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Product Name :
Temperature Measurement Methods and Calibration Unit

Product Code :
LBNY-0005-1020007



Description :

The measurement of temperature is fundamental to almost every branch of engineering and science. Up to nine different methods of Temperature Measurement Methods and Calibration Unit are included and students undertake detailed experiments to compare not only accuracy but also the way in which the instruments work. The Temperature Measurement Methods and Calibration Unit enables students to investigate the many different methods of measuring temperature and to determine the advantages and disadvantages of the various sensor and indicator types. The operation of platinum resistance temperature sensors and their importance in the International Temperature Scale are investigated.

Technical Specification :

Experimental Capabilities:

- The use of liquid in glass thermometers for measurement of fixed scale points.
- The Peltier and Seebeck thermo-electric effects.
- Investigation of junction voltage from different thermocouple types.
- The use of vapour pressure for temperature measurement.
- The use of bi-metallic expansion devices for temperature measurement.
- Voltage calibration of different thermocouple types using a water-ice reference.
- The effect of lead resistance and voltmeter meter impedance on thermocouple measurements.
- The use of ice point reference with a thermocouple.
- The law of intermediate metals and intermediate temperatures associated with thermocouples.
- Connection of thermocouples in series for signal amplification and parallel for averaging of measured temperatures.
- Use of a direct reading, internally compensated thermocouple indicator.

The use of a direct reading PRT indicator device.

Investigation of the resistance change of a negative temperature coefficient thermistor sensor with temperature.

Investigation of the platinum resistance sensor, its resistance change with temperature and the reference PRT equation

Calibration of all of the supplied sensors with reference to an accurate platinum resistance thermometer.

Investigation of the response rate of various thermocouples and sensors.

The use of a direct reading thermistor indicator device.



Laboratory Instrument India