

MODEL 6650A



Dual Source High Resistance Meter

- Replaces Teraohmmeter Technology
- Range 100kΩ to 10PΩ
- Automatic Scanner Control
- Any Ratio up to 100:1
- Live Ratio or Direct Measurement
- Voltage and Current Measurements
- Surface and Volume Resistivity
- 1V to 1000V Variable Voltage Output

MODEL INFORMATION

After Years of development of high resistance bridge measurement systems and resistance standards, Measurements International (MI) is pleased to announce the launch of the 6650A High Resistance Bridge-Meter.

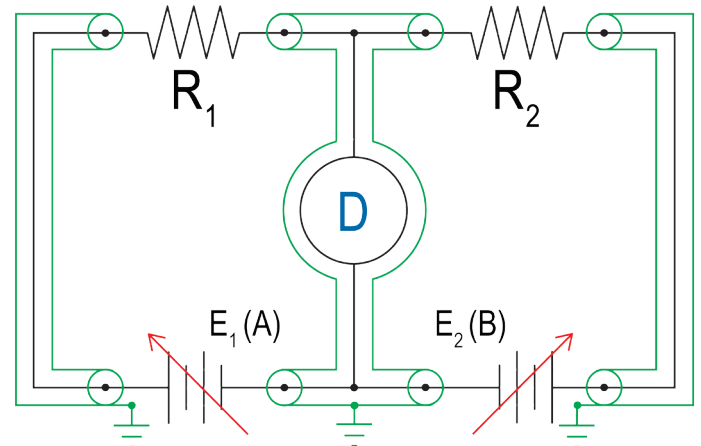
The 6650A offers users all the useability of a Dual Source Resistance Bridge(DSB) in a simple, easy to use "meter like" package.

The model 6650A is a low cost Dual Source High Resistance Meter using the preferred "Dual Source" method for measuring High resistances in the range of 100kΩ to 10PΩ. The simplified construction and operation of the 6650A offers much improved operation and performance over the typical teraohmmeter/electrometer, with a more user friendly approach to high resistance measurements. The 6650A has numerous advantages over single input devices like the typical Teraohmmeter/electrometer such as reliability, traceability and the fact that measurements are not dependant on short term stability or repeatability of the measurement circuit.

By utilizing a true "Bridge" measurement circuit, the UUT is compared to a working or primary standard to produce a "Live Ratio". Any value resistor up to and including the $10^{17} \Omega$ level can be measured at ratios up to 100:1 and voltages up to 1000VDC. **Other commercially available units are limited within this range and do not allow the full freedom that the MI 6650A can offer!**

The 6650A is enabled with numerous measurement functions that allow users to tailor their measurements for their own particular needs.

- **Live Ratio Mode** - The most accurate mode of use is the live ratio mode where the Bridge architecture in the 6650A is formed by substituting two of the resistive arms of a Wheatstone bridge circuit with low-impedance digitally-programable voltage sources. In this mode, the 6650A can measure a UUT with a ratio of 1:1, 10:1, or 100:1 with respect to the reference resistor.
- **Direct Measurement Mode** - In this mode, the 6650A offers users the ability to quickly establish nominal values, measure Insulation resistance, Volume and Surface resistivity. This mode offers the same functionality that is utilized on a less accurate single input device such as the teraohmmeter. This mode is also useful for determining resistor time constants, as well as voltage and temperature coefficients.
- **Voltage and Current Measurements** - Service mode features the ability to measure voltages from 1V to 1000V DC and currents from 10^{-5} to 10^{-15} Amps.



Voltage Range: The 1000V DC sources in the 6650A offer voltage ratios of 1, 10, and 100 or any ratio in between. The voltage setting is indicated on the front panel display.

Front Panel Operation: The front panel offers users simple and intuitive measurement options. Features include resistor protection, settle time to verify time constants of resistors, number of measurements, statistics, voltage and temperature coefficients and graphing.

Software: The 6650A software allows the user to define measurement and test parameters utilizing the same proven software used on the MI 6010 and

6000 series of DC Bridges that customers have become accustomed to. The features include resistor protection, settle time to verify time constants, number of measurements, statistics, voltage and temperature coefficients and graphing. Programs Menu allows users to create and combine several program tasks. Selectable parameters include measurement time delays (wait times), settle time, number of measurement, test voltage, number of runs, standards used, reversal rate, current threshold, and standard resistor uncertainty. Measurement parameters including statistics data are displayed during measurement.

Measurements International is the only manufacturer of High Resistance Measurement systems whose measurement capabilities support its product specifications!!

6650A Measurement Specifications

Measurement Range (Ohms)	Applied Voltage	Live Ratio Mode Uncertainty		Direct Measurement
		1:1 and 10:1 Ratio	100:1 Ratio	12 Month
100k to 1M	1 to 100V	15	30	100
1M to 10M	1 to 100V	15	30	100
10M to 100M	10V to 1000V	15	30	100
100M to 1G	10V to 1000V	15	30	100
1G to 10G	10V to 1000V	20	50	300
10G to 100G	10V to 1000V	20	50	500
100G to 1T	10V to 1000V	70	200	800
1T to 10T	100V to 1000V	200	400	2000
10T to 100T	100V to 1000V	500	900	3500
100T to 1P	100 V to 1000V	1500	N/A	1%
1P to 10P	100 V to 1000V	-	-	2%

1. Uncertainty Confidence Level: 99%
2. Uncertainties relative to calibration standards used and are independent of reference resistor or UUT uncertainty contributors.
3. Does not include settle time, dielectric or voltage coefficient etc. for the resistor being measured.

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Data Subject to Change - Preliminary

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