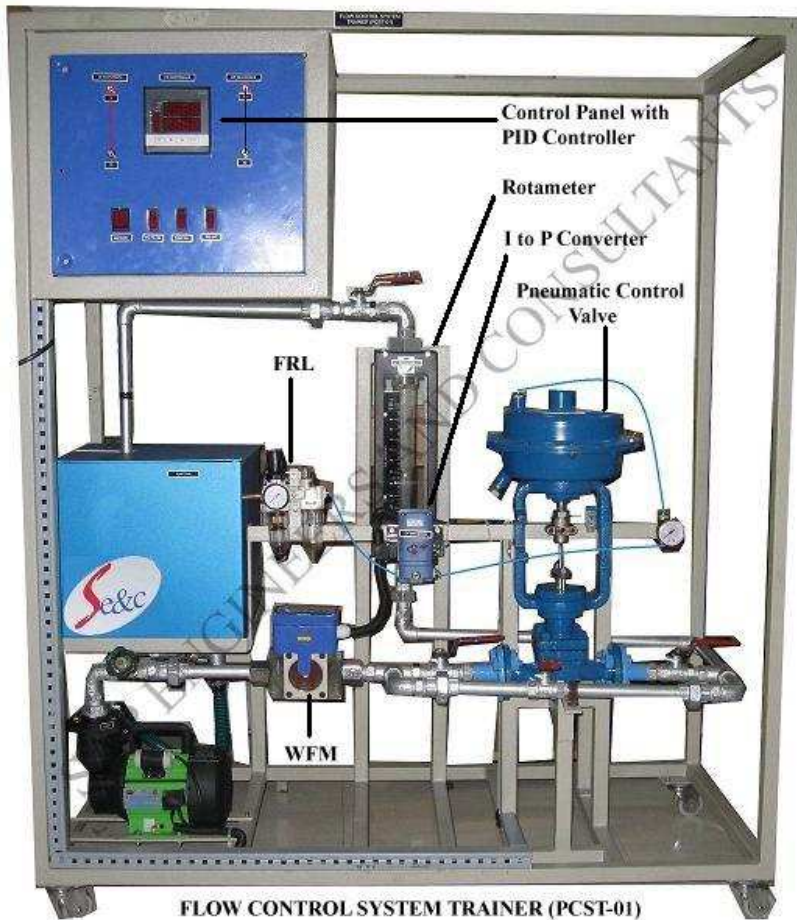


SAP E & C FLOW CONTROL TRAINER
(PRODUCT CODE: PCST - 01)



FLOW CONTROL SYSTEM TRAINER (PCST-01)

The **Flow Control Trainer (PCST - 01)** is the system, which outlines the basics of Closed Loop Flow Control and various aspects related to it.

KEY WORDS:

- Feedback Flow control.
- PID control.
- SCADA Based Flow Control
- P, P+I, P+I+D Controller Action.
- USB / RS 232 / Ethernet/ Modbus Communication
- 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" SS ball valves: 6 No
3	Centrifugal Pump: -	½ H.P., 1φ 230 V AC supply, Surface mounting
4	Flow meter: -	½", Turbine type / WFM type Type: 3-wire type / DPT with orifice plate Range: 0-600 LPH / 0-1000 LPH, Output: 4-20 mA, Supply: 24 V DC: 100 mA Mounting: Horizontal, Connection: ½"
5	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.
6	Rotameter: -	Range: 100-1000 LPH, Glass Tube Type/ Acrylic body. Connection: ½", Bob Material- SS 304, Mounting: Inlet- Bottom, Outlet- Top.
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 :-	Air Filter, Regulator & Lubricator, 0-10 Kg/cm ² with pressure gauge, Connection ¼" NPT / BSP.

For More Details Visit Our Website At: www.sapengineers.com, E-mail:- pravinsdeode@vsnl.net
SAP Engineers & Consultants, Kothrud, Pune-411 038. Ph-(020)25384737

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9	Power Supply: -	24 V DC, 3 A, Size: 48mm×126mm×68mm.
10	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.
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	SCADA Application Software (Optional):-	SCADA Appn 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.
13	Computer (Optional):-	PC with color monitor: 15", PC Pentium Dual Core, with serial communication ports, 160/300 GB HDD, 512 MB/1 GB RAM
14	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 Proportional (P), Integral (I) and Derivative control (D).
- ❖ Study of operation and calibration of transmitters, I/P converter and Control Valve.
- ❖ Study of programming and operation of PID controller.
- ❖ Study of stability of single loop Flow 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.
- ❖ Auxiliary experiments
- ❖ Study of SCADA Application Software/ Computerized Control of Flow Control System.

Features: -

- ❖ Understand the concept of feedback FLOW 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 Flow Control System Trainer.

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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

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