

## SAP E&C SPLIT RANGE CONTROL TRAINER (SAP-44)



This trainer is highly flexible and modular system for studying of Split Range Control Loops (Pressure Control Loop / Level Control Loop) optional in industrial processes.

### Technical Specifications:

- ❖ Sump tank: -  
Material: PVC foam sheet, 5 mm thick, Capacity: 30 liters,  
Dimension: 1.5ft (L) × 1ft (W) × 1 ft (H).
- ❖ Centrifugal Pump : -  
1 H.P., 230 VAC 50 Hz Supply , Surface Mounting
- ❖ Level Tank: -  
Material: acrylic 5 mm thick ( With Level Loop)  
Dimension: 150mm (Ø) × 500mm (H).
- ❖ Pressure vessel: -  
Shape: Cylindrical, Material: SS 304,(With pressure Loop)  
Diameter: 150 mm, Length: 300 mm,  
Capacity: 15 Kg/cm<sup>2</sup>, with ½" BSP connection  
For pressure gauge, inlet & drain facility
- ❖ Piping: -  
1" Class B GI with 1" SS ball valves.
- ❖ Level Transmitter: -  
(With level Loop)  
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.
- ❖ Pressure Transmitter: -  
(With Pressure Loop)  
Input: 0-2.5 Kg/cm<sup>2</sup>/ 0-4 Kg/cm<sup>2</sup>  
Output: 4-20 mA, supply: 24 V DC, 50 mA.  
Type: 2-wire Piezoresistive type, Medium: Water Pressure.  
Mounting: Top ½" BSP connection.

For More Details Visit Our Website At: [www.sapengineers.com](http://www.sapengineers.com), E-mail:- [pravinsdeode@vsnl.net](mailto:pravinsdeode@vsnl.net)  
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- ❖ Pneumatic control valve: - 2 no. Size: 1", Characteristics: Equal percentage.  
Type: Two way Globe type with valve Positioner (Air to Close) & two way Globe type with valve Positioner (Air to Open),  
Cv: 9 US GPM, with diaphragm actuator.  
Flange connection: PCD: 80 mm,  
ID: 26 mm, OD: 110 mm.  
Positioner Action: 0.2 to 1.0 Kg/cm (Direct Action / Reverse Action Pneumatic Input Signal: 0.2 to 1.0 Kg/cm<sup>2</sup>)
- ❖ E/P Converter: - Input: 4-20 mA, Output: 3-15 psi, Connection ¼" NPT / BSP.
- ❖ Rotameter: - 1 No. Range : 0-2000 LPH , Glass Tube Type/ Acrylic body , Bob Material SS 304, Connection 1" Mounting Inlet Bottom, Outlet Top
- ❖ Air pressure Regulator: - 0-10 Kg/cm<sup>2</sup> with pressure gauge, Connection ¼" NPT / BSP.
- ❖ Power Supply: - 24 V DC, 1.5 A, Size: 48mm×126mm×68mm.
- ❖ Electronic PID Controller: - 1 No., Single input PID with Serial Interface (ASCII Protocol) RS232Cut Out Size; 92×92×144mm,  
Input: 4-20 mA, Output: 4-20 mA,  
Display: Dual for PV & SP, Bargraph display for Output & deviation, Hi-Low alarm annunciations.
- ❖ 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 multistand wire with proper insulated Lugs, Ferruling & neat wire dressing & clamping Wires & power cables are seated through 1"×1" PVC cable tray.  
Dimension: 1ft (L) ×1ft (W) ×1ft (H).
- ❖ SCADA Application Software: - SCADA S/W, And PID mode, Auto/Manual Tuning (Optional) 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.
- ❖ Air Compressor: - Tank capacity: 30 Liters, Discharge: 2 CFM (Optional) Motor: ½ H.P. 230 V AC Operated Working Pressure: 3-4 Kg/cm<sup>2</sup>
- ❖ Computer: - PC with colour monitor: 15", PC Pentium Dual Core, (Optional) With 2 serial communication ports, 80 GB HDD, 512MB RAM, Floppy Drive.

#### Features:

- ❖ Compact Ergonomic Design.
- ❖ User Friendly, Self Explanatory Systems.
- ❖ Leak proof Safety Measures, sturdy piping.
- ❖ 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.
- ❖ SCADA software connectivity for analysis of Split Range Control Trainer.

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**Process Equipments:**

A sump tank and transparent acrylic tank (secondary) containing water.

A control system to study split range control (Level/Pressure)

Electrical control panel along with PC Interface module.

**Range of experiments:**

Feedback control: - Pressure/Level

Split Range control: - Pressure/Level.

Study of SCADA Application Software/ Computerized Control of Split Range Control System

**Services Required:**

- ❖ 230 V Single phase AC Supply, Water Supply and its Drain Arrangement.
- ❖ Clean, Dry, Compressed Air Supply at 2.1 Kg /cm<sup>2</sup>.

**System Dimensions:** 5 Ft. (L) X 2. Ft. (W) X 5 Ft. (H)

**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.

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