Proportional Integral (PI) Control System

Model : SE-1025

SINCOM SE-1025 PI Temperature Control System is an exceptional, highly adaptable and comprehensive trainer that is specifically designed for studying the impact of an **PI** (Proportional Integral) closed loop control system on the temperature of a heater load. This system includes an RTD temperature sensor, OP-AMP based circuitry, Temperature Processor, a digital temperature indicator, and an electrical heater load. Additionally, it offers the convenience of setting the reference temperature input, variable set point adjust, Gain control, multiple feedback elements, allowing for precise control and analysis of PI control system.

Features

- Platinum RTD as a Temperature Sensor
- $3^{1/2}$ Digit Digital Temperature Indicator
- Closed Loop Temperature control system
- Facility to select P,PI Control system
- AC Heater Input Control
- Facility to set reference input, set temperature and P/PI Gain control.
- Multiple Feedback elements
- Wide Temperature Range
- External Electrical Heating System
- In-Built Fixed and Variable 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
Fixed Regulated DC Power Supply	: +5V, ±12V /500mA
Variable DC Power Supply	: Two Variable 0 to -5V
Temperature Sensor	: RTD PT 100
Control System	: Closed Loop Temperature control system
Controller	: Proportional (P), Integral (I)
Processor	: OP-Amp Based, Error Detection and Correction circuitry
Gain Control	: P,PI By Potentiometer
Temperature Display	: Digital $3^{1/2}$ Digit LED Display
Temperature Range	: Upto 100^{o} C
Reference Input Adjust	: Variable 5V
Temperature Set Point Adjust	: Variable with Push Switch selection
Multiple Feedback Control	: By Two Resistors
AC Heater Input	: Intensity Control by Potentiometer
Heating Source	: Electrical 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^{0}C, 80% RH

Learning Scope

- To Study the Principle of PI Controller.
- To Study the Operation of PI Temperature controller.
- To Study the Temperature controller in Open Loop.
- To Study the Temperature controller in Closed Loop-PI mode.
- To Observe and note the ON/OFF of AC Heater at the set value in closed loop.

Other Instruments Required : Digital Multimeter (Optional)

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