

MFT1800 Series 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
- 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 to IEC 60364. 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)*.
 - Insulation test at 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 k Ω
 - 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, 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

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 M Ω .

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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 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.

Fully compliant with all requirements of IEC 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 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 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 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.

* model dependant

** requires optional accessory

	MFT1815	MFT1825
Insulation ranges		
250 V, 500 V	■	■
1000 V	■	■
Test voltage display	■	■
Adjustable buzzer threshold		■
Continuity and resistance ranges		
200 mA test	■	■
15 mA test		■
Adjustable buzzer threshold	■	■
RCD tests		
1/2 x I, 1 x I, 5 x I RAMP RCD test	■	■
2 x I		■
Fast ramp	■	■
Auto RCD test	■	■
Type A & AC RCDs	■	■
Type S RCDs	■	■
Type B (pure DC) RCDs		■
Programmable RCD	■	■
3-phase RCD (no Earth)		■
10 mA RCD	■	■
30 mA, 100 mA, 300 mA, 500 mA RCD	■	■
1000 mA RCD		■
Earth test		
2-pole**		■
3-pole**		■
Loop testing		
2-wire and 3-wire non-tripping L~PE	■	■
2-wire high current L~L & L~N	■	■
50 V to 480 V (L~N) 50 V to 280 V (L~PE)	■	■
Phase to Phase tests (L~L)	■	■
PSCC & PFC (20kA max)	■	■
Touch-voltage display (0 V~253 V)	■	■
Other features		
Supply measurement	■	■
Current measurement**		■
Phase rotation	■	■
Backlight	■	■
Auto power-down	■	■
Calibration certificate supplied	■	■
Rechargeable batteries/charger included	■	■
3-year warranty (on registration)	■	■
CAT IV 300 V	■	■
IP54	■	■

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SPECIFICATIONS

Insulation test

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

Insulation accuracy

1000 Volts	10 k Ω ~ 999 M Ω	$\pm 3\%$ ± 2 digits
500 Volts	10 k Ω ~ 500 M Ω	$\pm 3\%$ ± 2 digits
	>500 M Ω	$\pm 10\%$ ± 4 digits
250 Volts	10 k Ω ~ 250 M Ω	$\pm 3\%$ ± 2 digits
	>250 M Ω	$\pm 10\%$ ± 4 digits
100 Volts	10 k Ω ~ 100 M Ω	$\pm 3\%$ ± 2 digits
	>100 M Ω	$\pm 10\%$ ± 4 digits

Resistance and continuity

0.01 Ω ~ 99.9 Ω	$\pm 2\%$ ± 2 digits
100 Ω ~ 99.9 k Ω	$\pm 5\%$ ± 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	$\pm 5\%$ ± 3 digits
L-E tests*	

0.1 Ω ~ 39.9 Ω $\pm 5\%$	± 5 digits \pm noise margin
40.0 Ω ~ 999 Ω	$\pm 10\%$ ± 5 digits
Display range	0.01 Ω ~ 999 Ω

Live to earth PFC range 20 kA

Live to live PSCC range 20 kA

* Reference conditions apply.

For test environments see service data.

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	10% ~ -0% (1/2xl)
Trip test	+0% ~ +10% (1xl, 2xl & 5xl)

Ramp test

Touch voltage	+5% +15% ± 0.5 V (0 ~ 253 V)
Trip time	$\pm 1\%$ ± 1 ms
Trip current	$\pm 3\%$

Step increments

VAR	10 mA ~ 50 mA 1 mA steps
(variable RCD selection)	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
	$\pm 3\%$ ± 1 V ± 2 digits

Phase rotation indication: L1-L2-L3 & L1-L3-L2

Frequency	15 Hz ~ 99 Hz $\pm 0.5\%$ ± 1 digit
	100 Hz ~ 400 Hz $\pm 2.0\%$ ± 2 digits

Frequency resolution 0.1 Hz

Power supply

MFT1815 & MFT1825: IEC LR6 type AA alkaline
(6 cells - supplied)

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 & Rc

100 k Ω @ 50 V
5 k Ω @ 25 V

2 & 3 pole method

(0.01 Ω ~ 1.999 k Ω) $\pm 2.0\%$ ± 5 digits

ART method

(1.00 Ω ~ 1.999 k Ω) $\pm 5.0\%$ ± 5 digits

Stakeless method

(1.00 Ω ~ 199 Ω) $\pm 7.0\%$ ± 5 digits

Current

(via optional clamp meter)

$\pm 5.0\%$ ± 3 digits.

Range 0.1 mA to 200 A AC

Resolution 0.1 mA

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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

ENVIRONMENTAL

Operating temperature range and humidity	
	10 °C ~ +55 °C
	90% R.H. at +40 °C max
Temperature (storage)	
	-25 °C ~ +70 °C
Maximum altitude	2000 m
Weight (instrument and case)	
	1 kg (with batteries, excluding case)
Dimensions (instrument and case)	
	150 x 85 x 235 mm
IP rating	IP54

Calibration temperature

+20 °C

TEMPERATURE EFFECTS

Temperature co-efficient

<0,1% per °C

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ORDERING INFORMATION

Description	Order Code
MFT1815-AU	1005-270
MFT1815-CH-DE/FR	1002-402
MFT1815-SC-DE/NL/EN	1002-403
MFT1815-SC-FR/ES	1002-405
MFT1825-AU	1002-406
MFT1825-CH-DE/FR	1002-407
MFT1825-SC-DE/NL/EN	1002-408
MFT1825-SC-FR/ES	1002-410

Description	Order Code
Included accessories	
Printed quickstart guide	
Calibration certificate	
Switched probe SP5	1007-157
Neck strap - Megger embroidered	2001-509
3 Wire lead set with prods and clips	1001-991
Euro mains test lead SIA45 (not AU)	2000-674
AU/NZ plug test lead (AU only)	6220-828

Optional accessories

Soft carry case with lead/document pouch	6420-143
Fused 10 A test lead set (red/blue/green) with prods and clips	1001-975
ETL30 Extension Test Lead 30 m	1000-215
ETL50 Extension Test Lead 50 m	1000-217
Battery charging lead 12V	1004-183
Earth electrode kit	1001-810
ETK30 (3 Pole Earth Test Kit)	1010-176
MCC1010 Current measuring clamp	1010-516
MVC1010 Voltage clamp	1010-518