



SAP ENGINEERS AND CONSULTANTS, PUNE

Process Instrumentation Trainer Kit. (PIT-01) is highly Flexible And modular system for studying of various Types of transmitters and actuators used in industrial Processes.

It has been designed to include these processes in a single structure. The system includes Transducers, actuators, current source, heater control card, Digital panel meter and Electro pneumatic converter.

Key Words: -

- ❖ Flow Measurement loop.
- ❖ Level Measurement loop
- ❖ Pressure Measurement loop,
- ❖ Temperature Measurement loop,

Technical Specification:-

No.	Item Name	Technical Specifications
1	Sump Tank	1 No. Material: P.P.5mm thick / Stainless Steel, 1.5 mm thick, Capacity: 53 liters, Dimension: 18"(L) ×12"(W) ×15"(H).
2	Level Tank	1 No. Material: P. P. 5 mm thick, Dimension: 6 "×6"×24"
3	Heater / Geyser	1 No. Capacity: 3 KW
4	Piping	1" GI, Class B, with 1" SS ball valves (12 Nos)
5	Centrifugal Pump	1 No. 1 HP, 1ϕ 230 V AC supply, Surface mounting
6	Pneumatic Control Valve	1 No. Type: Pneumatic, Size: 1", Input: 3-15 psig, Linear / Equal Percentage
7	Temperature Transmitter-	1 No. Temperature Probe PT100, Type-2 wire, Range: 0-100°C, Output: 4-20 mA,
8	Flow Transmitter	1 No. 1", Turbine type / WFM type / DPT (Differential Pressure Transmitter) type. Range: 0-2000 LPH, Output: 4-20 mA, Type: 3-wire type, Supply: 24 V DC: 100 mA Mounting: Horizontal, Connection: 1"
9	Level Transmitter	1 No. Probe length Input: 0-500 mm Output: 4-20 mA, supply: 24 V DC, Type: 2-wire capacitance type, Mounting: Top 2" screwed connection
10	Pressure Transmitter	1 No. GPT, Type: 2 wire, Range: 0-2.5 bar, Output: 4-20 mA, Connection -¼ " BSP

11s	I to P Converter-	1 No. Current loop resistor, Input: 4-20 mA, Output: 3-15 psi, Supply- 1-4 Kg/cm ²
12	Thyristered Phase Angle Control Card	1 No. Input: 4-20 mA, Output: 0-230 VAC variable, 10 A Max
13	Rotameter	1 No. Range: 100-2000 LPH, Glass tube type/acrylic body, Bob Material: SS 304 Connection: 1", Mounting: Inlet- Bottom, Outlet- Top.
14	Air Filter Regulator With Pressure Gauge -	1 No. Connection- ¼", Pressure Gauge Range: 0-10 Kg/cm ²
15	Pressure Vessel	1 No. Shape Cylindrical, Material MS CRCC, / SS 304 Diameter: 150mm, Length: 300mm, Capacity: 15 Kg/cm ² with ½"/¼" BSP Connection For Pressure Gauge (0-4 Kg/cm ²), Pressure Transmitter and Inlet, outlet facility
16	Air Compressor (Optional)	01 No. Tank capacity: 20/24 Liters, Discharge: 2 CFM Motor: 1 H.P/2 H.P, Supply-230 V AC, 50 Hz, Working pressure: 5-6 kg/cm ²
17	Current source	01 nos. input supply:-230 VAC, For measuring Transmitter Output, 4-20mADC, Programmable Type
18	Digital panel meter	05 nos. Range: 0-20mA, Supply: 230 VAC, Programmable Display
19	Electrical Control panel	01 No. MS Powder coated panel with switches, indicator, Test Points, Current source on front facia, UK 2.5 Terminal connectors mounted on DIN rail channel, Use of 1sq mm Multistrand 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).
20	Orifice	d/D = β = 0.51, thickness = 5mm, material SS type, Type : concentric
21	Relay	01 nos. 24VDC, 2 C/O,
22	Pressure Gauge	02 nos, 0-4 Kg/cm ² , Dial Size:100 mm, 0-2.5Kg/cm ² , Dial Size 40mm
23	Power Supply	01 nos. O/P- 24V DC, 3A ; Supply: 230VAC
24	U Tube Manometer	01 No., U-Tube manometer, H-400mm, Panel mounting type
25	Level Switch	01 Nos. MINI FLOAT LEVEL SENSOR FOR WATER: 2 Wire, Supply: 24VDC operated
26	Solenoid Valve	01 Nos. ½" connection 24V DC operated
27	Frequency transmitter	01 Nos. Freq I/P- 50 – 500Hz, O/P- 4-20mA ; Supply: 230VAC

Features-

- ❖ Compact Ergonomic Design.
- ❖ User Friendly, Self Explanatory Systems.
- ❖ Leak proof Safety Measures, sturdy piping.
- ❖ Enhanced Electrical Safety Considerations.
- ❖ Training Manuals and 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.

Range of experiments:

- ❖ Measurement Loop: - Study of Flow transmitter and measurement.
Study of Level transmitter and measurement.
Study of Temperature transmitter and measurement.
Study of Pressure transmitter and measurement.
- ❖ Study of Control valve & its characteristics.
- ❖ Study of electro-pneumatic converter & its operation.
- ❖ Study of frequency transmitter & its operation.
- ❖ Study of solenoid valve & its operation.

Services Required-

- ❖ Electric Supply - 1 ϕ 230 VAC, 16A, 50 Hz .
- ❖ Clean, Dry, Compressed Air Supply. Working Pressure: 5-6Kg/cm².
- ❖ Function generator(for frequency transmitter)

System Dimensions: Approx 57'' (L) X 21'' (W) X 67'' (H))

Weight: Approx.200Kg

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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