# 10kV and 15kV Digital Megohmmeters

## Models 6550 & 6555

## Expert tools for testing insulation safely & accurately

- Insulation measurement up to 30TΩ
- Test voltages up to 15,000V
- Step, ramp & fixed voltage testing
- Multiple test modes: voltage ramp and step with "Burn-In", "Early-Break" and "I-Limit" modes
- 3 filter choices to optimize measurement stability
- Selectable voltage from 40V to 10,000 / 15,000V
- Storage of up to 80,000 measurements
- Optically-isolated USB communication for data transfer to PC and report generation using DataView® software


IP 54 Rated

SAFETY 1000V CAT IV RATING

*Our products are backed by over 100 years of experience in test and measurement equipment, and encompass the latest international standards for quality and safety.*

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**www.aemc.com**

AEMC® INSTRUMENTS
CHAUVIN ARNOUX GROUP

# Models 6550 & 6555

*Model 6555 checking insulation resistance on feed cables to a three-phase motor.*


The Megohmmeter Models 6550 and 6555 are high-end portable instruments intended for measuring a wide variety of electrical insulation resistance values on cables and devices operating at high voltage. They are packaged in a rugged case that is IP54 rated (cover closed). Test results and configuration information is provided on a graphical LCD screen, as well as exportable through the use of the DataView® software provided. The Megohmmeters can operate on battery or AC power while testing.

These Megohmmeters contribute to the safety of electrical installations and equipment. Their operation is managed by microprocessors that acquire, process, display and store the measurements.

The Model 6550 makes insulation measurements at voltages up to 10,000V, the Model 6555 up to 15,000V.

## Main Functions:

- Detection and measurement of input voltage, frequency, and current prior to running a test.
- Quantitative and qualitative insulation measurements.
- Measurements at a fixed test voltage of 500, 1000, 2500, 5000, 10,000 or 15,000VDC.
- Measurements at an adjustable test voltage between 40 and 15,000VDC preselected by the user prior to the test. Three preselected test voltages can be stored in the instrument and can be modified as needed prior to starting a test.
- Ramp voltage measurements with a ramp from 40 to 10,000V or 15,000V, model dependent. Three ramp profiles can be stored in the instrument. Each ramp profile includes the starting and ending test voltage and the ramp time between the two.
- Step voltage measurements with steps from 40 to 10,000V or 15,000V, model dependent. Three step voltage profiles can be stored in the instrument. Each contains up to 10 steps that include test voltage and duration.
- Three test current choices: Burn-In, Early-Break and I-Limit provide qualitative analysis tools for detection breaks in insulation.
- Quality ratio calculations for DAR, PI, and DD are calculated and displayed.
- Temperature correction of the measured resistance to a reference temperature.
- Capacitance measurement of the device tested.
- Residual current measurement.

# SELECTABLE VOLTAGE FROM 40V TO 10kV / 15kV

## FEATURES

- True Megohmmeter®
- Fixed or programmable test voltage from 40V to 10kV / 15kV
- Wide measurement range from 10kΩ to 30TΩ
- 5mA charging current
- Step voltage testing
- Ramp voltage testing
- Automatic calculation of DAR / PI / DD / ΔR (ppm / V) ratios
- Digital filtering of insulation measurements to eliminate noise and erratic display of the results
- Live measurement of the voltage to warn the operator of potential unsafe conditions
- Programmable thresholds to trigger audible alarms which aid the user in fault detection
- Timed measurement duration checks
- Current limit programming
- Fuse protection, with display indication of defective fuse condition
- Automatic discharging of the test voltage on the tested device at the end of the measurement provides for operator safety
- Auto Power Off mode saves battery power
- Battery charge indication
- Internal storage of up to 80,000 measurements
- Real-time clock
- Large backlit LCD screen with digital display, bargraph and R(t)+u(t), I(t) and I(V) graphs
- Multiple test modes: voltage ramp and step voltage with “Burn-In”, “Early-Break” and “I-Limit” modes
- Three filter settings to optimize measurement stability
- Temperature correction of R at a reference temperature
- Optically-isolated USB communication for transfer onto PC and report generation with FREE DataView® software

## APPLICATIONS

- Acceptance testing and preventive maintenance
- Test motors, cables, switchgears and electrical wiring installations
- Continuity checks
- Check domestic and industrial wiring

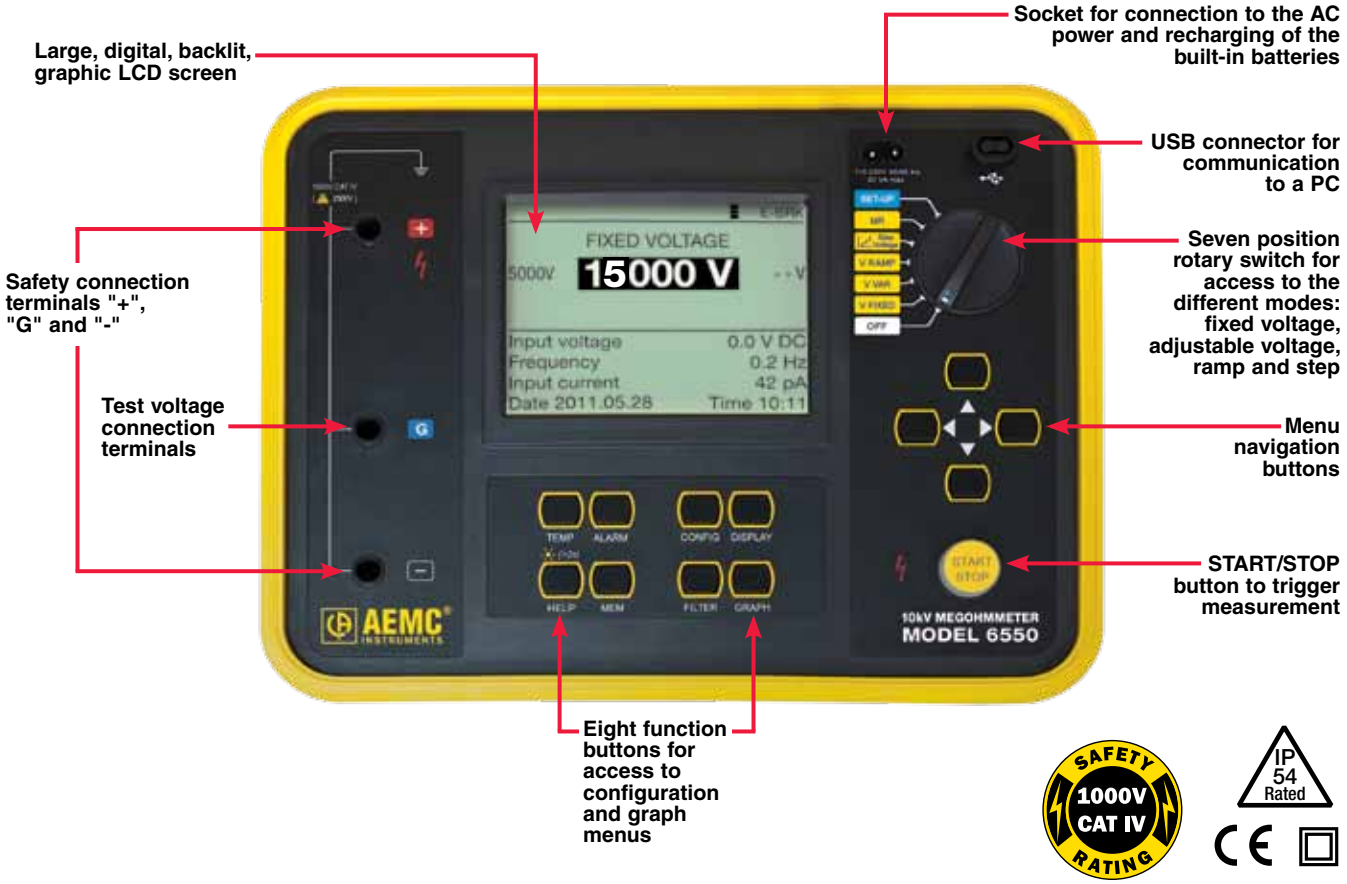
## SPECIFICATIONS

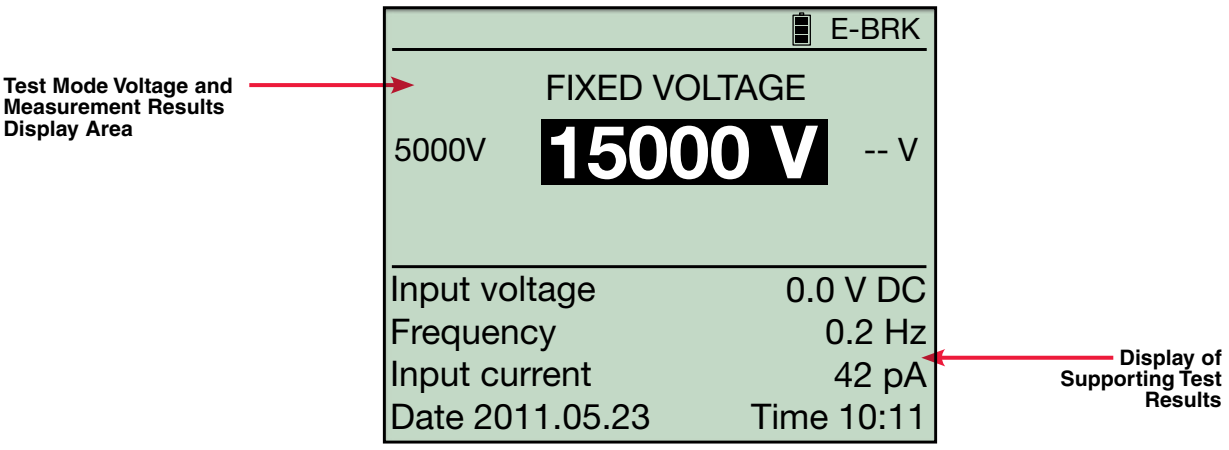
| MODELS | | 6550 | 6555 |
|---|---|---|---|
| **INSULATION TESTS** | | | |
| **Test Voltage** | 500V<br>1000V<br>2500V<br>5000V<br>10,000V | 10kΩ to 2000GΩ (2TΩ)<br>10kΩ to 4000GΩ (4TΩ)<br>10kΩ to 10,000GΩ (10TΩ)<br>10kΩ to 15,000GΩ (15TΩ)<br>10kΩ to 25,000GΩ (25TΩ) | |
| | 15,000V | – | 10kΩ to 30,000GΩ (30TΩ) |
| **Fixed Test Voltages** | | 500/1000/2500/5000/10,000V | 500/1000/2500/5000/10,000/15,000V |
| **Variable Voltages** | | Variable: 40 to 10kV<br>Three user programmable voltage schemes | Variable: 40 to 15kV<br>Three user programmable voltage schemes |
| **Ramp Mode** | | Programmable ramps: start voltage/end voltage/duration | |
| **Ramp Configuration Range** | | 40 to 1100V<br>40 to 10,000V | 40 to 1100V<br>40 to 15,000V |
| **Step Mode** | | Up to 10 steps (value and duration configurable for each step) | |
| **Voltage Measurement** | | 0 to 2500VAC; 0 to 4000VDC | |
| **Capacitance Measurement** | | 0.001 to 9.999µF/10.00 to 49.99µF | |
| **Leakage Current Measurement** | | 0 to 8mA | |
| **Discharge After Test** | | Yes/Automatic | |
| **Additional Test Stop Modes** | | | |
| | I-Limit | Programmable: 0.2 to 5mA | |
| | Early-Break | di/dt | |
| | Timer | Up to 99 minutes 59 seconds | |
| **Burn Mode** | | Constant testing | |
| **Ratio Calculation** | | PI, DAR, DD | |
| **Calculation of R at ref. T°** | | Yes | |
| **Measurement Display Filter** | | 3 filters with 3 possible time constants | |
| **Graphs on Display** | | R(t)+V(t); I(t); I(V) | |
| **Storage** | | 256 registers, stores 80,000 points: R, V, I and date | |
| **Communication** | | Optically-isolated port for USB and RS232 links | |
| **PC Software** | | DataView® software | |
| **Power Supply** | | NiMH rechargeable batteries, two 9.6V/ 4000mAh charging by external voltage: 90 to 260V; 50/60Hz | |
| **Battery Charging** | | Battery charging allowed while performing insulation measurements | |
| **Electrical Safety** | | 1000V CAT IV; IEC61010-1 and IEC 61557 | |
| **EMC, Mechanical Protection, Altitude** | | EN 61326-1, IP54, 2000m | |
| **Dimensions/Weight** | | 13.39 x 11.81 x 7.87" (340 x 300 x 200mm) approx. 6.2kg (excluding accessories) | |

# CONTROL FEATURES

## Front Panel Features for Models 6550 & 6555

*Models 6550 and 6555 have the same front panel with differences in the display only.*



# FUNCTIONS

## Models 6550 & 6555

### Polarized Index (PI) & Dielectric Absorption Ratio (DAR)

Insulation is affected by temperature and humidity variations. Moreover, the appearance of disturbance currents means that the measurement is false right from the start. To eliminate these influences, you have to measure over the long term and calculate the PI and DAR coefficients in order to assess the quality and ageing of the insulation.

### Test with Programmable Duration

Insulation measurements sometimes take a long time to stabilize because of transient disturbance currents. Insulation quality can be assessed more accurately by means of long-term measurements and analysis of the insulation's trend curve according to the time for which the test voltage is applied.

### Dielectric Discharge (DD)

Automatically detect the presence of faulty insulation layers among other high-resistance layers using the math programmed into the instrument.

$$DD = \frac{\text{Current measured after 1 min (mA)}}{\text{Test Voltage (V) x Measured Capacitance (F)}}$$

### Stop Test on Thresholds (I-LIM or di/dt, Early-Break)

In order to cover non-destructive test applications, the Models 6550 and 6555 can be set up to stop the tests before breakdown if an insulation fault is detected. The breakdown limit may be a current (I-LIM), or a di/dt value. For investigations on samples, a BURN mode is provided to allow testing whatever the current reached.

### Variable Voltage Selection

To handle all measurement environments (electrical equipment, telecommunications installations, rotating machinery, etc.) and measure with the greatest possible accuracy, both instruments offer the V-VAR rotary-switch position. This allows users to select a voltage among three configurable values and then cause it to vary during the test from 40 to 10,000V/15,000V, in 10V steps from 40 to 1000V and in 100V steps above 1kV.

### Graph R(t)+V(t), I(t), I(V)

If a test with a programmed duration is run, the instruments automatically store the data at a rate chosen by the user. The Models 6550 and 6555 can display the curves R(t)+V(t), I(t) and I(V) directly on the graphic screen. The curves can also be displayed on a PC screen with the DataView® software.

### Programmable Alarms

An alarm threshold can be stored. When the measurement trips the alarm, visual and audible alarms are triggered and displayed.

### Filter Function

When the measurements are unstable, the filter function uses the several filters included in the instrument to smooth the display of the insulation values so that you can read them more easily and interpret them more quickly.

### Storage

The Models 6550 and 6555 are equipped with internal memory capable of storing up to 80,000 measurements. Two indices, OBJ (object) and TEST, are used to store the time/date-stamped results in an ordered way.

### Reference Temperature

The value of an insulation resistance varies according to the temperature at the time of the measurement. For precise, reliable monitoring, it is always a good idea to express the result of a measurement at a given temperature of reference. There is a special button to press to make the instrument perform the necessary calculation.

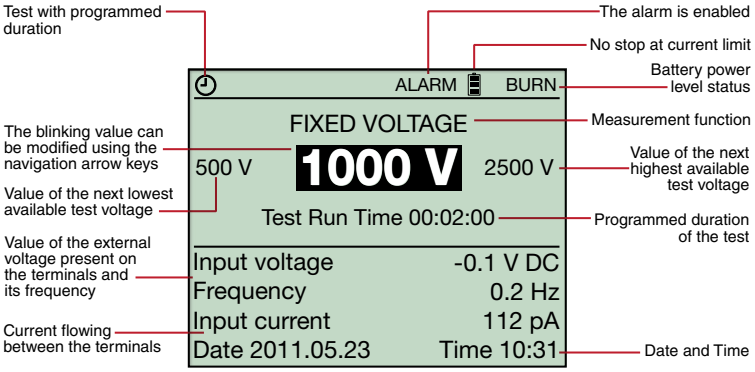
### Voltage Ramp and Voltage Step

The resistance of a faulty insulation falls as the test voltage increases. This test, which involves increasing the test voltage step by step, helps to assess the quality of the insulation by observing the curve R (V test) and the result in ppm/V, which gives a quantitative indication of the curves slope. A ramp mode with a rise time between the two values is also available.

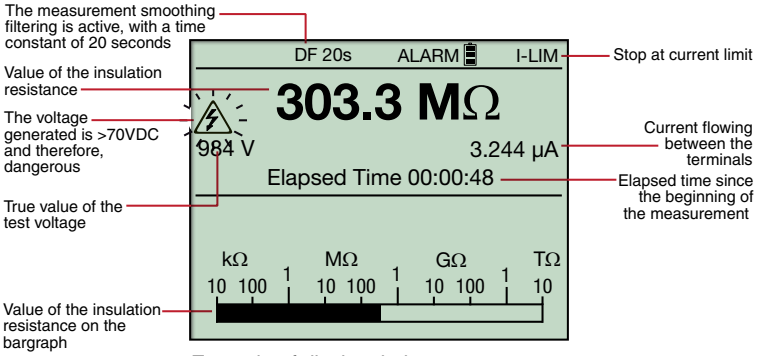
### DataView® Software

This software retrieves the data stored in the memory, plots the trend curve R(t), prints the customized test protocols and creates spreadsheet files. DataView® configures and controls the instrument via an optically-isolated link compatible with USB and RS232.

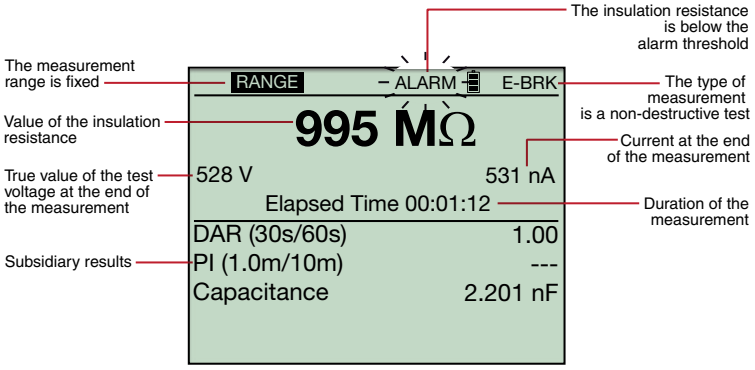
# FUNCTIONAL DISPLAYS



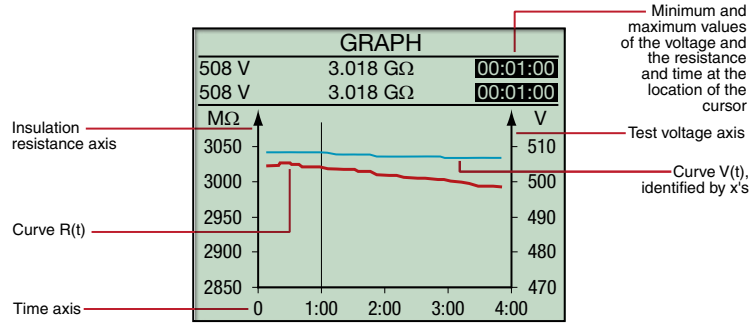

*Example of display before measurement.*



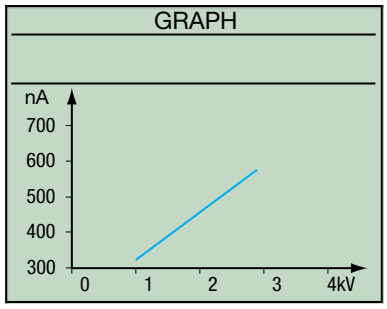

*Example of display during measurement.*



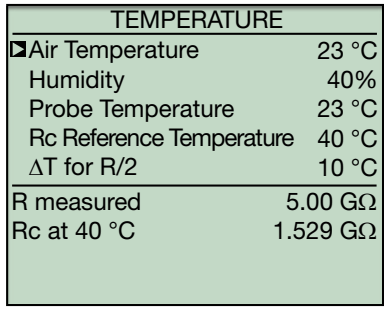

*Example of display after measurement.*



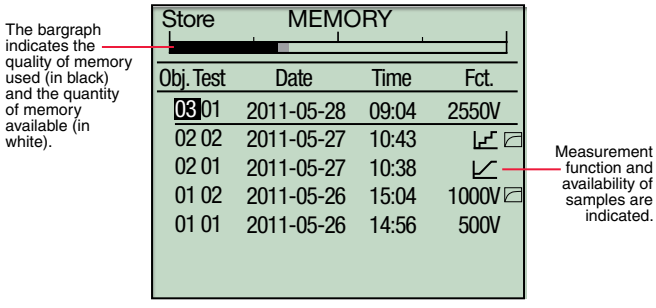

*Resistance versus time graph.*



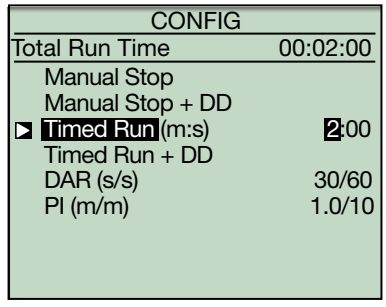

*This curve is useful primarily in the case of a measurement in V-RAMP mode.*




*The instrument displays the insulation resistance referred to the reference temperature.*




*The number of measurements that can be recorded depends on the number of samples stored for each measurement.*




*When Timed Run (test with programmed duration) or Timed Run + DD is selected, the duration of the measurement (m:s) can be set.*

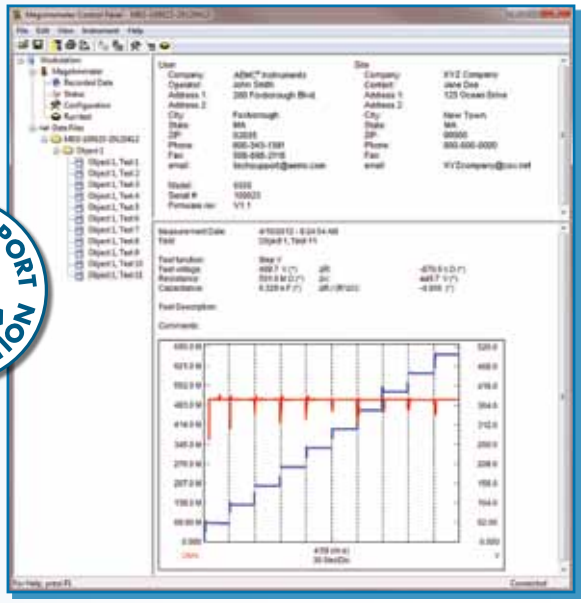
NEW & IMPROVED SOFTWARE

# DataView®

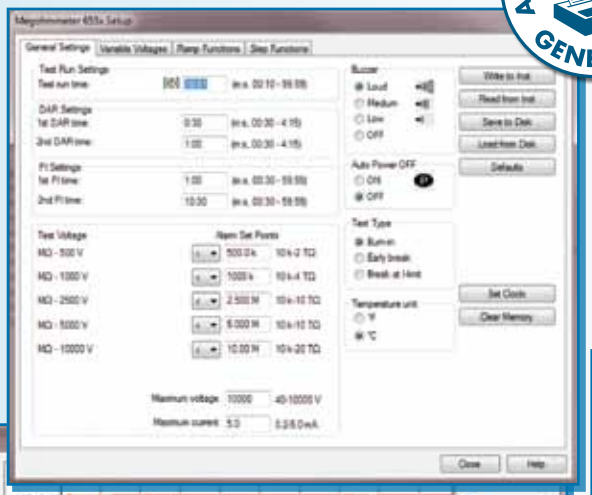
## Data Analysis & Reporting Software


- Print reports of all test results
- Select test voltage and run tests from your computer with a simple click and execute process
- Capture and display data in real-time
- Retrieve data from the instrument's memory – up to 80,000 insulation resistance measurements
- Display DAR, PI and DD ratios
- Plot graphs of manual and timed tests
- Include your analysis comments section with the report
- Store a library of setups for different applications
- Certification of results through report generation
- Free updates are available @ **www.aemc.com**

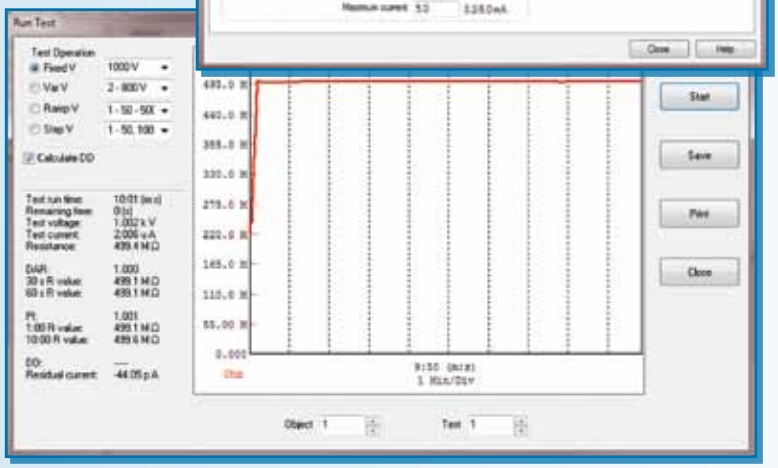
AUTOMATIC REPORT GENERATION



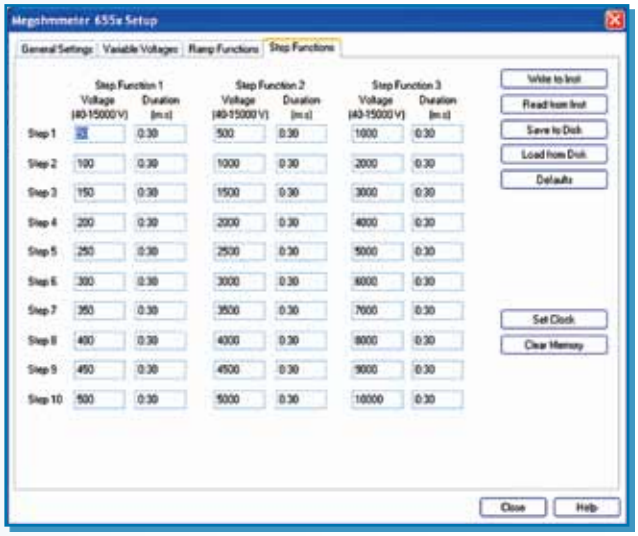
*Easy identification of all stored test results.*



*Clear and straight forward set up of parameters.*




*Real-time display of measurement results.*




*Step voltage set up screen.*

# www.aemc.com

## Models 6550 & 6555 include:

*One red, blue and black 9 ft 15kV integral lead, one 15kV jumper lead (blue), one red, blue and black alligator clip (1000V CAT IV), one red and blue test probe (1000V CAT IV), optical USB cable, power cord 115V US, small classic tool bag, user manual and USB stick with DataView® software.*

| ORDERING INFORMATION | CATALOG NO. |
|---|---|
| **Megohmmeter Model 6550** (Graphical, Analog Bargraph, Backlight, Alarm, Timer, 500V, 1000V, 2500V, 5000V, 10kV, Ramp, StepV, Variable, Auto DAR/PI/DD, USB w/DataView® software) | **Cat. #2130.31** |
| **Megohmmeter Model 6555** (Graphical, Analog Bargraph, Backlight, Alarm, Timer, 500V, 1000V, 2500V, 5000V, 10kV, 15kV, Ramp, StepV, Variable, Auto DAR/PI/DD, USB w/DataView® Software) | **Cat. #2130.32** |

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