



52046 Measurement of temperature is an important task in a large number of physical processes. A transducer is a device which converts the temperature information into an electrical signal, usually voltage, for an automated processing. A very wide variety of temperature transducers are commonly available which differ from each other with regards to these: Range of operation, Sensitivity, linearity, Accuracy, Stability, Repeatability and Speed of response The present experiments have been designed to study the input-output characteristics of some common transducers like, thermistors (PTC and NTC), thermocouple, semiconductor sensors and may be extended to also study the temperature coefficients of resistance.

OBJECT

Temperature-output voltage characteristics of the following transducers in the temperature range from room temperature to 150° and determination of their parameters

1. Gain and CMRR of the Instrumentation Amplifier
2. Characteristics of a Negative Temperature Coefficient Thermistor (NTC).
3. Characteristics of a Positive Temperature Coefficient Thermistor (PTC).
4. Characteristics of semiconductor Sensor, AD590 up-to 90 °C only.
5. Characteristics of Thermocouple-Chromel/ Alumel (K type).
6. Characteristics of Platinum RTD.

Features

1. Built-in DC Power Supply
2. Functional blocks indicated on-board Mimics
3. Exhaustive Learning Material
4. On board signal conditioning circuitry

Technical Specification

1. Temperature transducers : K type T/C
: NTC
: PTC
: AD 590
: Platinum RTD
2. Oven : Temperature Controlled up-to 120° C with digital display
3. Voltmeter : Digital Voltmeter (0-2V)
4. Instrumentation Amplifier : Built in with selectable gain
5. Power Supply : 230V+5%, 50Hz
6. Interconnections : 4mm banana sockets
7. Power Consumption : 32 VA(approximately)
8. Dimension : W 340 x H 125 x D210
9. Weight : 3.5Kg (approximately)
10. Operating Conditions : 0-40° C, 85% RH

List of Accessories:

1. Patch Cord 4mm length 50cm Red&Black... 4P.
2. Oven..... 1P.

Note: Specifications are subject to change.

