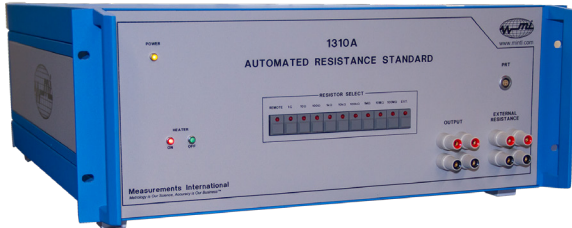




1310A AUTOMATED RESISTANCE STANDARD

Developed & designed by metrologists for metrologists & calibration technicians



Featuring

- ▶ Exceptional Stability
- ▶ Cost-effectiveness
- ▶ Performance-based Results

Overview

Measurements International's new Automated Resistance Standard model 1310A is an easy-to-use, cost-effective calibration instrument that will give the military sector, national and third-party

laboratories complete confidence in resistance standards. Designed with input from a world-leading National Measurement Institute, customers can be confident this new design offers exceptional calibration results.

Feature	Benefit
9 resistors 1 Ω, 10 Ω, 100 Ω, 1 kΩ, 10 kΩ, 100 kΩ, 1 MΩ, 10 MΩ, 100 MΩ, 1 external channel.	Complete line of decade value standards in one temperature-controlled enclosure.
Hand-picked high precision resistors in temperature-controlled chamber.	Delivers the highest level of performance from the internal high precision resistors.
Internal resistance elements in a temperature-controlled chamber.	Excellent stability and extremely low-temperature coefficients.
Single output cable for direct plug-in.	Easy operation without the requirement for changing wires.
Built for calibration of calibrators and DVMs.	Best stability < 2.5 μΩ/Ω/Year.
Built-in 4-terminal scanner.	Combining two instruments into one simple to use instrument.
External extra channel.	Connect to the resistance value of your choice.
Front panel or GPIB controlled.	Simplifies operation for the user.
Internally mounted temperature sensor PT100.	Users can connect to the front panel and monitor internal oven.

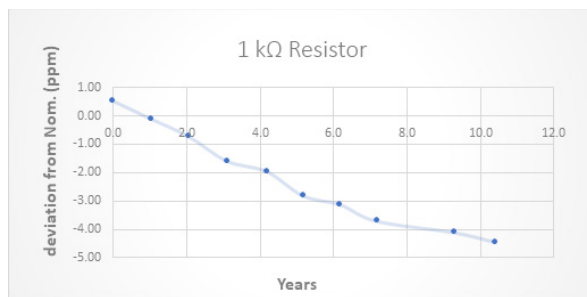


Figure 1: Drift of MI Resistor Over a 10 Year Period

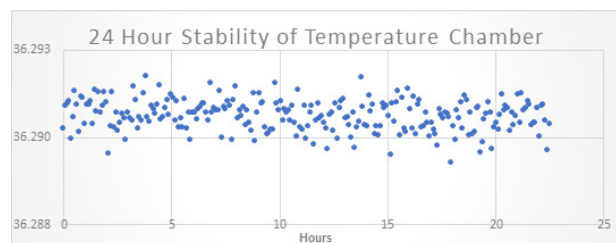


Figure 2: 4 Hour Stability Testing Internal Temperature Chamber



Measurements International

Metrology is Our Science, Accuracy is Our Business™

1310A AUTOMATED RESISTANCE STANDARD

Specifications: Rev 4

Nominal Resistance (Ohms)	Nominal Resistance ($\pm \mu\Omega/\Omega$) ($\pm \text{ppm}$)	24 Hour Stability ($\pm \mu\Omega/\Omega$) ($\pm \text{ppm}$)	12 Month Stability ($\pm \mu\Omega/\Omega$) ($\pm \text{ppm}$)	Temperature Coefficient ($\pm \mu\Omega/\Omega/^\circ\text{C}$) ($\pm \text{ppm}/^\circ\text{C}$)	Max. Voltage (Volts)
100 M Ω	50	0.4	10	0.025	100
10 M Ω	35	0.25	10	0.025	100
1 M Ω	25	0.03	2.5	0.02	100
100 k Ω	15	0.02	2.5	0.01	100
10 k Ω	10	0.01	2.5	0.005	32
1 k Ω	10	0.01	2.5	0.005	10
100 Ω	10	0.01	2.5	0.005	3.2
10 Ω	10	0.01	2.5	0.005	1.0
1 Ω	10	0.01	2.5	0.005	0.32
Internal Temperature Stability			$\pm 0.1^\circ\text{C}$ Over a 1 Year Period		
Ambient Temperature Range			23 $^\circ\text{C} \pm 5^\circ\text{C}$		
Ambient Humidity Range			20 to 70 % RH		
Warranty			Standard 2 Year Parts & Labour		

Scanner Specifications

Operation	Four-Terminal
Error Contribution	< 20 Nanovolts
Contact Configuration	Relay - Two Coil Latching
Max Carrying/Switching Current	4/2 Amps @ < 30 Volt (DC)
Maximum Working/Switching Voltage	1000/220 Volts @ < 100 mA (DC)
Contact Resistance	< 0.05 Ω
Expected Relay Life	10 ⁸ Operations
Insulation Resistance	> 10 ¹² Ω

Dimensions (L x W x H):
572 x 445 x 203 (mm)

Weight:
9 kg

Shipping Weight:
13 kg

Mains Power:
85 to 264 V_{ac} - 47 to 440 Hz

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