

GroundFlex Field Kit Tower Ground Resistance Tester 6474 and Multifunction Earth Tester 6472-AU



AEMC's GroundFlex® Field Kit includes the GroundFlex® Adapter Model 6474 and Ground Resistance Tester Model 6472. This is the **ONLY** system on the market capable of testing ground resistance of individual power transmission tower legs, as well as total resistance without disconnecting the overhead ground wire – this alone is a huge time and money saver, not to mention a major safety improvement.

Key features include testing both ground resistance of tower legs (individually and total) and overhead ground wires. This system tests leakage current through the tower legs and tests at frequencies up to 5kHz to profile impedance, which is important to characterize for lightning strikes.

The AEMC 6472 Earth Tester is several earth testers in one. It allows the user to perform all necessary earth measurements comprising:

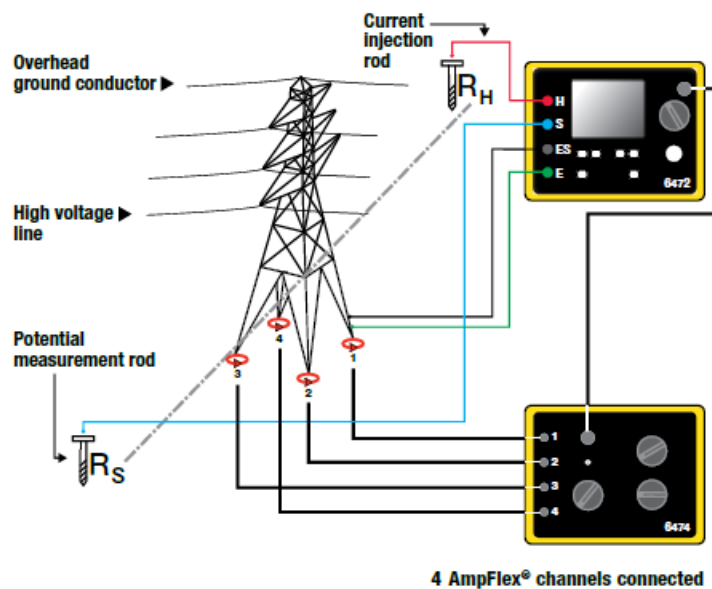
- Earth Resistance of an isolated electrode
- Earth Resistance of a connected electrode without disconnection by the Selective method
- Earth Resistance of a connected electrode without disconnection by the Stakeless method
- Soil Resistivity directly in Ohm-m by either the Wenner or Schlumberger methods
- Earth Bond Resistance (milli-ohmmeter)
- External AC and DC voltage measurement

The 6472 distinguishes itself from other portable earth testers in that it has a test current of up to 250mA improving its ability to make accurate and repeatable measurements in poor soil conditions as frequently encountered in Australia.



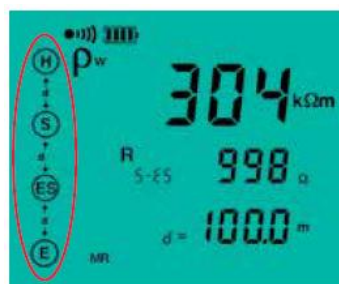
The **6474/6472-AU** is an Australian derivation of the standard European & US 6474/6472 GroundFlex kit, developed in co-operation with Australian Power utilities and includes:

1. 4x GroundFlex 5m sensors
2. 50/25m test leads on A-frame reel for fast roll out and rewind. (100/50m optional)
3. 4x Stainless steel helical stakes for strength, corrosion resistance and superior ground contact
4. 2x Connecting leads and crocodile clips Cat 4, 600V
5. 2x Connecting and CT leads 4m in length to reach pole transformer test points from ground
6. 2x Heavy duty HPRC resin case with foam cut-outs accommodating instrument & accessories.
7. 1x 6472/6474 Connection lead
8. 6x BNC extension leads
9. 2x C-clamps
10. 1x Optical USB cable
11. 1x Power adaptor and Australian power cord
12. USB Stick with DataView software & User manual for set up, data storage, real time display, analysis, report generation and system configuration
13. Calibration certificates
14. Optional 100kA fused bridging lead with insulation piercing connectors for safe stakeless testing of HV earths when not bonded to LV earth.
15. Optional 2 x SR182 Current Probes for 2-clamp (stakeless method)



Ground measurement on towers with ground cable

High-voltage lines are usually equipped with a ground cable to allow lightning to discharge to ground via the tower. As all the towers 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 ground 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.

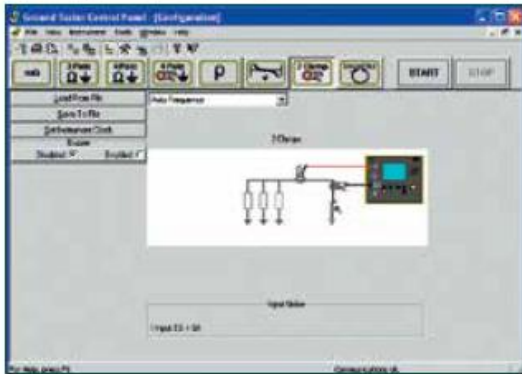
Features

- Measures the Earth Resistance of steel towers and poles
- Just one measurement for towers, poles or structures with up to 4 legs
- Suitable for measuring the earth resistance of H-frames, tri-leg & communications towers
- Can be used on reinforced concrete poles bonded with overhead earth
- Tests with all other bonding in place
- No need to isolate the line or climb towers or structures
- Automatic check for correct connection
- Unaffected by any stray currents flowing in structures
- Static Test Indicates:
 - Leakage current present in the tower or pole
 - Indication of high resistance or disconnected overhead earth bond
 - Test stakes placed within potential gradient area of tower
- Measure earth resistance using 2-clamp (stakeless method) – No auxiliary stakes needed
- Measure earth resistance using single clamp (selective method)
- Measure earth resistance using 3-pole Fall of Potential method
- Measure Soil Resistivity with automatic calculation of ρ in Ohm-m using Wenner or Schlumberger methods
- Measure resistance (earth bonding) by 2 and 4-pole (Kelvin) DC resistance methods
- Automatic or manual selection of test frequency from 40 to 5078Hz
- Selectable test voltage of 16 or 32V
- Test current up to 250mA
- All leads and connectors colour coded
- Automatic recognition of test stake connections and their resistance values
- Stores up to 512 complete test results in internal memory
- Rugged weather and dustproof case to IP53
- DataView report generation software included

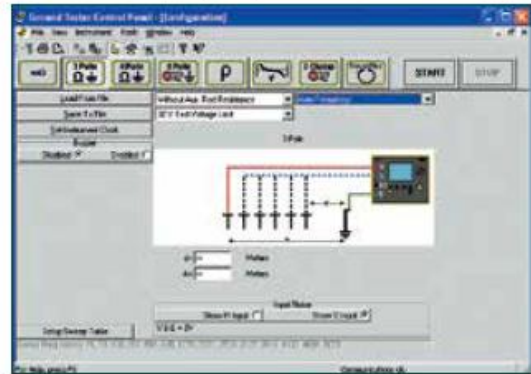


Typical DataView® Functional Displays

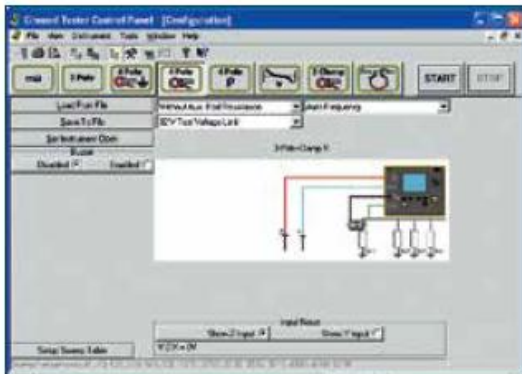
2 Clamp Method Setup



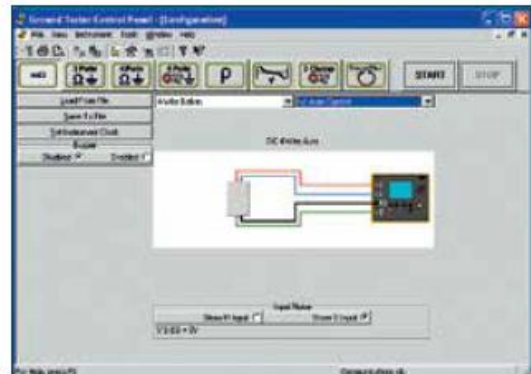
Fall-of-Potential, Step-Touch Potential



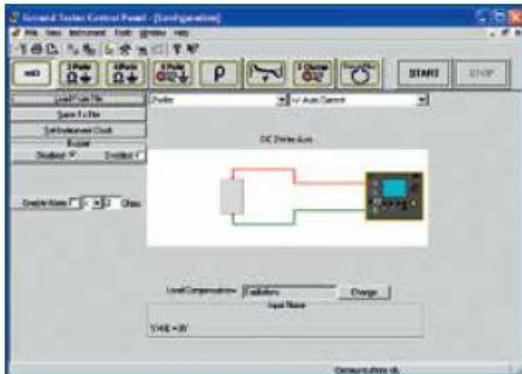
Selective 3-Point Testing of Multiple Rods



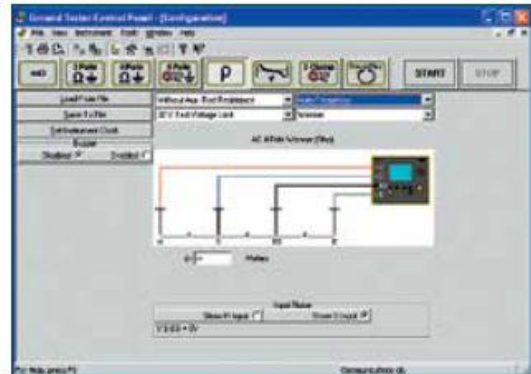
4-Point Bonding For Very Low Resistance



Bonding



Soil Resistivity



AC Current Probe Model SR182
Catalog #2135.72

Current Probe accessory option

For use in two clamp and selective ground testing methods

Specifications

2 CLAMP METHOD	
Range	0.1 to 500Ω
Resolution	0.01 to 1Ω
Measurement Frequency	Auto: 1611Hz Manual:128Hz, 1367Hz, 1611Hz, 1758Hz
3-POLE METHOD	
Range (auto ranging)	0.01Ω to 99.9kΩ
Resolution	0.01Ω to 100Ω
Test Voltage	16 or 32 V RMS
Resistance Measurement Frequency	41 to 5078Hz automatic or user selectable
Test Current	250mA max.
Accuracy	±2% reading + 1 count @128Hz
SOIL RESISTIVITY	
Test Methods	Wenner or Schlumberger with automatic calculation in Ω-metres
Range (auto ranging)	0.01 to 99.9kΩ p max 999kΩ-m
Resolution	0.01Ω to 100Ω
Test Voltage	16 or 32 V RMS
Resistance Measurement Frequency	41 to 128Hz automatic or user selectable
EXTERNAL VOLTAGE MEASUREMENT	
Range (auto ranging)	0.1 to 65V AC/DC to 440Hz
Accuracy	±2% reading + 1 count
RESISTANCE MEASUREMENT (Bond Testing)	
Measurement Type	2-pole with lead resistance compensation or 4-pole Kelvin
Range (auto ranging)	2-pole 0.02Ω to 99.9kΩ 4-pole 0.02Ω to 99.99kΩ
Accuracy	±2% reading + 2 counts
Test Voltage	16V DC (+/- or auto polarity)
Test Current	250mA max.
MEASUREMENT WITH 6474	
Range (auto ranging)	0.001Ω to 99.99kΩ
Resolution	0.001Ω to 10Ω
Accuracy	±5% reading + 1 count
Test Voltage	16 or 32 V RMS
Resistance Measurement Frequency	41 to 5078Hz automatic or user selectable
Test Current	250mA max.
DATA STORAGE	
Memory Capacity	512 test results
Communication	Optically isolated USB
POWER SOURCE	
Battery Type	9.6V NiMh rechargeable battery pack
Recharging	110/230V external charger with 18V DC 1.9A output or 12V DC
DIMENSIONS/ WEIGHT	
6472	272 x 250 x 128mm, 3.2Kg
6474	272 x 250 x 128mm, 2.3kG
6472 Hard Case external dimensions	620 x 520 x 275mm
6474 Hard Case external dimensions	543 x 419 x 218mm

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