HATS-LR Series

Make accurate calibrations and transfer measurements over three decades of resistance with the HATS-LR Series.

- Steps from 1 Ω to 100 kΩ
- Transfers from 0.1 Ω to 1 MΩ
- High transfer accuracy - to 1 ppm

The Benefits of Using Transfer Standards

In order to perform calibrations with a high degree of accuracy, reference standards must be employed at every range or decade of the measuring or calibration instrumentation. Clearly, this can be difficult and costly since these standards must be highly stable and their precise values must be known with a high degree of certainty and sufficient resolution. To minimize the cost and difficulty, more practical means of performing such calibrations is to use transfer standards.

If one has a single standard that is calibrated by a national laboratory, one can then compare the transfer standards to the certified standard by ratio techniques.

SPECIFICATIONS

Resistor Type: Wirewound, hermetically sealed, low inductance.

Step Size: 1 Ω, 10 Ω, 100 Ω, 1 kΩ, 10 kΩ, or 100 kΩ.

Accuracy:
- Initial: ≤±15 ppm for 1 Ω, 10 Ω steps;
- ≤±10 ppm for 100 Ω through 10 kΩ steps.
- Long Term: ≤±10 ppm/year;

Transfer:
- ±(1 ppm + 0.1 μΩ) for 10:1 and 100:1 ratios for 1 Ω, 100 Ω, 1 kΩ, 10 kΩ, and 100 kΩ steps;
- ±1 ppm for 10:1 and 100:1 ratios for 10 Ω step.

(Transfer accuracies apply when SB103, PC101, or SPC102 fixtures are used)

Matching:
- Accuracy: within 10 ppm for 1 Ω, 10 Ω steps;
- within 5 ppm for 100 Ω through 10 kΩ steps.

Temperature Coefficient:
- ±1 ppm/°C for HATS-LRTC-10 (low TC version)
- ±2 ppm/°C for HATS-LR-10
- ±3 ppm/°C for HATS-LR-100
- ±10 ppm/°C for HATS-LRTC-10
- ±15 ppm/°C for HATS-LR-100 through 100K.

Power Coefficient:
- ±0.01 ppm/mW per resistor for HATS-LR-1;
- ±0.02 ppm/mW per resistor for HATS-LRTC-10;
- ±0.05 ppm/mW per resistor for HATS-LR-100 through 100K.

Maximum Applied Input: 1500 V maximum or 1 W per resistor, or 5 W for entire unit, whichever applies. 1500 V peak between any terminal and case.

Dimensions: 31.2 cm W x 9.7 cm H x 11.4 cm D (12.3” x 3.8” x 4.5”).

Weight: 2 kg (4.4 lb).

Calibration Conditions: Four-wire Kelvin measurements, low power, at 23°C, traceable to NIST. Initial calibration data supplied with instrument.

Leakage Resistance: Greater than 1 TΩ from terminal to case.

Shorting Bars and Compensation Networks: For connecting resistors in parallel or series-parallel combinations.

Environmental Conditions:
- Operating Conditions: 10°C to 40°C
- Storage Conditions: -40°C to 70°C

ORDERING INFORMATION

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