

# GROUND RESISTANCE TESTERS

## Tower Ground Resistance Testers

### GroundFlex® Field Kit Models 6472 & 6474

Test active towers safely without de-energizing or disconnecting any cables



#### SPECIFICATIONS



cover closed

MODELS	6472 & 6474						
ELECTRICAL	3-POINT METHOD	4-POINT SELECTIVE METHOD	EARTH MEASUREMENT WITH 2 CLAMPS	SOIL RESISTIVITY	EARTH POTENTIAL MEASUREMENT	DC RESISTANCE MEASUREMENT	MEASUREMENTS WITH 6474
Range (Auto-Ranging)	0.01Ω to 99.9kΩ	0.001 to 99.99Ω	0.01 to 500Ω	0.01kΩ to 99.9Ω	0.01mV to 65.00V	0.001Ω to 99.9kΩ	0.001Ω to 99.99kΩ
Resolution	0.01 to 100Ω	0.001 to 10Ω	0.01 to 1Ω	0.01 to 100Ω	0.01 to 10mV	2 wires: 0.01 to 100Ω/ 4 wires: 0.001 to 10Ω	0.001 to 10Ω
Accuracy	± (2% + 1 count)	± (2% + 1 count)	± (10% + 1 count)	± (2% + 1 count)	± (5% + 1 count)	± (2% + 2 counts)	± (5% + 1 count)
No-Load Voltage	16 or 32Vrms	16 or 32Vrms	16 or 32Vrms	16 or 32Vrms	16 or 32Vrms	± 16Vdc	16 or 32Vrms
Measurement Frequency	41 to 5078Hz	41 to 5078Hz	Auto: 1611 Hz Manual: 128 Hz, 1367 Hz, 1611 Hz, 1758 Hz	41 to 128Hz	41 to 128Hz	DC	41 to 5078Hz
Coupling Measurement	Yes	-	-	-	-	-	-
Auxiliary Rod Resistance Measurement	0.1Ω to 100kΩ	0.01Ω to 100kΩ	-	-	-	-	0.01Ω to 100kΩ
Voltage Interference	Maximum 60Vpeak						
Soil Resistivity	-	-	-	Wenner and Schlumberger	-	-	-
Type of Measurement	3 wires	4 wires	-	4 wires	3 wires	2 wires or 4 wires	-
Measurement Current	-	-	-	-	-	> 200mA DC	-
<b>MECHANICAL</b>							
Memory/Communication	512-record memory / optical link/USB						
Dimensions/Weight	10.7 x 9.84 x 5.04" (272 x 250 x 128mm) / Model 6472: 3.2 kg / Model 6474: 2.3 kg						
Protection Safety	IP53 (cover closed)						
Electrical Safety	50V CAT IV, complies with IEC 61326-1 / IEC 61010 / IEC 61557-1-4-5						

#### TEST KITS

##### Ground Tester Model 6472 Kit-500 ft

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, one 100 ft AEMC® tape measure, DataView® software, ground tester workbook and user manual on USB stick, carrying bag for meter and carrying bag for kit. **Catalog #2135.54**

##### GroundFlex® Adapter Model 6474

Includes GroundFlex® Adapter Model 6474, four GroundFlex® sensors (5m) with twelve color-coded rings, connection lead, two extension leads on H reel (black/green) with color-coded alligator clips, one extra black and green alligator clip, six BNC extension leads, calibration loop, three C-clamps, carrying case with wheels and handle for meters, one inverter 12Vdc to 120Vac 200 watt (vehicle use) and user manual. **Catalog #2136.03 (includes Cat. #2135.54)**



# GroundFlex® Field Kit Models 6472 & 6474

## ► FEATURES

- 3- and 4-Point Fall-of-Potential measurement with manual or automatic frequency selection
- 4-Point soil resistivity measurement with automatic calculation of Rho ( $\rho$ ) and user selection of the Wenner or Schlumberger test method
- 2- and 4-Wire DC resistance measurement (Bond testing) with automatic polarity reversal
- 3-Point earth coupling measurement
- Automatic frequency scan from 40 to 5078Hz for optimum test accuracy in electrically noisy environments
- Selectable test voltage limit of 16 or 32V with up to 250mA of test current
- Automatic recognition of all electrode connections and measurement of their resistance value
- Determines bonding condition of overhead ground conductors
- Auto Power OFF management
- Optically isolated USB communication
- Remote set up and operation of all measurements using DataView® software supplied
- Automatic report generation
- Rechargeable NiMH batteries from wall charger or vehicle power
- Rugged dustproof and rainproof field case — IP53 rated in closed position
- IEC 61557 parts 4 and 5 compliant
- Includes DataView® software for data storage, real-time display, analysis, report generation and system configuration

### Ground measurement on pylons with ground cable

High-voltage lines are usually equipped with a ground cable to allow lightning to discharge to earth via the pylon. As all the pylons are all connected to this conductor, all the tower's resistances are in parallel. This means it is impossible to measure tower resistance using traditional 3-Point methods unless the earth cable is disconnected, which is a dangerous and time-consuming operation.

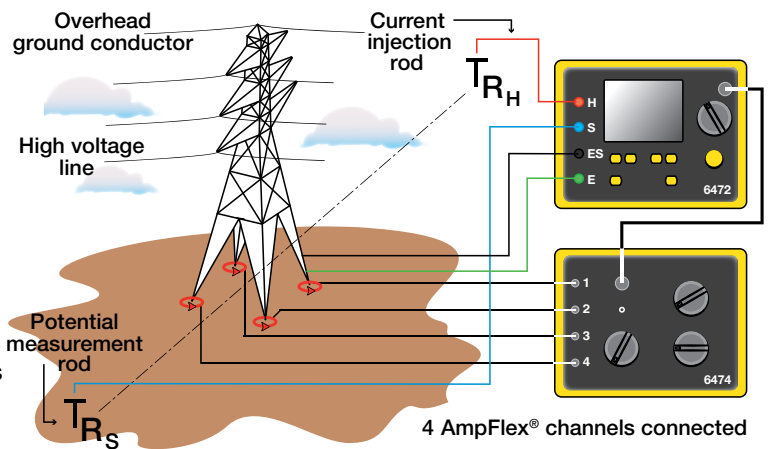
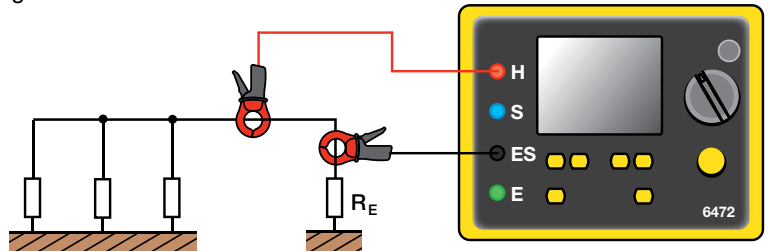
### Automatic recognition and display of input connections to match test

The connections are displayed and flash if incorrect or absent for the test selected.



### Ground resistance measurement using 2 Clamps

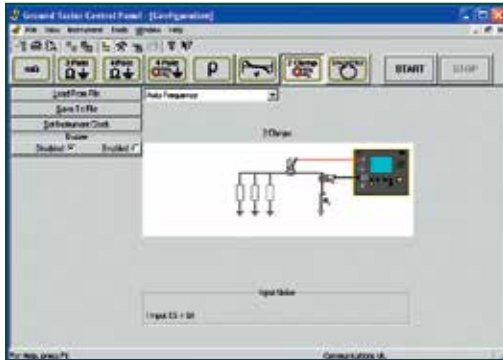
In the event of a system with parallel ground connections, the Model 6472 is capable of accurately measuring a ground resistance using clamps only. The principle of this method involves placing 2 clamps around the ground conductor to be tested and connecting them each to the instrument. One clamp injects a known signal (32V/1367Hz) while the other clamp measures the current circulating in the loop. This method saves considerable time when ground testing because it is no longer necessary to set up auxiliary rods or to disconnect the ground connector.



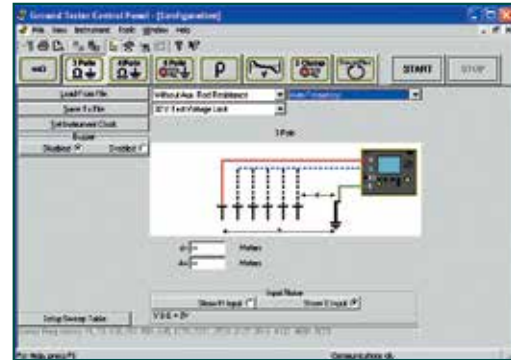
CATALOG NO.	DESCRIPTION
2135.54	Ground Resistance Tester Model 6472 Kit – 500 ft (Model 6472 and Cat. #2135.37)
2136.03	GroundFlex® Field Kit Model 6474 (Includes Cat. #2135.54)
2136.04	GroundFlex® Adapter Model 6474 w/{1} 10 m GroundFlex® Sensor
2136.05	GroundFlex® Adapter Model 6474 w/{1} 10 m GroundFlex® Sensor (Includes Cat. #2136.04 & Cat. #2135.54)

## Typical DataView® Functional Displays

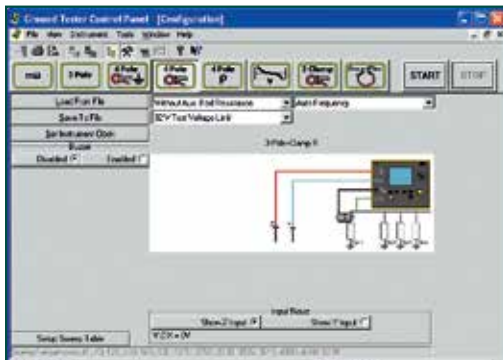
### 2 Clamp Method Setup



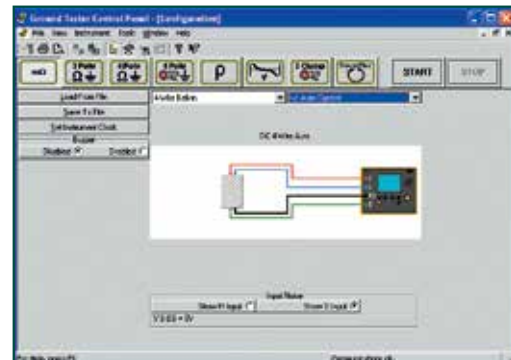
### Fall-of-Potential, Step-Touch Potential



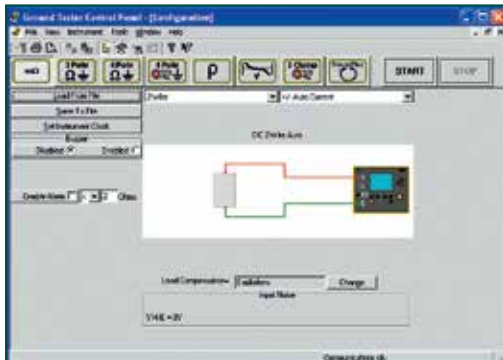
### Selective 3-Point Testing of Multiple Rods



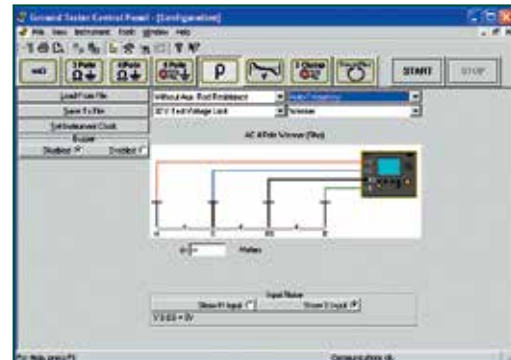
### 4-Point Bonding For Very Low Resistance



### Bonding



### Soil Resistivity



## ▶ OPTIONAL KITS

### 150 ft Kit

#### Catalog #2135.35

Test Kit for 3-Point testing includes carrying bag, two 150 ft color-coded leads on spools (red/blue), two 5 ft color-coded leads (red/blue), one 30 ft lead (green), two 14.5" T-shaped auxiliary ground electrodes, one set of five spaded lugs and 100 ft tape measure.



### 300 ft Kit

#### Catalog #2135.36

Test Kit for 4-Point testing includes carrying bag, two 300 ft color-coded leads on spools (red/blue), two 5 ft color-coded leads (red/blue), two 100 ft color-coded leads (green and black), four 14.5" T-shaped auxiliary ground electrodes, one set of five spaded lugs and 100 ft tape measure.



### 500 ft Kit

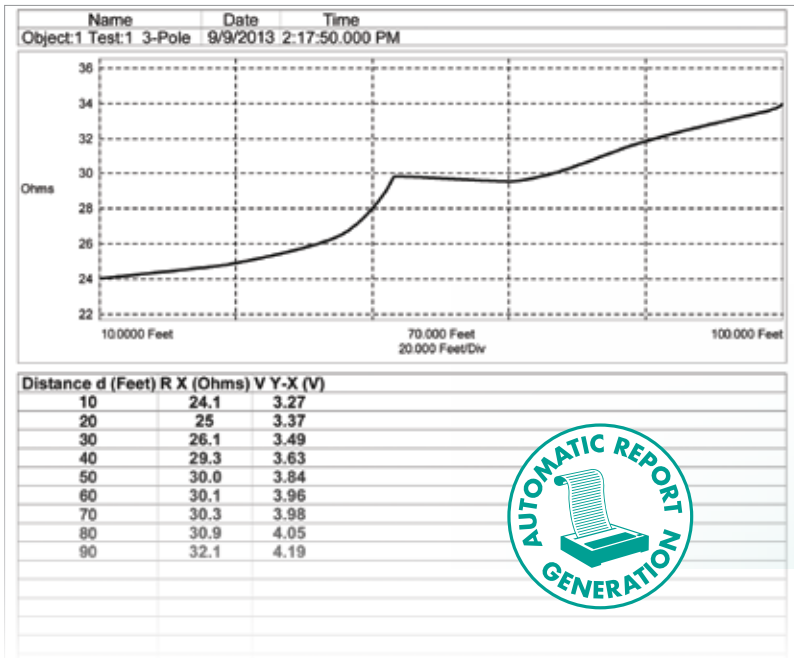
#### Catalog #2135.37

Test Kit for 4-Point testing includes carrying bag, two 500 ft color-coded leads on spools (red/blue), two 5 ft color-coded leads (red/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 and 100 ft tape measure.



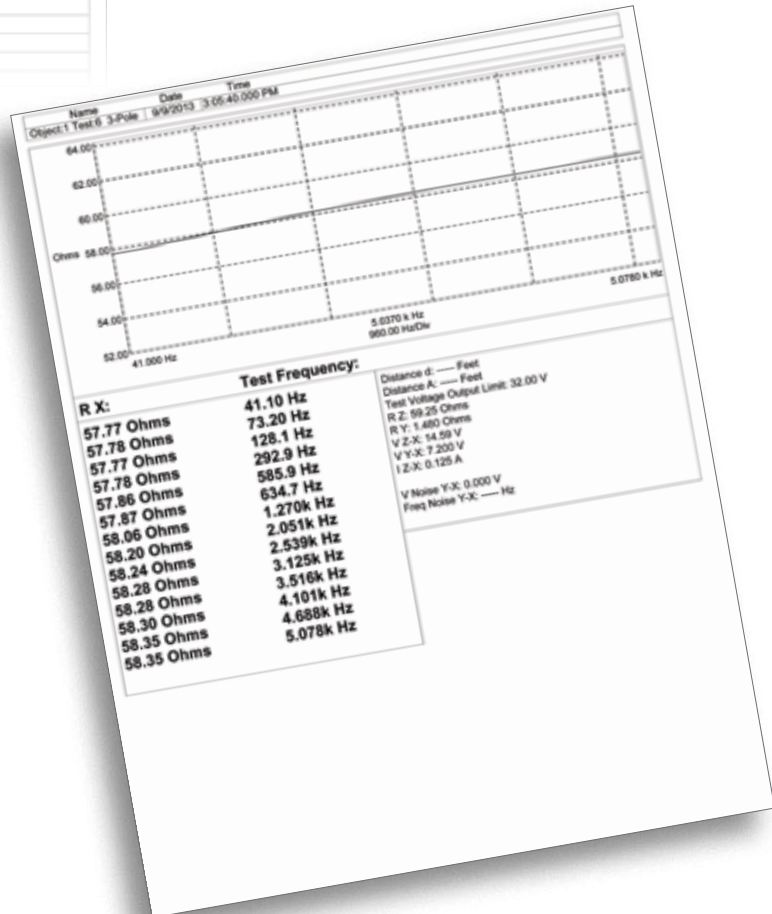
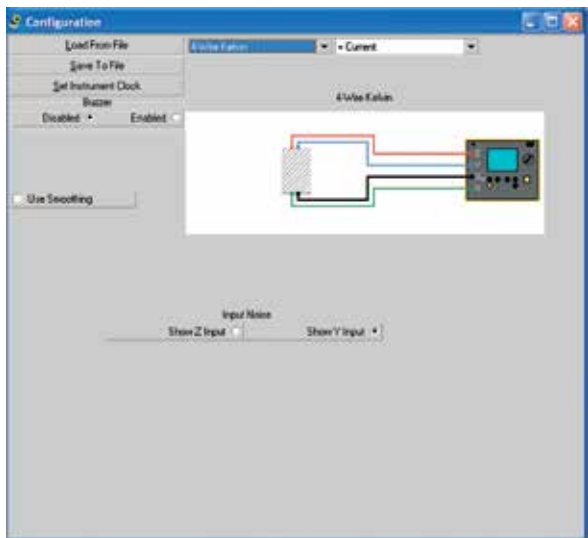
# DataView®

Data Analysis and Reporting Software for Ground Testers



## Configure all functions of the Models 6417, 6471 & 6472

- 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
- 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 on our website [www.aemc.com](http://www.aemc.com)



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, all ground tester 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.