

# Fluke 1663 Installation Multifunction Tester



## Key features

- Tests continuity at L-N, N-PE inputs
- Tests smooth dc sensitive RCDs (Type B)
- Tests earth resistance, voltage, and frequency
- Offers multiple test voltages: 50 V, 100 V, 250 V, 500 V, 1000 V
- 6 mA RDC-DD testing for EV charging stations

## Product overview: Fluke 1663 Installation Multifunction Tester

Fluke 1663 Multifunction Installation Tester is the ideal choice for hard working professionals

The 1663 installation tester delivers the full-featured functionality and advanced measurement capabilities that professional installers need. It is compact and lightweight (less than 1.3 kg) and comes with a padded carrying and waist strap for convenient handling. Operation is intuitive and easily mastered by all levels of workers so you can put it to work immediately for quick and efficient testing to all local regulations. Additional features like On/Off switchable auto-start for RCD and loop test, as well as a self-test, saves time and gives you more confidence in your results.

Test EV charging station RCD type A-EV or RDC-DD DC protection devices

Perform tests on EV charging station DC protection devices using the RCD type B (smooth DC currents) VAR mode.

which generates the test currents for RCD type A-EV or RDC-DD acc. to IEC 62955 (6/60/200 mA and ramp <2 to 6 mA ramp). This allows the quick and easy testing of additional 6 mA DC monitors on charging points and can be used in conjunction with the Fluke FEV100 or FEV300.

## Software compatible

The Fluke 1663 is compatible with TruTest™, a Fluke software designed to eliminate the hassle associated with traditional electrical system data management and reporting. Whether you are testing fixed wire installations, or appliances in an office, verifying repairs in a workshop, or performing annual inspections, proper data management is critical for producing easy-to-understand reports for clients. TruTest™ Software allows you to quickly and easily import measurement results directly from your test instruments, manage files transferred from instruments, or manually enter data as needed.

## Other useful capabilities:

- Checks wiring polarity to detect broken N wires
- Measures insulation resistance and loop and line resistance
- Includes Z-max memory for loop tests to support easy evaluation of the highest loop test value
- Provides unique zero adapter for fast, reliable and accurate test lead and mains cord compensation
- Measures motor windings with continuity test
- Calculates prospective earth fault current (PEFC/IK) and prospective short-circuit current (PSC/IK)
- Measures RCD switching time and tripping level (ramp test)
- Measures trip time and current for RCD type A & AC in one test
- Measures RCD variable current
- Provides automatic RCD test sequence
- Includes a phase sequence indicator
- Safety rated CAT III 500V, CAT IV 300V

# Specifications: Fluke 1663 Installation Multifunction Tester

Specifications: Fluke 1663 and 1664 FC Installation Multifunction Testers

| AC voltage measurement                   |                       |
|------------------------------------------|-----------------------|
| Range                                    | 500 V                 |
| Resolution                               | 0.1 V                 |
| Accuracy 45 Hz – 66 Hz                   | 0.8% + 3              |
| Input impedance                          | 360 kΩ                |
| Overload protection                      | 660 V rms             |
| Continuity testing (RLO)                 |                       |
| Range (autoranging)                      | 20 Ω / 200 Ω / 2000 Ω |
| Resolution                               | 0.01 Ω / 0.1 Ω / 1 Ω  |
| Open Circuit Voltage                     | >4 V                  |
| Insulation resistance measurement (RISO) |                       |
| Test voltages                            | 50-100-250-500-1000 V |

|                                                  |                                                                                                                                                                                                            |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accuracy of test voltage (at rated test current) | +10%, -0%                                                                                                                                                                                                  |
| Test voltage                                     | 50 V<br>100 V<br>250 V<br>500 V<br>1000 V                                                                                                                                                                  |
| Insulation resistance range                      | 20 MΩ / 50 MΩ<br>20 MΩ / 100 MΩ<br>20 MΩ / 200 MΩ<br>20 MΩ / 200 MΩ / 500 MΩ<br>20 MΩ / 200 MΩ / 1000 MΩ                                                                                                   |
| Resolution                                       | 0.01 MΩ / 0.1 MΩ<br>0.01 MΩ / 0.1 MΩ<br>0.01 MΩ / 0.1 MΩ<br>0.01 MΩ / 0.1 MΩ / 1 MΩ<br>0.01 MΩ / 0.1 MΩ / 1 MΩ                                                                                             |
| Test current                                     | 1 mA @ 50 kΩ<br>1 mA @ 100 kΩ<br>1 mA @ 250 kΩ<br>1 mA @ 500 kΩ<br>1 mA @ 1 MΩ                                                                                                                             |
| <b>Loop and line impedance (ZI)</b>              |                                                                                                                                                                                                            |
| Range                                            | 10 Ω (Hi current mΩ mode)/20 Ω/200 Ω/2000 Ω                                                                                                                                                                |
| Resolution                                       | 0.001 Ω/ 0.01 Ω/ 0.1 Ω/1 Ω                                                                                                                                                                                 |
| <b>Prospective earth fault current, PSC test</b> |                                                                                                                                                                                                            |
| Range                                            | 1000 A / 10 kA (50 kA)                                                                                                                                                                                     |
| Resolution                                       | 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. |
| <b>RCD testing, RCD types tested</b>             |                                                                                                                                                                                                            |
| RCD Type                                         | AC <sup>1</sup><br>G <sup>2</sup> ,S <sup>3</sup>                                                                                                                                                          |
| Model 1663                                       | A4, AC <sup>1</sup> , G <sup>2</sup> ,S <sup>3</sup>                                                                                                                                                       |
| Model 1664 FC                                    | A, AC, B5, S                                                                                                                                                                                               |

|                                                     |                                                                                                                                                                                                                                        |                                             |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Notes                                               | <sup>1</sup> Responds to AC<br><sup>2</sup> General, no delay<br><sup>3</sup> Time delay<br><sup>4</sup> Responds to pulsed signal<br><sup>5</sup> Responds to smooth DC signal                                                        |                                             |
| Tripping speed test (ΔT)                            |                                                                                                                                                                                                                                        |                                             |
| Current settings <sup>1</sup>                       | 10-30-100-300-500-1000 mA – VAR<br>10-30-100 mA                                                                                                                                                                                        |                                             |
| Multiplier                                          | x ½, x 1<br>x 5<br>VAR Mode Type B - 6, 60, 200 mA                                                                                                                                                                                     |                                             |
| Measurement range                                   | RCD Type G                                                                                                                                                                                                                             | 310 ms<br>50 ms                             |
|                                                     | RCD Type S                                                                                                                                                                                                                             | 510 ms<br>160 ms                            |
|                                                     | EV / RDC-DD                                                                                                                                                                                                                            | 6 mA - 10s<br>60 mA - 0.3s<br>200 mA - 0.1s |
| Notes                                               | <sup>1</sup> 1000 mA type AC only<br>700 mA maximum type A in VAR mode<br>The VAR Mode at RCD type B (smooth DC currents) generates the test currents acc. to IEC 62955 for RCD type A-EV or RDC-DD (6/60/200 mA and ramp <2 to 6 mA). |                                             |
| RCD/FI-Tripping Current Measurement/Ramp Test (IΔN) |                                                                                                                                                                                                                                        |                                             |
| Current range                                       | 30% to 110% of RCD rated current <sup>1</sup><br><2 mA to 6 mA smooth DC <sup>3</sup>                                                                                                                                                  |                                             |
| Step size                                           | 10% of IΔN <sup>2</sup><br>Linear rising within 30 s                                                                                                                                                                                   |                                             |
| Dwell time                                          | RCD Type G                                                                                                                                                                                                                             | 300 ms/step                                 |
|                                                     | RCD Type S                                                                                                                                                                                                                             | 500 ms/step                                 |
| Measurement accuracy                                | ±5%                                                                                                                                                                                                                                    |                                             |
| Specified trip current ranges (EN 61008-1)          | 50% to 100% for Type AC<br>35% to 140% for Type A (>10 mA)<br>35% to 200% for Type A (≤10 mA)<br>50% to 200% for Type B                                                                                                                |                                             |

|                                   |                                                                                                                                                                                                                                          |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes                             | <sup>1</sup> 30% to 150% for Type A $I\Delta N > 10 \text{ mA}$<br>30% to 210% for Type A $I\Delta N = 10 \text{ mA}$<br>20% to 210% for Type B<br><sup>2</sup> 5% for Type B<br><sup>3</sup> For RCD type A-EV/RDC-DD acc. to IEC 62955 |
| <b>Earth Resistance Test (RE)</b> |                                                                                                                                                                                                                                          |
| Range                             | 200 $\Omega$ / 2000 $\Omega$                                                                                                                                                                                                             |
| Resolution                        | 0.1 $\Omega$ / 1 $\Omega$                                                                                                                                                                                                                |
| Frequency                         | 128 Hz                                                                                                                                                                                                                                   |
| Output Voltage                    | 25 V                                                                                                                                                                                                                                     |
| <b>Phase Sequence Indication</b>  |                                                                                                                                                                                                                                          |
| Icon                              | <br>Phase Sequence indicator is active.                                                                                                                 |
| <b>General Specifications</b>     |                                                                                                                                                                                                                                          |
| Size (L x W x H)                  | 10 x 25 x 12.5 cm                                                                                                                                                                                                                        |
| Weight (incl. batteries)          | 1.3 Kg                                                                                                                                                                                                                                   |
| Battery size, quantity            | Type AA, 6 ea.                                                                                                                                                                                                                           |
| Sealing                           | IP-40                                                                                                                                                                                                                                    |
| Safety                            | Complies with EN/IEC 61010-1 and EN/IEC 61010-2-034                                                                                                                                                                                      |
| Overvoltage                       | CAT III / 500V; CAT IV 300V                                                                                                                                                                                                              |
| Performance                       | EN61557-1 to EN61557-7 and EN61557-10                                                                                                                                                                                                    |

## Ordering information



### **FLK-1663**

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Includes:

- 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
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**Fluke Europe B.V.**

P.O. Box 1186  
5602 BD Eindhoven  
The Netherlands  
[www.fluke.com/en](http://www.fluke.com/en)

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07/2026

**For more information call:**

In Middle East/Africa  
+31 (0)40 267 5100

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