

New!



DISCOVER THE "BLUE BOX" DIFFERENCE

AccuBridge® Resistance Bridges Products Guide



Measurements International
Metrology is Our Science, Accuracy is Our Business™



The Metrologist's Choice.....

From National Measurement Institutes to government, industrial and commercial primary labs worldwide, MI bridges are the preferred choice. The performance, accuracy, and speed of resistance measurements in applications ranging from micro-ohms to peta-ohms set MI bridges apart from all others.



The Proven and Best Technology.....

Developed from the best research done by National Measurement Institutes, the Measurements of MI's bridges are unmatched by any other commercial instrumentation. Offering the best uncertainties available, with repeatability and reliability. MI bridges help labs attain the best accredited performance available.



Measurement Confidence

Proper techniques provide the best measurements. MI's bridges individually use the best measurement techniques appropriate to span measurements over 21 decades of resistance. Employing Direct Current Comparator, Dual Source Bridge, and Binary Voltage Divider technologies, you can make the best measurements with confidence.



A Bridge To Fit Your Specific Needs

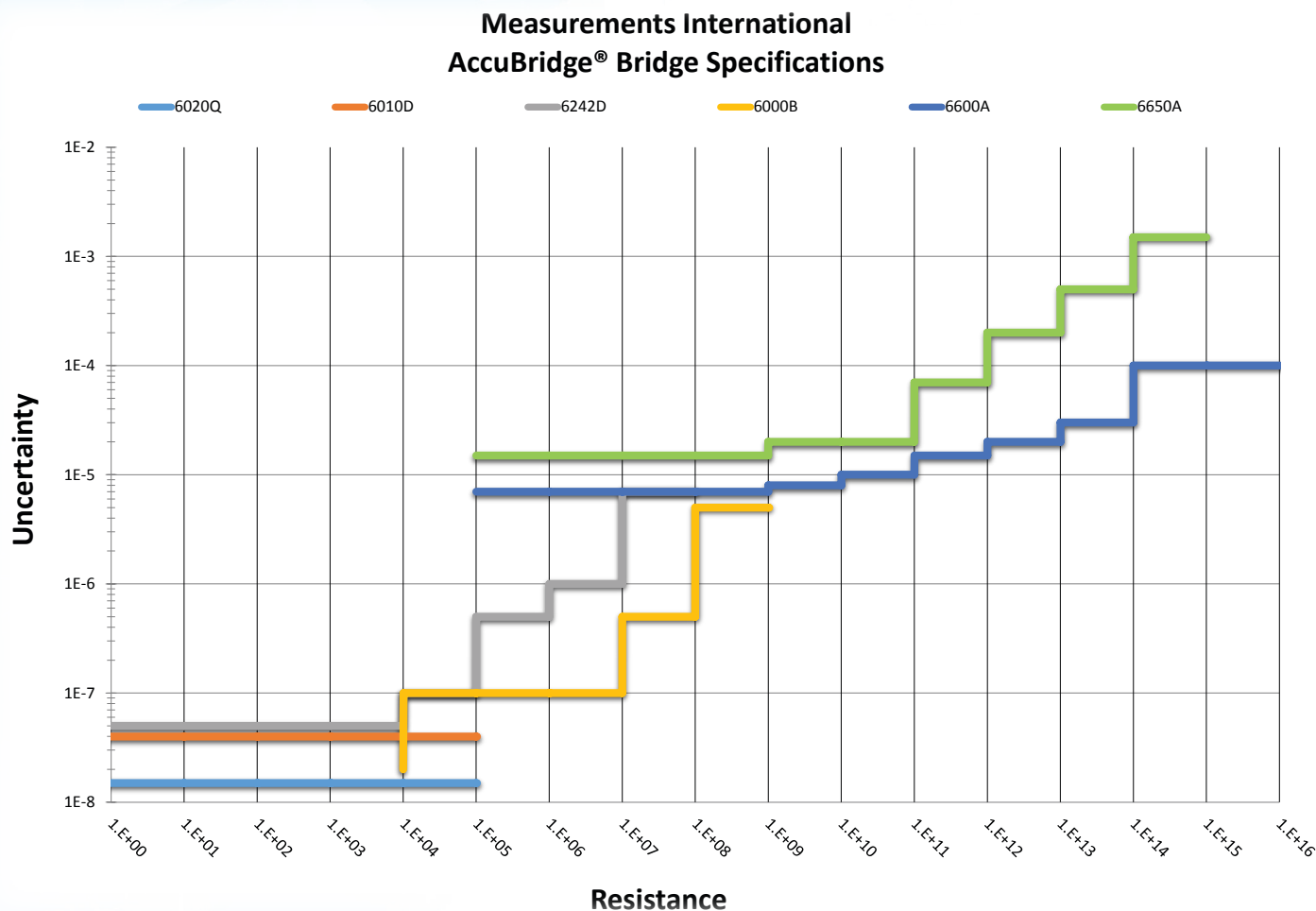
One of MI's AccuBridge® line of bridges will provide a solution exactly to fit your needs. Whether it is a measurement of a Quantum Hall Resistance with an uncertainty of better than 20 parts in 10^{-9} or a Peta ohm measurements at 1%, an AccuBridge® will do your job as you need it to, every time.



Metrology is our Science, Accuracy is Our Business™

Measurements International (MI) is the world's premier metrology company. MI provides innovative Standards Technology for both the Metrology and AC Power Industries. For the Metrology industry MI designs, develops, and manufactures electrical and temperature metrology instruments using AccuBridge® technology. For the AC power industry MI designs, develops and manufactures high-voltage transformer test instruments, capacitance/Inductance Bridges, voltage dividers, wattmeters and current transformers using the AccuLoss™ and two-stage-compensated current transformers. All instruments are manufactured with the highest quality in support of our customer's organization.

The MI line of AccuBridge® resistance bridges offer users world class uncertainties while maintaining the useability that is familiar to National Measurement Institutes all over the world. No other resistance bridge can claim the Metrologist's Choice...!





**AccuBridge® 6020Q
Automated Resistance Bridge**

- Accuracy 15 ppb
- Maximum Ratio: 14:1
- Resolution: 1 ppb
- AccuBridge® Technology
- Automatic and Manual Operation
- Not affected by Temperature change
- English and Chinese operating systems

**AccuBridge® 6010D
Automated Resistance Thermometry Bridge**

- Accuracy < 40ppb**
- Resolution: 1 ppb
- AccuBridge®
- Ratio, Resistance and Temperature
- Touch Screen and Software Operation
- Not affected by Temperature change
- English and Chinese operating systems

**AccuBridge® 6242D
Automated Resistance Bridge**

- Accuracy 0.1 ppm
- Maximum Ratio: 14:1
- Resolution: 1 ppb
- AccuBridge® Technology
- Automatic and Manual Operation
- Not affected by Temperature change
- English and Chinese operating systems



AccuBridge®

Old Technology meets New technology to form the the worlds leading Accurate Resistance Technology

AccuBridge® technology is at the core of all MI bridge design. It incorporates our entire design philosophy, which is to develop the most advanced technological solutions without any of the tricks or shortcuts found elsewhere. This next generation of bridges are built around the existing bridge architechure but also incorporating the latest technology advancements (AccuBridge® Design) and methods to improve noise, speed, accuracy and overall performance. Simply stated..... Trust AccuBridge® for your measurement needs!

**AccuBridge® 6000B
Automated Primary Resistance Bridge**

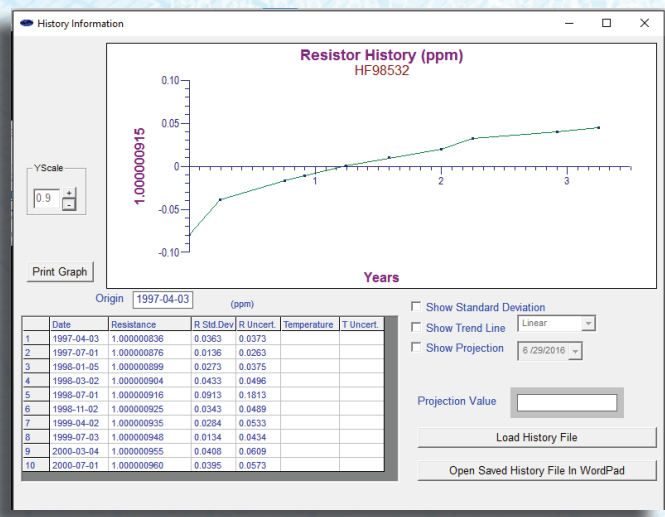
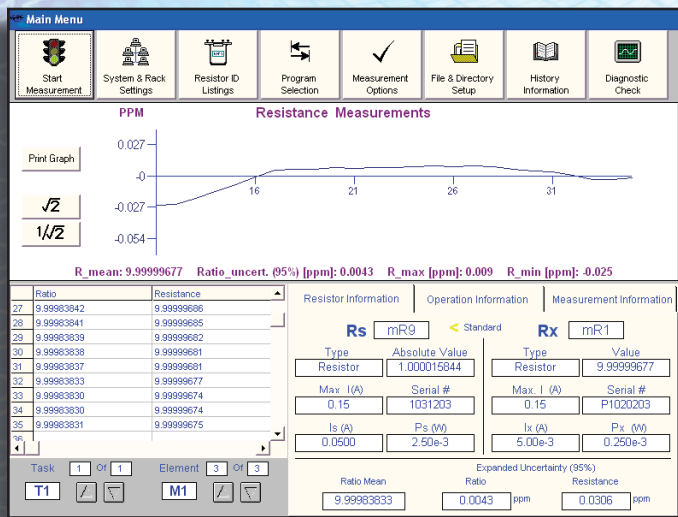
- Accuracy 0.1 ppm
- Maximum Ratio: 14:1
- Resolution: 1 ppb
- AccuBridge® Technology
- Automatic and Manual Operation
- Not affected by Temperature change
- English and Chinese operating systems

**AccuBridge® 6650A
Dual Source High Resistance Meter**

- Range: 100kΩ to 1PΩ
- Maximum Ratio: 100:1
- 10V-1000V Variable Output
- AccuBridge® Technology
- Live Ratio or Direct Measurement Mode
- Voltgag and Current Measurements
- English and Chinese operating systems

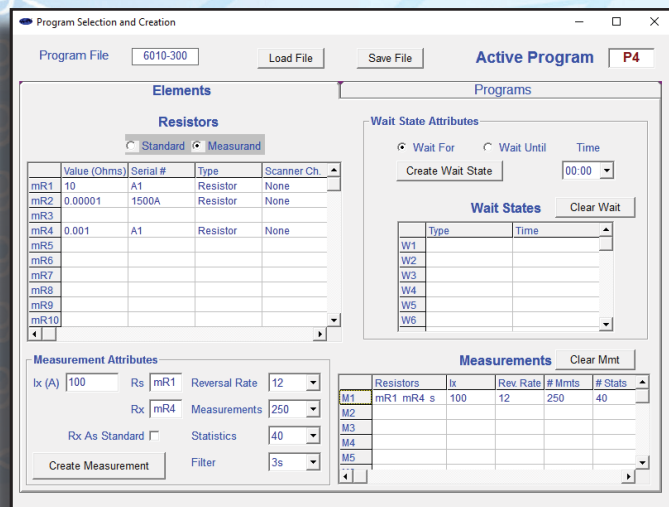
**AccuBridge® 6600A
Dual Source High Resistance Bridge**

- Range: 100kΩ to 10PΩ
- Maximum Ratio: 100:1
- 10V-1000V Variable Output
- AccuBridge® Technology
- Live Ratio or Direct Measurement Mode
- Voltgag and Current Measurements
- English and Chinese operating systems

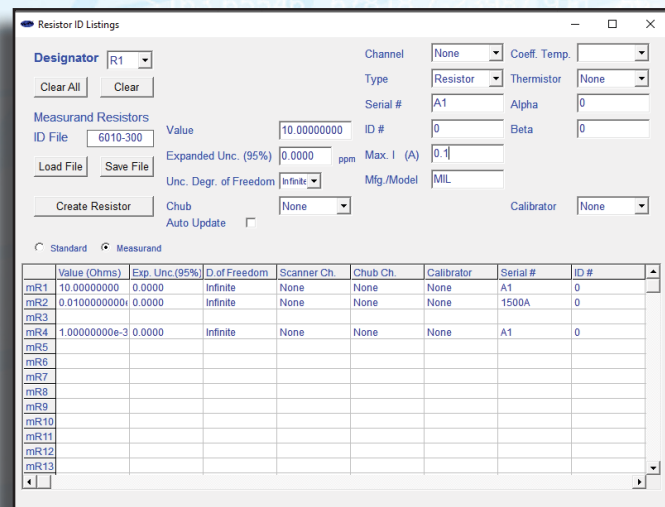


Thorough Real-time Measurement Information and Analysis - you have complete confidence in the measurement being made with the information provided. Available information includes a complete profile of the ongoing ratio measurement series with the full measurement configuration. Information is also in a graphical display format with uncertainty analysis.

Complete measurement history of individual resistors is saved in the measurement data file. It includes measurement data along with its standard deviation and uncertainty. The history can be displayed in graphical control charts as well as have the full numerical data accessed for independent viewing and analysis.



Simply create and/or customize multiple different measurement processes. This optimizes your metrology for the best measurements possible for both individual resistors and various resistance values. Customize the test current, reversal rates, wait sequences, number of measurements made, the statistical processes applied, filtering and other critical parameters.



A library of resistors, both standard resistors and measurand resistors, is created and available for access via the software. This provides a seamless way to manage the resistors and measurements necessary in the lab.

AccuBridge® Model Comparison							
Bridges	6020Q	6010D	6242D	6000B	6600A	6650A	6650AF
Basic Bridge Capabilities							
Minimum Resistance	0.01 Ω	0.001Ω	0.001Ω	10 kΩ	100 kΩ	100 kΩ	100 kΩ
Max Resistance	100 kΩ	100 kΩ	100 MΩ	1 TΩ	10 PΩ	1 PΩ	100 TΩ
Best Uncertainty	<15 x 10 ⁻⁹	<40 x10 ⁻⁹	<0.1x 10 ⁻⁶	<0.1x 10 ⁻⁶	<7 x 10 ⁻⁶	<15 x 10 ⁻⁶	0.07%
Ratio Range	0.08:1 to 14:1	0.08:1 to 14:1	0.001:1 to 100:1	1:1 to 14:1	1:1 to 100:1	1:1 to 100:1	n/a
Linearity	<5x 10 ⁻⁹	<5 x 10 ⁻⁹	<10 x 10 ⁻⁹	<5 x 10 ⁻⁹	<0.1 x 10 ⁻⁶	<0.2 x 10 ⁻⁶	<0.5 x 10 ⁻⁶
Advanced Bridge Capabilities							
AccuBridge® Technology	Binary Wound DCC	Binary Wound DCC	Binary Wound DCC	Binary Voltage Divider	Dual Source Bridge	Dual Source Bridge	Internal Source / DVM
Input Channels	2	2	2	4	2	2	1
Ratio Measurement Mode	•	•	•	•	•	•	
Direct Measurement Mode	•	•	•	•	•	•	•
Test Voltage Ranges				10V to 110V	1 to 1000V	1 to 1000V	1 to 1000V
Test Current Range	10µA to 150mA	10µA to 200mA	1µA to 150mA				
Current Reversal	Auto			Selectable			n/a
6011 Range Extenders		•	•				
Extended Current Max		3000A	3000A				
Self Calibration	•	•	•	•			
PRT/RTD compatibility	•	•	•				
Manual and Auto Operation	•	•	•	•	•	•	•
Remote Control	•	•	•	•	•	•	•
Interfaces	GPIB						
Measurement Software	6020Q SW	6010 SW	6242D SW	6000 SW	6600 SW	6650A SW	none
Warranty	2 years						
Optional Matrix Scanner (Ch.)	10 to 80	10 to 80	10 to 40	10 to 40			
Optional Coax Scanner (Ch.)					10 or 20	10 or 20	
Instrument Features							
Touch Screen	•	•	•		•	•	•
Graphical Data Display	•	•	•		•	•	•
USB for Data	•	•	•		•	•	•

Optional Accessories

4210A	10-Channel High Resistance Matrix Scanner
4220A	20-Channel High Resistance Matrix Scanner
9300A	Ultra High Stability Programmable Air Bath
9300	High Stability Air Bath
9331	Standard Air Resistors
9210A	MI-Type One Ohm Oil Resistors
6XXX-BNC	BNC connectors



Measurements International
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1987
Measurements International (MI) is founded. Developed Four Terminal Automated Resistance Scanner Model 4220A

1990
Developed first commercial Automated Potentiometer based on the Binary Voltage Divider Technology (BVD), Model 8000A Range 1mV to 10V Accuracy $< 5 * 10^{-8}$

1992
Develops first commercial automated Direct Current Comparator Resistance Bridge (DCC) Model 6010A, Range 1 Ω to 10k Ω , Accuracy 10^{-7}

1993
Developed first commercial automated High Resistance Bridge for the measurement of resistors. Range 10k Ω to 100M Ω , Accuracy 10^{-6}

1993
MI USA was founded

1997
Re-develops DCC Technology which resulted in the world famous 6010B Resistance Bridge from 0.001 Ω to 10k Ω , Accuracy 10^{-7}

1998
Develops 20,000 A Direct Current Comparator for the LHC at CERN

2002
Develops the world's first and only portable cryogenic QUANT Ω (QHR) System Model 6800A Accuracy $1 * 10^{-8}$

25th Anniversary

2003
Developed the world's first room temperature Direct Current Comparator DCC Bridge (6010Q) for cryogenic applications Accuracy $2 * 10^{-8}$

Develops first commercial automated High Resistance Bridge based on the binary voltage divider technology to 100V, Model 6000B Accuracy $2 * 10^{-8}$
MI Europe was founded

2006
Develops first self calibrating Direct Current Comparator Ratio Bridge. Model 6242B with touch screen display Range 1 Ω to 100M Ω Accuracy $5 * 10^{-8}$

Develops world's first AccuBridge[®] Technology DCC Resistance Bridge with complete self calibration Range 0.1 Ω to 100k Ω Accuracy $2 * 10^{-8}$

2009
Develops first commercial Dual Source Bridge Technology for the measurement of high value resistors Range 10k Ω to 100T Ω Voltage 1V to 1000V

MI China was founded
Develops first automated Direct Current Comparator Resistance Bridge Model 6010D with touch screen display Range 0.01 Ω to 100k Ω , Accuracy $4 * 10^{-8}$

2011
Develops first automated high current 3000A Direct Current Comparator DCC Shunt Measurement System Ratio 1,000,000:1

2013
Developed first Benchtop High Resistance Bridge

2016
AccuBridge[®] line introduced as the improved next generation of MI Bridges



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www.mintl.com

sales@mintl.com