Earth Ground and Electrical Tester

- **Fluke 1623-2 GEO Earth Ground Tester Kit**

  The Fluke 1623-2 GEO Earth Ground Tester offers data storage and download capabilities via USB port. World class accessories will simplify and speed up testing time.

1. **Fluke 1623-2 GEO Earth Ground Tester Kit**

- **Key Features**

Stakeless Testing

The Fluke 1623-2 earth ground tester is able to measure earth ground loop resistances using only clamps. With this test method, two clamps are placed around the earth ground rod and each are connected to the tester. No earth ground stakes are used at all. A known, fixed voltage is induced by one clamp and the current is measured using the second clamp. Then the tester automatically determines the resistance of the earth ground rod. This test method only works if a bonded earth ground system exists for the building or structure under test, but most are. If there is only one path to ground, like at many residential applications, the Stakeless method will not provide an acceptable value and the Fall-of-Potential test method must be used.

With Stakeless testing, the earth ground rod does not need to be disconnected - leaving the bonded earth ground system intact during test. Gone are the days of spending time placing and connecting stakes for each earth ground rod on your system - a major time saver. You can also perform earth ground tests in places you've not considered before: inside buildings, power pylons, or anywhere you don't have access to soil.

The Most Complete Tester

The Fluke 1623-2 is a unique earth ground tester that can perform all four types of earth ground measurement.

- 3- and 4-Pole Fall-of-Potential (using stakes)
- 4-Pole Soil Resistivity Testing (using stakes)
- Selective Testing (using 1 clamp and stakes)
- Stakeless Testing (using 2 clamps only)

- Specifications: Fluke 1623-2 GEO Earth Ground Tester Kit

General Specifications

Display: 1999 digit LCD	Display with special symbols, digit height 25 mm, fluorescent backlight
User interface	Instant measurement through TURN and START one button concept. The only operating elements are rotary switch and START button
Robust, water and dust resistant	Instrument is designed for tough environmental conditions (rubber protective cover, IP56)
Memory	Internal memory storage up to 1500 records accessible via USB port
Temperature Range	
Operating temperature	-10°C to 50°C (14°F to 122°F)
Storage temperature	-30°C to 60°C (-22°F to 140°F)
Temperature coefficient	±0.1% of reading/°C < 18°C > 28°C
Intrinsic error	Refers to the reference temperature range and is guaranteed for 1 year
Operating error	Refers to the operating temperature range and is guaranteed for 1 year
Climatic class	C1 (IEC 654-1), -5°C to +45°C (23° to +115° F), 5% to 95% RH
Protective type	IP56 for case, IP40 for battery door according to EN60529
Safety	Protection by double and/or reinforced insulation. max. 50 V to earth. IEC61010-1: Pollution degree 2
EMC (emission immunity)	IEC61326-1: Portable
Quality system	Developed, designed and manufactured according to DIN ISO 9001

External voltage	V ext, max = 24 V (DC, AC < 400 Hz), measurement inhibited for higher values
V ext rejection	> 120 dB (162⁄3, 50, 60, 400 Hz)
Measuring time	Typical 6 seconds
Max. overload	250 V rms (pertains to misuse)
Auxiliary power	6 x 1.5 V Alkaline (type AA LR6)
Battery life span	Typical > 3,000 measurements
Dimensions (W x H x D)	250 x 133 x 187 mm (9.75 x 5.25 x 7.35 in)
Weight	1.1 kg (2.43 lb) including batteries 7.6 kg (16.8 lb) incl. accessories and batteries in carrying case
RA 3-Pole Ground Resistance Measurement (IEC 1557-5)	
Switch position	R_A 3-pole
Resolution	0.001 Ω to 10 Ω
Measuring range	0.020 Ω to 19.99 kΩ
Accuracy	±(2% rdg + 3 d)
Operating error	±(5% rdg + 3 d)
Measuring Principle: Current/Voltage Measurement	
Measuring voltage	Vm = 48 V AC

Short-circuit current	> 50 mA
Measure frequency	128 Hz
Probe resistance (R_S)	Max 100 kΩ
Auxiliary earth electrode resistance (R_H)	Max 100 kΩ
Additional error from R_H and R_S	R_H[kΩ]•••R_S[kΩ]/R_A[Ω]•••0.2%
Monitoring of R_S and R_H with error indicator. Automatic range selection. Measurement is not performed if the current through the current clamp is too low.	
R_A 4-Pole Ground Resistance Measurement (IEC 1557-5)	
Switch position	R_A 4-pole
Resolution	0.001 Ω to 10 Ω
Measuring range	0.020 Ω to 19.99 kΩ
Accuracy	±(2% rdg + 3 d)
Operating error	±(5% rdg + 3 d)
Measuring Principle: Current/Voltage Measurement	
Measuring voltage	Vm = 48 V AC
Short-circuit current	> 50 mA

Measure frequency	128 Hz
Probe resistance (R_S + R_{ES})	Max 100 kΩ
Auxiliary earth electrode resistance (R_H)	Max 100 kΩ
Additional error from R_H and R_S	R_H[kΩ]•••R_S[kΩ]/R_A[Ω]•••0.2%
Monitoring of R_S and R_H with error indicator. Automatic range selection.	
RA 3-Pole Selective Ground Resistance Measurement with Current Clamp (R_A with Clamp)	
Switch position	R_A 3-pole with clamp
Resolution	0.001 Ω to 10 Ω
Measuring range	0.020 Ω to 19.99 kΩ
Accuracy	±(7% rdg + 3 d)
Operating error	±(10% rdg + 5 d)
Measuring Principle: Current/Voltage Measurement (with External Current Clamp)	
Measuring voltage	Vm = 48 V AC
Short-circuit current	> 50 mA
Measure frequency	128 Hz

Probe resistance (R_S)	Max 100 kΩ
Auxiliary earth electrode resistance (R_H)	Max 100 kΩ
Monitoring of R_S and R_H with error indicator. Automatic range selection. Measurement is not performed if the current through the current clamp is too low.	
RA 4-Pole Selective Ground Resistance Measurement with Current Clamp (R_A with Clamp)	
Switch position	R_A 4-pole with clamp
Resolution	0.001 Ω to 10 Ω
Measuring range	0.020 Ω to 19.99 kΩ
Accuracy	±(7% rdg + 3 d)
Operating error	±(10% rdg + 5 d)
Measuring Principle: Current/Voltage Measurement (with External Current Clamp)	
Measuring voltage	Vm = 48 V AC
Short-circuit current	> 50 mA
Measure frequency	128 Hz
Probe resistance (R_S)	Max 100 kΩ
Auxiliary earth electrode resistance (R_H)	Max 100 kΩ

Monitoring of R_S and R_H with error indicator. Automatic range selection. Measurement is not performed if the current through the current clamp is too low.

Stakeless Ground Loop Measurement (2 Clamps)	
Switch position	R_A 4-pole 2 clamps
Resolution	0.001 Ω to 10 Ω
Measuring range	0.020 Ω to 19.99 kΩ
Accuracy	±(7% rdg + 3 d)
Operating error	±(10% rdg + 5 d)
Measuring Principle: Stakeless Measurement of Resistance in Closed Loops Using Two Current Transformers	
Measuring voltage	Vm = 48 V AC
Measure frequency	128 Hz
Noise current (I_{EXT})	Max. I_{EXT} = 10 A (AC) (R_A < 20 Ω)
	Max. I_{EXT} = 2 A (AC) (R_A > 20 Ω)

Automatic range selection. The information regarding stakeless ground loop measurements is only valid when used in conjunction with the recommended current clamps at the minimum distance specified.