Multi-Function Ground Resistance Tester Model 6472

The Digital Ground Resistance Tester Model 6472 is a portable measurement instrument designed to measure Bond Resistance, Ground Resistance (with and without clamps), Soil Resistivity, Earth Coupling and Step & Touch Potential.

When used in combination with the GroundFlex® Adapter Model 6474 (factory supplied product only), Power Transmission Tower and Tower Leg Ground Resistance testing is also available.

The Model 6472 measures from 0.01 to 99.99kΩ and is auto-ranging, automatically seeking out the optimum measurement range, test frequency and test current.

The adjustable test frequency (either manual or automatic) from 41 to 5078Hz test voltage provides rejection of high levels of interference, allowing it to be used under difficult conditions such as the presence of high stray currents that normally affect accuracy.

The Model 6472 is CAT IV rated to 50V and is over voltage protected to more than 250VAC against accidental connection to live circuits. The voltage is also displayed on screen. In the event of a system fault, the Model 6472 can withstand 250VAC.

Up to 512 test results can be stored in internal memory for later recall to the display or downloaded to a PC using DataView® software (included) for Automatic Report Generation, Automatic Fall-of-Potential Plot Generation, Frequency/ Resistance Plots and much more.

Features

- 4-Pole (4-Point) Fall-of-Potential measurement for very low resistance measurements with manual or automatic frequency selection and automatic lead compensation
- 3-Point Fall-of-Potential measurement
- 3-Point earth coupling measurement
- Manual or automatic frequency scan from 40 to 513Hz for test accuracy in electrically noisy environments
- Earth coupling testing
- Selectable test voltage 16 or 32V up to 250mA test current
- 4-Point soil resistivity measurement with automatic calculation of Rho (ρ) and user selection of Wenner or Schlumberger test method
- 2- and 4-Wire DC resistance measurement (Bond testing) with automatic polarity reversal
- Ground Resistance with 2 clamps (no auxiliary rods)
- Ground Resistance of Pylons with the GroundFlex® Adapter Model 6474 and GroundFlex® sensors allow the system to measure leakage current and ground resistance of tower legs without disconnecting the overhead ground conductor.
- Includes DataView® software for data storage, real-time display, analysis, report generation and system configuration
- Auto-off power management
- Automatic recognition of all electrode connections and their resistance value
- Stores up to 512 complete test results in internal memory
- Optically isolated USB communication
- Rechargeable NiMH batteries from wall charger or vehicle power
- Rugged dustproof and rainproof field case

Applications

- 3-Point measurements of resistance to ground of ground rods and grids. 3-Point measurements are used when electrode or grid can be easily disconnected.
- 4-Point tests or soil resistivity measurements. Locating areas of lowest soil resistivity is essential for achieving an economical grounding installation.
- 2 Clamp method–test grounding systems without the need for auxiliary electrodes.
- Touch and step potential testing measurements. These tests are 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 earth) is comparable to the size of the ground to be tested.
- 2- or 4-Wire tests for continuity tests on bonding or on grounding systems. Test is a DC resistive test using 250mA or more and is used to check bonding of all connection points on the ground system.
- Earth coupling measurement and display. Used to estimate the influence of two earth resistance systems that are not connected to each other.

The Model 6472 performs an automated way to measure the value of the earth/ground using the Fall-of-Potential method and storing measurements.

Specifications

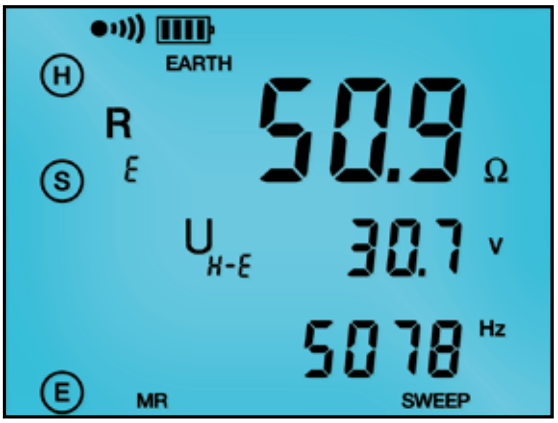
SPECIFICATIONS	
MODEL	**6472**
ELECTRICAL	
3-Point Measurement	
Range (Auto-Ranging)	0.09Ω to 99.9kΩ
Resolution	0.01Ω to 100Ω
Test Voltage	Nominal 16 or 32VRMS user selectable
Resistance Measurement Frequency	41 to 5078Hz automatic or user selectable
Test Current	Up to 250mA
Accuracy	±2% of Reading + 1ct @ 128Hz
2 Clamp Measurement	
Range	0.10 to 500Ω
Resolution	0.01 to 1Ω
Measurement Frequency	Auto: 1367Hz Manual: 128Hz-1367Hz-1611Hz-1758Hz
Soil Resistivity 4-Point Measurement	
Test Method	Wenner or Schlumberger selectable with automatic calculation of test results in Ω-meters or Ω-feet
Range (Auto-Ranging)	0.01 to 99.99kΩ; ρ Max: 999kΩm
Resolution	0.01 to 100Ω
Test Voltage	16 or 32V user selectable
Frequency	From 41 to 128Hz selectable
External Voltage Measurement	
Range (Auto-Ranging)	0.1 to 65.0VAC/DC – DC to 440Hz
Accuracy	±2% of Reading + 1ct
Resistance Measurement (Bond Testing)	
Measurement Type	2-Pole (with lead resistance compensation) or 4-Pole (Kelvin sensing) user selectable
Range (Auto-Ranging)	2-Pole 0.01Ω to 99.9kΩ; 4-Pole 0.001Ω to 99.99kΩ
Accuracy	±2% of Reading + 2cts
Test Voltage	16VDC (+, - or auto polarity)
Test Current	Up to 250mA max
Data Storage	
Memory Capacity	512 test results
Power Source	9.6V rechargeable battery pack (included)
Recharging Source	110/220 50/60Hz external charger with 18VDC, 1.9A output or 12V vehicle power

Functional Displays

4-Point Bond Test

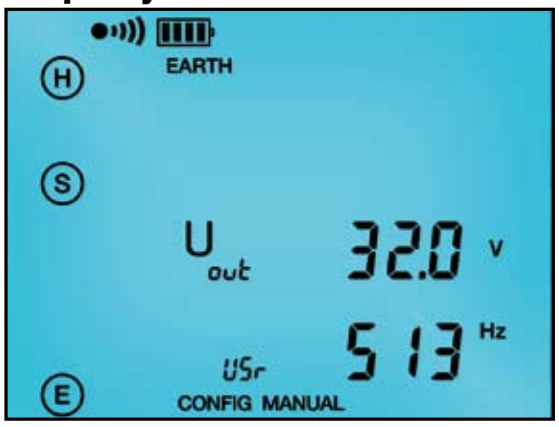
The 4-Point Bond test displays lead connections, bond resistance test results, test voltage and current.

3-Point Fall-of-Potential Test



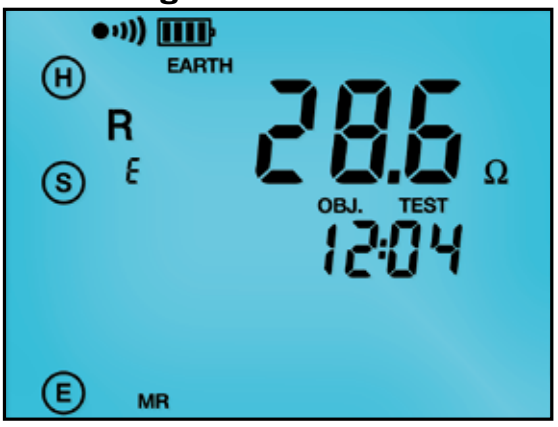
The 3-Point Fall-of-Potential test displays test lead connection, grounding electrode resistance, test voltage and frequency.

Frequency Selection Test



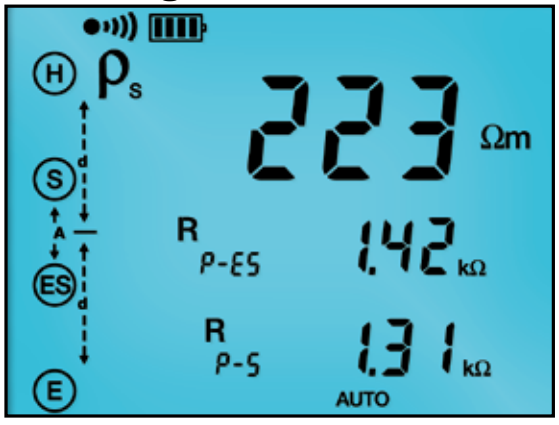
The Frequency selection screen displays selected test frequency and voltage for the test as well as lead connection.

Data Storage



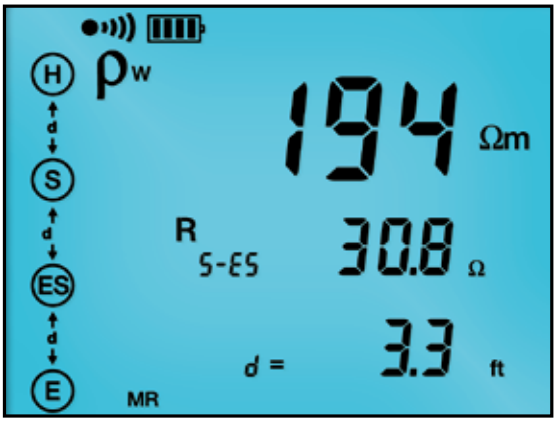
Memory Recall displays test results stored at a specific memory location.

Schlumberger Test



The Schlumberger test displays test lead connection, soil resistivity (ρ) test results, test electrode resistance and more.

Wenner Test



The Wenner test displays test lead connection, soil resistivity (ρ) test results, electrode spacing and resistance.

Construction

1. Four terminals: H (Z) (auxiliary electrode), S (Y) (electrode), ES (Xv) (earth/ground electrode) and E (X) (earth/ground electrode) All terminals accept 4mm Ø banana plugs. Terminals H (Z) and ES (Xv) also accept special plugs for current clamps. S (Y) will take a shielded cable.

2. Connector for charging the battery.

3. 256 segment multi-line backlit LCD.

4. Connector for an optical interface to a PC. Either an RS-232 or USB connection can be used.

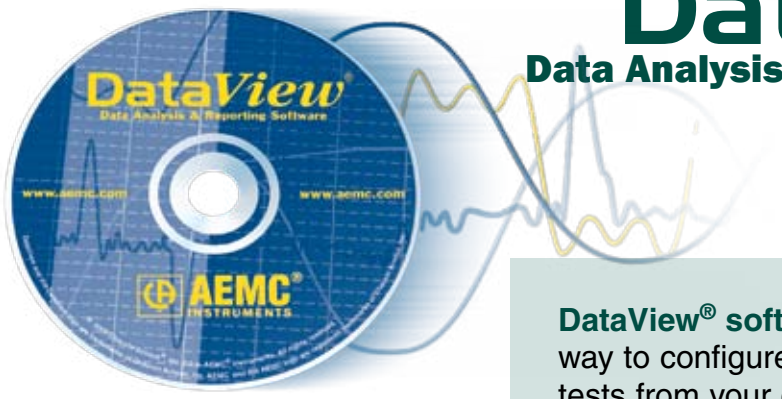
5. Rotary switch: OFF position, 7 measurement functions and SET-UP function.

6. START/STOP button: Starts the measurement and compensates for the leads (in the mΩ measurement function).

7. Six function buttons

DataView®

Data Analysis and Reporting Software



DataView is included with Model 6472.

DataView® software provides a convenient way to configure and control ground resistance tests from your computer. Through the use of clear and easy-to-use tabbed dialog boxes, the Model 6472 functions can be configured and tests can be initiated. Results can be displayed in real time and stored in your PC. Reports may be printed along with the operator's comments and analysis.

AUTOMATIC REPORT GENERATION

- Run tests and analyze real-time data from your PC
- Configure all test functions and parameters from your PC
- Customize views, templates and reports to your exact needs
- Create and store a complete library of configurations that can be used with the Ground Resistance Tester as needed
- Display Fall-of-Potential plots, tabular listings of test results, resistance vs. frequency plots, soil resistivity and bonding tests
- Print reports using standard or custom templates you design
- Free updates are available through our website **www.aemc.com**

DataView®

Minimum Computer Requirements:

- Windows XP / Windows Vista & Windows 7 (32/64 bit)
- 256MB of RAM for Windows XP
  1GB of RAM for Windows Vista & Windows 7 (32 bit)
  2GB of RAM for Windows Vista & Windows 7 (64 bit)
- 80MB of hard disk space (200MB recommended)

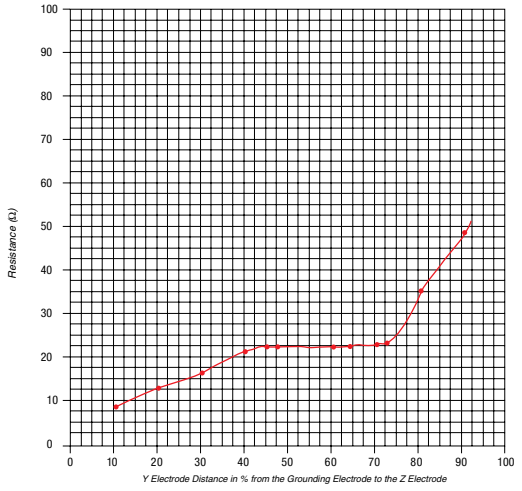
Windows is a registered trademark of Microsoft Corporation in the United States and/or other countries.

Fall-of-Potential Plot

Name of Operator _____
Location _____ Date _____
Model _____
Serial # _____
Ground System Type: Single Rod ☐ Rod Depth _____ ft
Multiple Rods (Grid) ☐ Longest Diagonal Dimension _____ ft
Z Electrode Distance _____ ft

%	Voltage Electrode (Y) distance from Ground Rod under Test (X) FEET	Measured Resistance OHMS
90	180	49.3
80	160	34.2
72	144	22.1
70	140	22.1
62	124	21.8
60	120	21.8
52	104	21.6
50	100	21.6
40	80	20.4
30	60	16.2
20	40	12.8
10	20	9.1
0		

Test Conditions
Temp: _____ Soil: ☐ Moist ☐ Dry
Soil Type
☐ Loam ☐ Sand & Gravel ☐ Shale ☐ Clay ☐ Limestone
☐ Sandstone ☐ Granite ☐ Slate ☐ Other _____



Typical report showing Fall-of-Potential plot using DataView® software.

Accessories

Includes meter, rechargeable NiMH batteries, optical USB cable, power adapter 110/240V with power cord 115V US, two 500 ft color-coded leads on spools (red/blue), two 100 ft color-coded leads (hand-tied, green/black), one 30 ft lead (green), four T-shaped auxiliary ground electrodes, set of five spaded lugs, one 100 ft AEMC® tape measure, DataView® software, ground tester workbook CD, carrying bag for meter, carrying bag for kit, product warranty and registration card and a user manual.
Catalog #2135.54

Current Probe accessory options

(For use in two clamp and selective ground testing methods)

AC Current Probe Model MN82
Catalog #2135.71

AC Current Probe Model SR182
Catalog #2135.72

ORDERING INFORMATION	CATALOG NO.
Multi-Function Ground Resistance Tester Model 6472 Ground Resistance Tester Model 6472 (2-Point, 3-Point, 4-Point, Bond Test, Digital, Rechargeable Battery, DataView® software)	Cat. #2135.51
Multi-Function Ground Resistance Tester Model 6472 Kit–150 ft Model 6472 and Catalog #2135.35.	Cat. #2135.52
Multi-Function Ground Resistance Tester Model 6472 Kit–300 ft Model 6472 and Catalog #2135.36.	Cat. #2135.53
Multi-Function Ground Resistance Tester Model 6472 Kit–500 ft Model 6472 and Catalog #2135.37.	Cat. #2135.54
Accessories (Optional)	
Test Kit for 3-Point testing (includes two 150 ft color-coded leads on spools (red/blue), one 30 ft lead (green), two 14.5" T-shaped auxiliary ground electrodes, set of five spaded lugs, 100 ft tape measure and soft carrying bag)	Cat. #2135.35
Test Kit for 4-Point testing (includes two 300 ft color-coded leads on spools (red/blue), two 100 ft color-coded leads (hand-tied green/black), four 14.5" T-shaped auxiliary ground electrodes, set of five spaded lugs, 100 ft tape measure and soft carrying bag)	Cat. #2135.36
Test Kit for 4-Point testing (includes two 500 ft color-coded leads on spools (red/blue), two 100 ft color-coded leads (hand-tied green/black), one 30 ft lead (green), four 14.5" T-shaped auxiliary ground electrodes, set of five spaded lugs, 100 ft tape measure and soft carrying bag)	Cat. #2135.37
AC Current Probe Model MN82 for use with Model 6472*	Cat. #2135.71
AC Current Probe Model SR182 for use with Model 6472*	Cat. #2135.72

**2 probes required for two clamp testing method.*

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