



**RENEW**  
INSTRUMENTS

**LAB  
EQUIPMENTS**

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# LEVEL CONTROL TRAINER

Level Control Trainer is designed for demonstration of tank level measurement and to provide hands on experience on how to operate a level control loop using microprocessor based (PID) controller. The design consists of industrial grade instrumentation to exhibit a realistic working environment of a standard industrial process control loop.

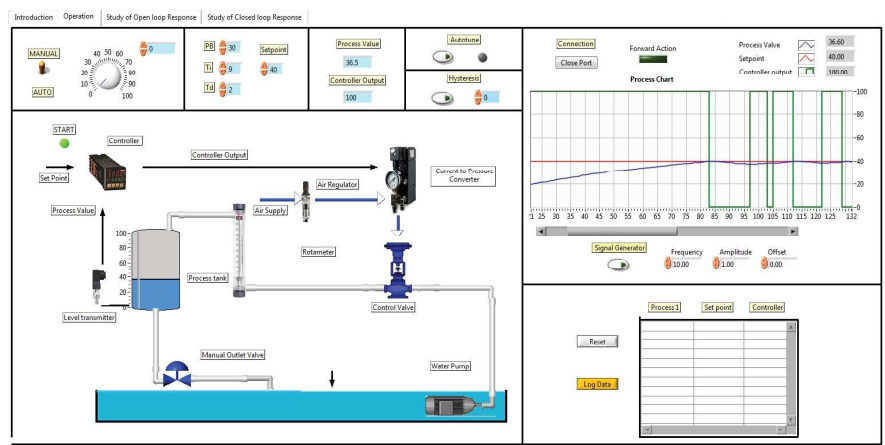


## Product Inclusions -

- Control Valve
- Acrylic Process Tank
- Air Filter with Regulator
- I to P converter
- Rotameter
- Level Transmitter
- Submersible Pump and SS Tank

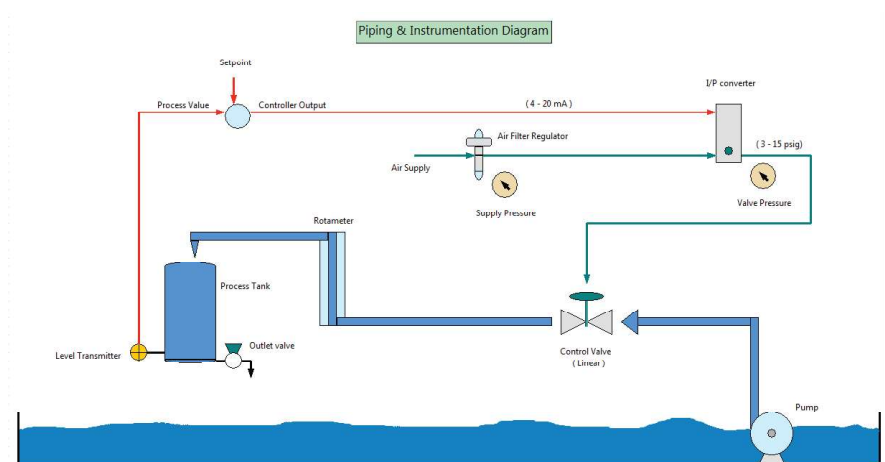
## SCADA

Our Trainer Kits are provided with a specially developed SCADA software for real-time process control and data acquisition. Using this software various experiments can be performed in different controlling modes such as Manual, Hysteresis, P, I, D, PID Control, Auto Tuning & Stability Control.



## P & ID

In this process a level transmitter is used for measuring the level of water in transparent process tank. Level of the tank is controlled by PID controller which manipulates pneumatic control valve with the help of I to P converter. The process is controlled through computer using SCADA software.



# TEMPERATURE CONTROL TRAINER

Temperature Control Trainer help the users to understand basic principles of temperature control loop and delivers a hands on experience to operate the process using microprocessor based (PID) controller. The self-assembled trainer provides flexibility to construct different designs, simulating a real world industrial plant environment for a wide range of educational experience in temperature control studies.

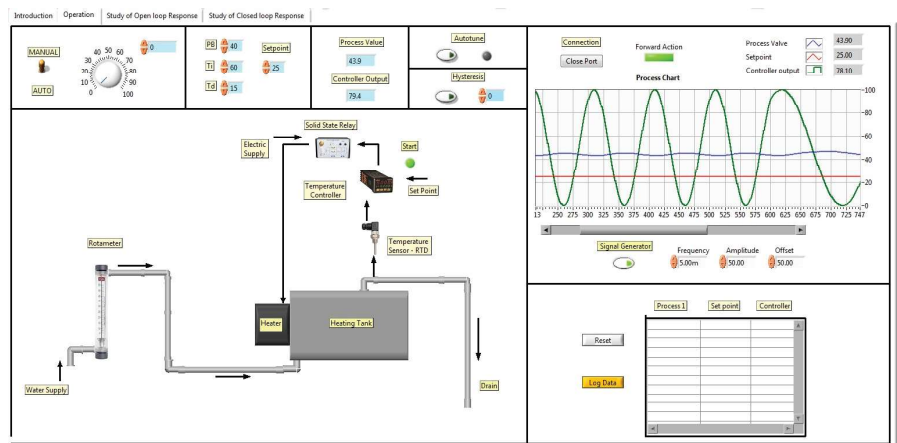
## Product Inclusions -

- Heater
- SS Tank
- Solid State Relay
- PID
- RTD
- Rotameter



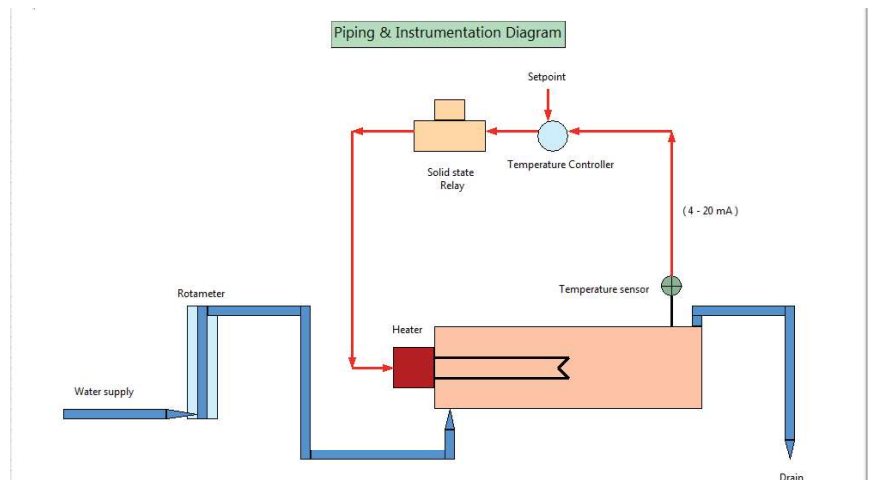
## SCADA

Users can raise or lower the water flowrate using rotameter in order to preset the inlet and outlet flowrate of heater tank. Temperature is controlled using a microprocessor based controller which manipulates the heater input through solid state relay. Stability of the system can be verified by operating the system in stability control mode.



## P & ID

The process setup consists of hot water tank fitted with SSR controlled heater for on-line heating of water. SSR (Solid State Relay) is used for converting output from controller to input of heater. RTD (Resistance Temperature Detector) is used to measure the temperature of hot water.



# INTERACTING & NON INTERACTING SYSTEM

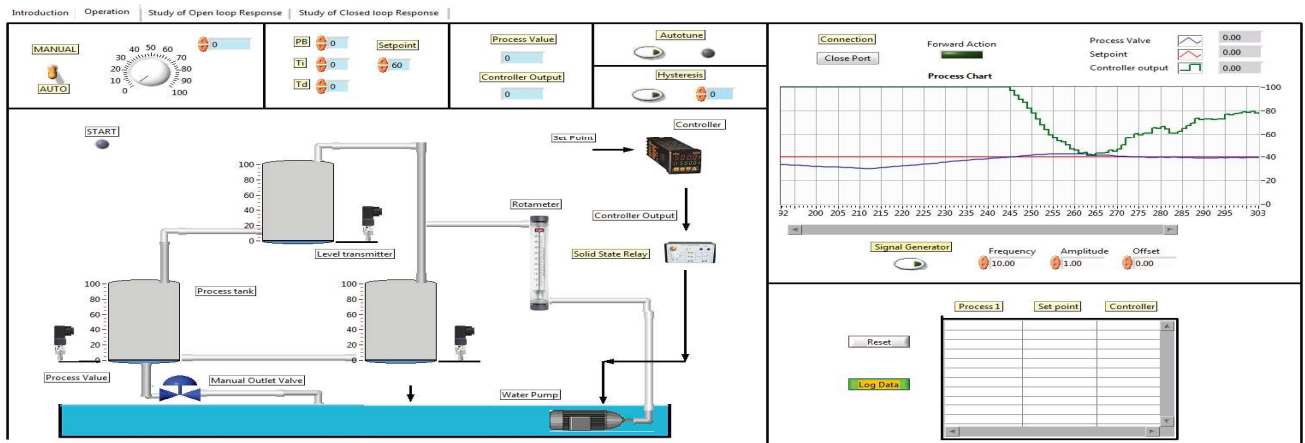
The setup is designed to study dynamic response of single and multi-capacity processes when connected in interacting and non-interacting mode. It is a combined unit to study single capacity process, non-Interacting process and interacting process. The observed step response of the tank level in different mode can be compared with mathematically predicted response.

## Product Inclusions -

- PID Controller
- Submersible Pump
- Supply Tank
- Acrylic Process Tank
- Rotameter for Flow Measurement
- Solid state relay for Pump Control

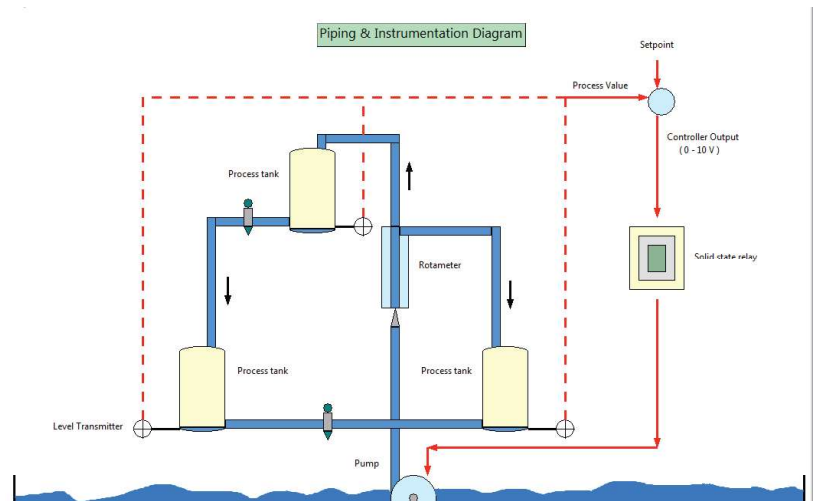


SCADA



## P & ID

Setup consists of supply tank, pump for water circulation, rotameter for flow measurement, transparent tanks with graduated scales, which can be connected in interacting and non-interacting mode. Controller's output is connected to SSR for water control. The components are assembled on frame to form tabletop mounting.



# CASCADE CONTROL TRAINER

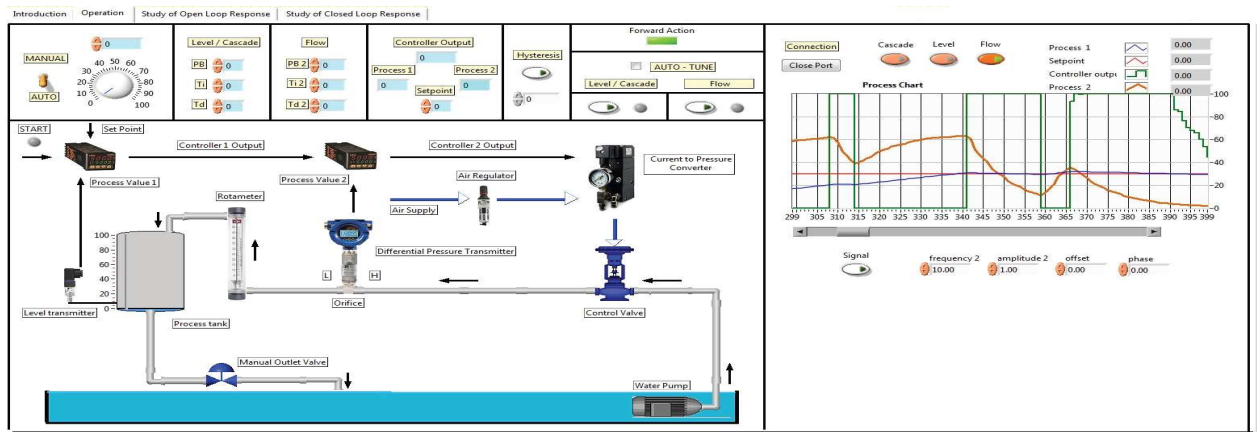
Cascade control trainer provides comprehensive experimental introduction to the fundamentals of control engineering. Cascade Control Trainer has both level as well as flow control system. This type of system is used for faster and stable control of process.

## Product Inclusions -

- Control Valve
- Acrylic Process Tank
- Air Filter with Regulator
- I to P converter
- Rotameter
- Level Transmitter
- Submersible Pump and SS Tank
- Orifice and Differential Pressure Transmitter

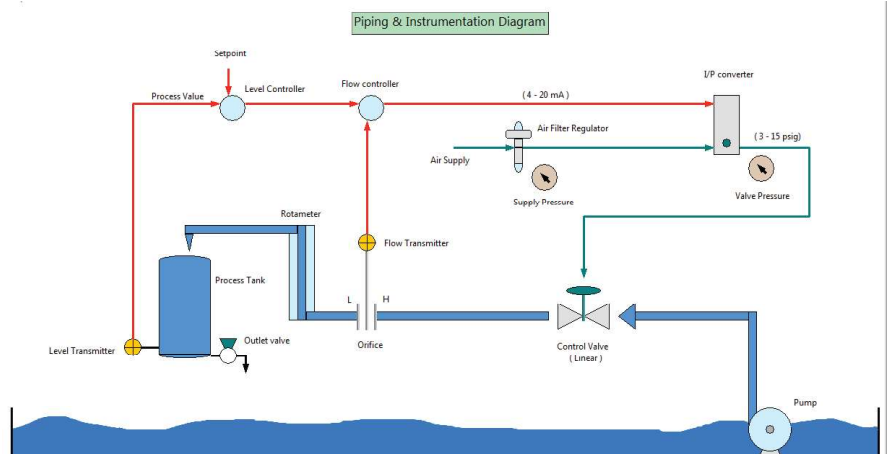


SCADA



## P & ID

The level transmitter used for level sensing is fitted on transparent process tank. Level and flow are controlled by PID controller which manipulates pneumatic control valve using I to P converter. DPT is connected to orifice for measuring the flow rate. Controller is connected to computer and interfacing is done using SCADA Software.

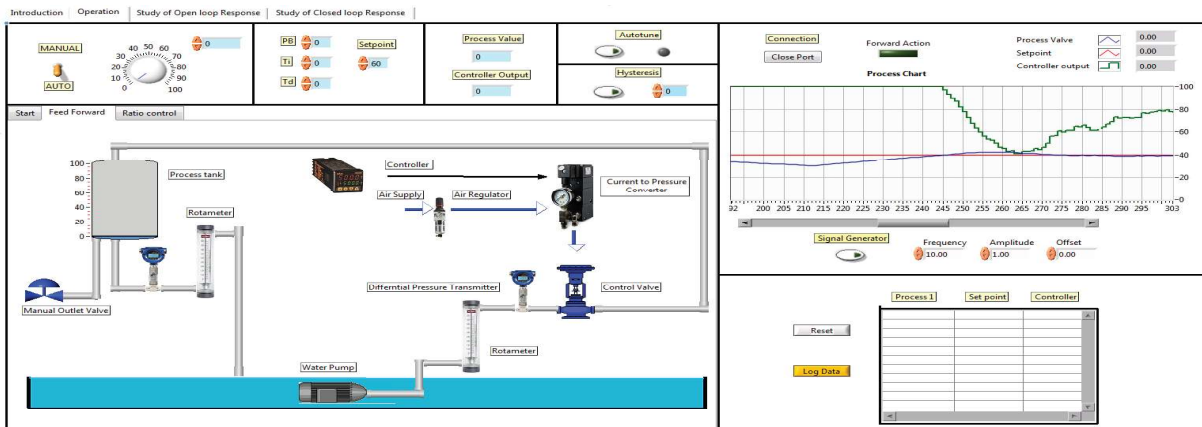


# MULTIPROCESS CONTROL TRAINER

Our Multiprocess Control Trainer offers an extended range of experiments in form of Multiple Loop Setup. This Control Trainer is used to study the response of P, PI, PD, PID Controllers. As well as Level, Flow, Cascade, Feed forward and Ratio control like experiments can be performed in addition to the basic experiments.

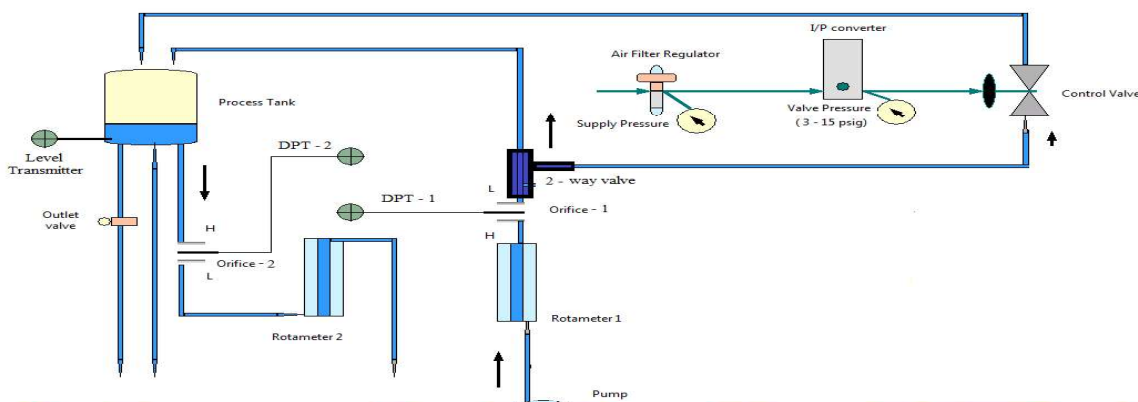
## Product Inclusions -

- Control Valve
- Acrylic Process Tank
- PLC
- Air Filter with Regulator
- I to P Converter
- Rotameter
- Level Transmitter
- Submersible Pump and SS Tank
- Orifice and Differential Pressure Transmitter



SCADA

Piping & Instrumentation Diagram



P & ID



# FLOW CONTROL TRAINER

Flow Control Trainer simulates a typical Flow Control Loop found in oil & gas, chemical and food production plants around the world. This system makes an excellent platform for training in all aspects of liquid flow instrumentation and engineering. The trainer provides the flexibility to construct different designs, simulating a real world industrial plant environment for a wide range of educational experiences in flow control studies.

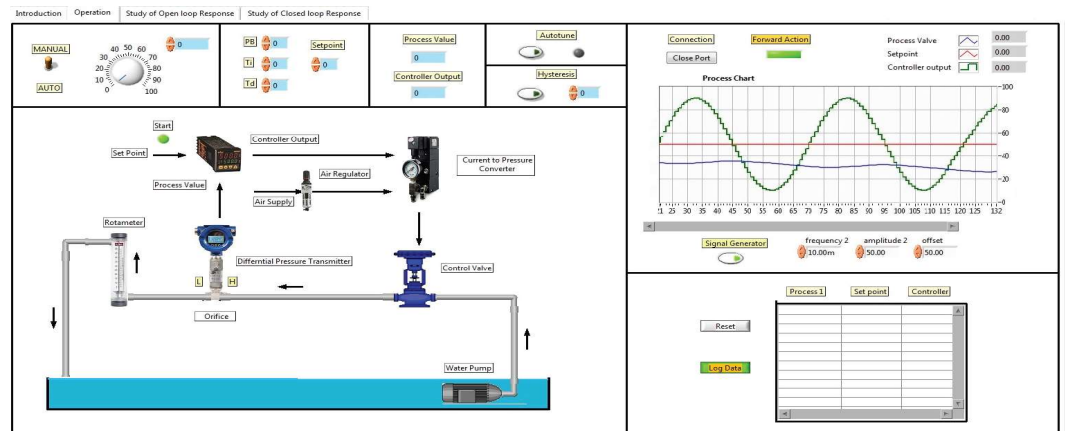
## Product Inclusions -

- Control Valve
- Air Filter with Regulator
- I to P Converter
- Rotameter
- Submersible Pump and SS Tank
- Orifice and Differential Pressure Transmitter



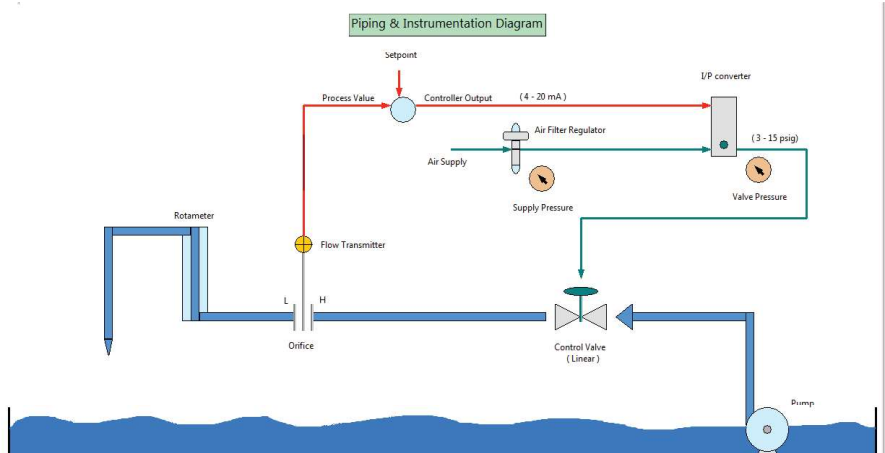
## SCADA FEATURES

- DATA LOGGING
- DATA PRINTING
- DATA EXPORT
- TREND PLOTS
- HMI CONTROL



## P & ID

In this trainer kit the flow rate of water is measured by using orifice plate assembly connected with differential pressure transmitter. Set point for the flow rate is given to the controller through SCADA, which is achieved by controlling the flow rate using pneumatic control valve.



# PRESSURE CONTROL TRAINER



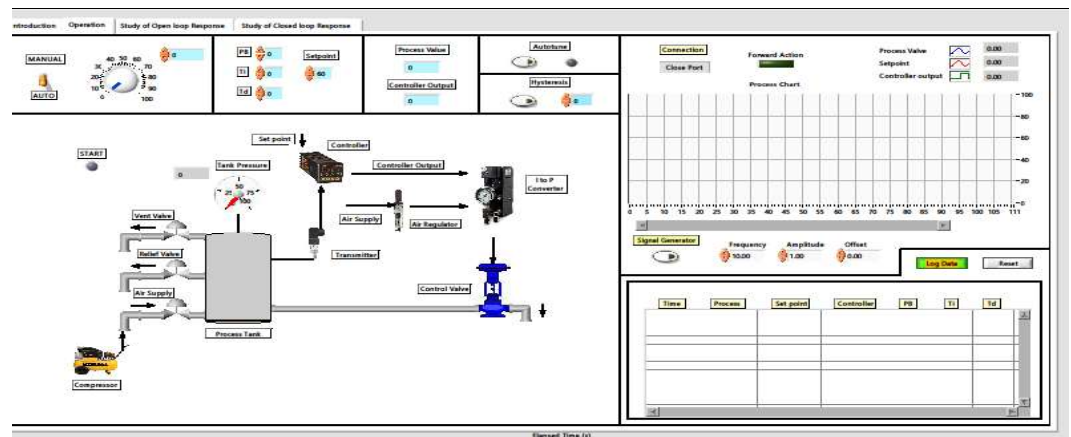
Pressure Control Trainer is designed for understanding the basic principles of Pressure Control Loop. The process set up consists of pressure tank fitted with pneumatic control valve. Pressure transmitter is used for measuring the pressure. The process parameter (Pressure) is controlled by microprocessor based PID controller which manipulates pneumatic control valve fitted at outlet of pressure tank through I/P converter. This unit comes along with necessary piping and is fitted on support housing designed for table top mounting.

## Product Inclusions -

- Pressure Tank
- Control Valve
- Air Filter with Regulator
- I to P Converter
- Pressure Transmitter
- Pressure Relief Valve
- Pressure Gauge

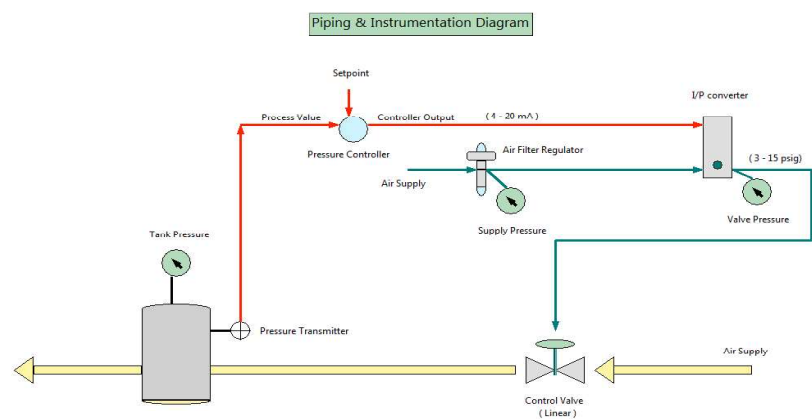
## SCADA FEATURES

- DATA LOGGING
- DATA PRINTING
- DATA EXPORT
- TREND PLOTS
- HMI CONTROL



## P & ID

In this trainer kit the process parameter (pressure) is measured by using Pressure Transmitter. Set point for the tank pressure is given to the controller through SCADA, which is achieved by controlling the pressure using pneumatic control valve.





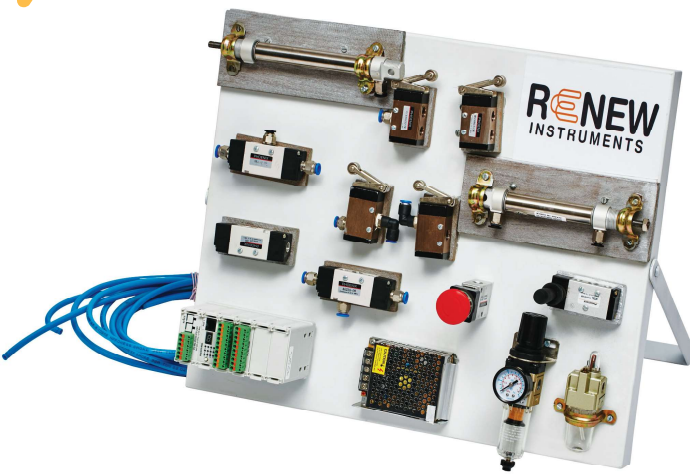
# PNEUMATIC & ELECTRO-PNEUMATIC TRAINER

Pneumatics is a branch of engineering that makes use of compressed instrument air. Our Pneumatic Trainer Kit is provided with specially developed simulation software which helps the user to understand how pneumatic system and its components work.

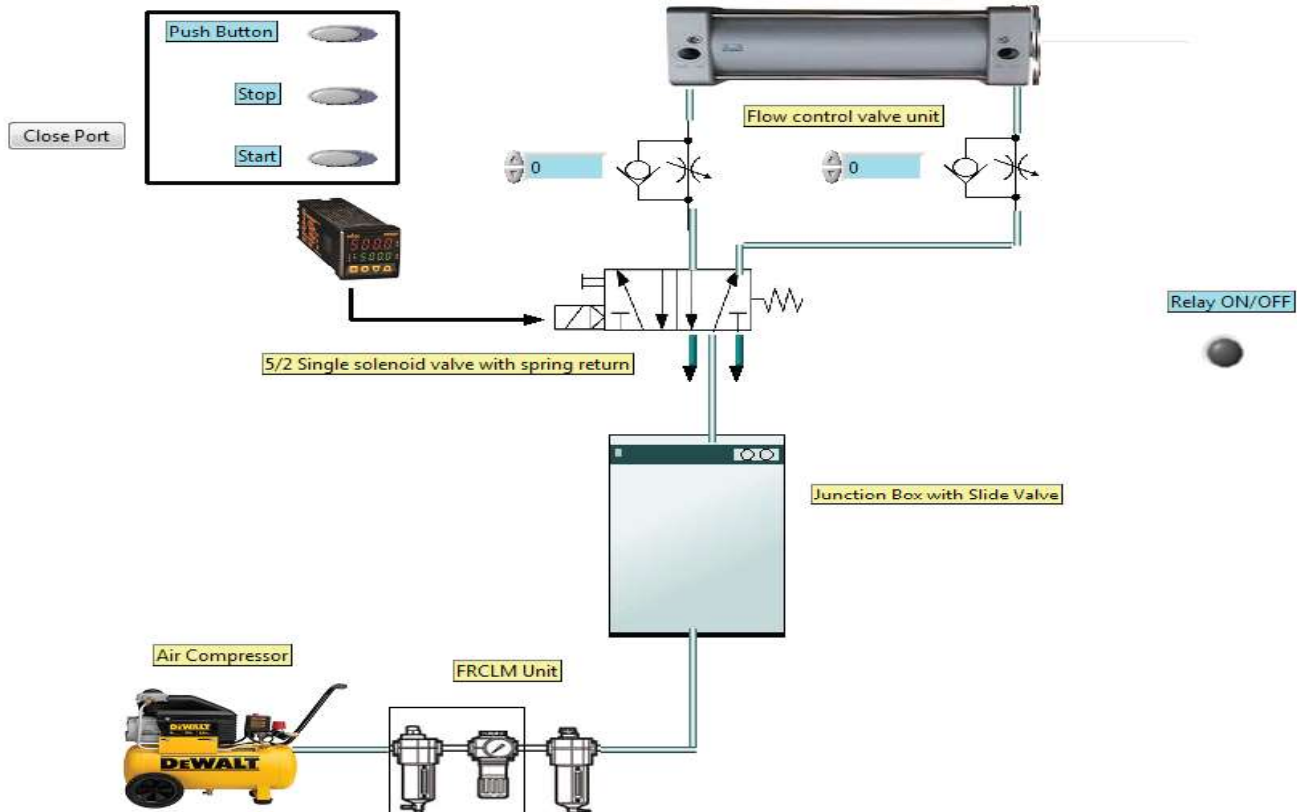
Electro-Pneumatic components are controlled with the help of electrical devices such as solenoids for changing inlet and outlet paths. Our Electro-pneumatic Trainer is provided with list of various experiments which will help the user to understand how electro-pneumatic system works. PLC (Programmable Logic Controller) is used for controlling the solenoids. More than 12 different experiments can be performed using this set up.

## Product Inclusions –

- Solenoid, Pilot & Roller Lever Valves
- Filter Regulator & Lubricator
- Double & Single Acting Cylinders
- AND, OR and SHUTTLE Valves
- Flow Control Valves
- Junction Box



Description Experiment



# CONTROL VALVE CHARACTERISTICS

The Control Valve Characteristics Trainer allows the users to have hands on training regarding the operation of pneumatic control valves used in industry. The equipment is meant for mounting control valves of different design. It outlines the basic characteristic of control valve and its applications. While operating it, user can get an idea of working process easily.

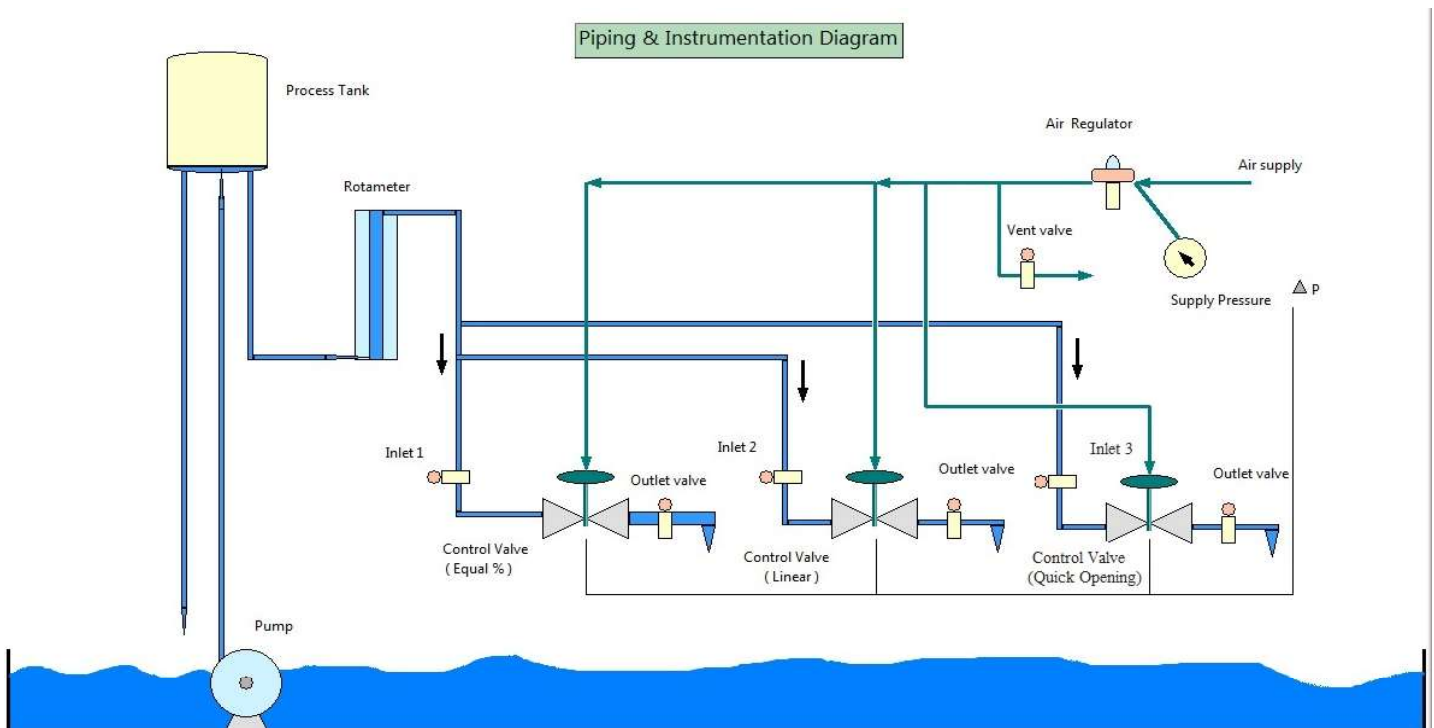
## Product Inclusions -

- Control valves( Quick opening, Equal % and Linear)
- Air Regulator
- Overhead Tank
- Rotameter
- SS tank and submersible pump



## CONTROL VALVE P & ID

Control Valve Characteristics trainer is designed to understand the working principle and flow characteristics of control valve. The set up consists 3 different types of pneumatic control valves such as Linear Acting, Equal % and Quick Opening, Stainless Steel Water Tank with pump for continuous water circulation and rotameter for flow measurement.



# I2P AND P2I CONVERTER TRAINER

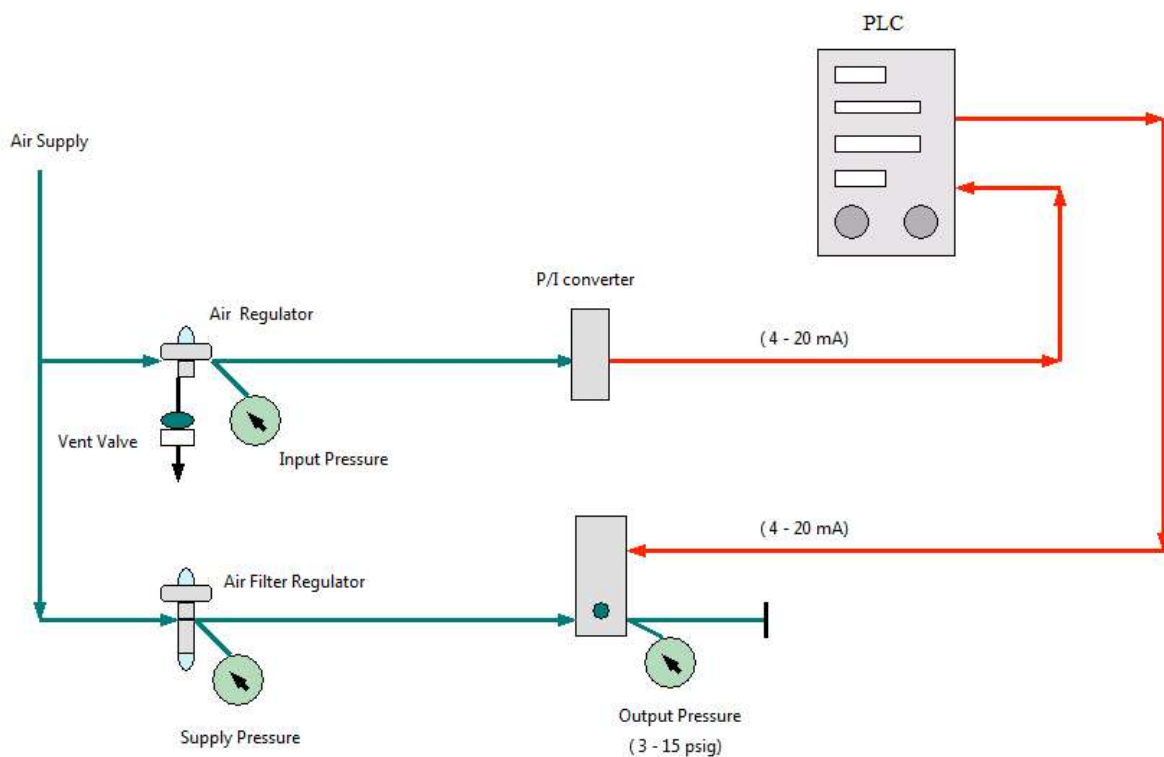
The I/P and P/I converter setup is designed for understanding basic principles of electronic and pneumatic signal conversion. Set-up enables study of I/P and P/I converter working, calibration and characteristics of linearity, hysteresis, accuracy, and repeatability.

## Product Inclusions -

- I/P Converter
- P/I Converter
- PLC
- Pressure Gauge
- Air Regulator
- Air Filter & Regulator



Piping & Instrumentation Diagram

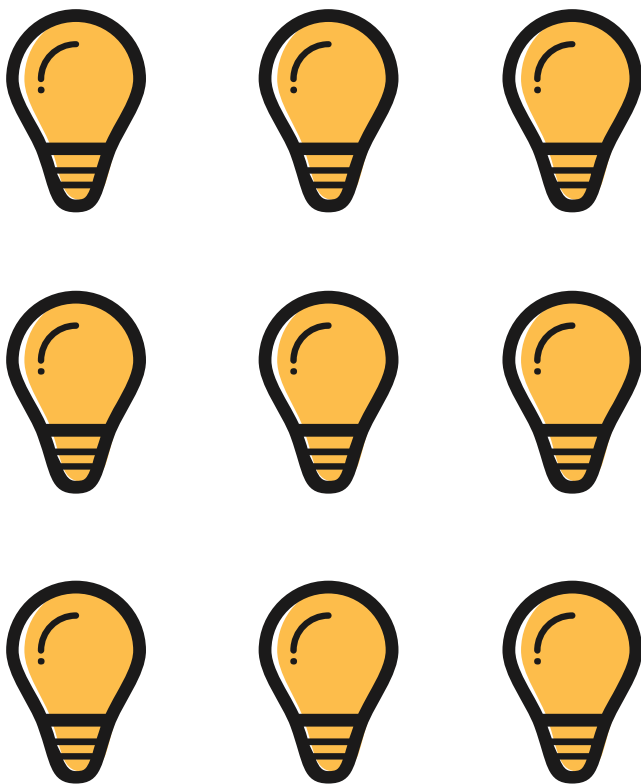


# ABOUT US.....

RENEW INSTRUMENTS IS A NATIONAL PROCESS INSTRUMENTATION FIRM THAT SERVES DIFFERENT KINDS OF ORGANISATION, CORPORATION AND PRIVATE CLIENTS.

WE ARE RESPONSIBLE FOR DESIGNING AND BUILDING DIFFERENT KINDS OF PROCESS LAB EQUIMENTS.

WE ARE KNOWN FOR OUR FAST AND RELIABLE RESPONSE TO REQUESTS AND QUERIES OF THE CLIENTS. OUR ENGINEERS ARE RESPONSIBLE FOR MAKING CREATIVE AND EFFICIENT USE OF FUNDS, ELECTRICAL ELEMENTS AND MATERIALS TO ACHIEVE THESE GOALS



## WE ARE INSPIRED BY PURPOSE. DRIVEN BY PASSION

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