

SAP E&C DISTRIBUTED CONTROL SYSTEM TRAINER (TDS-2001) COMPUTERIZED



This Distributed control and data acquisition system offer, for use with PCST series Process plant.

Outline principle of Distributed control System used in Industrial Environment. The SCADA software & an interfacing package, Computer base data logging & Distributed Control facility gives the overall idea Regarding it's application.

Technical Specifications:

- ❖ Sump tank: - 3 nos., Material: Stainless Steel, 2 mm thick/P.P 5mm thick
Capacity: 30 liter,
Dimension: 1ft (L) ×1ft (W) ×1 ft (H).
- ❖ Level Tank: - Material: acrylic 5 mm thick
Dimension: 150(Ø) mm×500(H) mm.
- ❖ Temperature Cabinet:- 1'' thick insulation wall, with circulating fan & Thermostat,
- ❖ Heater:- 1 KW. Dimension: 1.25ft (L) ×1.25ft (W) ×2ft (H).
- ❖ Pressure vessel:- Shape: Cylindrical, Material: SS 304,
Diameter: 150 mm, Length: 300 mm,
Capacity: 15 Kg/cm², with ½'' BSP connection
For pressure gauge, inlet & drain facility
- ❖ Piping:- ½'', Class B GI with ½'' SS ball valves: 30 nos.
- ❖ Flow meter:- 2 no. Size: 1'', turbine type/ WFM type,
Range:0-2000 LPH, supply: 24 V DC, 100 mA.
Output: 4-20 mA, Type: 3-wire type.
Mounting: Horizontal, Connection; ½''
- ❖ 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.
- ❖ Pressure Transmitter:- Input: 0-2.5 Kg/cm²/ 0-4 Kg/cm²
Output: 4-20 mA, supply: 24 V DC, 50 mA
Type:2-wire Piezoresistive type, Medium: Water Pressure.
Mounting: Top ½''BSP connection.

- ❖ Temperature Transmitter:- Input: RTD, Output: 4-20 mA, Type: 2-wire type, Power Supply: 24 V, 50 mA, Range: 0-200 ° C.
- ❖ Thyresterized Phase Angle:- Control Card Input: 4-20 mA, Output: 0-230 VAC variable, 10 A Max
- ❖ Pneumatic control valve:- 3 no. Size: ½”, Characteristics: Equal percentage. Type: Two way Globe type with valve (Air to Close) Cv: 5 US GPM, With diaphragm actuator. Flange connection: PCD: 60 mm, ID: 16 mm, OD: 90 mm.

- ❖ Rotameter:- 2 no. Range: 0-1000 LPH, Glass tube type/acrylic body Connection: 1”, Mounting: Inlet Bottom Outlet Top.
- ❖ E/P Converter:- 3no Input: 4-20 mA, Output: 3-15 psi, Connection ¼” NPT / BSP. Supply: 1.4 Kg/cm²
- ❖ Air Filter Regulator:- 0-10 Kg/cm² with pressure gauge, Connection ¼” NPT / BSP.
- ❖ Level Switch:- Float operated, Float Material; SS304 Switching voltage: 240 VAC\200 VDC Switching Current; 2A, Switch Action; Reversible, Weight: 315 Gms.
- ❖ Current Meters:- 3 no. Range 0-20 mA, Supply: 230 V AC, Cut out: 44mm×92 mm×110 mm.
- ❖ Isolator:- 2 no. Signal Isolators, Input: 4-20 mA, Output: 4-20 mA, Supply: 230 V AC.
- ❖ Power Supply:- 24 V DC, 1.5 A, Size: 48mm×126mm×68mm.
- ❖ Electronic PID Controller:- 4 no, Single input PID & Dual Input PID, with Serial Interface (ASCII Protocol) RS 485 O/P, 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.
- ❖ RS 485/RS 232 Converter:- Module Input: From Four Different Stations RS 485. Output: To PC RS 485. Power supply: 24 V DC, 100 mA.
- ❖ SCADA Application:- SCADA S/W, PID setting(P, PI And PID mode), Auto/Manual Tuning of PID, Software Data Storage, Off Line analysis, Online Data Acquisition, Simulation and Printing Of data in Graphical and tabular form. Interactive Graphical User Interface (GUI) includes.
- ❖ 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).

- ❖ Computer: - PC with colour monitor: 15'', PC Pentium Dual Core, with 2 serial Communications, 80 GB HDD, 512 MB RAM, Floppy Drive.
- ❖ Air Compressor: - Tank capacity: 30 Liters, Discharge: 2 CFM
(Optional) Motor: ½H.P. 230 V AC Operated, Working pressure: 3-4 kg/cm²

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.
- ❖ Flow plant (PCST-01), Level plant (PCST-02), Pressure Plant (PCST-03), Temperature plant (PCST-04) can be interfaced with TDS 2001 to have a feel of Distributed Control system trainer.
- ❖ Printer (Optional).

System Dimensions: Supervisory Station: 2 Ft. X 2 Ft. X 5Ft.

Software Specifications:

- ❖ Online process monitoring & control.
- ❖ Bi-directional communication between centralized computer and PID controllers.
- ❖ Graph, Report Generation Facility.
- ❖ Process Parameter Display, Alarms Configuration.
- ❖ Password Security.

Services Required:

- ❖ Single-phase electrical supply of 230V 50Hz.
- ❖ Water supply and drainage arrangement.
- ❖ Clean, Dry, Compressed Air Supply at 2.1 Kg/ cm²

Range Of Experiments:

- ❖ Study of Distributed Control System.
- ❖ Auxiliary Experiments.
- ❖ Study of Hierarchical control system.
- ❖ Study of SCADA Application Software/ Computerized Control of Distributed Control System.

Note: All descriptive matter and illustrations above 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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