

# 1660 Series

## Installation testing that protects appliances, wirelessly shares data

The new Fluke 1660 Series Installation Testers are the only installation testers that help prevent damage to connected appliances at insulation tests, and also allow users to send test results wirelessly via smartphone directly from the field.



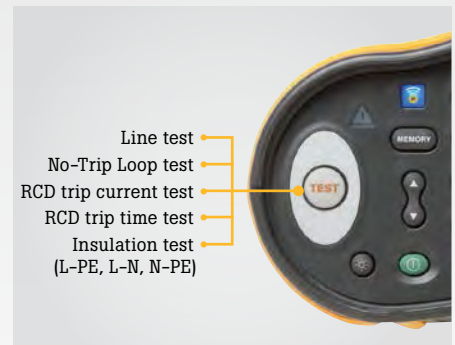
### Insulation PreTest

Stops insulation test when a connected appliance is detected



### Fluke Cloud™ Storage

Flexible and secure data storage from the field



### Auto Test

Does 5 required installation tests in one sequence, including selectable Type A, AC & RCD Auto Test.

# Faster, safer installation testing

The new Fluke 1660 Series Installation Testers are the only installation testers that help prevent damage to connected appliances, at insulation tests, and also allow users to send test results wirelessly by e-mail via smartphone directly from the field.

## Insulation PreTest

### Protect the installation. Avoid costly mistakes.

The Fluke 1664 FC Installation Tester is the only tester with "Insulation PreTest," which warns you about potentially serious and costly mistakes. If the tester detects that appliances are connected to the system during test, it will stop the insulation test and provide a visual and audible warning.



### Fluke Connect<sup>®</sup>, ShareLive<sup>™</sup> calling and Fluke Cloud<sup>™</sup> storage ShareLive<sup>™</sup> video calls

Save time—eliminate data entry by wirelessly syncing measurements directly from your 1664 FC Installation Tester and share with your team using the Fluke Connect system. Having access to measurements simultaneously at the inspection site and the office enables faster decision making and real time collaboration between team members.

Cloud storage allows you to retrieve stored results whether you are in the office or in the field to make decisions in real time. Plus you can import the data into Fluke DMS to process and generate certificates.

### Auto Test for faster, easier testing

#### Faster

- Auto Test does 5 required installation tests in one sequence, ensuring compliance with local installation regulations. It reduces the number of manual connections, decreases the possibility of making errors and reduces test time up to 40% from previous Fluke models.
- Z-max memory function for loop tests—easy evaluation of the highest loop test value in a circuit.

- Fast voltage measurement between L-N, L-PE and N-PE using the mains cord. Selectable by soft keys, no need to change measurement connections.
- Measure RCD trip current and trip time for types AC, A, F (standard and selective), B and B+
- Two measurements at once and a dual display. PEFC or PSC and loop impedance are measured and displayed in parallel, saving you time.
- Ring continuity testing—select the required input connectors with soft keys—no need to exchange test leads.
- Automatic test start for Loop and RCD tests—as soon as mains voltage is stable it starts testing.
- Insulation testing between L-N, L-PE and N-PE—select the required input connectors with soft keys—no need to exchange test leads.

#### Safer

- Touchpad electrode detects earth voltages > 50 V, indicating potential dangerous situations.
- Supplied with the safety designed SureGrip<sup>™</sup> test leads and clips which gives the user a comfortable, reliable grip and consistent results.

#### Easy

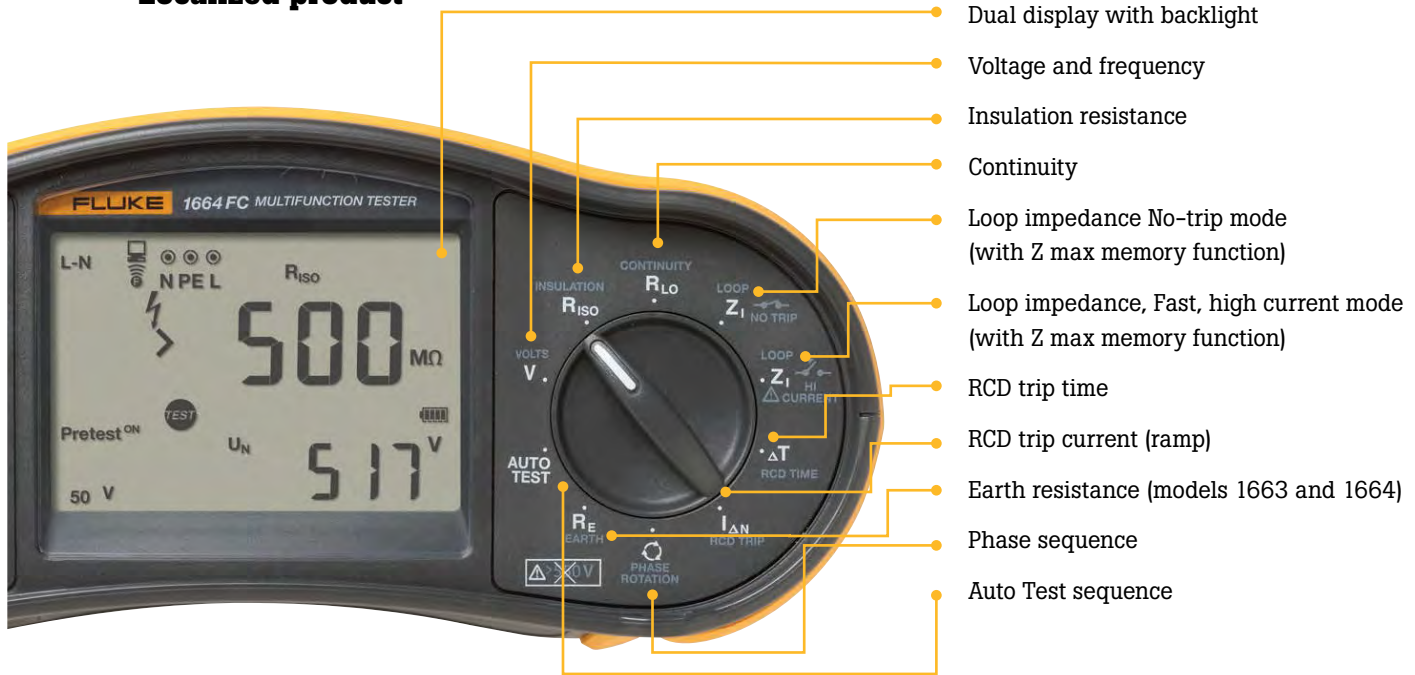
- Zmax memory for loop tests—easy evaluation of the highest loop test value
- Measure RCD trip current and trip time in on go (for types AC and A)
- Insulation-PreTest<sup>™</sup> safety function, protects connected appliances
- Auto Test sequence, to test line/loop impedance, RCD trip current/trip time, RCD Auto test or insulation tests in one go
- Fluke Connect WiFi interface
- Continuity test at L-N, L-PE and N-PE inputs, at 10 and 250 mA with auto polarity swap
- Insulation test at L-N, L-PE and N-PE inputs
- Selectable Auto-Start function for line/loop and RCD tests
- Recognize open neutral

#### Rugged and lightweight

- Withstands a drop of 1 meter.
- Compact, lightweight (less than 1.3 kg) and padded neck-strap to free your hands for all day testing.
- 1660 Series testers verify that fixed wiring correctly installed to meet the requirements of IEC 60364, HD 384 and all relevant local standards.

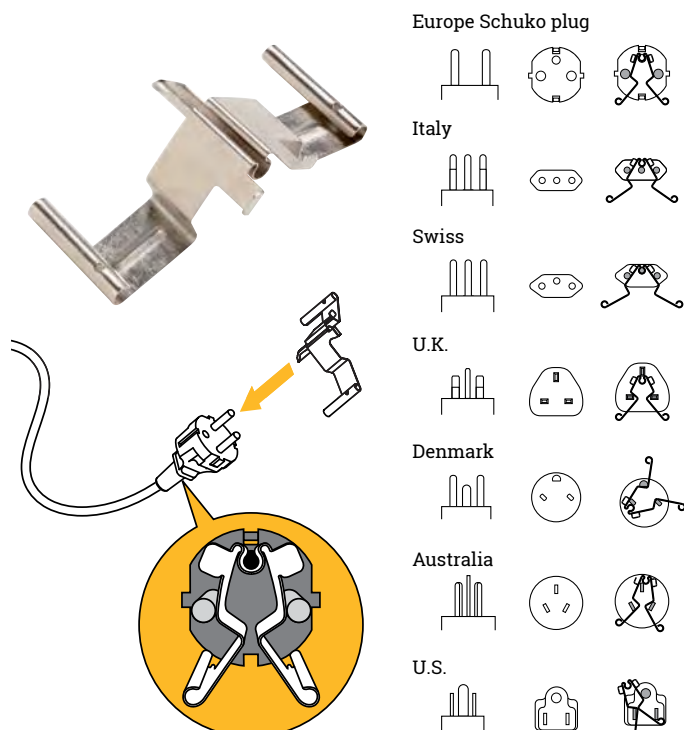
# Fluke 1660 Series

## Localized product



## Zero adapter

For easy, always reliable and accurate compensation of test leads and mains cords. This adapter can be used for all different kind of mains plugs as well as test accessories like probes, alligator clips etc.



## Complete kit

All 1660 models are equipped with detachable standard 4-mm leads that can be replaced in case of damage or loss. A durable hard case will protect your instrument in touch field conditions.



# Fluke 1660 Series Installation Testers

## 1664 FC

### Work safer, protect the installation under test, share results

The Fluke 1664 FC is the only installation tester that protects connected appliances from damage during insulation tests, and allows you to share your test results wirelessly by smartphone with coworkers or customers. Fluke's patent pending Insulation PreTest stops you from performing tests with appliances that are connected to the system during test. This helps eliminate accidental damage and keeps your customers happy.

In addition, the Fluke 1664 FC offers you the power of Fluke Connect. Now you can send test results straight from your Fluke 1664 FC to your smartphone, and transmit those results to other members of your team. You can get feedback, suggestions and answers to questions.

You can also save your test results to Fluke Cloud™ storage. No more writing down data on paper with the possibility of transcription errors. Cloud storage gives you a fast, secure and accurate way to storing all your test and create test certificates with Fluke DMS.

## 1663

### The ideal tester for hard-working professionals

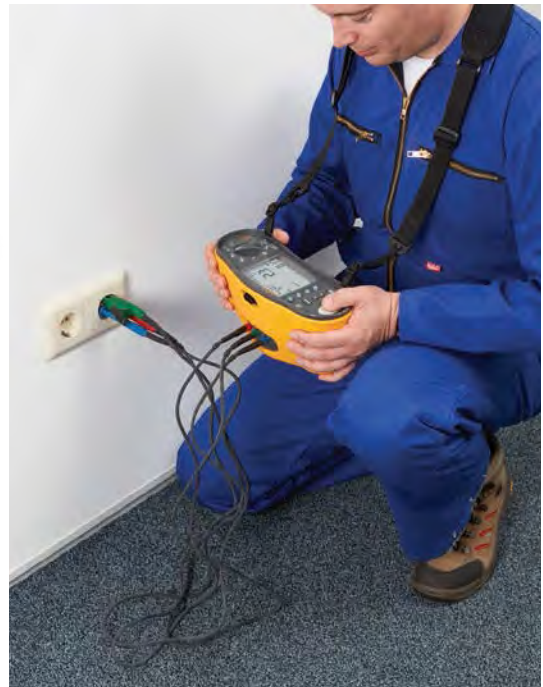
This instrument is ideal for professional users—full-featured functionality, advanced measurement capability, yet it is still easy to use. Operation is intuitive and easily mastered by all levels of field workers.



## 1662

### A solid, basic installation tester

The Fluke 1662 gives you Fluke reliability, simple operation and all the testing power you need for day-in, day-out installation testing.



Kit shown is U.K. only. Contents vary by region.

# The right accessories for your Fluke tools

## DMS COMPL Software for Installation Tester Fluke 1663 and 1664 FC and Portable Appliance Tester Fluke 6500-2

The Fluke DMS (Data Management Software) is an efficient program for administration and reporting of installation tests. Supporting reports for appliance testing in for UK, Austria, Germany, Netherlands

- Allows direct download from instrument into PC
- Comprehensive data management
- Easy to use with clear, logical database structure
- Automatic generation of new testing records
- Print test reports and certificate
- Compatible with Windows 7, 8, 10 and XP

## DMS COMPL PROF Software for the Fluke 1662, 1663, 1664 FC and Fluke 6500-2

Same as DMS COMPL Software plus:

- Four different user groups can be configured for use by multiple people
- Comparison and update of different DMS databases
- Evaluation of test results for installation testing
- Printout of bar coded test and appliance numbers via software interface to external software for barcode printing
- New data records for tests are automatically created and can be easily printed
- Direct creation and printing of unique testing reports

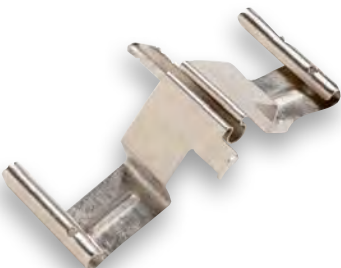
### ES165X Earth Spike Kit



Earth Spike Test kit for Fluke 1663 and 1664 FC, contents:

- Auxiliary earth probes
- Test connection leads and crocodile clips
- Purpose-made carry case

### Zero adapter



- For easy test lead compensation

### TP165X Remote Test Probe



Slim probe with test button keeps your eyes on the panel while probing hard to reach points. This remote probe is powered by the tester so always operable (does not require additional batteries).

### Mains cord



FLK-166X-MAIN TEST CORD, UK



FLK-166X-MAIN TEST CORD, SOLUTION (EU)

### TLK290 Flexible Socket Probe Set



Set includes three Flexible Socket Probes and a Large Alligator Clip

- Test probe set to be used on motor and three phase sockets
- Probes have flexible test points that fits securely between 4 and 8 mm sockets
- For use with 4 mm shrouded test leads, such as Fluke TL224
- Safe contact e.g. in CEE 16 A and CEE 32 A three phase sockets
- CAT III 1000 V/CAT IV 600 V, 8 A

# Specifications

Features by model			
Measurement Function	1664	1663	1662
Insulation PreTest safety function NEW	•		
Insulation at L-N, N-PE inputs NEW	•		
Auto Test sequence NEW	•		
Loop and line resistance—mΩ resolution	•		
Continuity at L-N, N-PE inputs NEW	•	•	
Test smooth dc sensitive RCDs (Type B/B+)	•	•	
Earth resistance	•	•	
Voltage (t-rms) and frequency	•	•	•
Wiring polarity checker, detects broken PE and N wires	•	•	•
Insulation resistance	•	•	•
Continuity and resistance	•	•	•
Measure motor windings with continuity test (@ 10 mA)	•	•	•
Loop and line resistance	•	•	•
Prospective earth fault current (PEFC/IK)	•	•	•
Prospective short-circuit current (PSC/IK)	•	•	•
RCD trip time	•	•	•
RCD trip current (ramp test)	•	•	•
Measures trip time and current for RCD type A and AC in one test	•	•	•
RCD variable current	•	•	•
Automatic RCD test sequence	•	•	•
Phase sequence test	•	•	•
Other features			
Fluke Connect® compatibility NEW	•		
ShareLive™ calling NEW	•		
Fluke Cloud™ storage NEW	•		
On/Off switchable auto-start for RCD and Looptest NEW	•	•	•
Self-test	•	•	•
Illuminated display	•	•	•
Memory, interface			
Z Max memory NEW	•	•	
Memory	•	•	•
IR-USB and BLE interface (when used with optional Fluke DMS and FVF software)	IR-USB/BLE	IR-USB	
Included Accessories			
Heavy duty mains cord with single input connector NEW	•	•	•
Hard case	•	•	•
Remote control probe	•	•	•
Zero adapter	•	•	•

## General Specifications

Specification	Characteristics
Size	10 cm (L) x 25 cm (W) x 12.5 cm (H)
Weight (incl. batteries)	approx. 1.3 kg
Battery size, quantity	1.5V type AA (IEC LR6), 6 pcs.
Sealing	IP 40
Safety	Complies with IEC/EN61010-1, UL61010, ANSI/ISA -s82.02.01 and CAN/CSA c22.2 No. 1010
Overvoltage	CAT III/500 V; CAT IV 300 V
Performance	IEC/EN61557-1 to IEC/EN61557-7 and IEC/EN61557-10

## AC and DC voltage Measurement (trms)

Range	Resolution	Accuracy	Input Impedance	Overload Protection
500 V	0.1 V	0.8 % + 3	360 kΩ	660 V rms

## Continuity Testing (RLO)

Range (Autoranging)	Resolution	Open Circuit Voltage
20 Ω/200 Ω/2000 Ω	0.01 Ω/0.1 Ω/1 Ω	> 4 V

## Loop and Line Impedance (ZI)

Range	Resolution
10 Ω (Hi current mΩ mode) /20 Ω/200 Ω/2000 Ω	1 mΩ/ 0.01 Ω/ 0.1 Ω/1Ω

**Prospective Earth Fault Current, PSC Test**

Range	Resolution
1000 A/10 kA (50 kA)	1 A/0.1 kA

**Computation:** Prospective Earth Fault Current (PEFC) or Prospective Short Circuit Current (PSC) determined by dividing measured mains voltage by measured loop (L-PE) resistance or line (L-N) resistance, respectively.

**Insulation Resistance Measurement (RISO)**

Test Voltages		Accuracy of Test Voltage (at rated test current)
<b>Model 1662</b> 100-250-500-1000 V	<b>Model 1663, Model 1664 FC</b> 50-100-250-500-1000 V	+10 %, - 0 %

Test Voltage	Insulation Resistance Range	Resolution	Test Current
50 V	20 MΩ/50 MΩ	0.01 MΩ/0.1 MΩ	1 mA @ 50 kΩ
100 V	20 MΩ/100 MΩ	0.01 MΩ/0.1 MΩ	1 mA @ 100 kΩ
250 V	20 MΩ/200 MΩ	0.01 MΩ/0.1 MΩ	1 mA @ 250 kΩ
500 V	20 MΩ/200 MΩ/500 MΩ	0.01 MΩ/0.1 MΩ/1 MΩ	1 mA @ 500 kΩ
1000 V	20 MΩ/200 MΩ/1000 MΩ	0.01 MΩ/0.1 MΩ/1 MΩ	1 mA @ 1 MΩ

**RCD testing, RCD types tested**

RCD Type		Model 1662	Model 1663, 1664 FC
AC <sup>1</sup>	G <sup>2</sup> ,S <sup>3</sup>	A/F <sup>4</sup> , AC <sup>1</sup> , G <sup>2</sup> ,S <sup>3</sup>	A/F, AC, B/B+, G, S

Notes <sup>1</sup> Responds to AC. <sup>2</sup>General, no delay. <sup>3</sup>Time delay. <sup>4</sup>Responds to pulsed signal. <sup>5</sup>Responds to smooth DC signal

**Trip time test (ΔT)**

Current Settings <sup>1</sup>	Multiplier	Measurement Range	
		RCD Type G	RCD Type S
10-30-100-300-500-1000 mA – VAR	x ½, x 1	310 ms	510 ms
10-30-100 mA	x 5	50 ms	160 ms

<sup>1</sup>1000 mA type AC only. 700 mA maximum type A in VAR mode, VAR mode not available for type B.


**RCD trip current measurement/ramp test (Index<sub>ΔN</sub>)**

Current Range	Step Size	Dwell Time		Measurement Accuracy
		Type G	Type S	
30% to 110% of RCD rated current	10% of Index <sub>ΔN</sub>	300 ms/step	500 ms/step	± 5%
<b>Notes</b> 30 % to 150 % for Type A I <sub>ΔN</sub> > 10 mA 30 % to 210 % for Type A I <sub>ΔN</sub> = 10mA 20 % to 210 % for Type B		<b>Specified trip current ranges (EN 61008-1):</b> 50 % to 100 % for Type AC 35 % to 140 % for Type A (>10 mA) 35 % to 200 % for Type A (≤10 mA) 50 % to 200 % for Type B 5 % for Type B		

**Earth resistance test (RE) Model 1664 FC and 1663 only**

Range	Resolution	Frequency	Output Voltage
200 Ω/2000 Ω	0.1 Ω/1Ω	128 Hz	25 V

**Phase sequence indicator**

Icon	Range	Display
	100 to 500 V	"1-2-3: or "3-2-1"
Phase Sequence indicator is active		



**Included Accessories**

6x AA (IEC LR6) batteries, C1600 hard carrying case, zero adapter, heavy duty mains cord, TL1665 STD standard test lead set (FTP/UK fused probes, UK only), padded neck strap and waist strap, quick reference guide, TP165X Remote control probe and lead, user's manual on CD-ROM

**Ordering Information**

**Fluke 1664 FC** Multifunction Installation Tester with Auto Test, Insulation PreTest, Fluke Connect® compatibility

**Fluke 1663** Multifunction Installation Tester

**Fluke 1662** Multifunction Installation Tester

**Preventive maintenance simplified. Rework eliminated.**

Save time and improve the reliability of your maintenance data by wirelessly syncing measurements using the Fluke Connect® system.

- Eliminate data-entry errors by saving measurements directly from the tool and associating them with the work order, report or asset record.
- Maximize uptime and make confident maintenance decisions with data you can trust and trace.
- Access baseline, historical and current measurements by asset.
- Move away from clipboards, notebooks and multiple spreadsheets with a wireless one-step measurement transfer.
- Share your measurement data using ShareLive™ video calls and emails.
- The **Fluke 1664 FC** is part of a growing system of connected test tools and equipment maintenance software. Visit the website to learn more about the Fluke Connect® system.

**Fluke.** Keeping your world up and running.®



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5/2016 6007084a-en

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