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Fluke 1630

Earth Ground Clamp Meter

Technical Data

Earth Ground loop resistance measurements for commercial, industrial, and utility applications



The clamp-on ground testing technique used by the Fluke 1630 simplifies ground loop testing and enables non-intrusive leakage current measurement.

The compact and rugged design makes the Fluke 1630 easy to use in small places and harsh environments, while the "Display-Hold" and the continuity testing with an audible alarm function, ensures convenience in use. The novel technique means that earth ground loop testing and continuity testing can be completed without breaking the circuit.

- A wide ground loop resistance range, from 0.025 Ω to1500 Ω, to satisfy all requirements
- Large jaw opening of 35 mm (1.38 in) for tests on ground conductors and/or equipotential bus bars
- Measurement of ground leakage current, from 0.2 mA to 1000 mA, without needing to disconnect – ideal for system troubleshooting
- Wide ac current measurement range from 0.2 A to 30 A allows one instrument for multiple applications
- Continuity loop test – quickly assess whether resistance is less than 40 Ω, with audible alarm
- User-defined HI / LO Alarm limits, for rapid measurement evaluation
- Handy "Display-Hold" button for capturing readings in hard-to-reach places
- Time saving memory function automatically records and stores measured values
- Automatic self calibration ensures correct measurement every time

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Stakeless testing system

The Fluke 1630 uses the Stakeless testing method, which eliminates the need to disconnect parallel ground rods and find suitable locations for placing auxiliary ground stakes. This saves time and enables users such as industrial and utility electricians, and field service electricians and contractors, to perform earth ground loop tests in locations where it is not possible to use other techniques, such as inside buildings or on power pylons. With the Stakeless testing method, earth ground stakes are no longer necessary. The Fluke 1630 Earth Ground Clamp is placed around the earth ground rod or the connecting cable. A known voltage is induced by one half of the clamp and the current is measured by the other half. The tester automatically determines the ground loop resistance at this grounding connection.

Applications

- Earth Ground loop testing in various installations – for example, high voltage pylons, buildings, cell phone substations, RF transmitters, etc.
- Inspection of lightning protection systems
- Leakage current measurement

General specifications

Operating error	Refers to the operating temperature range and is guaranteed for 2 years
Storage temp. range	-20 °C to 60 °C (-4 °F to 140 °F)
Reference temp. range	23 °C ± 5 °C (73 °F ± 9 °F)
Storage humidity	< 75 % R_H
Operating humidity	< 85 % R_H
Display	9999 digit LC-display with special symbols
Protection	IP20 according to IEC 529/EN 60529
Safety	300 V, CAT III / pollution degree 2 IEC 61010-1
Weight	640 g (1.4 lb)
Conductor size	35 mm (1.38 in) approximately
Dimension (length x width x depth)	257 mm x 100 mm x 47 mm (1 in x 3.9 in x 1.9 in)
Emission	IEC 1000 4-2, IEC 61326-1 class B
Immunity	IEC 61000-4-2, 8 kV (air) criteria A
	IEC 61000-4-3, 3 V/m performance criteria A
Range selection	Auto
Overload indicator	"OL" on display
Measuring time	0.4 sec
Measuring frequency	3.333 kHz
Battery type	9 V alkaline (type IEC 6 LR 61)
Battery life	≥ 8 hours (continuous operation)
Power consumption	40 mA
Low battery indication	Display symbol

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Ground Loop Resistance (Autorange)

Operating temperature: 0 °C to 50 °C (14 °F to 122 °F)

Range	Resolution	Operating error[1]
0.025 - 0.250 Ω	0.002 Ω	± 1.5 % rdg ± 0.05 Ω
0.250 - 9.999 Ω	0.02 Ω	± 1.5 % rdg ± 0.1 Ω
10.00 - 99.99 Ω	0.04 Ω	± 2.0 % rdg ± 0.3 Ω
100.0 - 199.9 Ω	0.4 Ω	± 3.0 % rdg ± 1.0 Ω
200.0 - 400.0 Ω	2 Ω	± 5.0 % rdg ± 5 Ω
400.0 - 600.0 Ω	5 Ω	± 10 % rdg ± 10 Ω
600.0 - 1500 Ω	20 Ω	± 20 %

[1]Note: Loop resistance with no inductance, external magnetic field < 50 A/m, external electrical field < 1 V/m, conductor centered.

Continuity

Beep if resistance < approx. 40 Ω

Ground/leakage current mA~

(Autorange, 50/60 Hz, true-rms, crest factor < 3.0)
Operating temperature: -10 °C to 50 °C (14 °F to 122 °F)

Range	Resolution	Operating error
0.200 - 1.000 mA	0.001 mA	± 2.5 % rdg ± 0.05 mA
1.00 - 10.00 mA	0.01 mA	± 2.5 % rdg ± 0.05 mA
10.0 - 100.0 mA	0.1 mA	± 2.0 % rdg ± 0.3 mA
100 - 1000 mA	1 mA	± 2.0 % rdg ± 3 mA

Current A~

(Autorange, 50/60 Hz, true-rms, crest factor < 3.0)
Operating temperature: -10 °C to 50 °C (14 °F to 122 °F)

Range	Resolution	Operating error
0.20 - 15.00 A	0.01 A	± 2.0 % rdg ± 0.03 A
15.00 - 30.00 A	0.01 A	± 3.0 % rdg ± 0.03 A

HI/LO Limit Evaluation

Values from 0 Ω to 1510 Ω may be preset for automatic comparison. If the measured value is outside of the limit an audible and visual signal is given.

Recording

Measured values can be saved or logged with a defined time interval from 1 to 255 s. Recorded values may then be recalled on the display of the instrument.

The Fluke 1630 Earth Ground Clamp Meter includes:

- Carrying case with strap
- Resistance test loop
- Users manual in English, French, Spanish, German, Italian, Portuguese and Simplified Chinese



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