

1650 Series Multifunction Installation Testers

New

The future of installation testing is here

BS7671 16th Edition
IEE Wiring Regulations



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 and BS 7671 16th Edition IEE Wiring Regulations. 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.

- **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

Safety Conformance

All inputs are protected to EN 61010-1, CAT III 500 V.

- **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



Accessories and Ordering Information

Included Accessories

- TP165X Remote Control Probe
- TL165X UK Fused Standard Test Lead Set
- C1600 Hard Carrying Case
- Mains Test Cord
- Padded Carrying Strap
- Quick Reference Guide
- 6 AA Cell batteries

Optional Accessories

- ES165X Earth Spike Test Kit (Fluke 1653)
- FVF-SC2 FlukeView® Forms and Cable (Fluke 1653)

Ordering Information

- Fluke 1652 Multifunction Installation Tester
- Fluke 1653 Multifunction Installation Tester

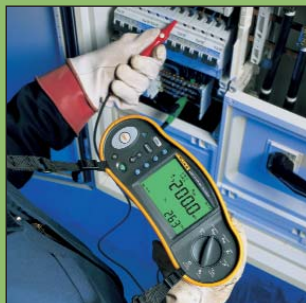
Features

	1652	1653
Measurement functions		
Voltage & Frequency	●	●
Wiring polarity	●	●
Insulation Resistance	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 DC-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

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

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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

Both 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.

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 200 MΩ	0.1 MΩ	1 mA @ 250 kΩ	± (1.5%+ 3 digits)
1653, 1652	500 V	100 kΩ to 200 MΩ 200 MΩ to 500 MΩ	0.1 MΩ 1 MΩ	1 mA @ 500 kΩ	± (1.5%+ 3 digits) + 10%
1653, 1652	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 10 kA	
Resolution and Units	$I_k < 1000 \text{ A}$	1 A
	$I_k \geq 1000 \text{ A}$	0.1 kA
Accuracy	Determined by accuracy of loop resistance and mains voltage measurements	

RCD Testing			
RCD Type		1652	1653
AC	G	●	●
AC	S	●	●
A	G	●	●
A	S	●	●

¹AC – responds to AC ²G – General, no delay ³S – Time delay ⁴A – 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				
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): 10 x 25 x 12.5 cm
Weight: 1.17 kg
3 Years Warranty