THERM-X | *The Temperature Specialists*

We possess the knowledge and experience to complete your thermal application on target every time.

Our Company

Established in 1983, Therm-x takes pride in delivering thermal solutions incorporating our vertical integration capabilities including; Thermal Design and Test, CNC Machining, Metal Joining, Sheet Metal Manufacturing and Integration of these disciplines with Electro Mechanical Assembly.

Therm-x has become a leader in Advanced Temperature and Process Control Systems for the Hi-Technology industries. We continue to develop advanced staffing, tools for design and analysis of customer requirements as well as sophisticated manufacturing capabilities to support design, production, test and delivery of temperature and process control systems

Markets served include Semiconductor and Electronics Equipment, Alternative Energy, Medical/Biotech, Defense/Aerospace, Petrochemical, and Food/Beverage. Cutting-edge manufacturing and advanced engineering capabilities allow us to support the evolving and unique temperature management needs of clients who envision innovative process solutions.

Engineered solutions include:
Heaters, Sensors and Control Systems.

If your application requires a custom solution, our application engineers will work with you from design to product launch to develop the right product for your application. Design support, engineering, manufacturing and testing are done at our facility in Hayward, CA. Therm-x also has inventory on the West Coast for off the shelf products such as Controllers, Thermocouples, RTDs, Thermocouple Wire, Indicators, Data Acquisition and more.

Our low cost region strategic partner Therm-x SVT, located in Vietnam can be your outsource solution for higher volume, lower cost requirements with a quality system developed here in the states.

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THERM-X
THE TEMPERATURE SPECIALISTS

THERMESTHESIOMETER
MODEL: XTMX3125
USER GUIDE



thermesthesiometer

www.therm-x.com

Overview

Therm-x **Thermesthesiometer Probe** is built in accordance to NBS TN-816, "Engineering and Construction Manual for an Instrument to Make Burn Hazard Measurement in Consumer Products" (Marzett a 1974). A fine wire thermocouple for contact temperature measurement is precisely placed on the probe to simulate human touch. Probe body temperature is controlled with a temperature controller. Temperature controller maintains human body temperature using a secondary thermocouple.

Content

XTMX3125 Thermesthesiometer Kit includes:

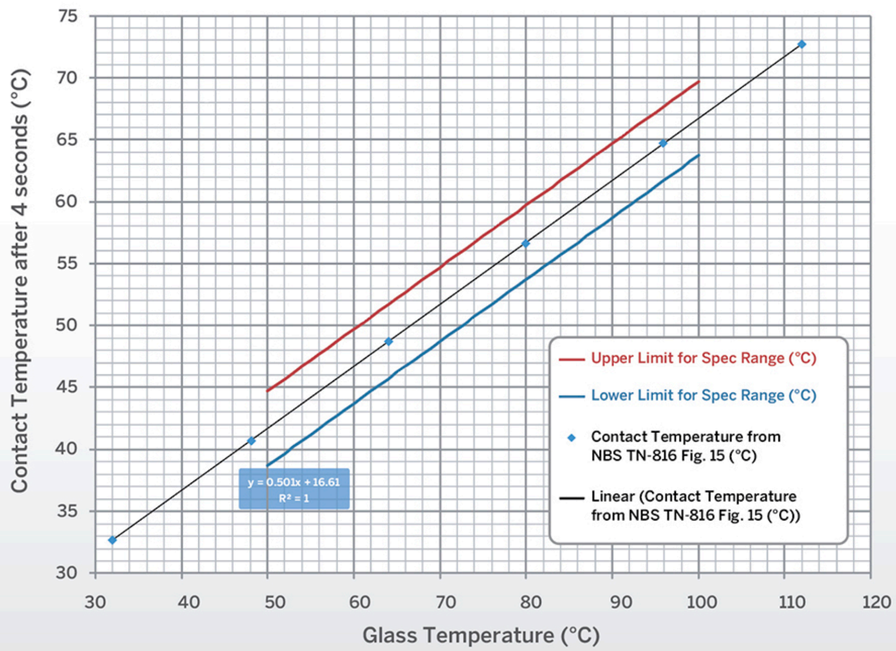
1. Detachable Probe with Protection Cap P/N XTMS3125
2. Temperature Controller P/N XTMI3117
3. Temperature Controller Power Cord
4. Thermocouple Extension Cable for Data Logger
5. Carrying Case
6. Calibration Certificate



Calibration

Thermesthesiometer Probe is validated using a glass reference surface. A precision RTD sensor is used for an accurate contact temperature measurement. Four second contact temperature is measured at various glass temperatures. Measurements are verified using a controlled environment Fig. 15 of NBS TN-816.

Fig. 15 Comparison of Measured and Calculated Values



Operating Instructions

1. Attach probe to the Temperature Controller. Secure probe to controller frame by tightening connector screws.

2. Connect Type K thermocouple extension cable from Contact T/C Output to the data acquisition system.

3. Plug Temperature Controller to power outlet and switch Main Power on. Wait for Heat Controller read out to stabilize. Probe set point is set to 32°C by default. To adjust controller set point, hold square key and press up or down key to increase or decrease temperature.

4. When Heat Controller read out reaches 32°C, wait for contact thermocouple reading to stabilize. Contact thermocouple reading should stabilize between 29°C and 31°C. Hold at that condition for five minutes to ensure equilibrium.

5. Thermesthesiometer is now ready for operation. Use ASTM C1057-03 for burn hazard measurements. The following precautions should be taken when taking measurements:
   - Probe shall be applied firmly and squarely to the test surface. Avoid rubbing and scraping motion.
   - A force of 4-7 pounds is recommended. User may acquire satisfactory feel of application pressure applying probe to a weighing scale.
   - Between each measurement, let probe and contact temperature stabilize. For rapid measurements, quick cool down can be accomplished by heat sinking probe to a metal surface at room temperature.
   - Probe should never be used on surfaces hotter than 200°C. Recommended procedure is to monitor contact temperature during operation. Probe should be removed from hot surface before data acquisition system reading reaches 100°C.

6. Keep protection cap on the probe when Thermesthesiometer is not being used. Probe can be left attached to the Temperature Controller and safely stored in the carrying case.

Heat Controller Overview

