

Temperature Stabilized Resistance Standards

Perfect for Automated Measurement Systems or a Laboratory Standard



6634A SERIES FEATURES

- ◆ Resistance Range: 0.1 Ω to 100 M Ω in Single Decade Increments
- ◆ Temperature Coefficient ± 0.005 ppm/ $^{\circ}\text{C}$
- ◆ Stabilities Low as < 2 ppm/year
- ◆ Thermometry Value Models Available
- ◆ 4 Terminal Connections
- ◆ Eliminates Oil Bath Requirements
- ◆ Internal PRT Stability : $\pm 0.02^{\circ}\text{C}$ / Year
- ◆ Custom Internal Temperature Set Points
- ◆ Ambient Temperature Range: $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$
- ◆ Low Thermal EMF's – Shielded Chamber
- ◆ Temperature Regulation: $\pm 0.01^{\circ}\text{C}$ over a 1 year period
- ◆ Guarded Resistance Element Chamber
- ◆ Custom Values / Models Available
- ◆ CE Marked with World-Wide Voltage & Frequencies
- ◆ Top End Range Values up to 100 T Ω with Guildline Model 6636

GUILDLINE INSTRUMENTS 6634A SERIES is a modular series of Resistance Standards that can be rack mountable or simply set on a bench. The 6634A Series provides a set of precision resistance standards enclosed in a temperature controlled chamber.

There are 10 standard resistance values available covering the range of 0.1 ohm to 100 Megohms. Each resistance element is isolated and has a 4 terminal connection at the back panel. The resistance elements are maintained at $30 \pm 0.01^{\circ}\text{C}$ in a temperature stabilized chamber.

Chamber temperature set points of 35°C and $40^{\circ}\text{C} \pm 0.01^{\circ}\text{C}$ are available on request. Temperature monitoring is provided by a precision PRT sensor installed in the chamber with 4 terminal connectors provided on the front panel. The Model 6634A is intended to be used as a Working Standard Resistance Reference for automated resistance measurement systems. Special resistance values are available in the range of 0.1 to 100M ohms.

Four standard model variations are available with 5, 8, 9 or 10 resistance elements installed. Special values or other sets of standard resistance values may be ordered. All models purchased with less than 10 resistance standards can be expanded at any time.

The 6634A Series is an Excellent Solution as a Working Standard Resistance Reference for Automated Resistance Measurement Systems or a Laboratory Primary Resistance Standard!

Resistance elements are electrically isolated and bonded to an aluminium block to reduce thermal gradients in the inner chamber. The inner chamber is designed to electrically shield the individual elements and an electrical connection is provided to a guard terminal at the back panel.

Design of the 6634A reduces thermal bridges between the control and monitoring circuits and the resistance elements. The individual resistance element design is based on the proven Guildline Model 9334 Resistance Standards and achieves excellent long term stability and low power coefficients.

Gold plated 5 way binding posts provide for very low thermal EMF when connected to bare copper cables or gold plated connections. When used with a low thermal scanner and automated DCC Resistance Bridge such as the Guildline Model 6622A Series, full automation of resistance measurements to 1G ohms is attainable.

6634A Series of Temperature Stabilized Resistance Standards

6634A Specifications

Nominal Resistance (Ohms)	Nominal Initial Tolerance ¹ (+/- ppm)	24 Hour Stability (+/- ppm)	12 Month Stability ² (+/- ppm)	Temperature Coefficient (+/- ppm/°C)	Maximum Voltage (Volts)
0.1	10	0.1	3	0.01	0.1
1	10	0.01	2	0.005	0.32
10	10	0.01	2	0.005	1.0
100	10	0.01	2	0.005	3.2
1k	10	0.01	2	0.005	10
10k	10	0.01	2	0.005	32
100k	15	0.02	5	0.01	100
1M	25	0.04	5	0.02	320
10M	35	0.2	6	0.2	1000
100M	50	0.5	15	0.2	1000

Note 1: Nominal initial tolerance is defined as the maximum variation of resistance mean values as initially adjusted at the point of sale.

Note 2: Stability is exclusive of the effects of applying power above 20 mW, but not exceeding the maximum voltage, in terms of hysteresis and short term temperature stabilization.

Note: Calibrated in ambient conditions of 23 °C, referred to the unit of resistance as maintained by the National Research Council of Canada or the NIST and expressed as a total uncertainty with a coverage factor of k = 2. A calibration report stating the measurement values and uncertainty is provided with each unit.

GENERAL SPECIFICATIONS							
Temperature Stability		± 0.01 °C over 1 year, exclusive of self heating effects of the resistors					
Output Resistance Range		0.1 ohm to 100M ohms. (Special values between 0.1 ohms and 100M ohms available at time of order. For higher values see Guildline 6636 Temperature Stabilized Resistance Standard Series.					
PRT Sensor:	1 Year Stability ± 0.02 °C	Resistance 100 ohms ± 0.1% at 0°C	0-100°C Temperature Coefficient 0.392 ohms/°C				
Power Requirements	VAC: 100, 120, 220, 240V ± 10%		Frequency: 50/60 Hz ± 10%		15 VA Maximum		
Environmental:	Operating	18 °C to 28 °C, < 70% RH, non-condensing					
	Storage	-20 °C to 60 °C, < 90% RH, non-condensing					
Dimensions	Height		Width		Depth		Weight
	132 mm	5.2 in	440 mm	17.4 in	503 mm	19.8 in	11 kg 24 lbs
Note:	Add 10mm (0.4 in) to height for bench top feet						

ORDERING INFORMATION	
6634A-10	Resistance Standard with 10 Decade Elements 0.1Ω to 100MΩ
6634A-9	Resistance Standard with 9 Decade Elements 0.1Ω to 10MΩ
6634A-8	Resistance Standard with 8 Decade Elements 1Ω to 10MΩ
6634A-7	Resistance Standard with 7 Decade Elements 1Ω to 1MΩ
6634A-6	Resistance Standard with 6 Decade Elements 1Ω to 100kΩ
6634A-5	Resistance Standard with 5 Decade Elements 1Ω to 10kΩ
Note: Report of Calibration and Calibration Certificate Included	
6634A/SSRV	Single element substitution of any decade value between 0.1 to 100M ohms
6634A/SPRV	Single element substitution of any special value between 0.1 to 100M ohms
/TM6634A	Technical Manual (Included)
/ST-X	Optional Internal Temperature Set point (Specify 35°C or 40°C)
/Lead-11	Low Thermal Lead Pair w/Gold Plated Banana Plugs, 1M length
/Lead-12	Low Thermal Lead Pair w/Gold Plated Banana Plugs, 2M length
*Other Precision Leads Are Available – Call and tell us your requirements	
Optional Calibration Services (ISO 17025 Service Available)	
/Cal	Additional Customer Specified Cal Point (Charge)

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