

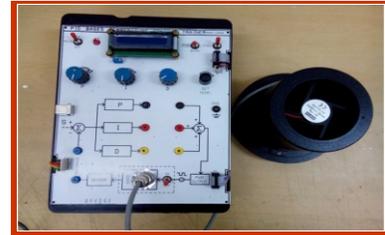
# PID Trainer System

## Introduction

•A **PID controller** (proportional–integral–derivative controller) is a generic control loop feedback mechanism (Algorithm) widely used in industrial control systems and Robotics and is the most commonly used feedback controller. A PID controller calculates an "error" value as the difference between a **measured process** variable and a **desired set point**. The controller attempts to **minimize** the error by adjusting the process control inputs.

## Technical Specification

- Digital PID Based on advance microcontroller
- Study of Proportional control (P)
- Study of Proportional & Integral Controller (PI)
- Study of Proportional Integral and Derivative Controller (PID)
- Operating temperature: Ambient to 90°C
- Separate controls for P, I, D channel gains
- Digital display of set and measured temperature on a 16x2 LCD
- Digital display of P,I,D gain factor on a 16x2 LCD
- Graph between Temperature Vs. Time on PC side on Labview software.
- Store the Data in a excel file



## Experiments

- 1)Concept of PWM to control input of oven
- 2)Control the temperature of oven using open loop control
- 3)Control the temperature of oven using closed loop P control
- 4)Control the temperature of oven using closed loop closed loop PI control
- 5)Control the temperature of oven using closed loop closed loop PID control



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