

Digital Ground Resistance Tester Models 4620 & 4630



Digital Ground Resistance Tester Models 4620 and 4630 perform ground resistance and soil resistivity tests. These direct reading testers measure from 0 to 2000Ω, and are auto-ranging, so they automatically seek out the optimum measurement range. Easy-to-use — simply connect the leads, Press-to-Measure and read the results.

The large LCD (nearly 3/4" high characters) 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 Models 4620 and 4630 are fuse protected up to >250VAC against accidental connection to live circuits. In the event of a system fault, they can withstand 250VAC with spikes of 3000VAC or 1000VDC.

The heavy-duty field case is sealed against dust and water when closed. The meter itself is self-contained within an inner case providing additional environmental and insulation protection. The test button is also sealed against the elements.

The Model 4620 is powered by eight, C cell batteries.

The Model 4630 is powered by 9.6V, 3.5 Ah NiMH rechargeable batteries. A built-in recharge circuit, powered from 120/230V 50/60Hz line, also provides for testing while recharging.

Both models will perform over 2000 15 second tests between recharging (Model 4630) or battery replacement (Model 4620).

The Ground Resistance Tester Models 4620 and 4630 are rugged, easy-to-use instruments ideal for maintenance crews performing numerous tests. Both models exceed mechanical and safety specifications for shock, vibration and drop tests called out in IEC standards. They are designed to reject high levels of interference, so they can be used under difficult conditions such as high stray currents that normally affect accuracy.



Models 4620 & 4630 (pdf) 05/06 Rev. 02

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Features


- Measures soil resistivity (4-Point) method
- Measures ground resistance (2- and 3-Point) Fall-of-Potential method
- 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
- Large easy-to-read backlit display
- Battery powered (Model 4620)
- AC powered with rechargeable NiMH batteries (Model 4630)
- Rugged dustproof and rainproof field case
- Can also be used for continuity tests on bonding
- Color-coded terminals
- Double Insulation
- CE Mark

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

| MODELS | 4620 | | 4630 |
|---|---|---|-----------------------|
| 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 | ≤42V peak | ≤42V peak |
| Resistance Measurement Frequency | 128Hz square wave | 128Hz square wave | 128Hz square wave |
| Test Current | 10mA | 1mA | 0.1mA |
| Accuracy | ±2% of Reading ± 1ct | ±2% of Reading ± 1ct | ±2% of Reading ± 3cts |
| Auxiliary Electrode Influence Max Res. in Current Circuit Max Res. in Voltage Circuit | 3kΩ 2000Ω | 30kΩ 50kΩ | 50kΩ 50kΩ |
| Interference | 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 4 to 8 seconds for a stabilized measurement | | |
| Withstanding Voltage | 250Vac or 100Vdc | | |
| Power Source | Eight C cell batteries; Alkaline recommended; | 120/230V 50/600Hz Rechargeable 9.6V, 3.5 Ah NiMH batteries | |
| Battery Life | 1800 15-second measurements; LO BAT indication on LCD | | |
| Fuse Protection | 0.1A, >250V, 0.25 x 1.25"; 30kA Interrupt Capacity | | |
| MECHANICAL | | | |
| Display | 3½ digit, 0.71" (18mm) high; 2000-counts; electroluminescent blue backlight 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), 20 to 90% RH | | |
| Storage Temperature | -40° to 158°F (-40° to 70°C), 10 to 90% RH with batteries removed | | |
| Dimensions | 10.8 x 9.7 x 5.0" (273 x 247 x 127mm) | | |
| Weight | 6.28 lbs (2.85kg) | 7.38 lbs (3.35kg) | |
| Case | Heavy duty o-ring sealed field case | | |
| 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) when case is closed | | |
| SAFETY | | | |
| Rating | EN 61010-1, Cat. III, Pollution Degree 2 | | |
| Double Insulation  | Yes | | |
| CE Mark | Yes | | |

Ground Kits



Test Kit for 4-Point testing includes instrument, two 300 ft color-coded leads on spools (red and blue), two 100 ft color-coded leads (green and black), four 14.5" T-shaped auxiliary ground electrodes, one set of five spaded lugs, 100 ft tape measurer and carrying bag.

Catalog #2135.20 (Model 4620)

Catalog #2135.23 (Model 4630)



Test Kit for 3-Point testing includes instrument, two 150 ft color-coded leads on spools (red and blue), one 30 ft lead (green), two 14.5" T-shaped auxiliary ground electrodes, one set of five spaded lugs, 100 ft tape measurer and carrying bag.

Catalog #2135.19 (Model 4620)

Catalog #2135.22 (Model 4630)



Test Kit for 4-Point testing includes instrument, two 500 ft color-coded leads on spools (red and blue), two 100 ft color-coded leads (green and black), one 30 ft lead (green), four 14.5" T-shaped auxiliary ground electrodes, one set of five spaded lugs, 100 ft tape measurer and carrying bag.

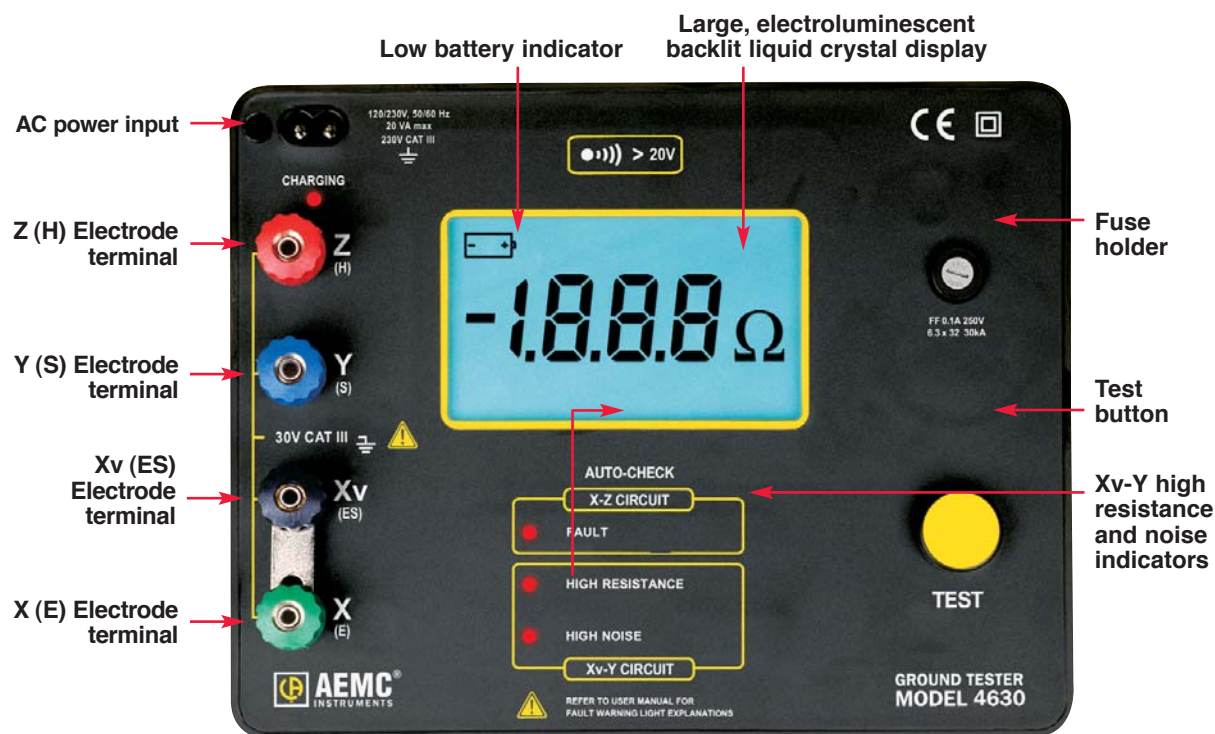
Catalog #2135.21 (Model 4620)

Catalog #2135.24 (Model 4630)



The Models 4620 and 4630 are built into a double case. This extra rugged construction provides double insulation, maximum field durability and ease of serviceability.

Construction



ORDERING INFORMATION

CATALOG NO.

| | |
|---|----------------------|
| Ground Resistance Tester Model 4620 (4-Point, Digital, Battery Powered) | Cat. #2130.43 |
| Includes meter, eight C cell batteries and user manual | |
| Ground Resistance Tester Model 4630 (4-Point, Digital, Rechargeable Battery) | Cat. #2130.44 |
| Includes meter, battery, AC Power cord and user manual | |
| Ground Resistance Tester Model 4620 Kit – 150 ft (Model 4620 and Catalog #2135.35) | Cat. #2135.19 |
| Ground Resistance Tester Model 4620 Kit – 300 ft (Model 4620 and Catalog #2135.36) | Cat. #2135.20 |
| Ground Resistance Tester Model 4620 Kit – 500 ft (Model 4620 and Catalog #2135.37) | Cat. #2135.21 |
| Ground Resistance Tester Model 4630 Kit – 150 ft (Model 4630 and Catalog #2135.35) | Cat. #2135.22 |
| Ground Resistance Tester Model 4630 Kit – 300 ft (Model 4630 and Catalog #2135.36) | Cat. #2135.23 |
| Ground Resistance Tester Model 4630 Kit – 500 ft (Model 4630 and Catalog #2135.37) | Cat. #2135.24 |



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