

# 1650 Series Multifunction Installation Testers

FLUKE®



Fluke 1653



Fluke 1652



Fluke 1651

## The future of installation testing is here

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 multifunction 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.



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	●	●	●
Automatic RCD test sequence	●	●	●
Test of pulse sensitive RCD's	●	●	●
Earth Resistance	●	●	●
Phase Sequence Indicator	●	●	●
<b>Other features</b>			
Self-test	●	●	●
EN 61557*/VDE 0413 compliant	●	●	●
Illuminated Display	●	●	●
Line voltage indicator	●	●	●
Battery indicator and battery test function	●	●	●
<b>Memory, Interface</b>			
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  
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

## Recommended Accessories



**MTC1363 (UK)**  
Mains Test Cord



**MTC77 (Europe)**  
Mains Test Cord



**ES165X (1653)**  
Earth Spike Test Kit



**FVF-SC2 (1653)**

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## Specifications



### 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 using (optional) FlukeView® Forms software.



### 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. A probe with built-in test button comes with every instrument.

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		
	$I_K \geq 1000 A$		0.1 kA		
Accuracy	Determined by accuracy of loop resistance and mains voltage measurements				
RCD Testing					
RCD Type		1651	1652	1653	
<sup>1</sup> AC	<sup>2</sup> G	●	●	●	
AC	<sup>3</sup> S	●	●	●	
<sup>4</sup> A	G		●	●	
A	S		●	●	
<sup>1</sup> AC – responds to AC <sup>2</sup> G – General, no delay <sup>3</sup> S – Time delay <sup>4</sup> 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 1/2	± 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	± 5%	
50% to 110% of RCD's rated current	10% of I <sub>ΔN</sub>	300 ms/step	500 ms/step		
Earth Resistance Test (R <sub>E</sub> ) – 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**