

MFT70 Multifunction Tester



- Simple color-coded test selection and large clear backlit display for ease of use
- Internal memory and Bluetooth® communications
- 3-terminal earth test and stakeless testing for spike resistance measurement **
- GFCI testing
- EN61010 CATIV safety ratings and tough IP54 case

DESCRIPTION

The MFT70 Multifunction Tester 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
- GFCI test
 - Ramp test displays trip current
- 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 color 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 MFT70 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 MFT70 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, 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.

The MFT70 includes built in memory and Bluetooth® communications for downloading of memory using Megger Download Manager (supplied) for simple form filling of test results.

The new MFT70 has been designed for tough environments and ultimate reliability. Features include a rubber over mold 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 color coded rotary switches with results clearly displayed on the high contrast dual measurement backlit display.

Included with the instrument are a standard 3-wire lead set 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 molded 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.

* model dependant

** requires optional accessory

SPECIFICATIONS

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

Resistance and continuity

	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)	

GFCI Test

Intrinsic current accuracy:	
Ramp test current:	±5% ±1 digit
Trip time:	±1% ±1 ms
Supply:	48 V - 280 V 45 Hz to 65 Hz
Max service error:	±10% ±2 digits

Supply measurement

Voltage	10 V ~ 600 V (15 ~ 400 Hz) True RMS ±3% ± 1 V ±2 digits
Phase rotation indication	L1-L2-L3 and 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 supply

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

Earth / ground 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 and Rc 100 k Ω @ 50 V 5 k Ω @ 25 V
2 and 3 pole method	(0.01 Ω ~ 1.999 k Ω) $\pm 2.0\%$ ± 3 digits
ART method	(1.00 Ω ~ 1.999 k Ω) $\pm 5.0\%$ ± 3 digits**
Stakeless method	(1.00 Ω ~ 199 Ω) $\pm 7.0\%$ ± 3 digits**

Current range

(via optional clamp meter)

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

MV sensor input

Including temperature (third party module)	$\pm 1.0\%$ ± 2 digits
Range	0.0 mV to ± 199.9 mV dc
Resolution	0.1 mV

Data storage

Capacity:	1000 results Bluetooth® communication
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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

Operating temperature range

-10 °C ~ +55 °C

Storage temperature range

-25 °C ~ +70 °C

Humidity

90% R.H. at +40 °C max

Maximum altitude

2000 m

Weight

1 kg (with batteries, excluding case)

Dimensions (instrument and case)

150 mm H x 85 mm W x 235 mm D

IP rating

IP54

Calibration temperature

+20 °C

Temperature co-efficient

<0,1% per °C

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* Reference conditions apply

**requires optional accessory for some ranges

ORDERING INFORMATION

Description	Order Code	Description	Order Code
MFT70		Optional accessories	
Included accessories		Fused 10 A test lead set (red/blue/green) with prods and clips	1001-975
Neck strap - Megger embroidered	2001-509	XTL50 Extended Test Lead (50 m)	2007-998
3 Wire lead set with prods and clips	1001-991	XTL30 Extended Test Lead (30 m)	2007-997
Mains plug test lead	1007-087	Cigar lighter adapter for battery charging.	6280-332
AC battery charger	1002-736	MCC1010 clamp	1010-516
Earth / Ground Electrode kit	1001-810	MVC1010 clamp	1010-518
Switched Probe SP5	1007-157		

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