

Typical Long-Term Temperature Stability of an LDT-5412 Thermoelectric Temperature Controller



This technical note presents the results of long-term temperature stability measurement tests in a controlled environment performed on a production model LDT-5412 Thermoelectric Temperature Controller.

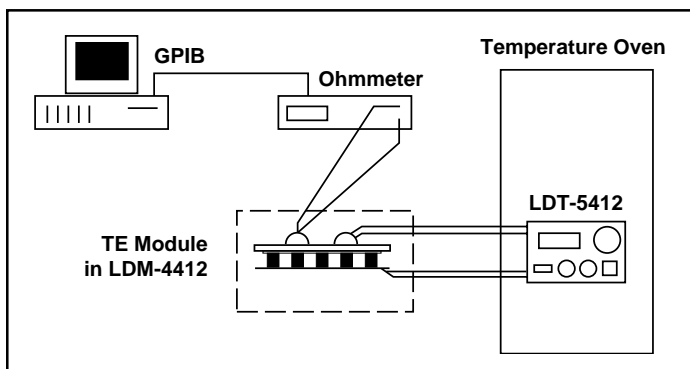


Figure 1. Measurement Setup Diagram.

MEASUREMENT SETUP

The measurement setup is shown in Figure 1. The LDT-5412 was placed in a temperature-controlled oven and stabilized for one hour at 25°C. Temperature data was taken by measuring the resistance of a precision thermistor which was independently connected to the load (LDM-4412). The load was also kept in a 25°C temperature-stable environment. The starting resistance was 15 k Ω (15°C). Raw data was fed to a computer and converted to temperature drift. Then these results were graphed, as shown in Figure 2.

RESULTS

It can be seen from the results in Figure 2 that the LDT-5412 exhibited a stability of better than $\pm 0.005^\circ\text{C}$ for a period of 24 hours when the load temperature was set at 15°C via the LDT-5412. This experiment was conducted in a controlled environment. If a similar experiment were conducted in an uncontrolled environment, the results may vary.

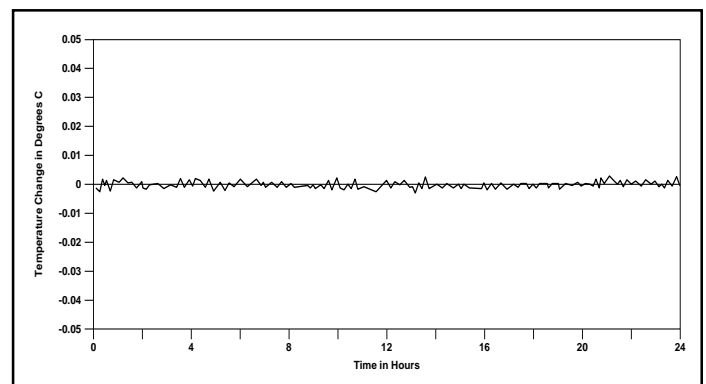


Figure 2. LDT-5412 Long-Term Stability Measurement Results.