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DATASHEET

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WHY BUY
WHEN YOU CAN HIRE

MFT1700 Series
Multifunction Tester

- **Simple colour-coded test selection with large clear backlit display for ease of use**
- **Two wire non trip loop testing for fast repeatable results**
- **3-phase RCD testing for industrial applications with no earth**
- **3-terminal earth test for electrode resistance measurement**
- **On-board data storage and Bluetooth® download**
- **EN61010 CATIV safety rating and tough IP54 case**

DESCRIPTION

The MFT1700 series is a range of 3 instruments for testing low voltage electrical installations to BS7671. 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 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 start – no need to press TEST so leaving both hands free to hold probes
- Resistance range up to 100 kΩ
  With fast continuity buzzer at selectable thresholds
- 2-wire loop test
  Non-trip (RCD) and high-current testing
  Including Phase-to-Phase
- Prospective fault current measurement
  Up to 20 kA
- RCD testing including:
  Type AC, A, S, B* and programmable RCDs
  3-phase RCDs*
  Auto-test routine
  Fault (Touch) voltage display
- 3-pole earth testing

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 right 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 handheld. Dual TEST and LOCK buttons – one pair at each end – makes the testers easy to operate left or right handed.

Quick to pick up and use, the 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 MFT1700 series 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 MFT1730 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 VDE 0100 and BS 7671, the new MFT includes all the latest measurement technology in a light-weight compact design, 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 integrated 3-terminal techniques for earth electrode testing.

The MFT1730 includes built in memory and Bluetooth communications for downloading test results using Megger Download Manager (supplied). As an option, the MFT1730 is available complete with PowerSuite® Lite combined with Ultra Mobile software as the MFT1730 On-Site. PowerSuite provides a professional solution to certification with electronic form completion from stored data within the MFT, either downloaded to a mobile device such as a Smartphone, or direct to a PC. See the separate datasheet on Megger PowerSuite software for further details.

The new MFT1700 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 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

Product selection chart

	MFT1710	MFT1720	MFT1730
Insulation ranges			
100 V			■
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, 1, 5 x I & ramp RCD test	■	■	■
Auto RCD test		■	■
Type AC, A & S RCDs	■	■	■
Type B (pure DC) RCDs			■
Programmable RCD		■	■
3-phase RCD (no earth)		■	■
30, 100, 300 & 500 mA RCD	■	■	■
10 mA & 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) 50 V to 280 V (L~PE)	■	■	■
Phase to phase tests (L~L)		■	■
PSCC & PFC (20 kA max.)	■	■	■
Max. Zs display		■	■
R1 + R2 value		■	■
Touch voltage display on faulty earth	■	■	■
Earth electrode test			
2 & 3 pole **			■
Other features			
Supply measurement	■	■	■
True RMS			■
Leakage current measurement**		■	■
Phase rotation		■	■
Calibration certificate	■	■	■
Rechargeable batteries (charger included)			■
SP5 Switched probe included		■	■
Warranty upgradeable to 3 years FREE	■	■	■
On board memory with Bluetooth download			■
CAT IV 300 V	■	■	■

SPECIFICATION

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	±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 ~ 480 V (45 Hz ~ 65 Hz)
L-E tests*	±5% ±0.05 Ω ± Noise margin
L-N/L-L tests	
0.1 Ω ~ 39.9 Ω	±5% ±0.03 Ω
40.0 Ω ~ 1000 Ω	±10% ±0.05 Ω
Display range	0.01 Ω ~ 1000 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, 2xI & 5xI)	+0% ~ +10%
Ramp test	
Touch voltage (0 ~ 253 V)	+5% +15% ±0.5 V
Trip time	±1% ±1 ms
Trip current	±5%
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 digit
Frequency resolution	0.1 Hz

***** Reference conditions apply.
For test environments see service data.

Power

MFT1710 & MFT1720:	IEC LR6 type AA alkaline (6 cells - supplied)
MFT1730:	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 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

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

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

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)
Moisture/dust ingress protection	IP54
Calibration Temperature:	+20 °C

Temperature effects

Temperature coefficient:	<0,1% per °C

The word 'Megger' is a registered trademark
The word 'PowerSuite' is a registered trademark of Megger Limited
The Bluetooth word mark/logo are owned by Bluetooth SIG. Inc.

ORDERING INFORMATION

Item (Qty)	Cat. No.
MFT1710-BS	1001-063
MFT1720-BS	1001-064
MFT1730-BS	1001-066
MFT1730 On-site	1001-633
Included accessories	
Printed quick start guide	
Full user guide on CD	
Calibration certificate	
Switched probe SP5	1001-878
Neck strap - Megger embroidered	2001-509
3 Wire lead set with prods and clips	1001-860
SIA10 Socket Interface adaptor UK to 3 x 4 mm	6220-810
Plug-in battery charger	2001-697

Item (Qty)	Cat. No.
Optional accessories	
PowerSuite Lite	1000-631
PowerSuite Lite On-Site (mobile)	1000-632
Euro mains test lead SIA45	2000-674
Fused 10 A test lead set (red/green) with prods and clips	1001-977
ETL30, 30 m extension test lead	1000-215
ETL50, 50 m extension test lead	1000-217
12 V charger lead	6280-332
Earth electrode kit	1001-810
Switched Probe SP5 (silicone)	1001-687

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CERTIFICATION ISO
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Registered to ISO 14001-2004 Cert. no. EMS 61597

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