Digital Ground Resistance Tester
Model 4610 & 4610 Kit

Model 4610 Kit (optional)
Catalog #2114.95

Digital Ground Resistance Tester Model 4610 performs ground resistance and soil resistivity tests. Direct reading tester measures from 10mΩ to 1999Ω, and is Auto-Ranging, so it automatically seeks out the optimum measurement range. Easy to use — simply connect the leads, Press-to-Measure and read.

The large LCD (nearly 3/4" high) is easy to read, and also indicates low battery status, overrange, and test lead shorts and lead reversals. Three LED indicators on the front panel continuously warn the user of measurement problems to ensure accurate and reliable tests.

The Model 4610 is fuse protected up to >250VAC against Accidental connection to live circuits. In the event of a system fault, it can withstand 250VAC with spikes of 3000VAC or 1000VDC.

The heavy duty ABS case is O-ring sealed against dust and water and the Press-to-Measure button is also sealed. Model 4610 is battery powered for convenient use in remote field applications. Mechanical and safety specifications, such as vibration and drop test, meet or exceed IEC standards, to ensure safe and reliable field use.

The Ground Resistance Tester Model 4610 is a rugged, easy-to-use instrument ideal for maintenance crews performing numerous tests. The Model 4610 is designed to reject high levels of interference, so it can be used under difficult conditions such as high stray currents that normally affect accuracy.

The Ground Resistance Tester Model 4610 is available alone or as a complete kit. The kit includes T auxiliary ground electrodes, 16 and 90 ft leads, and two 300 ft leads on reels with wind-up handles to facilitate storage packed in a hard molded carrying case.

Model 4610 shown in standard soft carrying case Catalog #2114.94

Features

- Fall-of-Potential method
- Measures ground resistance (2- and 3-Point) and soil resistivity (4-Point)
- Step voltage tests and touch potential measurements
- Auto-Ranging: automatically selects the optimum range
- Designed to reject high levels of noise and interference
- Extremely simple to operate: connect – press – read
- LED on faceplate informs operator of high input noise, high auxiliary rod resistance and fault connections
- Battery powered
- Rugged dustproof and rainproof field case
- May be used also for continuity tests on bonding
- Color-coded terminals

Applications

- Three-point measurements of resistance to ground of ground rods and grids. Three-point measurements are generally used when the electrode or grid can be easily disconnected, if corrosion is suspected, or in circumstances where ground faults are unlikely to occur.
- Four-point tests, or soil resistivity measurements. Locating areas of lowest soil resistivity is essential for achieving an economical grounding installation.
- Touch potential measurements, an alternative to 3-Point tests in evaluating electrical safety. This test is recommended when the ground cannot be disconnected, where ground faults are highly likely to occur, or when the “footprint” of grounded equipment (the outline of the part of equipment in contact with the earth) is comparable to the size of the ground to be tested.
- Two-point tests for continuity tests on bonding or on pre-established grounds. This test is commonly performed in urban environments where proper auxiliary electrode placement may be obscured by confined real estate. Measurements are referenced against a good local ground conductor.

Specifications

ELECTRICAL			
Ranges (Auto-Ranging 0 to 2000Ω)	20Ω	200Ω	2000Ω
Measurement	0.00 to 19.99Ω	20.0 to 199.9Ω	200 to 1999Ω
Resolution	10mΩ	100mΩ	1Ω
Open Voltage	≤42V peak		
Resistance Measurement Frequency	128Hz square wave		
Test Current	10mA	1mA	0.1mA
Accuracy	±2% of Reading ± 1ct	±2% of Reading ± 1ct	±3% of Reading ± 3cts
Auxiliary Electrode Influence Range Current Circuit Voltage Circuit	 20Ω 200Ω 2000Ω	 3kΩ 30kΩ 50kΩ	 50kΩ 50kΩ 50kΩ
Interference	Model 4610 rejects high levels of interference voltage (DC, 50 to 60Hz, harmonics): DC voltage in series with X: 20V; AC voltage in series with Y: 13V peak; AC voltage in series with Z: 32V peak		
Response Time	Approximately 6 seconds for a stabilized measurement		
Withstanding Voltage	250VAC with spikes of 3000VAC or 1000VDC		
Power Source	Eight 1.5V “AA” batteries; Alkaline recommended; “LO BAT” indication on LCD		
Battery Life	1800 15-second measurements		
Fuse Protection	High breaking capacity 0.1A, >250V, 0.25 x 1.25"		
MECHANICAL			
Display	7-segment LCD, 0.71" (18mm) high (3½ digit); 2000-counts; LCD also indicates overrange, test lead shorts and lead reversals		
Connection	Color-coded terminals accept spade lugs with min. gap of 6mm or standard 4mm banana jacks		
LED Indication	Three LEDs indicate high input noise, high auxiliary rod resistance, open leads, blown fuse		
Operating Temperature	14° to 131°F (-10° to 55°C), 0 to 90% RH		
Storage Temperature	-40° to 158°F (-40° to 70°C), 0 to 90% RH with batteries removed		
Dimensions	8.7 x 5.4 x 5.9" (220 x 136 x 150mm)		
Weight	2.9 lbs (1.3kg)		
Case	Heavy-duty ABS		
Colors	Case: safety yellow; Front panel: gray		
Mechanical Shock	IEC 68-2-27		
Vibration Test	IEC 68-2-6		
Drop Test	IEC 68-2-32		
Dielectric Test	3kV, 50/60Hz, 1 min. between four interconnected measuring terminals and any external metal ground		
Environmental	O-ring sealed against dust and water to IP50 (Protection Index)		
Electrostatic	IEC 801-2		
Electromagnetic	IEC 801-3		
Electric Shock	IEC 801-5		
SAFETY			
Rating	EN 61010-1, Cat. III, Pollution Degree 2, 42V		
Agency Approval	Emission (EN 50081-1) Immunity (EN 50082-1)		
CE Mark	Yes		

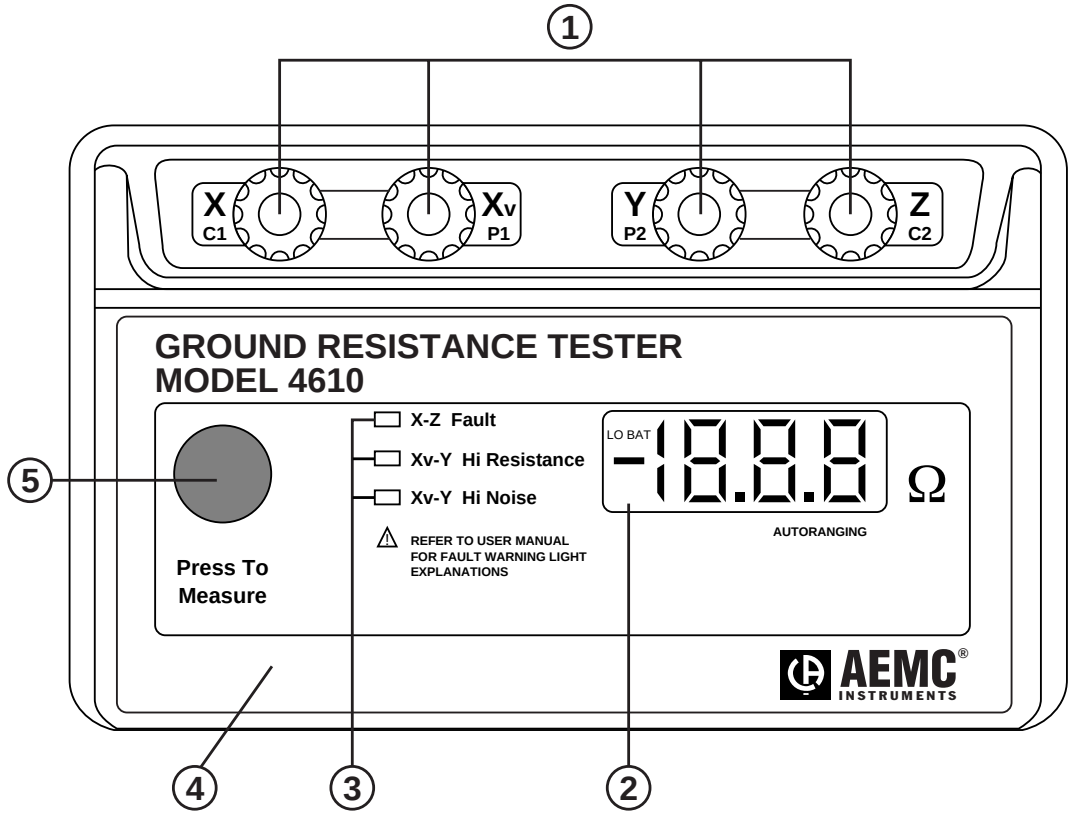
Accuracies and specifications are given for an ambient temperature of 23°C ± 3°K, RH of 45 to 55%, battery power at 8V, auxiliary resistance at the measurement terminals <200Ω, no stray voltage and a magnetic field from 0 to 40A/m.

Accessories

Test Kit for Models 4600 & 4610 includes four auxiliary ground electrodes, two 300 ft leads on reels with wind-up handles, one 90 ft lead and one 16 ft lead in hard carrying case (Catalog #2118.31)

25Ω Calibration Checker Catalog #2118.58

Digital Ground Resistance Tester Model 4610 Kit (Catalog #2114.95)



1. Input measurement terminals
2. Large LCD with low battery indicator
3. LED measurement fault indicators
   Model 4610 LED Indicators
   X-Z Fault:
   LED signals that there is excessive (>30V peak) voltage between terminals
   X and Z. Xv-Y High Resistance:
   LED signals that the resistance in the voltage circuit (between Xv and Y) is too high or that the circuit may be open.
   Xv-Y High Noise:
   LED signals the presence of excessive noise in the voltage circuit.
4. Front panel sealed to IP50
5. Rugged Press-to-Measure button

ORDERING INFORMATION — CATALOG NO.

Ground Resistance Tester Model 4610 (4-Point Digital) . . . . . **Cat. #2114.94**
Includes batteries, soft carrying case and user manual

Ground Resistance Tester Model 4610 Kit . . . . . **Cat. #2114.95**
Includes meter, one 16 ft lead, two 100 ft colo-coded leads, two 300 ft leads on reels, four auxiliary ground electrodes, molded hard carrying case, batteries and user manual

Accessories (Optional)

25Ω Calibration Checker . . . . . Cat. #2130.59

Tape Measure (100 ft) . . . . . Cat. #2130.60

Test Kit for 3-Point Testing (supplemental for 4-Point testing) includes two 100 ft color-coded leads, one 16 ft lead, two 16" T-shaped auxiliary ground electrodes and carrying case . . . . . Cat. #2130.61

Test Kit for 3-Point Testing includes two 150 ft color-coded leads on spools, one 16 ft lead, two 16" T-shaped auxiliary ground electrodes, 100 ft AEMC tape measure and carrying case . . . . . Cat. #2130.62

Test Kit for 4-Point Testing includes two 300 ft color-coded leads on spools, two 100 ft color-coded leads, one 16 ft lead, four 16" T-shaped auxiliary ground electrodes, 100 ft AEMC tape measure and carrying case . . . . . Cat. #2130.63

Ground Tester Video/Workbook set . . . . . Cat. #2130.64

AEMC® INSTRUMENTS
CHAUVIN ARNOUX GROUP

Contact Us

United States & Canada:

Chauvin Arnoux®, Inc.
d.b.a. AEMC® Instruments
200 Foxborough Blvd.
Foxborough, MA 02035 USA
(508) 698-2115 • Fax (508) 698-2118
www.aemc.com

Customer Support – for placing an order, obtaining price & delivery:
customerservice@aemc.com

Sales Department – for general sales information:
sales@aemc.com

Repair and Calibration Service – for information on repair & calibration, obtaining a user manual:
repair@aemc.com

Technical and Product Application Support – for technical and application support:
techinfo@aemc.com

Webmaster – for information regarding www.aemc.com:
webmaster@aemc.com

South America, Central America, Mexico, Caribbean, Australia & New Zealand:

Chauvin Arnoux®, Inc.
d.b.a. AEMC® Instruments
15 Faraday Drive
Dover, NH 03820 USA
(978) 526-7667 • Fax (978) 526-7605
export@aemc.com
www.aemc.com

All other countries:

Chauvin Arnoux SCA
190, rue Championnet
75876 Paris Cedex 18, France
33 1 44 85 45 28 • Fax 33 1 46 27 73 89
info@chauvin-arnoux.com
www.chauvin-arnoux.com