Proportional Integral Derivates (PID) Control System

Model : SE-1026

SINCOM SE-1026 PID Temperature Control System is an exceptional, highly adaptable and comprehensive trainer that is specifically designed for studying the impact of an **P** (Proportional), **PI** (Proportional Integral), **PID** (Proportional Integral Derivative) 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 P,PI,PID 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,PID Control system
- AC Heater Input Control
- Facility to set reference input, set temperature and P/PI/PID 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) and Derivative (D)
- Processor : OP-Amp Based, Error Detection and Correction circuitry
- Gain Control : P,PI,PID 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 P,I,D Controller.
- To Study the Operation of PID Temperature controller.
- To Study the Temperature controller in Open Loop.
- To Study the Temperature controller in Closed Loop-PID 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.

Subject to Change