



TEMPERATURE PROCESS CONTROL TRAINING SYSTEM (SMT-9201)

Process Control technology has greatly expanded the variety of tasks performed by instrument technicians at industrial plants. They must calibrate, troubleshoot, and repair instruments ranging from pneumatic booster relays to microprocessor-based automatic controllers. To successfully perform these tasks without adversely affecting plant production and maintenance costs, effective training is essential.

The SMT-9201 Temperature Process Control system is designed for hands-on training in the measurement, control and troubleshooting of industrial processes. The trainers can operate independently, or be combined together in different configurations to simulate more-complex processes. The Temperature use water as the process media. Student courseware starts with an introduction to the basic characteristics of main process variables, and proceeds progressively to the study of process fundamentals, calibration of sensing devices and transmitters, and the operation of microprocessor-based controllers. Closed-loop control of processes and troubleshooting exercises are an integral part of the training program, and computer-based training and simulation software provides flexibility when adding to or upgrading existing programs.

Process Control Trainer contains an educational board with a pressurized vessel and a set of sensors and actuators for temperature. A control module, containing the interface circuits for the sensors and the actuators and the ON/OFF, proportional, integral and derivative control circuits (PID).



TECHNICAL SPECIFICATIONS

- **Fixed Supply DC:** +12V, +15V, -15V, +24V & +48V
- **Vessel:** 6 Liter approx.
- **Water Tank:** 20 liter approx
- **Heater Element:** 300W
- **Water Circulation Pump:** 10 l/min
- **Piping:** Plastic
- **Thermal Sensors:** PT100, Bi-metallic Direct Reading
- **Valves:** Manual
- **Temperature Sensor Interface:** DC Amplifier with Offset and Gain Control
- **ON/OFF Control:** Comparator with Hysteresis Control
- **Analog Source:** 0 ~ +10V,
- **PID Controller:** Proportional, Integral & Differential Control with Feedback
- **Pump Driver:** DC to PWM Driver with DC Level Offset Control
- **Motor Valve Driver:** Proportional ON/OFF Control
- **Heater Driver:** DC to PWM Driver with DC Level Offset Control

- **Accessories:** Power Cord, 2mm Patch Cord, Experiment Manual.
- **Optional:** Data Acquisition Unit / Interface Software.

Features:**Temperature Control**

User can control temperature level manually, through ON/OFF through ON/OFF & PID control

Experiments Included:

- Study of the Temperature Sensor
- ON-OFF, P, PI, PD and PID Closed Loop Control of the Temperature

Temperature Process Control Trainer (SMT-9201)

The Process Control Trainer provides user ability to control Temperature Control. Further details are as follow

Features:**Temperature Control**

User can control temperature level manually, through ON/OFF control or through software PID control algorithm.

Others

PID parameters are controllable and graph plotting is also available.