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**SINC**  <sup>®</sup>

**Sindhu** ELECTRONICS & COMMUNICATIONS PVT. LTD.

Electronics Educational Trainer Kits

# Temperature Measurement using RTD & Thermocouple

**Model : SE-1044**



**SINC SE-1044 Temperature Measurement using RTD & Thermocouple** is an exceptional trainer for studying temperature measurement and control using RTD & Thermocouple temperature sensors. This comprehensive trainer features an instrumentation amplifier wired with a microcontroller-based system, allowing for accurate temperature measurement and control. The LED seven segment display provides clear temperature readings, and users can easily set the temperature cut-off. Additionally, the trainer includes an electrical heating system for practical application and experimentation.

## Features

- ❖ Accurate Temperature measurement
- ❖ Platinum RTD and CRAL Thermocouple as a Temperature Sensor
- ❖ Microcontroller based system
- ❖ Wide Temperature Range measurement
- ❖ 3<sup>1/2</sup> Digit LED Temperature Display
- ❖ Heater Load control
- ❖ Temperature Cut-off setting
- ❖ External Electrical Heating System
- ❖ In-Built Fixed regulated DC Power Supply
- ❖ Presents a multi-color Circuit Diagram printed on the front panel of the white board
- ❖ Enclosed in an attractive, light weight, High Quality, Poly Coated Imported Pine Wooden cabinet
- ❖ Interconnections by 2mm high quality banana sockets and pins.

## Technical Specifications

- |                             |   |
|-----------------------------|---|
| ▪ AC Mains Power Supply     | : 230V ±10%, 50Hz                         |
| ▪ DC Power Supply           | : Regulated +12V /500mA ,+5V /500mA       |
| ▪ Maximum Operating Voltage | : 12V                                     |
| ▪ Temperature Sensor        | : RTD PT 100 and CRAL K type Thermocouple |
| ▪ Controller                | : Micro controller based                  |
| ▪ Heater Load Control By    | : SPDT Relay 5A                           |
| ▪ Temperature Setting By    | : 03 Push Switches                        |



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- Temperature Display : Red Color, 3<sup>1/2</sup> Digit , LED Display
- Temperature Range : Upto 100° C
- Heating Source : Electrical water Heating system
- Weight : 3.0 kg (approx)
- Dimensions (mm) : L 270 x W 390 x H 130
- Interconnections : 2mm Banana sockets
- Operating Temperature : 0-100° C, 80% RH

### Learning Scope

- To study Temperature measurement using RTD and Thermocouple.
- To observe and note the variation in temperature displayed w.r.t. change in Temperature.
- To Study ON/OFF Temperature Controller action using RTD and Thermocouple. To observe & Note temperature shown by the RTD and Thermocouple sensor and it's ON & OFF controlling of Load w.r.t. Pre decided Temperature.

**Other Instruments Required :** Digital Multimeter

**Accessories Included :** Electrical Heating System, Set of Patch Cords, Detail Instruction Manual.