



## Curriculum Coverage

- Acquiring Physical Phenomena
- On/Off Control
- PID Feedback Control
- Setpoint Profile Generation
- Lead-Lag Compensation
- Feedback/Feedforward Control
- Multiloop Cascade Control
- Ratio Control
- Flow Meters Comparison (with option)

## Features

- Computer based Process Trainer used to teach level, flow, temperature, and pressure Measurement & Control
- Includes all required sensors to measure different process variables
- For use with NI's Data Acquisition & Control hardware



## Description

A bench-mount trainer for teaching Process Measurement & Control through level, flow, temperature, and pressure. The PT001 trainer includes all the required sensors and actuators to perform the full experiment list for teaching process control and measurement. Using PT001, the student will acquire better understanding and hands-on experience in process control.

The PT001 was developed for use with NI's measurement and control platforms. It utilizes the platform features such as; real-time and FPGA processing, intelligent communication interfaces, rugged I/O modules, among others. The industrial I/O modules filter, calibrate, and scale raw sensor signals to engineering units and performs self diagnostics.

The curriculum covered includes teaching the principles of acquiring different physical phenomena, On/Off Control, PID control, Feedforward and other types of control used in the industry.

### Components

- Thermocouples Heater
- Level Sensor Pressure Sensor
- Magnetic Flow Meters
- Flow Control Valve
- Pump
- Variable Frequency Drive
- Turbine Flow Meter (Option)

### NI<sup>1</sup> Compatible Platforms

- Compact RIO
  - Others<sup>2</sup>
- <sup>1</sup> NI  
<sup>2</sup> Please check with us about compatibility of other NI Platforms

### Required NI Modules

- cRIO: NI-9211, NI-9207, NI-9472, NI-9263

## Software

- User friendly with easy to use interface
- Developed using NI LabVIEW package
- Built-in safety features & limitations, and designed for students' use

**Ordering Information Process Trainer**

**PT001 - A - B - C**

NI* Platform	Power	Options
1... cRIO	1... 220 VAC	0... No Option 1... Turbine Flow Meter

\*Purchase NI Hardware Separately

For complete product specifications, pricing, and information:  
e-mail: [info@ti.jo](mailto:info@ti.jo) / website: [www.ti.jo](http://www.ti.jo)

and Images are subject to change at anytime without prior notice.



## Technical Specifications

---

### *Process Control & Measurement Trainer Specifications:*

#### *Dimensions & Volumes:*

- Dimensions (LxWxH): 1200 x 700 x 600 mm
- Lower Tank Dimensions: 400 x 255 x 205 mm
- Upper Tank Dimensions: 300 x 255 x 205 mm
- Lower Tank Volume: 18.7 Liters
- Upper Tank Volume: 14 Liters

#### *Safety Considerations:*

- Maximum allowable temperature: 55 °C
- Maximum allowable water level in the upper tank: 23 cm

#### *Heater:*

- Heater Power: 2000 Watts

#### *Maximum Flow Rate:*

- Upper: 4-5 Liters/minute
- Lower: 11-12 Liters/minute

#### *Pump:*

- Pressure: 10 Bars
- Power: 115 Watts