

MFT1800 Multifunction Tester



- **Simple colour-coded test selection and large clear backlit display for ease of use**
- **Two wire non trip loop testing for fast repeatable results**
- **Phase rotation indication for verification of rotating machinery**
- **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 MFT1800 range consists of 3 instruments designed for testing low voltage electrical installations. They provide 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 AC + DC)
- 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
- Resistance range 0.01 Ω to 100 k Ω
 - With fast continuity buzzer and selectable thresholds
- 2-wire Loop test
 - Non-trip (RCD) and high-current testing
 - Including Phase-to-Phase
- Prospective fault current measurement
 - Up to 40kA Phase-to-Phase
 - Increased resolution
- RCD testing including:
 - Type AC, A, S, B and programmable RCDs
 - 1/2 x I, 1 x I, 2 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 the large transient spikes which are possible up to the limit of IEC 61010 CAT IV definitions.

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

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 display shows precise values of key measurements. The dual display shows test parameters simultaneously with the measured value, such as the output voltage on insulation testing as well as the resistance value in M Ω .

Visible and audible safety warnings are paramount when testing high-energy systems, and the MFT1800 range includes full input protection and safety warnings when a hazardous voltage is encountered. 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 for extra safety.

For intensive users the MFT1830 features internally rechargeable batteries and charger with a charge time of less than 4 hrs.

Future proof and fully compliant with all requirements of Harmonised Document 60364 derived standards including VDE 0100 and 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 wire non-trip loop test technology for fast repeatable results, comprehensive testing of RCDs including type B and the latest clamp-on techniques for Earth testing.

The MFT1835 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 MFT1800 series 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 backlit display.

Included with the instrument are standard 3-wire leadset and a mains connection lead, a switched probe for fast and easy testing, a full 12-month calibration certificate and 3-year warranty for extra peace-of-mind. All this is housed in a robust moulded case with additional space for optional extras like the earth test kit, comprising 2 spikes and 3 long test leads.

SELECTION CHART

INSULATION RANGES	MFT1815	MFT1825	MFT1835
100 V			■
250 V	■	■	■
500 V	■	■	■
1000 V		■	■
Test voltage display	■	■	■
Adjustable buzzer threshold		■	■
Test lock	■	■	■
25 V or 50 V test inhibit setup option	■	■	■
CONTINUITY AND RESISTANCE RANGES			
200 mA test	■	■	■
15 mA test		■	■
Lead null	■	■	■
Adjustable buzzer threshold	■	■	■
Auto-start test	■	■	■
Auto-reverse continuity test option	■	■	■
RCD TESTS			
1/2 x I RCD test		■	■
1 x I RCD test	■	■	■
2 x I RCD test		■	■
5 x I RCD test		■	■
Auto RCD test		■	■
Fast ramp test (setup option)	■	■	■
Type AC (General purpose AC) RCDs	■	■	■
Type A (AC + pulsed-DC) RCDs	■	■	■
Type S (time-delayed) RCDs		■	■
Type B (pure DC) RCDs			■
Programmable RCD		■	■
3-phase RCD (no Earth)		■	■
10 mA RCD		■	■
30 mA RCD	■	■	■
100 mA RCD	■	■	■
300 mA RCD	■	■	■
500 mA RCD	■	■	■
1000 mA RCD		■	■
LOOP TESTING			
2-wire non-tripping L~PE	■	■	■
2-wire high current L~L & L~N	■	■	■
50 V to 480 V (L~N) 5 0V to 280 V (L~PE)	■	■	■
Phase to Phase tests (L~L)		■	■
20 kA Fault current	■	■	■
40 kA Fault current		■	■
Auto-start loop test	■	■	■
Touch-voltage inhibit (25/50/60 V)	■	■	■
Touch-voltage display (0 V~253 V)	■	■	■

	MFT1815	MFT1825	MFT1835
EARTH TEST			
2-pole*		■	■
3-pole*		■	■
3-pole + clamp (ART)*			■
Stakeless*			■
25 V and 50 V output voltage		■	■
Ground-noise voltage check		■	■
OTHER FEATURES			
AC voltage measurement	■	■	■
True RMS			■
Frequency measurement	■	■	■
Current measurement*		■	■
Phase rotation	■	■	■
Temperature measurement		■	■
Backlight	■	■	■
Auto power-down	■	■	■
Calibration certificate supplied	■	■	■
Batteries included	■	■	■
Rechargeable batteries/Chrg included			■
Progressive battery monitor	■	■	■
SP5 Switched probe included	■	■	■
3-year warranty	■	■	■
Onboard memory with Bluetooth® download			■
CAT IV 300 V	■	■	■
IP 54	■	■	■

* additional accessories required

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

5V ±1V

Test current (0 Ω ~ 9.99 Ω) 205 mA or 1.5 mA (user selectable)
± 5 mA

Loop test

Live to earth supply	48 V ~ 280 V (45 Hz ~ 65 Hz)
Live to live supply	48 V ~ 480 V (45 Hz ~ 65 Hz)
Trip and non-trip tests	±5% ±0.03 Ω
Display range	0.01 Ω ~ 1000 Ω
Live to earth PFC range	20 kA
Live to live PSSC range	0 kA

RCD TESTS

Supply	48 V ~ 280 V (45 Hz ~ 65 Hz)
RCD type	Type AC, A, S Type B - pure dc
No trip test (1/2xI)	-8% ~ -2%
Trip test (1xI, 2xI & 5xI)	+2% ~ +8%

Ramp Test

Auto RCD test	
Trip time	±1% ±1 ms
Trip current	±3%
Programmable step increments	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 (50 ~ 60 Hz) True RMS ±3% ± 1 V ±2 digits
Phase rotation indication	L1-L2-L3 & L1-L3-L2
Touch voltage (0 ~ 253 V)	+5% +15% ±0.5V
Frequency	15 Hz ~ 99 Hz ±0.5% ±1 digit 100 Hz ~ 400 Hz ±2.0% ±2 digit
Frequency resolution	0.1 Hz

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	@50 V 100 kΩ @25 V 5 kΩ

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

Temperature (via optional probe)

Range	-20 °C ~ +100 °C
Accuracy	±1.0% ± 2 digits.
Resolution	1 °C

Current (via optional clamp meter)

Resolution	0.5 mA ~ 199.9 A ±5.0% ±3 digits.
	0.1 mA

ENVIRONMENTAL

Temperature (operational)	-10 °C ~ +55 °C
Temperature (storage)	-25 °C ~ +70 °C
Operating humidity	93% R.H. at +40 °C max
Max altitude	2000 m

Weight

1 kg (with batteries, excluding case)

Moisture/Dust ingress protection

IP54

Power

Primary dry cells (6 cells)	IEC LR6 type AA alkaline (supplied)
Rechargeable (6 cells)	1.2 V NiMH (optional)
On-board re-charging	Mains power or car-battery (4 hours typical)

DESIGN STANDARDS

Safety	BS EN 61010 -1:2001 600 V Cat III / 300 V Cat IV (Max Phase to Phase 600 V)
EMC	IEC61326 edition 2 location class B
Design	EN61557

ORDERING INFORMATION

Item (Qty)	Cat. No.	Item (Qty)	Cat. No.
MFT1815-SC	1001-081	Optional accessories	
MFT1825-SC	1001-088	Soft Carry case with lead/document pouch	6420-143
MFT1835-SC	1001-093	Switched Probe SP5	6220-812
Included Accessories		Euro Mains Test Lead SIA40	6220-832
Printed Quickstart Guide		Fused 10A test lead set (Red/Green) with Prods and clips (NEW) right angle plugs	6220-827
Full User Guide on CD		Earth bond test lead set (high current loop test only)	6231-586
Calibration Certificate		Fused prod and clip set, use with 6220-770	6180-405
Switched Probe SP5	6220-812	3 Wire lead set with separate prods and clips (MFT1500 mk1)	6220-770
Neck strap - Megger embroidered	2001-509	ETL30, 30 m extension test lead	1000-215
3 Wire lead set with prods and clips	6220-796	ETL50, 50 m extension test lead	1000-217
Euro Mains Test Lead SIA45	2000-674	12V charger lead	6280-332
Battery charger	2001-697		

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CERTIFICATION ISO
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