1650 Series Multifunction Installation Testers

FLUKE®

Fluke 1653

Fluke 1652

Fluke 1651

The perfect installation testing solution

The Fluke 1650 Series testers verify the safety of electrical installations in domestic, commercial and industrial applications. They can ensure that fixed wiring is safe and correctly installed to meet the requirements of IEC 60364, HD 384 and all relevant local standards. The unique ergonomic design, low weight and padded neck-strap to free your hands, make operating a Fluke 1650 multifuction tester a pleasure. With easy-to-operate controls and large display with exceptionally wide viewing angle, it's also comfortable and safe to use.

- **Easy:** simply turn the knob, press the button and see the results
- **Efficient:** measure loop impedance without tripping RCDs, eliminating the need to bypass them
- **Rugged:** withstands a one-meter drop for demanding field use
- **Safe:** slim probe with test button keeps your eyes on the panel while probing hard to reach points
- **Comfortable:** compact and lightweight (less than 1.2 kg) for all day testing
- **Compliant:** meets all relevant standards including EN 61557 and VDE 0413

Rotary knob labeling is available in six versions. Select from English, French, German, Italian, Spanish or a user-friendly Symbols version.

EN 61557 COMPLIANT

500V CAT III

BS7671 16th Edition IEE Wiring Regulations IEC 60364.6.61, HD 384

Features

Measurement functions	1651	1652	1653
Voltage & Frequency	●	●	●
Wiring polarity	●	●	●
Insulation Resistance	500, 1000 V	250, 500, 1000 V	50, 100, 250, 500, 1000 V
Continuity	●	●	●
Loop & Line Resistance	●	●	●
PFC/PSC (short-circuit current)	●	●	●
RCD tripping time	●	●	●
RCD tripping current level		● ramp test	● ramp test
Automatic RCD test sequence		●	●
Test of pulse sensitive RCD's		●	●
Earth Resistance			●
Phase Sequence Indicator			●
Other features			
Self-test	●	●	●
EN 61557*/VDE 0413 compliant	●	●	●
Illuminated Display	●	●	●
Line voltage indicator	●	●	●
Battery indicator and battery test function	●	●	●
Memory, Interface			
Memory (500 measurements)			●
Computer interface			●
Time stamp (with FlukeView® Forms)			●
Software			option

* 1651: sections 1, 2, 3, 4, 6, 10
1652: sections 1, 2, 3, 4, 6, 10
1653: sections 1, 2, 3, 4, 5, 6, 7, 10

Included Accessories

TP165X Remote Control Probe (1652 and 1653 only)
TL165X STD Standard Test Lead Set
C1600 Hard Carrying Case
Mains Test Cord
Padded Carrying Strap
Quick Reference Guide
6 AA Cell batteries

Ordering Information

Fluke 1651 Multifunction Installation Tester
Fluke 1652 Multifunction Installation Tester
Fluke 1653 Multifunction Installation Tester

Check the Fluke website for the various software modules

10650-eng Rev. 05

Recommended Accessories

TLK290
Test Probe Kit

MTC1363 (UK)
Mains Test Cord

MTC77 (Europe)
Mains Test Cord

ES165X (1653)
Earth Spike Test Kit

FVF-SC2 (1653)

1650 Series Multifunction Installation Testers

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The perfect installation testing solution

Slim probe design

Thanks to its slim probe with integral test button, you can safely make one-handed measurements on hard to reach points, while keeping your eyes on the panel.

Professional reports

Up to 500 test results can be stored in the 1653 installation tester. The data stored for each measurement consists of the test function, user selectable test conditions and unique references. Model 1653 has an IR port and adaptor to enable the results to be uploaded to a computer for preparing professional reports.

Complete kit

All 1650 models are equipped with detachable leads that can be replaced in case of damage or loss. A durable hard case will protect your instrument in tough field conditions.

Specifications

AC Voltage Measurement

Range	Resolution	Accuracy 50 Hz – 60 Hz	Input Impedance	Overload Protection
500 V	0.1 V	0.8% + 3	3.3 MΩ	660 Vrms

Continuity Testing

Range (autoranging)	Resolution	Test Current	Open Circuit Voltage	Accuracy
20 Ω	0.01 Ω	> 200 mA	> 4 V	± (1.5%+3 digits)
200 Ω	0.1 Ω			
2000 Ω	1 Ω			

Insulation Resistance Measurement

Model	Test Voltage	Insulation Resistance Range	Resolution	Test Current	Accuracy
1653	50 V	10 kΩ to 50 MΩ	0.01 MΩ	1 mA @ 50 kΩ	± (3%+ 3 digits)
1653	100 V	100 kΩ to 20 MΩ 20 MΩ to 100 MΩ	0.01 MΩ 0.1 MΩ	1 mA @ 100 kΩ	± (3%+ 3 digits) ± (3%+ 3 digits)
1653, 1652	250 V	100 kΩ to 20 MΩ 20 MΩ to 200 MΩ	0.01 MΩ 0.1 MΩ	1 mA @ 250 kΩ	± (1.5%+ 3 digits)
1653, 1652, 1651	500 V	100 kΩ to 20 MΩ 20 MΩ to 200 MΩ 200 MΩ to 500 MΩ	0.01 MΩ 0.1 MΩ 1 MΩ	1 mA @ 500 kΩ	± (1.5%+ 3 digits) + 10%
1653, 1652, 1651	1000 V	100 kΩ to 200 MΩ 200 MΩ to 1000 MΩ	0.1 MΩ 1 MΩ	1 mA @ 1 MΩ	± (1.5%+ 3 digits) + 10%

Loop Impedance Measurement

Range	Resolution	Accuracy
20 Ω	0.01 Ω	± (3% + 10 digits)
200 Ω	0.1 Ω	
2000 Ω	1 Ω	

PFC. PSC Test

Range	0 to 50 kA	
Resolution and Units	I_K < 1000 A	1 A
	I_K ≥ 1000 A	0.1 kA
Accuracy	Determined by accuracy of loop resistance and mains voltage measurements	

RCD Testing

RCD Type		1651	1652	1653
[1]AC	[2]G	●	●	●
AC	[3]S	●	●	●
[4]A	G		●	●
A	S		●	●

[1]AC – responds to AC [2]G – General, no delay [3]S – Time delay [4]A – Responds to pulsed signal

Tripping Time Test (ΔT)

Current Settings	Multiplier	Test Current Accuracy	Trip Time Accuracy
10, 30, 100, 300, 500, 1000 mA	x ½	± 0% - 10%	± (1% Reading + 1 digit)
10, 30, 100, 300, 500, 1000 mA	x 1	± 10% - 0%	± (1% Reading + 1 digit)
10. 30 mA	x 5	± 10%	± (1% Reading + 1 digit)

Tripping Current (Ramp) Test – Fluke 1653 and 1652 only

Current Range	Step size	Dwell time		Trip Current Measurement Accuracy
		Type G	Type S	
50% to 110% of RCD's rated current	10% of $I_{\Delta N}$	300 ms/step	500 ms/step	± 5%

Earth Resistance Test (R_E) – Fluke 1653 only

Range	Resolution	Accuracy
200 Ω	0.1 Ω	± (2%+ 5 digits)
2000 Ω	1 Ω	± (3.5%+ 10 digits)

Battery type: Alkaline supplied. usable with 1.2 V NiCD or NiMH rechargeable batteries
Size (HxWxD): 100 mm x 250 mm x 125 mm

Weight: 1.17 kg
Three Years Warranty

1650 Series/6000 Series Accessories

Accessories for Fluke 1650 Series Installation Testers

ES165X Earth Spike Test Kit (Fluke 1653)
Earth Spike Test kit contents:
- Auxiliary earth probes
- Test connection leads and crocodile clips
- Purpose-made carry case

FVF-SC2 Fluke ViewForms Software (Fluke 1653)
To address the increasing demands for reporting and documentation, Fluke presents FlukeView Forms documenting software. Download the data from the Fluke 1653 and create an easy report. The Fluke ViewForms Software also supports other Fluke tools. See page 109.

TLK 290 Test Probe Kit
- Kit includes three flexible socket probes and a large alligator clip
- To be used on three phase sockets
- Probes have flexible width test points that fit securely in 4 to 8 mm sockets
- CAT III 1000 V, 8 A

MTC1363

MTC77

Mains Test Cord for 1650 series

MTC1363	UK plug
MTC77	Schuko plug

Accessories for Fluke 6500 Series Portable Appliance Testers

PASS560R Appliance Pass Labels
Quantity 600

APP1000/APP2000 Bar Code Appliance Number Labels
APP1000: Labels numbered 0001-1000
APP2000: Labels numbers 1001-2000
Label number >2000 on request

BDST3/BDST4 Snap Tags
BDST3: Cable Tie
BDST4: Clip On
Quantity 20. Labels need to be purchased separately.

EXTL100 (UK plug)

EXTL100-02 (Schuko plug)

EXTL100 Extension Lead Test Adaptor
Adaptor for testing extension leads. Allows the earth test lead to be connected to the extension leads to perform insulation and earth bond tests.

SPScan15 Barcode Scanner
Easy to use, low current, intelligent barcode reader. SPScan15 can be used to scan barcodes attached to curved surfaces or where actual contact with the barcode surface is difficult.

SP1000 Mini Printer
Without using any additional software the SP1000 can be used to directly printout stored test records on to thermal paper. The printer is compact and easily transported and is ideal for test professionals who need to issue an immediate written account of work carried out. The printer is powered by a rechargeable battery and comes complete with mains charger and RS232 Printer Lead.

SP1000 Paper
Replacement thermal paper for the SP1000 Mini Printer

Fluke DMS software for 1650/6000 Series

The Fluke DMS (Data Management Software) is an efficient program for administration and reporting of installation tests in compliance with EN 60364, DIN VDE 0100/0105 and appliance tests in compliance with DIN VDE 0701/0702, ÖVE E 8701.

DMS 0100/INST Software for Installation Tester Fluke 1653
Supporting reports for Austria, Germany, Switzerland, Netherlands

DMS 0702/PAT Software for Portable Appliance Tester Fluke 6500
Supporting reports for Austria, Germany, Netherlands

DMS COMPL PROF Software for the Fluke 1653 and Fluke 6500
Supporting reports for Austria, Germany, Switzerland, Netherlands

Check the Fluke web for more information.