ESOLS
Engineering Education Equipment

FLOW PROCESS CONTROL TRAINING SYSTEM (SMT-9204)

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-9204 Flow 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 Flow. 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
- **Water Circulation Pump:** 10 l/min
- **Piping:** Plastic
- **Flow Sensor:** Direct Reading, Digital hall effect type
- **Valves:** Manual
- **Flow Sensor Interface:** F/V Converter 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/OF Control
- **Solenoid Valve Driver:** ON/OF Control with Driver

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

Features:
Flow Control
User can control flow of liquid manually through ON/OFF & PID control

Experiments Included:
- Study of the Flow Sensor
-ON-OFF, P, PI, PD and PID Closed Loop Control of the Level.

Flow Process Control Trainer (SMT-9204)

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

Features:

Flow Control
User can control flow of water manually, through ON/OFF control or through software PID control algorithm.
Others
PID parameters are controllable and graph plotting is also available.