

Typical Long-Term Temperature Stability of a LDT-5525 Thermoelectric Temperature Controller



This technical note presents the results of temperature stability measurement tests in a controlled environment performed on a production model LDT-5525 Thermoelectric Temperature Controller.

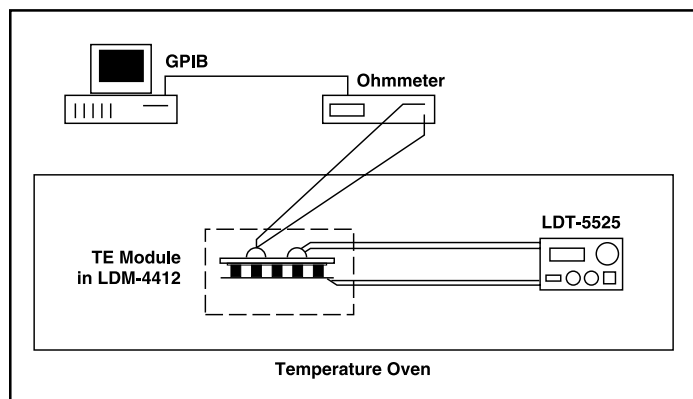


Figure 1. Measurement Setup Diagram.

MEASUREMENT SETUP

The measurement setup is shown in Figure 1. The LDT-5525 was placed in a temperature-controlled oven and stabilized for one hour at 20°C. Temperature data was taken by measuring the resistance of a precision thermistor which was independently connected to the load (LDM-4412 laser mount). The load was also kept in a 20°C temperature stable environment. The starting resistance was 12.3 k Ω (approximately 19°C). Raw data was fed to a computer and converted to temperature drift data in °C. The results were then graphed, as shown in Figure 2.

RESULTS

It can be seen from the results in Figure 2 that the LDT-5525 maintained a stability of better than $\pm 0.002^\circ\text{C}$ for a period of over 16 hours. This experiment was conducted in a controlled environment. If a similar experiment were conducted in an uncontrolled environment, results could vary.

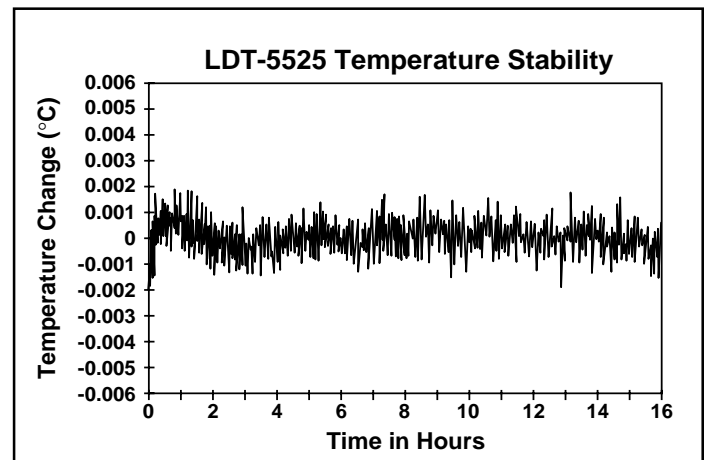


Figure 2. LDT-5525 Long-Term Temperature Stability Measurement Results.