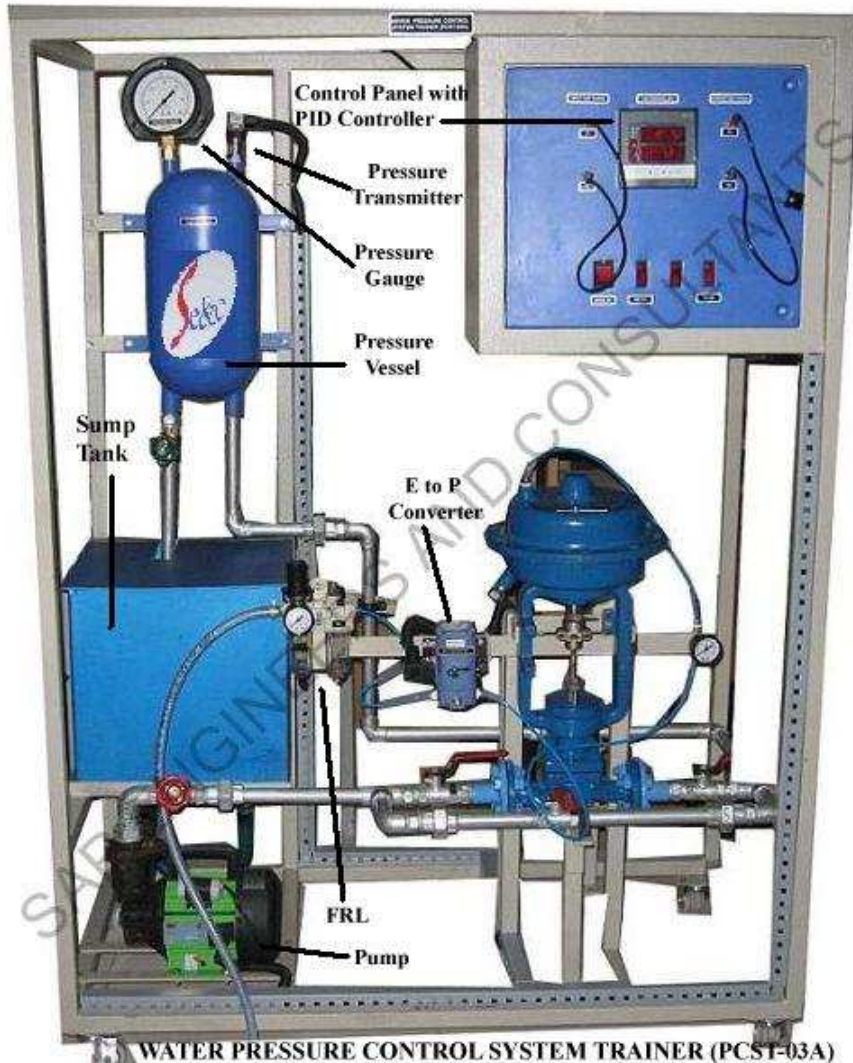


**SAP E & C WATER PRESSURE CONTROL TRAINER
(PRODUCT CODE: PCST - 03 A)**



The **Water Pressure Control Trainer (PCST - 03 A)** is the system, which outlines the basics of Closed Loop Water Pressure Control and various aspects related to it.

KEY WORDS:

- Feedback Water Pressure controls.
- PID control.
- SCADA Based Water Pressure Control
- P, P+I, P+I+D Controller Action.
- USB/RS232/RS 485/ Ethernet/ Modbus Comm.
- Ability to hook up with DCS (Distributed Control System Trainer)

Technical Specification-

No.	Item Name	Technical Specifications
1	Sump tank-	Material: Stainless Steel, 1.5 mm thick /P.P.5mm thick, Capacity: 30 liter, Dimension: 1 ft (L) ×1ft (W) ×1 ft (H).
2	Piping-	½" GI, Class B, with ½" ball valves: 6 No
3	Centrifugal Pump-	½ H.P., 1φ 230 V AC supply, Surface mounting
4	Pressure vessel with Pressure gauge-	Shape: Cylindrical, Material; CRCC 5 mm thick / SS 304-1.5mm thick, Diameter: 150 mm, Length; 300 mm, Capacity: 15 Kg/cm ² , with ½" BSP connection
5	Pressure Transmitter-	Input: 0-2.5 Kg/cm ² / 0-4 Kg/cm ² , Output: 4-20 mA, Type: 2-wire Piezo-resistive type, Supply: 24 V DC, 50 mA, Mounting: Top ½" BSP connection.
6	Pneumatic Control Valve-	Size: ½", Type: Two way Globe type (Air to Close), Cv: 5 US GPM, with diaphragm actuator, equal% characteristics, Flange connection : PCD : 60 mm, ID: 16 mm, OD: 90 mm.
7	E/P Converter-	Input: 4-20 mA, Output: 3-15 psi, Connection: ¼"NPT / BSP, Supply: 2.1 Kg/cm ²
8	A.F.R / F.R.L. Unit-	0-10 Kg/cm ² with pressure gauge, Connection: ¼" NPT / BSP.

SAP E & C WATER PRESSURE CONTROL TRAINER
(PRODUCT CODE: PCST - 03 A)



9	Electronic PID Controller-	With Serial PC Interface (ASCII Protocol) USB / Ethernet / RS 485 / RS 232, Cut Out Size: 92mm×92mm×144mm, Input: 4-20 mA, Output: 4-20 mA, Display: Dual for PV & SP, Bar graph display for Output & deviation, Hi-Low Alarm annunciation.
10	SCADA Application Software (Optional)-	SCADA App. S/W, PID control setting (P, PI, PD and PID mode), Auto/Manual Tuning of PID, Data Storage, Off Line analysis, online Data Acquisition, Simulation and Printing of data in Graphical and Tabular form. Interactive Graphical User Interface (GUI) included.
11	Electrical Control Panel-	MS Powder coated panel with switches, indicator, test Points, controller on front facia, UK 2.5 Terminal Connectors mounted on DIN rail channel, Use of 1sq mm multistrand wire with proper insulated Lugs, Feruling & neat wire dressing & clamping, Wires & power cables are seated through 1''×1''PVC cable tray. Dimension: 1ft (L) ×1ft (W) ×1ft (H)
12	Computer (Optional)-	PC with color monitor: 15'', PC Pentium Dual Core, with serial communication ports, 160/300 GB HDD, 512 MB/1 GB RAM
13	Air Compressor (Optional)-	Tank capacity: 25 Liters, Discharge: 2 CFM, Motor: 2 H.P. 230 V AC Operated, Working pressure: 5-6 kg/cm ²

Range of experiments:

- ❖ Study of single loop Feedback Proportional (P), Integral (I) and Derivative control (D4)actions .
- ❖ Study of operation and calibration of transmitters, I/P converter and Control Valve.
- ❖ Study of tuning and operation of PID controller.
- ❖ Study of stability of single loop Water Pressure Control System.
- ❖ Configure microcontroller based controller to give manual output, changing controller modes (Manual/Auto), Checking ON-OFF, Proportional, Integral, Derivative, PI and PID control actions, change local Set point, configure and run a set point ramp, configure measured values to either percentage or Engineering units.
- ❖ Study of Communication Protocols and interfacing of System with DCS / SCADA etc.
- ❖ Study of SCADA Application Software/ Computerized Control of Water Pressure Control System.

Features: -

- ❖ Illustrates the concept of feedback Water Pressure control loop.
- ❖ User Friendly, Self Explanatory Systems.
- ❖ Leak proof Safety Measures, sturdy piping.
- ❖ Enhanced Electrical Safety Considerations.
- ❖ Training Manual & Mimic Charts for Operation Ease.
- ❖ System Frame with Caster Wheel Arrangement for ease in movement.
- ❖ M.S. powder coated cubical plant with standard Instrument Mountings.
- ❖ Inbuilt Safety Measures to avoid improper usage.
- ❖ Computer Interface (Optional), SCADA Application software connectivity for analysis of Water Pressure Control System Trainer.

SAP E & C WATER PRESSURE CONTROL TRAINER
(PRODUCT CODE: PCST - 03 A)



System Dimension: 4.5 Ft. (L) X 1.5 Ft. (W) X 4.5 Ft. (H)


Services Required:

- ❖ Water supply and drainage arrangement.
- ❖ Electric supply 1 ϕ 230 V AC, 50 Hz.
- ❖ Clean, dry and dust free Compressed air supply 2.1 kg/cm².

Note:

All descriptive matter and illustrations are intended to give only a general idea of the equipment Detailed specifications may be altered at the company's discretion without any notice.

Manufactured/Marketed By
SAP ENGINEERS & CONSULTANTS



Regd. Off. : Shop No. 26-27,'Srushti', Survey No.82, Near Guru Ganesh Nagar,
Eklavya College Road (D.P.Road), Kothrud, Pune - 411 038

Telephone : (020) 2538 4737

Mobile : 94220 88946, 95524 75082

Fax : (020) 2538 3544

Email : pravinsdeode@vsnl.net, sapengineerspune@gmail.com

Website : www.sapengineers.com / www.sapengineers.co.in

3/3_2