

TECHNICAL DATA

Fluke 1660 Series Multifunction Installation Testers



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



FLUKE CONNECT COMPATIBLE (1664 FC ONLY)

View test results on your smartphone via Fluke Connect® mobile app and Data Management Software (Fluke DMS, sold separately). Download the free Fluke Connect app to enable wireless data transmission and Fluke Cloud™ storage.

INSULATION PRETEST (1664 FC ONLY)

The new Fluke 1660 Series Installation Testers are the only installation testers that help prevent damage to connected appliances.

AUTO TEST SEQUENCE (1664 FC ONLY)

Start a sequence of seven critical tests with one press of the TEST button.

HEAVY DUTY, SINGLE INPUT LINE CORD

Guards against failures in the field.

WARRANTY

Three-year standard warranty.

Reduce test time up to 40% with Auto Test

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

Insulation PreTest

Protect the installation. Avoid costly mistakes.

The Fluke 1664 FC Installation Tester is the only installation 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. This helps eliminate accidental damage to peripheral equipment and keeps your customers happy.

Fluke Connect®, ShareLive™ calling and Fluke Cloud™ storage

Share from anywhere

Save time—eliminate data entry by wirelessly syncing measurements directly from your installation tester and share with your team using the Fluke Connect system. Having access to measurements simultaneous at the inspection site and from the office or an off-site location enables faster decision making and real time collaboration between team members.

Fluke Cloud™ storage

Retrieve stored results from anywhere

Cloud storage allows you to retrieve stored results whether you are in the office or in the field to make decisions in real time. Fluke Connect uses radio-enabled test tools and a mobile app to transfer measurements straight from the field to a secure cloud location, where the data can be accessed by team members. Plus you can import the data into Fluke DMS to process and generate certificates.



Key product capabilities

The 1660 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 all relevant local standards.

Fluke 1664 FC

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 even have work orders sent to your job site.

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 data and create test certificates with Fluke DMS.

Fluke 1663

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

Fluke 1662

A solid, basic installation tester. The Fluke 1662 gives you Fluke reliability, simple operation and all the testing power you need for basic installation testing.

Features by model

Measurement function	1662	1663	1664 FC
Insulation-PreTest™ safety function NEW			•
Insulation at L-N, L-PE, N-PE inputs NEW			•
Auto Test sequence NEW			•
Loop and line resistance—mΩ resolution			•
Continuity at L-N, L-PE, N-PE inputs NEW		•	•
Test smooth dc sensitive RCDs (Type B/B+)		•	•
Earth resistance		•	•
Voltage trms (ac and dc) 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 test current	•	•	•
Automatic RCD test sequence	•	•	•
Phase sequence test	•	•	•

Other features	1662	1663	1664 FC
Fluke Connect® compatibility NEW			•
ShareLive™ calling NEW			•
Fluke Cloud™ storage NEW			•
On/Off switchable Auto Start for RCD and Loopstest NEW	•	•	•
Self-test	•	•	•
Illuminated display	•	•	•
Memory, interface			
Z Max memory NEW		•	•
Memory	•	•	•
IR-USB and BLE interface (use with optional Fluke DMS software and FVF)		IR-USB	IR-USB/BLE
Included Accessories			
Heavy duty mains cord with single input connector NEW	•	•	•
Hard case	•	•	•
Remote control probe	•	•	•
Zero adapter	•	•	•

General specifications

Specification	Characteristic
Size	10 cm (L) x 25 cm (W) x 12.5 cm (H)
Weight (incl. batteries)	approx. 1.3 kg
Battery size, quantity	1.5 V 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	Input Impedance	Overload Protection
500 V	0.1 V	3.3 MΩ	660 V rms

Continuity testing (R_{LO})

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

Insulation resistance measurement (R_{ISO})

Test voltages	
1662	1663/1664 FC
100-250-500-1000 V	50-100-250-500-1000 V

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

Insulation pretest

Insulation safety pretest	Requires to connect the Tester to L, N and PE.
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Loop and line impedance (Z_l)

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.

RCD testing, RCD types tested

RCD Type		Model 1662	Model 1663/1664 FC
AC ¹	G ² , S ³	A/F ⁴ , AC ¹ , G ² , S ³	A/F, AC, B/B+ ⁵ , G, S

¹Responds to AC. ²General, no delay. ³Time delay. ⁴Responds to pulsed signal. ⁵Responds to smooth DC signal.

RCD trip time test (ΔT)

Current Settings ¹	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

¹1000 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 (I_{ΔN})

Current Range	Step Size	Dwell Time		Measurement Accuracy
		Type G	Type S	
30 % to 110 % of RCD rated current ¹	10 % of I _{ΔN} ²	300 ms/step	500 ms/step	± 5 %
Notes 30 % to 210 % for Type A I _{ΔN} = 10mA 20 % to 210 % for Type B		Specified trip current ranges (EN 61008-1): 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		

¹30 % to 150 % for Type A I_{ΔN} > 10 mA. ²5 % 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
Phase Sequence indicator is active	100 to 500 V	"1-2-3": or "3-2-1"



Included Accessories

6x AA (IEC LR6) cell batteries,
C1600 hard carrying case, zero
adapter, heavy duty mains cord,
STD standard test lead set,
padded carrying and waist strap,
quick reference guide, TP165X
remote control probe and lead set
(FTP/UK fused probes, UK only),
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.
- **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.

Find out more at flukeconnect.com



All trademarks are the property of their respective owners. WiFi or cellular service required to share data. Smartphone, wireless service and data plan not included with purchase. First 5 GB of storage is free. Phone support details can be viewed at fluke.com/phones.

Smartphone wireless service and data plan not included with purchase.
Fluke Connect® is not available in all countries.

Fluke. Keeping your world up and running.®.

Fluke Corporation
PO Box 9090, Everett, WA 98206 U.S.A.
Fluke Europe B.V.
PO Box 1186, 5602 BD
Eindhoven, The Netherlands

For more information call:
In the U.S.A. (800) 443-5853 or
Fax (425) 446-5116
In Europe/M-East/Africa +31 (0)40 267 5100 or
Fax +31 (0)40 267 5222
In Canada (800)-36-FLUKE or
Fax (905) 890-6866
From other countries +1 (425) 446-5500 or
Fax +1 (425) 446-5116
Web access: <http://www.fluke.com>

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TECHNICAL DATA

Fluke T6 Electrical Testers with FieldSense technology



Measure voltage...without test leads

Measure voltage up to 1000 V ac through the open fork, without test lead contact to live voltage.* Without opening covers or removing wire nuts. On wires up to AWG 4/0 (120 mm²), carrying as much as 200 A. It will change your job. Safer. Faster. Easier.

Product Highlights

- FieldSense technology for ac voltage, current and frequency measurement without making electrical contact to live voltage*
- Simultaneous voltage and current display (T6-1000)—shows all power supply measurements at a glance for efficient troubleshooting
- 1 to 1000 V ac or dc (T6-1000); 600 V ac or dc (T6-600)
- 0.1 to 200 A ac
- Resistance 1 Ω to 100 kΩ (T6-1000), 1 Ω to 2 kΩ (T6-600)
- Frequency measurement 45 Hz to 66 Hz (T6-1000)
- Works with wires up to AWG 4/0 (120 mm²) with a 17.8 mm jaw opening.
- HOLD button temporarily freezes the reading for easy viewing
- Easy to read display with backlight
- Accepts optional Fluke TPAK Magnetic Meter Hanger for convenient operation
- Standard two-year warranty; extendable to four years through product registration within 45 days of purchase*

+ Requires capacitive path to ground, provided through user in most applications. Ground connection via test lead may be required in some situations.

* Register product online within 45 days of purchase to extend warranty to four years. See <http://a.fluke.com/registration> for details.



Specifications

Measurement Specifications					
Function	Requires test leads	T6-600	T6-1000	Resolution	Accuracy ⁽¹⁾
		Range	Range		
FieldSense ac voltage	No	600 V	1000 V	1 V	±(3 % + 3 counts) ^{[2] [3]} 45 Hz - 66 Hz
FieldSense ac current	No	200.0 A	200.0 A	0.1 A	±(3 % + 3 counts) 45 Hz - 66 Hz
FieldSense frequency [Hz]	No		45 Hz - 66 Hz	1 Hz	±(1 % + 2 counts) ^[3]
Volts ac	Yes	600 V	1000 V	1 V	±(1.5 % + 2 counts) 45 Hz - 66 Hz
Volts dc	Yes	600 V	1000 V	1 V	±(1 % + 2 counts)
Resistance	Yes	2000 Ω	2000 Ω	1 Ω	±(1 % + 2 counts)
	Yes		20.00 kΩ	0.01 kΩ	±(1 % + 2 counts)
	Yes		100.0 kΩ	0.1 kΩ	±(1 % + 2 counts)
Safety (measurement category)		600 V CAT III	1000 V CAT III 600 V CAT IV		

Accuracy⁽¹⁾: ± ([% of reading] + [number of least significant digits]). Accuracy is specified for 1 year after calibration, at 18 °C to 28 °C (64 °F to 82 °F) with relative humidity to 90 %. AC conversions are ac-coupled, RMS responding.

Accuracy⁽²⁾: Add 3 % without an external ground connection. External ground connection required for user wearing insulated gloves, standing on an insulated ladder and otherwise insulated from earth ground.

Accuracy⁽³⁾: FieldSense specified from 16V to 100% of range.

General Specifications

Calibration	1-year calibration cycle
Dimensions	61.1 mm x 259.3 mm x 43.8 mm
Weight	0.35 kg (0.78 lb)
Fork opening	17.8 mm
Temperature Operating: Storage:	-10 °C to +50 °C (14 °F to 122 °F) -30 °C to +60 °C (-22 °F to +140 °F)
Altitude Operating: Storage:	2,000 m (6,562 feet) 10,000 m (32,808 feet)
Relative Humidity	0 % to 90 %, 5 °C to 30 °C (41 °F to 86 °F) 0 % to 75 %, 30 °C to 40 °C (86 °F to 104 °F) 0 % to 45 %, 40 °C to 50 °C (104 °F to 122 °F)
Battery Type and Life	2 x AA (IEC LR6); 360 hours continuous, typical; 200 hours using FieldSense
Temperature coefficient	0.1 x (specified accuracy) / °C for <18 °C or >28 °C (< 64.4 °F or > 82.4 °F)
Safety	IEC/EN 61010-1, IEC/EN 61010-2-033: Pollution Degree 2
Electromagnetic Environment	IEC/EN 61326-1: Portable



Ordering information

Fluke T6-600 Electrical Tester

Fluke T6-1000 Electrical Tester

Included with product

Attached test leads with removable 4 mm probe caps, user documentation

Optional accessories

H-T6 Belt Holster

TPAK Magnetic Hanger

PRV240FS Proving Unit

TP1 Probe Set, Flat-Blade (US/UK flat tip)

TP38 Probe set, round (EU)

AC285 SureGrip Alligator Clips

AC220 SureGrip Alligator Clips

Service Information Sheet, PN 686953

Fluke. Keeping your world up and running.®

Fluke Corporation

PO Box 9090, Everett, WA 98206 U.S.A.

Fluke Europe B.V.

PO Box 1186, 5602 BD Eindhoven, The Netherlands

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For more information call:

In the U.S.A. (800) 443-5853 or Fax (425) 446-5116

In Europe/M-East/Africa +31 (0)40 267 5100 or Fax +31 (0)40 267 5222

In Canada (800)-36-FLUKE or Fax (905) 890-6866

From other countries +1 (425) 446-5500 or Fax +1 (425) 446-5116

Web access: <http://www.fluke.com>

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* Two-year additional warranty offer may be discontinued without notice