

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

Measuring functions

3-pole earth ground resistance, 2 pole ac resistance of a conductor, Interference voltage

Intrinsic error

Refers to the reference temperature range and is guaranteed for one year 2 measurements/second

Measuring rate

Battery

One 9 volt alkaline (LR61)

Battery condition

LO-BAT is displayed if voltage drops below 6.5 V

Voltages

Between jacks H/C2 and E/C1: 250 Veff maximum (effective voltage)

Between jacks S/P2 and E/C1: 250 Veff maximum

Climatic class

VDE/VDI 3540 RZ (conforming to KWG as per DIN 40040, 4/87)

Temperature performance

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.

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

Electrical specifications

Maximum deviations

Parameter	Influence factor	Deviation influence	Test voltage	3.7 kV
E ₁	Position	0 %	Protection type	IP 40; IEC/EN 60529
E ₂	Supply voltage	0 %	Electromagnetic compatibility	Emission: IEC/EN 61326 Class B
E ₃	Temperature E ₃	2.3 %		Immunity: IEC/EN 61326 Annex C
E ₄	Serial interference voltage (20 V)	0.6 %		
E ₅	Probe- and auxiliary probe resistance	10 %		

R_E resistance measurement

Measuring method 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

Open circuit voltage 23 to 24 V ac

Short circuit current > 50 mA ac

Measuring frequency 128 Hz

Maximum permissible overload 250 V_{eff}

Measuring range	Resolution	Display range	Intrinsic uncertainty	Operating uncertainty IEC 61557 ^[1]
0.15 W to 20 W	0.01 W	0 to 19.99 W	± (6 % of measured value + 5D)	± (18 % of measured value + 5D)
200 W	0.1 W	20 to 199.9 W		
2 kW	1 W	200 to 1999 W		

Notes:

[1] Covers all deviations caused by influence quantities E₁-E₅.

If the deviation E₄ caused by high probe or auxiliary probe resistance is higher than specified Measured values are outside of the specified operating uncertainty. flashes.

Measuring time 8 seconds (average from when START is pressed)

Limit input 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, W is displayed and the measurement is not started.

Automatic changeover of resolution

R _H	Resolution
< 7 kW	0.01 W
< 50 kW	0.1 W
> 50 kW	1 W

Interference voltage display dc + ac

V _{max}	30 V _{eff}
Common mode rejection	> 80 dB at 50 Hz and 60 Hz
R _i	680 kW
Measuring uncertainty	< 10 % for pure ac and dc signals



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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)

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