

Model 6634TS TransOhm

Temperature Stabilized Traveling Resistance Standard

Perfect For Automated Measurement Systems



6634TS FEATURES

- > *Temperature Regulation: $\pm 0.01^{\circ}\text{C}$ over a 1 year period.*
- > *Ambient Temperature Range: $23 \pm 5^{\circ}\text{C}$*
- > *Power Requirements: 15 VA*
- > *Voltage Requirements: 100, 120, 220, 240 $\pm 10\%$*
- > *Cold Power on Stabilization Time: 76 Hours to specified accuracy (battery discharged)*
- > *Stability < 1.5 ppm/year*
- > *Guarded Element Chamber*
- > *Temperature Coefficient ± 0.005 ppm/ $^{\circ}\text{C}$*
- > *Low thermal EMF*
- > *Temperature Regulation Time Period Using Internal Battery: 100 hours typical*

Guildline Model 6634TS is a transportable version of the 6634 Resistance Standard and provides a set of 4 precision resistances enclosed in a temperature controlled chamber.

Resistance values of 1 ohm, 10k ohms, 1M ohms and 100M ohms are provided. Optionally, any set of 4 values can be specified by the customer in the range of 0.1 to 100M ohms. Each resistance element is isolated and has a 4 terminal connection at the front panel. The resistance elements are maintained at $30 \pm 0.01^{\circ}\text{C}$. Chamber temperature set points of 35 and $40 \pm 0.01^{\circ}\text{C}$ are available on request. An internal battery will typically maintain the temperature for up to a period of 100 hours depending on the environment when transported.

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.

The 6634TS is intended to be used as a Transfer Standard Resistance Reference for Automated Resistance Measurement Systems

Design of the 6634TS 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.

Tellurium copper, gold flashed 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 6675A, full automation of resistance measurements to 100M ohms is attainable.

6634TS Temperature Stabilized Traveling Resistance Standard

6634TS Specifications

Nominal Resistance (Ohms)	Nominal Initial Tolerance (+/- ppm) (Note 1)	Calibration Uncertainty (+/- ppm) (Note 2)	Stability Over Any 24 Hour Period (+/- ppm)	Stability First 6 Months (+/- ppm)	Stability Next 12 Months (+/- ppm)	Temperature Coefficient (+/- ppm/°C)	Maximum Voltage (Volts)
1	10	0.2	0.006	2	1.5	0.005	0.32
10k	10	0.2	0.006	2	1.5	0.005	32
1M	25	5	0.03	5	6	0.01	320
100M	50	18	0.5	18	21	0.3	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: Calibrated in ambient conditions of 23 °C, referred to the unit of resistance as maintained by the National Research Council of Canada or the National Institute of Standards and Technology and expressed as a total uncertainty with a coverage factor of $k = 2$.

A traceable calibration report stating the measurement values and uncertainty is provided with each unit.

Note 3: 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.

Temperature Stability: +/- 0.01 °C over a 1 year period, exclusive of self heating effects of the resistors.

Range Special values in the range of 0.1 to 100M ohms available at time of order.

Power Requirements: 15 VA

Voltage Requirements: 100, 120, 220, 240 +/- 10%

Cold Power on Stabilization Time: 76 Hours to specified accuracy, (Battery Discharged).

Temperature Regulation Using Internal Battery: 168 hours at 20 °C ambient
72 hours at 0 °C ambient

6634TS Ordering Information

6634TS Temperature Stabilized Traveling Resistance Standard
TM6634TS Technical Manual (included)
Certificate of Calibration (included)
Report of Calibration (included)

GENERAL SPECIFICATIONS

Environment Operating 18 °C to 28 °C
< 70% RH, non-condensing
Storage -20 °C to 60 °C
< 90% RH, non-condensing

Dimensions H 204 mm (8.0 in)
W 280 mm (11 in)
D 346 mm (13.6 in)

Weight 13.6 KG (30 lbs)

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