

# TEMPERATURE MEASUREMENT BENCH

MODEL: HE 151



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**HIS Temperature Measurement Bench (Model: HE 151)** is a complete, free-standing apparatus to demonstrate fundamental temperature measuring techniques using thermocouples, mercury in glass thermometer, resistance temperature detector (RTD) and bimetallic temperature indicator.

### EXPERIMENTAL CAPABILITIES

The equipment is capable of demonstrating a range of experiment including:

- ◆ Measurement of water temperature in a hot water bath and vacuum flash using thermocouples, mercury in glass thermometer, RTD, bimetallic temperature indicator and etc.
- ◆ The Peltier Thermo-Electric Effect
- ◆ The Seebeck Thermo-Electric Effect
- ◆ Reference Junctions
- ◆ The Law of Intermediate Metals
- ◆ The Law of Intermediate Temperatures
- ◆ Effect of Lead Resistance and Meter Impedance in Thermocouple Circuits
- ◆ Connection of Thermocouples in parallel
- ◆ Connection of Thermocouples In Series
- ◆ Comparison of accuracy and methods of calibration.
- ◆ Observation of dynamic response.

**SPECIFICATIONS**

- a) Bench made of high quality formica laminated backpanel
- b) Heat source (hot water bath with heater/stirrer unit or water heater)
- c) Vacuum flask
- d) Air blower with heater
- e) Digital resistance /mV indicator
- f) Direct reading digital temperature indicator for use with thermocouple
- g) Thermocouples: Type J & K, lead wires
- h) Mercury in glass thermometers:  
-5 to 105 °C, and -5 to 360 °C
- i) Platinum resistance thermometer
- j) Bimetallic temperature indicator: 0 to 400 °C
- k) Thermistor

- l) Vapor pressure thermometer
- m) Self-adhesive surface temperature indicators
- n) Wet and dry bulb thermometer

**REQUIREMENTS**

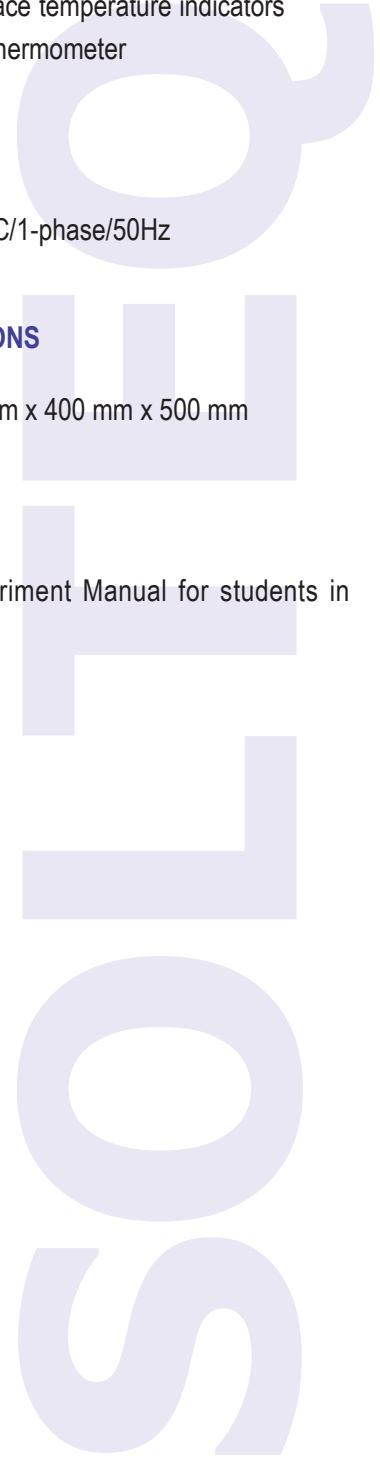
Electrical : 240VAC/1-phase/50Hz

**OVERALL DIMENSIONS**

Size (WxDxH): 800 mm x 400 mm x 500 mm

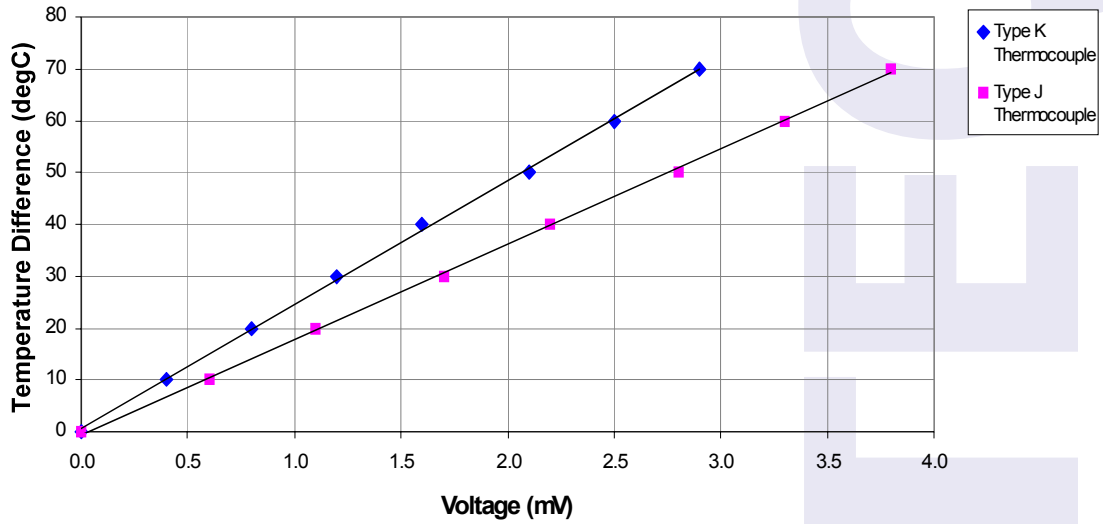
**MANUAL**

Operating and Experiment Manual for students in English.

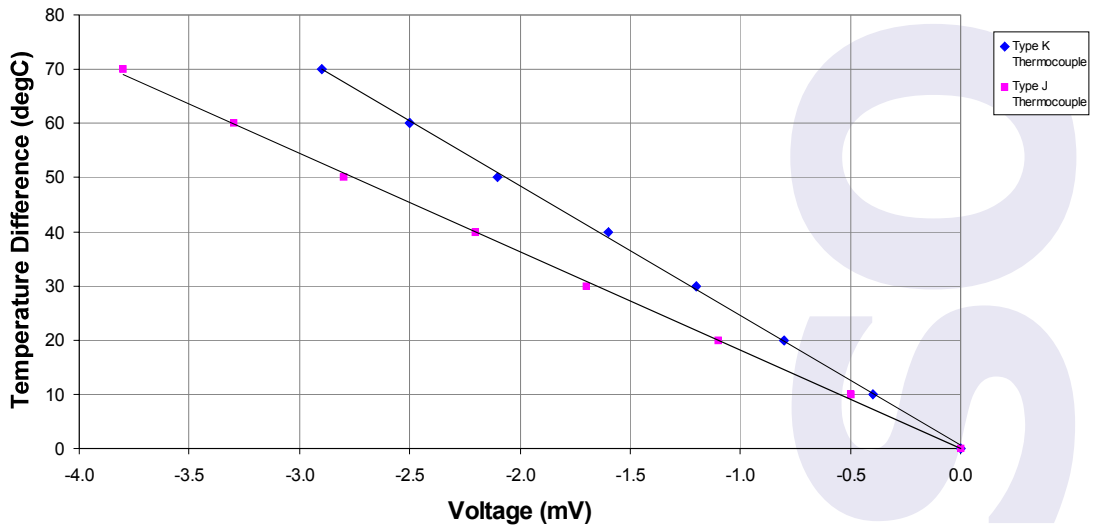


**TYPICAL EXPERIMENT RESULTS**

**Temperature Vs Voltage of Thermocouples**



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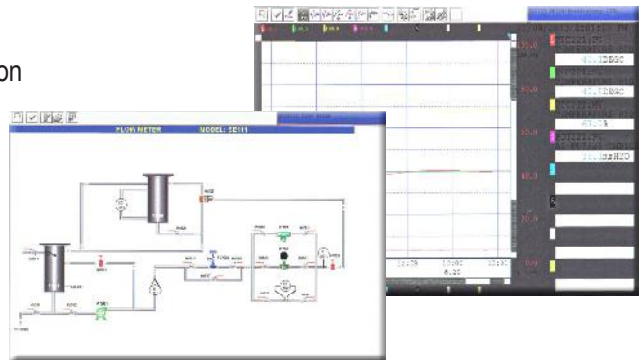


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