280 V (45 Hz ~ 65 Hz)
Live to live supply	48 V ~ 500 V (45 Hz ~ 65 Hz)
L-N/L-L tests	±5% ±3 digits
L-E tests*	
0.1 Ω ~ 39.9 Ω	±5% ±5 digits ± noise margin
40.0 Ω ~ 999 Ω	±10% ±5 digits
Display range	0.01 Ω ~ 999 Ω
Live to earth PFC range	20 kA
Live to live PSCC range	20 kA

RCD tests

Supply up to 100 mA	48 V ~ 480 V (45 Hz ~ 65 Hz)
Supply up to 1 A	48 V ~ 280 V
RCD type	Type AC, A, S
	Type B (pure dc)
No trip test (1/2xI)	–10% ~ –0%
Trip test (1xI & 5xI)	+0% ~ +10%
Ramp test	
Touch voltage (0 ~ 253 V)	+5% +15% ±0.5 V
Trip time	±1% ±1 ms
Trip current	±3%
Step increments	
VAR (variable RCD selection)	10 mA ~ 50 mA 1 mA steps
	50 mA ~ 500 mA 5 mA steps
	500 mA ~ 1000 mA 10 mA steps

Supply measurement

Voltage	10 V ~ 600 V (15 ~ 400 Hz) True RMS
	±3% ± 1 V ±2 digits
Phase rotation indication	L1–L2–L3 & L1–L3–L2
Frequency	15 Hz ~ 99 Hz ±0.5% ±1 digit
	100 Hz ~ 400 Hz ±2.0% ±2 digits
Frequency resolution 0.1 Hz	

Power

MFT1735:	1.2 V NiMH (rechargeable 6 cells supplied) Mains charger for on-board re-charging (4 hours typical) 12 V car charger (cigar lighter lead - optional)

Earth test

Resolution	0.01 Ω
Current	0.45 mA or 4.5 mA
Noise rejection	20 V pk/pk (7 V rms).
Max probe resistances Rp & Rc	
	100 kΩ @ 50 V
	5 kΩ @ 25 V
2 & 3 pole method (0.01 Ω ~ 1.999 kΩ)	
	±2.0% ±3 digits

ART method (1.00 Ω ~ 1.999 kΩ) ±5.0% ±3 digits**
Stakeless method (1.00 Ω ~ 199 Ω) ±7.0% ±3 digits**

Current (via optional clamp meter)

	±5.0% ±3 digits.
Range	0.1 mA to 200 A ac
Resolution	0.1 mA

mV Sensor input

including temperature (third party module)	
	±1.0% ±2 digits
Range	0.0 mV to ±199.9 mV dc
Resolution	0.1 mV

Internal memory (MFT1735)

Capacity	1000 results
Bluetooth communication	

Design standards

Safety

IEC 61010-1:2010
IEC 61010-30:2010
IEC 61010-031:2008
600 V Cat III / 300 V Cat IV (Max Phase to Phase 600 V)
IEC 61557:2007 parts 1 to 10

EMC

IEC61326 edition 2 location class B

For test environments see service data.

Environmental

Temperature (operational)	-10 °C ~ +55 °C
Temperature (storage)	-25 °C ~ +70 °C
Operating humidity	90% R.H. at +40 °C max
Max altitude	2000 m

Weight	1 kg (with batteries, excluding case)
Dimensions:	150 mm H x 85 mm W x 235 mm D
Moisture/dust ingress protection	IP54

Calibration temperature: +20 °C

Temperature effects

Temperature coefficient: <0,1% per °C

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* Reference conditions apply.
** requires optional accessory for some ranges

ORDERING INFORMATION

Item (Qty)	Cat. No.
MFT1735	1003-319
Included accessories	
Printed Quickstart Guide	
Full User Guide on CD	
Switched Probe SP5	1001-878
Neck Strap – Megger embroidered	2001-509
3-wire leadset with prods and clips	1001-991
UK mains lead SIA10	6220-810
Battery Charger	2001-697
Earth Spike Test Kit	1001-810

Item (Qty)	Cat. No.
Optional accessories	
Fused 10A test lead set (red/green/blue)	
with prods and clips	1001-975
ETL30: 30m extended test lead	1000-215
ETL50: 50m extended test lead	1000-217
12V charger lead	6280-332
Current Clamp	ICLAMP
Voltage clamp	VCLAMP

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