

SAP E & C FEEDBACK FLOW AND LEVEL CONTROL TRAINER
(PRODUCT CODE: PCST - 05 A)



The **Automated Flow and Level Control Trainer (PCST – 05 A)** is the system, which outlines the basics of Feedback Flow and Feedback Level Control Loops.

KEYWORDS-

- Feedback Control.
- Feedback Level Control.
- Feedback Flow Control.
- PID Control.
- P, P+I, P+I+D Controller Action.

Technical Specification-

No.	Item Name	Technical Specifications
1	Sump tank-	Material: Stainless Steel, 1.5 mm thick/P.P.5mm thick , Capacity: 30 litres, Dimension: 1ft (L) ×1ft (W) ×1ft (H).
2	Level Tank-	Material P.P. 5mm thick, Dimension: 150(L) mm× 150(W) mm× 600(H) mm
3	Piping-	½” Class B GI, with ½” SS ball valves: 10 No.
4	Centrifugal Pump-	½ H.P., 1ϕ 230 V AC supply, Surface mounting.
5	Flow Meter-	½”, turbine type / wfm type, Range: 0-500 LPH / 0-1000 LPH. Output: 4-20 mA, Type: 3-wire type, Supply: 24 V DC: 100 mA Mounting: Horizontal, Connection: ½”
6	Level Transmitter-	Input: 0-400 /0-500 mm, Output: 4-20 mA, Supply: 24 V DC, 100 mA Type: 2-wire Capacitance type, Mounting: Top 2” screwed connection.
7	Pneumatic Control Valve-	Size: ½”, Two way Globe type (Air to Close), Type: Equal Percentage, Cv: 5 US GPM with diaphragm actuator. Flange connection: PCD: 60 mm, ID16 mm, OD: 90 mm.
8	Rotameter-	1 no. Range: 100-1000 LPH, Glass tube type/ Acrylic body, Connection: ½”, Bob material: SS 304, Mounting: Inlet Bottom Outlet Top.

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9	E/P Converter-	Input: 4-20 mA, Output: 3-15 psi, Connection: ¼" NPT / BSP.
10	A.F.R / F.R.L. Unit-	0-10 Kg/cm ² with pressure gauge, Connection: ¼" NPT / BSP.
11	Electronic PID Controller-	1 no. Single input PID (1 NO.) 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.
12	SCADA Application Software (Optional)-	SCADA Application 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) includes.
13	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. Dimension: 1ft (L) ×1ft (W) ×1ft (H)
14	Computer (Optional)-	PC with color monitor: 15", PC Pentium Dual Core, With serial communication ports, 160/300 GB HDD, 512 MB/ 1GB RAM,
15	Air Compressor (Optional)-	Tank capacity: 25 Liters, Discharge: 2 CFM, Motor: 2 H.P. 1ϕ 230 V AC Operated, Working pressure: 5-6 kg/cm ²²

Range of experiments:

- ❖ Study of Feedback Control.
- ❖ Study of single loop proportional (P), integral (I), and derivative (D) control.
- ❖ Study of operation and calibration of transmitters, I/P converter and pneumatic control valve.
- ❖ Study of programming and operation of PID controller.
- ❖ Study of Feedback Flow Control loop and Feedback Level Control loop.
- ❖ Study of Rotameter, capacitance type level sensor & control valve.
- ❖ Study of SCADA Application Software/ Computerized Control of Feedback Flow and Level Control System.
- ❖ Auxiliary Experiments.

Features: -

- ❖ Compact Ergonomic Design.
- ❖ User Friendly, Self Explanatory Systems.
- ❖ Leak proof Safety Measures, Sturdy Piping & Robust Construction.
- ❖ Enhanced Electrical Safety Considerations.
- ❖ Training Manuals & 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 & SCADA software connectivity for analysis of Feedback Flow and Level Control Loop (Optional).

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


Services Required:

- ❖ Electric supply 1 ϕ 230VAC, 50Hz.
- ❖ Water Supply and Drainage Arrangement.
- ❖ Clean, dry Compressed air supply at 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
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