

# Fluke 1621

## Basic Earth Ground Tester

## Technical Data



The Fluke 1621 is an easy-to-use earth ground tester. The first line of defense in detecting reliable ground connections, the unit features basic ground testing methods including 3-pole Fall-of-Potential as well as 2-pole ground resistance. Its convenient size, rugged holster, and large, clear LCD display make it an ideal field earth tester, for most work environments. With a simple user interface and intuitive functionality, the Fluke 1621 is a handy tool for electrical contractors, utility test engineers, and earth ground specialists.

- 3-pole Fall-of-Potential earth testing for basic measurements
- 2-pole resistance measurements for added versatility
- Easily capture values with single-button operation
- Ensure accurate measurements with automatic 'noise' voltage detection
- Hazardous voltage warning offers increased user protection
- Clearly read and record data with a large, backlit display
- Rugged holster and design for tough work environments
- Portable size allows for easy transportation
- Instantly be alerted to measurements outside of your set limit, when you use the adjustable limit setting

### General specifications

<b>Measuring functions</b>	3-pole earth ground resistance, 2 pole ac resistance of a conductor, Interference voltage
<b>Intrinsic error</b>	Refers to the reference temperature range and is guaranteed for one year
<b>Measuring rate</b>	2 measurements/second
<b>Battery</b>	One 9 volt alkaline (LR61)
<b>Battery condition</b>	LO-BAT is displayed if voltage drops below 6.5 V
<b>Voltages</b>	Between jacks H/C2 and E/C1: 250 Veff maximum (effective voltage) Between jacks S/P2 and E/C1: 250 Veff maximum
<b>Climatic class</b>	VDE/VDI 3540 RZ (conforming to KWG as per DIN 40040, 4/87)
<b>Temperature performance</b>	Working: -10 °C to +50 °C (+14 °F to +122 °F) Operating: 0 °C to +35 °C (+32 °F to +95 °F) Storage: -20 °C to +60 °C (+68 °F to +140 °F) Reference: +23 °C ± 2 °C (+73 °F ± 4 °F)

**Note:** If the tester is not going to be used, or is being stored for a long period, remove the battery and store separately from the tester to avoid damage from battery leakage.

**Note:** The four temperature ranges for the tester exists to satisfy European Standards requirements; the instrument can be used over the full working temperature range by using the temperature coefficient to calculate accuracy at the ambient temperature of use.

## General specifications cont.

<b>Temperature coefficient</b>	± 0.1 % of range per degree Kelvin
<b>Safety</b>	IEC/EN 61010-1, 600 V CAT II, pollution degree 2
<b>Dimensions</b>	113 mm x 54 mm x 216 mm (4.5 in x 2.1 in x 8.5 in.), including holster
<b>Weight</b>	850 g (1.9 lb), including standard accessories, volume approximately 600 cm <sup>3</sup>

## Electrical specifications

### Maximum deviations

Parameter	Influence factor	Deviation influence
E <sub>1</sub>	Position	0 %
E <sub>2</sub>	Supply voltage	0 %
E <sub>3</sub>	Temperature E <sub>3</sub>	2.3 %
E <sub>4</sub>	Serial interference voltage (20 V)	0.6 %
E <sub>5</sub>	Probe- and auxiliary probe resistance	10 %

<b>Test voltage</b>	3.7 kV
<b>Protection type</b>	IP 40; IEC/EN 60529
<b>Electromagnetic compatibility</b>	Emission: IEC/EN 61326 Class B
	Immunity: IEC/EN 61326 Annex C

### R<sub>E</sub> resistance measurement

<b>Measuring method</b>	Current-voltage measurement with improved cross-talk attenuation, no compensation of measuring lead resistance, with probe (3-pole) or without probe (2-pole), as per IEC/EN 61557-5
<b>Open circuit voltage</b>	23 to 24 V ac
<b>Short circuit current</b>	> 50 mA ac
<b>Measuring frequency</b>	128 Hz
<b>Maximum permissible overload</b>	250 V <sub>eff</sub>

Measuring range	Resolution	Display range	Intrinsic uncertainty	Operating uncertainty IEC 61557 <sup>[1]</sup>
0.15 Ω to 20 Ω	0.01 Ω	0 to 19.99 Ω	± (6 % of measured value + 5D)	± (18 % of measured value + 5D)
200 Ω	0.1 Ω	20 to 199.9 Ω		
2 kΩ	1 Ω	200 to 1999 Ω		

**Notes:**

[1] Covers all deviations caused by influence quantities E<sub>1</sub>-E<sub>5</sub>.

If the deviation E<sub>4</sub> caused by high probe or auxiliary probe resistance is higher than specified  $\Delta$  flashes. Measured values are outside of the specified operating uncertainty.

<b>Measuring time</b>	8 seconds (average from when START is pressed)
<b>Limit input</b>	Tester retains set value even if instrument is turned off (assuming battery power supply is sufficient)

**Note:** If tester detects stray interference voltage ≥ 20 V, Ω is displayed and the measurement is not started.

### Automatic changeover of resolution

R <sub>H</sub>	Resolution
< 7 kΩ	0.01 Ω
< 50 kΩ	0.1 Ω
> 50 kΩ	1 Ω

### Interference voltage display dc + ac

<b>V<sub>max</sub></b>	30 V <sub>eff</sub>
<b>Common mode rejection</b>	> 80 dB at 50 Hz and 60 Hz
<b>R<sub>i</sub></b>	680 kΩ
<b>Measuring uncertainty</b>	< 10 % for pure ac and dc signals

## Ordering information

Fluke-1621 Earth Ground Tester

**Includes:**

- Users manual
- Two measuring leads with alligator clips, 2 m (6 ft)
- One battery, 9 V alkaline (LR61)
- One protective holster, yellow
- One CD-ROM

### Optional accessories

- Cable-Reel 50 m Ground/Earth Cable Reel 50 M Wire (162.5 ft)
- Cable-Reel 25 m Ground/Earth Cable Reel 25 M Wire (81.25 ft)
- Earth Stake Ground/Earth Stake
- ES-162P3 Stake Set for 3-Pole Measurement (includes three stakes, one 50 M cable reel, and one 25 M cable reel)

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

**Fluke Corporation**  
PO Box 9090, Everett, WA USA 98206

**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 2675 200 or Fax +31 (0) 40 2675 222  
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>

©2007 Fluke Corporation. All rights reserved. Specifications subject to change without notice. Printed in U.S.A. 6/2007 3057417 D-EN-N Rev A