

# Fluke 1555 and 1550C Insulation Resistance Testers

## Technical Data

Digital insulation testing up to 10 kV, ideal for wide range of high voltage applications

### Evaluate the trends, eliminate the doubt

The Fluke 1555 and Fluke 1550C insulation resistance testers, offer digital insulation testing up to 10 kV, making them ideal for testing a wide range of high voltage equipment including switchgear, motors, generators and cables.

Fluke insulation testers can now conduct the entire range of test voltages specified in IEEE 43-2000 with a best in class, 3 year warranty and CAT IV 600 V safety rating. With measurement storage and PC interface, the 1555 and 1550C are perfect tools for preventative or predictive maintenance programs designed to identify potential equipment failures before they occur.

### Features include:

- Test voltages up to 10 kV provides solutions for all applications
- CAT III 1000 V, CAT IV 600 V safety rating
- Warning function alerts the user that line voltage is present and gives the voltage reading up to 600 V ac or dc for increased user safety
- Selectable test voltages in 50 V steps from 250 V to 1000 V, and 100 V steps above 1000 V
- Measurements can be stored in up to 99 memory locations, with each location assigned a unique, user defined, label for easy recall
- Long battery life gives the user over 750 tests between charges
- Automatic calculation of Dielectric Absorption (DAR) and Polarization Index (PI) with no additional setup
- Guard system eliminates the effect of surface leakage current on high-resistance measurements
- Large digital/analog LCD for easy viewing
- Capacitance and leakage current measurement
- Ramp function for breakdown testing
- Resistance measurements up to 2 TΩ
- Timer settings up to 99 minutes for timed tests
- 3-year warranty



## Electrical specifications

The tester's accuracy is specified for one year after calibration at operating temperatures of 0 °C to 35 °C. For operating temperatures outside the range (-20 °C to 0 °C and 35 °C to 50 °C), add  $\pm .25\%$  per °C, except on the 20 % bands add  $\pm 1\%$  per °C.

### Insulation resistance measurement

| Test voltage (dc)   | Range                                                                                                      | Accuracy ( $\pm$ reading)                 |
|---------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| 250 V               | < 250 k $\Omega$<br>250 k $\Omega$ to 5 G $\Omega$<br>5 G $\Omega$ to 50 G $\Omega$<br>> 50 G $\Omega$     | unspecified<br>5 %<br>20 %<br>unspecified |
| 500 V               | < 500 k $\Omega$<br>500 k $\Omega$ to 10 G $\Omega$<br>10 G $\Omega$ to 100 G $\Omega$<br>> 100 G $\Omega$ | unspecified<br>5 %<br>20 %<br>unspecified |
| 1000 V              | < 1 M $\Omega$<br>1 M $\Omega$ to 20 G $\Omega$<br>20 G $\Omega$ to 200 G $\Omega$<br>> 200 G $\Omega$     | unspecified<br>5 %<br>20 %<br>unspecified |
| 2500 V              | < 2.5 M $\Omega$<br>2.5 M $\Omega$ to 50 G $\Omega$<br>50 G $\Omega$ to 500 G $\Omega$<br>> 500 G $\Omega$ | unspecified<br>5 %<br>20 %<br>unspecified |
| 5000 V              | < 5 M $\Omega$<br>5 M $\Omega$ to 100 G $\Omega$<br>100 G $\Omega$ to 1 T $\Omega$<br>> 1 T $\Omega$       | unspecified<br>5 %<br>20 %<br>unspecified |
| 10000 V (1555 Only) | < 10 M $\Omega$<br>10 M $\Omega$ to 200 G $\Omega$<br>200 G $\Omega$ to 2 T $\Omega$<br>> 2 T $\Omega$     | unspecified<br>5 %<br>20 %<br>unspecified |

|                                    |                                                      |
|------------------------------------|------------------------------------------------------|
| Bar graph range                    | 0 to 1 T $\Omega$ (1550C) - 0 to 2 T $\Omega$ (1555) |
| Insulation test voltage accuracy   | -0 %, +10 % at 1 mA load current                     |
| Induced ac mains current rejection | 2 mA maximum                                         |
| Charging rate for capacitive load  | 5 seconds per $\mu$ F                                |
| Discharge rate for capacitive load | 1.5 s/ $\mu$ F                                       |

|                             | Range                         | Accuracy                        |
|-----------------------------|-------------------------------|---------------------------------|
| Leakage current measurement | 1 nA to 2 mA                  | $\pm$ (5 % + 2 nA)              |
| Capacitance measurement     | 0.01 $\mu$ F to 15.00 $\mu$ F | $\pm$ (15 % rdg + 0.03 $\mu$ F) |

| Timer | Range           | Resolution                                |
|-------|-----------------|-------------------------------------------|
|       | 0 to 99 minutes | Setting: 1 minute<br>Indication: 1 second |

| Live circuit warning | Warning range                 | Voltage accuracy   |
|----------------------|-------------------------------|--------------------|
|                      | 30 V to 660 V ac/dc, 50/60 Hz | $\pm$ (15 % + 2 V) |

## General specifications

(RF connection time (binding time) can take up to 1 minute.)

|                                                                                                                                                                                                                       |                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Display                                                                                                                                                                                                               | 75 mm x 105 mm                                                                                                                                    |
| Power                                                                                                                                                                                                                 | 12 V lead-acid rechargeable battery, Yuasa NP2.8-12                                                                                               |
| Charger Input (AC)                                                                                                                                                                                                    | 85 V to 250 V ac 50/60 Hz 20 VA                                                                                                                   |
| This Class II (double insulated) instrument is supplied with a Class I (grounded) power cord. The protective earth terminal (ground pin) is not connected internally. The extra pin is for added plug retention only. |                                                                                                                                                   |
| Dimensions                                                                                                                                                                                                            | 269 mm x 277 mm x 160 mm (10.6 in x 10.9 in x 6.3 in)                                                                                             |
| Weight                                                                                                                                                                                                                | 3.7 kg (8.2 lb)                                                                                                                                   |
| Temperature (operating)                                                                                                                                                                                               | -20 °C to 50 °C (-4 °F to 122 °F)                                                                                                                 |
| Temperature (storage)                                                                                                                                                                                                 | -20 °C to 65 °C (-4 °F to 149 °F)                                                                                                                 |
| Humidity                                                                                                                                                                                                              | 80 % to 31 °C decreasing linearly to 50 % at 50 °C                                                                                                |
| Altitude                                                                                                                                                                                                              | 2000 m                                                                                                                                            |
| Enclosure sealing                                                                                                                                                                                                     | IP40                                                                                                                                              |
| Input overload protection                                                                                                                                                                                             | 1000 V ac                                                                                                                                         |
| Electromagnetic compatibility                                                                                                                                                                                         | EN 61326                                                                                                                                          |
| Certifications                                                                                                                                                                                                        |                                                                |
| Safety compliance                                                                                                                                                                                                     | IEC 61010-1: Overvoltage category II, pollution degree 2.<br>IEC 61010-2-030: Measurement 600V CAT IV / 1000V CAT III<br>IEC 61557-1, IEC 61557-2 |

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## Software specifications

Fluke ViewForms basic software requires a PC running Windows XP, Windows Vista, Windows 7 and Windows 8.

## Ordering information

1555 10 kV Insulation Tester  
1550C/Kit 5 kV Insulation Tester Kit  
1555/Kit 10 kV Insulation Tester Kit

### Optional accessories

TL1550EXT 25 foot extended test lead set  
TLK1550-RTLCT Heavy Duty Alligator Clip leads

### Included accessories

Test Cables with Alligator Clips (red, black, green)  
Infrared adapter with interface cable  
FlukeView Forms Basic CD-ROM  
AC Power Cord  
Soft Carrying Case (base models only)  
English Manual  
Users Manual on CD-ROM  
Quick Reference Card  
Software License Agreement  
Registration Card  
FlukeView Forms Installation Guide  
USB-IR Cable Installation Guide  
IP67 Hard Case (kit only)  
Certificate of Calibration (kit only)  
Heavy Duty Alligator Clip Leads (kit and 1555 only)

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Printed in U.S.A. 10/2014 6002295B\_EN

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