

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 patented 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. |
|---------------------------|--|

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 (Index_{ΔN})


| Current Range | Step Size | Dwell Time | | Measurement Accuracy |
|---|--|---|-------------|----------------------|
| | | Type G | Type S | |
| 30 % to 110 % of RCD rated current ¹ | 10 % of index 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>

Modification of this document is not permitted without written permission from Fluke Corporation.

©2016 Fluke Corporation.
Specifications subject to change without notice.
Printed in U.S.A. 2/2016 6004616a-en