Megger.

MFT1845 Multifunction Tester



- Enhanced non-trip loop impedance measurement technology
- "Confidence meter" measurement analysis (patent pending)
- Full single and 3 phase compliant installation testing
- 10 mA to 1 A single and 3 phase RCD testing
- Earth testing and stake-less testing for electrode resistance measurement*
- Simple colour-coded test selection
- Ambidextrous operation
- Internal memory and Bluetooth® communications
- EN61010 CAT IV safety rating and tough IP54 case

New Loop Impedance testing technology:

The MFT1845 includes a new non-trip loop testing technology that:

- Prevents any influence the RCD may present to the total loop impedance value.
- Faster non-trip loop testing down to 8 seconds.

This technique also allows testing of loop impedance through 10 mA type AC and Type A RCDs.

New "Confidence meter*" measurement analysis (Patent pending)

Overlaying the new non-trip loop impedance measurement is the new Megger "Confidence meter". As loop impedance values can be dramatically affected by circuit noise, the Confidence Meter displays the degree of confidence in the accuracy of the measured loop impedance. Using the digital ARC to indicate the analytical process, the measurement is continually monitored and adjusted when circuit noise is present, resulting in a dramatically improved and repeatable test result.

APPLICATIONS:

The MFT1845 offers a wide range of test functions, designed for all electrical installation testing and verification of low voltage building wiring and distribution testing scenarios. The MFT1845 is IEC 61010 CAT IV 300 V rated for safe connection anywhere within the LV network on single and 3 phase systems.

The unique modern styling allows it to be operated while stood on the floor, whilst up a ladder or platform, and optimised for hanging around the user's neck. Dual TEST and LOCK buttons - one pair at each end - makes the testers easy to operate left or right handed.

DESCRIPTION

The MFT1845 multifunction tester is an instrument designed for testing low voltage electrical installations and especially in locations that suffer from high electrical noise. It provides all the tests required to complete the necessary electrical certification for industrial, commercial and domestic fixed wiring installations, and includes:

- TRMS System voltage and frequency measurement
- 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
- Earth loop impedance testing, with:
 - New 3 wire non-trip technology
 - New confidence meter measurement
 - 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
 - 3-phase RCDs
 - Auto-test routine
 - Fault (Touch) voltage display
 - Earth spike testing
 - 2-pole/3-pole*, ART* and Stake-less* techniques
- * with appropriate optional accessories

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General features:

Quick to pick up and use, the function 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 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 .

Visible and audible safety warnings are paramount when testing high-energy systems and the MFT1845 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 MFT1845 features internally rechargeable batteries and charger with a charge time of less than 4 hrs, so reducing the cost of ownership.

The new MFT1845 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 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. Included with the instrument: 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 warranty free of charge. The MFT1845 is supplied in a large soft pouch 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.

PRODUCT SELECTION CHART

	MFT1845
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	

MFT1845 Multifunction Tester

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* requires optional accessory



MFT1845 Multifunction Tester

SPECFICATIONS

Insulation test

Output voltage	-0% +20% at rated load or less
Voltage display	$\pm 3\% \pm 3$ 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 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

Resistance and continuity

0.01 Ω ~ 99.9 Ω	±2% ±2 digits
100 Ω ~ 99.9 kΩ	$\pm 5\% \pm 2$ 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/neutral 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 ~ 1000 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

[†] Reference conditions apply For test environments see service data

RCD tests

Supply up to 100 mA	48 V ~ 480 V (4	15 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	(1/2xl)	-10% ~-0%
Trip test	(1xl, 2xl and 5xl)+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	1 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

Batteries	IEC LR6 type AA alkaline
	(6 cells - supplied)
	or 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 kΩ @ 50 V 5 kΩ @ 25 V
2 and 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)		
	$\pm 1.0\% \pm 2$ digits	
Range	0.0 mV to ±199.9 mV dc	

Resolution 0.1 mV

Data storage

Capacity: 1000 results

Bluetooth[®] communication

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 and humidity

> -10 °C ~ +55 °C 90% R.H. at +40 °C max

Storage temperature range and humidity

-25 °C ~ +70 °C

Maximum altitude 2000 m

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Weight (instrument and case)
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1 kg (with batteries, excluding case)

Dimensions (instrument and case)

150 mm H x 85 mm W x 235 mm D

IP rating

Calibration temperature

+20 °C

IP54

Temperature co-efficient

<0,1% per °C

The word PowerSuite is a registered trademark of Megger Limited. The Bluetooth[®] word mark and logo are owned by the Bluetooth SIG, Inc. and any use of such marks by Megger is under licence.

ORDERING INFORMATION			
Description	Order Code		
MFT1845-CH-DE-FR-IT	1009-988		
MFT1845-SC-DE-NL-EN	1009-989		
Included accessories			
Printed quick start guide			
Full user guide on CD			
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		
AC battery charger	1002-736		
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		
Cigar lighter adapter for battery charging.	6280-332		
Earth electrode kit	1001-810		
3 Pole Earth Test Kit	6210-160		

SALES OFFICE

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MFT1845_DS_en_V01

www.megger.com ISO 9001 The word 'Megger' is a registered trademark

