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PRODUCT DATA SHEET
Catalogue reference for product evaluation

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Universal Process Control Trainer | Prozessi PX 29B

Category: Process Engineering Technology · **Order Code:** PX 29 · **Country of Origin:** India

Product Overview

The Universal Process Control Trainer Prozessi PX 29B is a marine-oriented process control trainer with Honeywell HC900 and ControlEdge PLC. This universal process control trainer covers temperature, flow, level, and pressure control, cascade, feedforward, and MIMO strategies, SCADA supervision, and a marine cooling-water heat exchanger module.

View this product online: https://scienticoindia.com/product/universal-process-control-trainer-prozessi-px-29b/



Request a model-specific quotation
Include quantity and delivery country.

Technical Specifications

Universal Process Control Trainer Prozessi PX 29B — Technical Specifications

Parameter	Value
Control System	Honeywell HC900 Process Controller
PLC Module	Honeywell ControlEdge PLC, Ladder Logic
PLC Programming	Ladder Logic and Function Block Diagram
Process Variables	Temperature, flow, level, pressure
Temperature Sensor	PT100 RTD, 0 to 100°C
Flow Transmitter	DP, 0 to 200 mmH_2O
Level DP Transmitter	0 to 500 mmH_2O
Level GPT Transmitter	0 to 600 mmH_2O
Pressure Transmitter	GPT, 0 to 2.5 bar
Valve Position Feedback	Electronic 4 to 20 mA
Control Valves	Pneumatic, 1/2", 3 to 15 psig
I/P Converters	4 to 20 mA to 3 to 15 psig
Diaphragm Pump	200 LPH, VFD driven
Air Compressor	1 HP, 3.8 CFM, 10 kg/cm²

Parameter	Value
Receiver Tank	45 L
Heater	3 kW
Rotameter	40 to 400 LPH
Communication	RS232, RS485, Ethernet
Overall Dimensions	1150 x 800 x 1900 mm
Marine Application	Cooling-water, tank-level, pump, pressure, and alarm experiments

Technical Data

Process Equipment:

- Heating tank with 3 kW electrical heater
- Level measurement and pressure process tanks
- Centrifugal pump
- VFD-driven diaphragm pump, 200 LPH
- Pneumatic control valves with electronic positioners
- I/P converters and solenoid valves
- Air compressor with 45 L receiver tank
- Rotameter, orifice meter, and Venturi meter
- Modular patch board and industrial control panel

Instrumentation:

- PT100 RTD temperature sensors and transmitters
- DP flow transmitter, 0 to 200 mmH_2O
- DP and GPT level transmitters
- GPT pressure transmitter, 0 to 2.5 bar

Marine Module:

- Marine cooling-water heat exchanger training module

Communication:

- RS232, RS485, and Ethernet

Key Features

Key Features

- Honeywell Control Platform: HC900 process controller with ControlEdge PLC
- Dual Programming Support: Ladder Logic and Function Block Diagram
- Marine Process Control: Cooling-water temperature, bilge/ballast level, and pump sequencing experiments
- Integrated SCADA: Real-time visualization, alarms, trending, and data export
- Control Strategies: Single-loop, multi-loop, cascade, feedforward, ratio, and MIMO control
- Safety Functions: Alarm management, interlocks, and emergency shutdown
- Fault Simulation: Sensor and process fault simulation for troubleshooting practice
- Modular Patch Board: Flexible process configurations

Experiments

Instrumentation and Control:

- I/P converter calibration and characteristics
- Differential pressure transmitter response
- Control valve characteristics
- Valve positioner operation and tuning

- Rotameter calibration
- Orifice meter coefficient of discharge
- Venturi meter coefficient of discharge

Process Control:

- Temperature control of direct heating process
- Flow control of pump and process outlet
- Level control by inlet and outlet flow manipulation
- Pressure control of closed tanks
- Interacting and non-interacting system step response
- Cascade control of level and flow, temperature and flow, level and pressure
- Feedforward and feedforward with feedback control
- Ratio control of flows
- Three-element control
- MIMO pressure and level control

PLC and SCADA:

- PLC-based process, pump, level, temperature, and pressure/flow control
- PLC programming and I/O configuration
- SCADA-based process monitoring and data logging
- Alarm and interlock configuration
- Process abnormal-condition simulation
- Process control troubleshooting

Marine Applications:

- Cooling-water temperature control using heat exchanger
- Cooling-water flow and temperature control
- Bilge/ballast tank level monitoring and automation
- Automatic pump start/stop and sequencing
- Pressure regulation and control of process systems
- Alarm management and interlock operation
- Emergency shutdown and safe-state operation
- Process fault simulation and troubleshooting

Control Strategies

On-off, proportional, PI, and PID control. Single-loop, multi-loop, cascade, feedforward, feedforward with feedback, ratio, three-element, and MIMO control. Manual and automatic tuning, open-loop and closed-loop tuning, and Bode plot stability analysis.

Construction and Design

The system is a modular training workbench with dedicated sections for process control, instrumentation, pumping, heating, pneumatic control, and PLC/SCADA operation. A modular patch board gives access to process signals and control points for laboratory configurations.

Software

PLC programming software, function block development, hybrid control designer, SCADA/HMI supervisory software, real-time trend visualization, data logging, data export, manual and automatic tuning, and control strategy configuration. Software license and configuration documentation are included.

Scope of Delivery

- Complete process control workbench
- Honeywell HC900 process controller
- Honeywell ControlEdge PLC module with Ladder Logic programming software
- Process tanks and heating tank with 3 kW heater
- Temperature, flow, level, and pressure sensors and transmitters

- Pneumatic control valves, valve positioners, and I/P converters
- Centrifugal pump and VFD-driven diaphragm pump
- Air compressor, rotameter, orifice meter, and Venturi meter
- Solenoid valves, patch board, and control panel
- PLC programming software and SCADA/HMI software
- Marine cooling-water heat exchanger training module
- Marine process control experiment package
- Interconnecting piping and electrical cabling
- User manual, experiment manual, and marine engineering experiment manual
- Calibration certificate/report

Optional Accessories

- Additional process control modules
- Additional PLC I/O modules
- Extended patch board
- Additional I/P converter modules
- Additional control valves
- Advanced data logging package
- Additional process instrumentation
- Fault simulation module
- Additional SCADA/HMI workstation

Ordering & Delivery

- Send the product name, quantity, delivery country and destination with your enquiry.
- Production schedule, freight, payment terms and export documents are confirmed in the written quotation.

Frequently Asked Questions

Q: What controller does the Universal Process Control Trainer Prozessi PX 29B use?
A: It uses a Honeywell HC900 process controller and a Honeywell ControlEdge PLC for Ladder Logic programming.

Q: What programming languages are supported on the PX 29B?
A: Ladder Logic and Function Block Diagram programming are supported.

Q: What marine applications does the PX 29B cover?
A: It covers cooling-water temperature control, bilge and ballast tank level monitoring, pump sequencing, pressure regulation, and alarm and interlock operation.

Q: What communication interfaces does the PX 29B provide?
A: RS232, RS485, and Ethernet are provided.

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