

# GROUND RESISTANCE TESTERS

## MULTI-FUNCTION

### MODEL 6471

Test ground resistance without the need of auxiliary rods or with the 3- and 4- Point methods

### SPECIFICATIONS

MODEL	6471
<b>ELECTRICAL</b>	
<b>2 Clamp Measurement</b>	
Range	0.10 to 500Ω
Resolution	0.01 to 1Ω
Measurement Frequency	Auto: 1611Hz Manual: 128Hz-1367Hz-1611Hz-1758Hz
<b>3-Point Measurement</b>	
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 513Hz automatic or user selectable
Test Current	Up to 250mA
Accuracy	±2% of Reading + 1ct @ 128Hz
<b>Soil Resistivity 4-Point Measurement</b>	
Test Method	Wenner or Schlumberger selectable with automatic calculation in Ω-meters
Range (Auto-Ranging)	0.01 to 99.99kΩ; ρ max: 999kΩm
Resolution	0.001 to 10Ω
Test Voltage	16 or 32V user selectable
Frequency	From 41 to 128Hz selectable
<b>External Voltage Measurement</b>	
Range (Auto-Ranging)	0.1 to 65.0VAc/dc – DC to 440Hz
Accuracy	±2% of Reading + 1ct
<b>Resistance Measurement (Bond Testing)</b>	
Measurement Type	2-Pole (with lead resistance compensation) or 4-Pole (Kelvin sensing) user selectable
Range (Auto-Ranging)	2-Pole 0.12 to 99.99kΩ; 4-Pole 0.02 to 99.99kΩ
Accuracy	±2% of Reading + 2cts
Test Voltage	16Vdc (+, - or auto polarity)
Test Current	Up to 250mA max
<b>Data Storage</b>	
Memory Capacity	512 test results (64KB)
Communication	Optically Isolated USB
Power Source	9.6V rechargeable battery pack (included)
Recharging Source	110/220V, 50/60Hz external charger with 18Vdc, 1.9A output

Consult factory for NIST Calibration prices

### ACCESSORIES



**MN82 CURRENT PROBE**  
(2mA to 10Arms)  
Catalog #2135.71



**SR182 CURRENT PROBE**  
(0.5MA TO 40ARMS)  
Catalog #2135.72



**REEL CADDY**  
Catalog #2135.85 Set of (2),  
for use with ground kit spools



DataView®



cover closed



### GROUND RESISTANCE MEASUREMENT USING 2 PROBES

For systems with parallel ground connections, Models 6471 and 6472 are capable of accurately measuring a ground resistance using probes only. This method involves placing 2 probes around the ground conductor to be tested and connecting them each to the instrument. One probe injects a known signal (32V/1367Hz) while the other probe 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.

### PRODUCT INCLUDES

#### CAT #2135.48 MODEL 6471 (without probes)

Carrying bag, 110/240V power adapter with US power cord, optical USB cable, rechargeable NiMH battery, and a USB drive with DataView® software, ground tester workbook and a user manual.

#### CAT #2135.49 MODEL 6471 (with probes)

Carrying bag, set of (2) SR182 current probes, 110/240V power adapter with US power cord, optical USB cable, rechargeable NiMH battery, and a USB drive with DataView® software, ground tester workbook and a user manual.

#### KIT SHOWN 300 FT KIT: CATALOG #2135.50

Carrying bag for meter, carrying bag for kit, (2) 300 ft color-coded (red/blue) leads on spools, (2) 5 ft color-coded (red/blue) leads, (2) 100 ft hand-tied color-coded (green/black) leads, set of (2) SR182 current probes, 110/240V power adapter with US power cord, optical USB cable, (4) T-shaped auxiliary ground electrodes, set of (5) spaded lugs, 100 ft tape measure, rechargeable NiMH battery, and a USB drive with DataView® software, ground tester workbook and a user manual.



2 probes required to perform stakeless testing.

# GROUND RESISTANCE TESTERS

## MULTI-FUNCTION

### MODEL 6472

Use under difficult conditions such as the presence of high stray currents that normally affect accuracy

### SPECIFICATIONS

MODEL	6472
<b>ELECTRICAL</b>	
<b>2 Clamp Measurement</b>	
Range	0.1 to 500Ω
Resolution	0.01 to 1Ω
Measurement Frequency	Auto: 1611Hz Manual: 128Hz-1367Hz-1611Hz-1758Hz
<b>3-Point Measurement</b>	
Range (Auto-Ranging)	0.09Ω to 99.9kΩ
Resolution	0.01Ω to 100Ω
Test Voltage	Nominal 10, 16, 32 or 60Vrms user selectable
Resistance Measurement Frequency	41 to 5078Hz automatic or user selectable
Test Current	Up to 250mA
Accuracy	±2% of Reading + 1ct @ 128Hz
<b>Soil Resistivity 4-Point Measurement</b>	
Test Method	Wenner or Schlumberger selectable with automatic calculation of test results in Ω-meters
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
<b>External Voltage Measurement</b>	
Range (Auto-Ranging)	0.1 to 65.0VAc/dc – DC to 440Hz
Accuracy	±2% of Reading + 1ct
<b>Resistance Measurement (Bond Testing)</b>	
Measurement Type	2-Pole (with lead resistance compensation) or 4-Pole (Kelvin sensing) user selectable
Range (Auto-Ranging)	2-Pole 0.12Ω to 99.99kΩ; 4-Pole 0.02Ω to 99.99kΩ
Accuracy	±2% of Reading + 2cts
Test Voltage	16Vdc (+, - or auto polarity)
Test Current	Up to 250mA max
<b>Data Storage</b>	
Memory Capacity	512 test results (64KB)
Communication	Optically Isolated USB
Power Source	9.6V rechargeable battery pack (included)
Recharging Source	110/220V, 50/60Hz external charger with 18Vdc, 1.9A output

Consult factory for NIST Calibration prices

### ACCESSORIES

**MN82 CURRENT PROBE**  
(2mA to 10Arms)  
Catalog #2135.71



**SR182 CURRENT PROBE**  
(0.5MA TO 40ARMS)  
Catalog #2135.72



**REEL CADDY**  
Catalog #2135.85  
Set of (2), for use with ground kit spools



DataView®



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

### PRODUCT INCLUDES

Carrying bag, 110/240V power adapter with US power cord, optical USB cable, rechargeable NiMH battery, DataView® software, ground tester workbook and a user manual.

### TEST KITS

**6472 METER**  
300 ft Kit: Catalog #2135.53  
500 ft Kit: Catalog #2135.54 (shown)

Refer to page 78 for Model 6472 Kit descriptions Catalog #2135.35, #2135.36 and #2135.37



2 probes required to perform stakeless testing.

# GROUND RESISTANCE TESTERS

## MULTI-FUNCTION

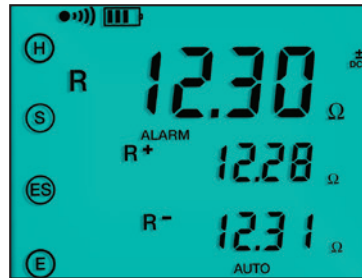
### LARGE FUNCTIONAL DISPLAYS

#### FEATURES

- Ground Integrity Measurement
- Ground Resistance testing using the 2 clamp method (no auxiliary rods needed)
- 2- and 4-Point Bond Resistance/Continuity measurement (DC Resistance) with automatic polarity reversal
- 3-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
- 3-Point Earth Coupling measurement
- Manual and Automatic frequency scan from 41 to 5078 Hz for optimum test accuracy in electrically noisy environments
- Selectable test voltage of 16 or 32V up to 250mA of test current
- Auto Power OFF feature
- Automatic recognition of all electrode connections and their resistance value
- Stores up to 512 complete test results in internal memory
- Display with automatic backlight when entering a function
- Optically isolated USB communication cable included
- Rechargeable NiMH batteries from wall charger or vehicle power
- Rugged dustproof and water-resistant field case (IP53 rated in closed position)
- Grounding standards IEC 61557 parts 4 and 5 compliant
- Includes DataView® software for set up, data retrieval, real-time display, analysis, report generation and system configuration
- Can also be used for continuity tests on bonding

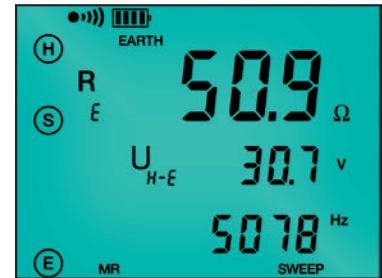
2 probes required to perform stakeless testing.

#### 4-POINT BOND TEST



The 4-Point Bond test shows 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 rod resistance and test electrode resistances

#### SCHLUMBERGER TEST



The Schlumberger test displays test lead connection, soil resistivity ( $\rho$ ) test results and electrode spacing

#### TWO CLAMP TEST



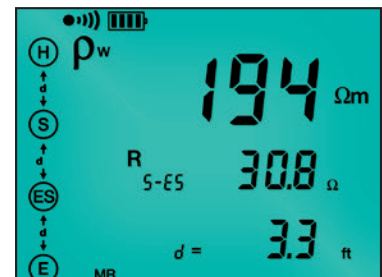
The 2 Clamp method displays clamp connection resistance, test current and frequency

#### DATA STORAGE



Memory Recall displays test results stored at a specific memory location

#### WENNER TEST



The Wenner test displays test lead connection, soil resistivity ( $\rho$ ) test results, electrode spacing and resistance

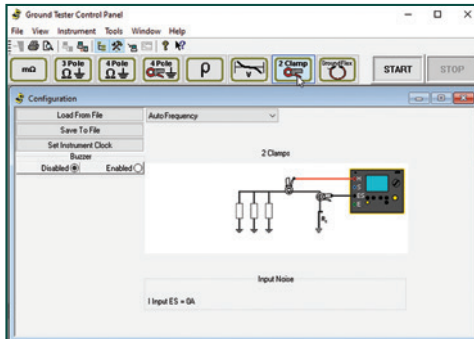
CATALOG NO.	DESCRIPTION
2135.48	Ground Resistance Tester Model 6471 (Digital, 3-Point, 4-Point, Clamp-on (SR182 probes not included), DataView® Software)
2135.49	Ground Resistance Tester Model 6471 (Digital, 3-Point, 4-Point, Clamp-on, (includes 2-SR182 probes), DataView® Software)
2135.50	Ground Resistance Tester Model 6471 Kit – 300 ft (Catalog #2135.49 and Catalog #2135.36)
2135.51	Ground Resistance Tester Model 6472 (Digital, 2-Point, 3-Point, 4-Point, Bond Test, DataView® software)
2135.53	Ground Resistance Tester Model 6472 Kit – 300 ft (Catalog #2135.51 and Catalog #2135.36)
2135.54	Ground Resistance Tester Model 6472 Kit – 500 ft (Catalog #2135.51 and Catalog #2135.37)
2135.60	Ground Resistance Tester Model 6471 Kit – 300 ft w/o Probes (Catalog #2135.48 and Catalog #2135.36)
2135.61	Ground Resistance Tester Model 6471 Kit – 500 ft w/o Probes (Catalog #2135.48 and Catalog #2135.37)

# GROUND RESISTANCE TESTERS

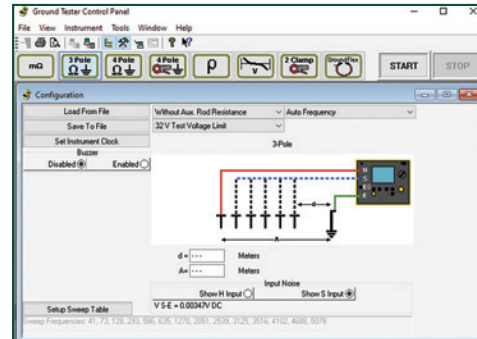
## MULTI-FUNCTION

### GROUND TESTERS MODELS 6471 & 6472 — TYPICAL DATAVIEW® FUNCTIONAL DISPLAYS

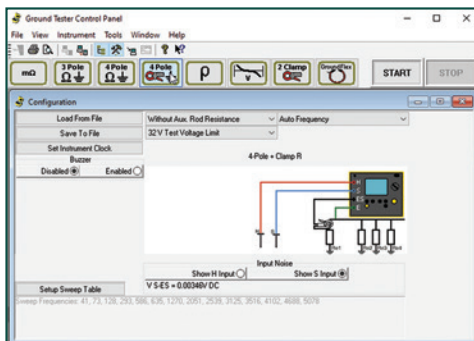
2 CLAMP METHOD SETUP



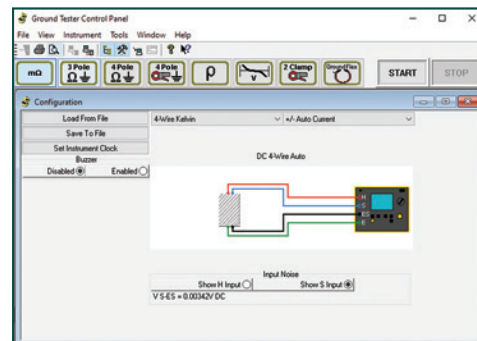
FALL-OF-POTENTIAL, STEP-TOUCH POTENTIAL



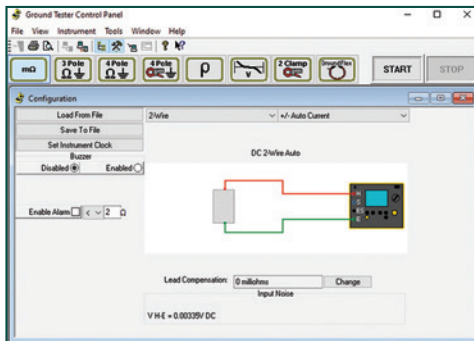
SELECTIVE 3-POINT TESTING OF MULTIPLE RODS



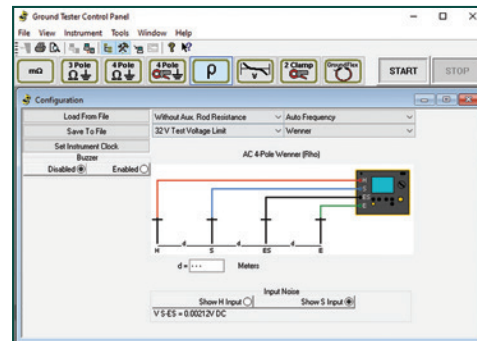
4-POINT BONDING FOR VERY LOW RESISTANCE



BONDING



SOIL RESISTIVITY



## OPTIONAL KITS

### 150 FT KIT

Catalog #2135.35

Test Kit for 3-Point testing includes carrying bag, (2) 150 ft color-coded (red/blue) leads on spools, (2) 5 ft color-coded (red/blue) leads, (1) 30 ft lead (green), (2) 14.5" T-shaped auxiliary ground electrodes, a set of (5) spaded lugs and (1) 100 ft tape measure.



### 300 FT KIT

Catalog 2135.36

Test Kit for 4-Point testing includes carrying bag, (2) 300 ft color-coded (red/blue) leads on spools, (2) 5 ft color-coded (red/blue) leads, (2) 100 ft hand-tied color-coded leads (green/black), (4) 14.5" T-shaped auxiliary ground electrodes, a set of (5) spaded lugs and (1) 100 ft tape measure.



### 500 FT KIT

Catalog #2135.37

Test Kit for 4-Point testing includes carrying bag, (2) 500 ft color-coded (red/blue) leads on spools, (2) 5 ft color-coded (red/blue) leads, (2) 100 ft hand-tied color-coded (green/black) leads, (1) 30 ft lead (green), (4) 14.5" T-shaped auxiliary ground electrodes, a set of (5) spaded lugs and (1) 100 ft tape measure.



# GROUND RESISTANCE TESTERS

## SELECTION CHART

AEMC MODEL NUMBER	AEMC CATALOG NUMBER	RESISTANCE RANGE	POWER SOURCE	2 POINT TEST	3 POINT TEST	4 POINT/ SELECTIVE	SOIL RESISTIVITY TEST	EARTH COUPLING	2 CLAMP	BONDING	DISPLAY	VOLTAGE INDICATION	INDUCTANCE INDICATION	SWEEP FREQUENCY
6416	2141.01	0.01 to 1500Ω	Battery	Clamp-On Ground Resistance Tester w/Alarm and Memory				-	✓	✓**	Digital	Voltage Displayed (noise icon, buzzer)	✓	-
6417	2141.02	0.01 to 1500Ω	Battery	Clamp-On Ground Resistance Tester w/Alarm, Memory and Bluetooth communication				-	✓	✓**	Digital		✓	-
6418	2141.03	0.01 to 1200Ω	Battery	Clamp-On Ground Resistance Tester w/Alarm and Memory				-	✓	✓**	Digital	Noise Icon	-	-
6422	2135.55	0.05 to 50kΩ	Battery	✓			-			✓	Digital	Noise Icon	-	-
6422 Kit 150FT	2135.56	0.05 to 50kΩ	Rechargeable Battery	✓			-			✓	Digital	Noise Icon	-	-
6424	2135.57	0.05 to 50kΩ	Rechargeable Battery	✓			-			✓	Digital	Noise Icon	-	-
6424 Kit 150FT	2135.58	0.05 to 50kΩ	Rechargeable Battery	✓			-			✓	Digital	Noise Icon	-	-
6424 Kit 300FT	2135.59	0.05 to 50kΩ	Rechargeable Battery	✓			-			✓	Digital	Noise Icon	-	-
GroundFlex® Field Kit Model 6474	2136.03	0.001Ω to 99.99kΩ	Rechargeable Battery	-			✓		-	✓	Digital	Voltage Displayed	-	✓
6471 (SR182 probes not included)	2135.48	0.01 to 99.99kΩ	Rechargeable Battery				✓		✓***	✓	Digital	Voltage Displayed	-	-
6471	2135.49	0.01 to 99.99kΩ	Rechargeable Battery				✓		✓	✓	Digital	Voltage Displayed	-	-
6471 Kit 300FT	2135.50	0.01 to 99.99kΩ	Rechargeable Battery				✓		✓	✓	Digital	Voltage Displayed	-	-
6472	2135.51	0.01 to 99.99kΩ	Rechargeable Battery				✓		✓***	✓	Digital	Voltage Displayed	✓	-
6472 Kit 300FT	2135.53	0.01 to 99.99kΩ	Rechargeable Battery				✓		✓***	✓	Digital	Voltage Displayed	✓	-
6472 Kit 500FT	2135.54	0.01 to 99.99kΩ	Rechargeable Battery				✓		✓***	✓	Digital	Voltage Displayed	✓	-
4620	2130.43	0.0 to 1999Ω	Battery	✓	-		✓		-		Digital	LED/Buzzer	-	-
4620 Kit 150FT	2135.19	0.0 to 1999Ω	Battery	✓	-		✓*		-		Digital	LED/Buzzer	-	-
4620 Kit 300FT	2135.20	0.0 to 1999Ω	Battery	✓	-		✓		-		Digital	LED/Buzzer	-	-
4620 Kit 500FT	2135.21	0.0 to 1999Ω	Battery	✓	-		✓		-		Digital	LED/Buzzer	-	-
4630	2130.44	0.0 to 1999Ω	Rechargeable Battery	✓	-		✓		-		Digital	LED/Buzzer	-	-
4630 Kit 150FT	2135.22	0.0 to 1999Ω	Rechargeable Battery	✓	-		✓*		-		Digital	LED/Buzzer	-	-
4630 Kit 300FT	2135.23	0.0 to 1999Ω	Rechargeable Battery	✓	-		✓		-		Digital	LED/Buzzer	-	-
4630 Kit 500FT	2135.24	0.0 to 1999Ω	Rechargeable Battery	✓	-					-		Digital	LED/Buzzer	-

\* Performing soil resistivity tests with this kit requires two additional auxiliary electrodes not supplied in the 150 ft kit and one additional test lead.

\*\* Clamp-on Ground Resistance Tester can measure system continuity inclusive of all bonding points.

\*\*\* Must purchase an additional (2) SR182 or (2) MN82 accessory clamps