

3-Variable Process Control Training System



Model: 601-000

DAC Worldwide's 3-Variable Process Control Training System (601-000) is a working, large scale, fluid process system allowing for hands-on training relating to the measurement and control of process variables including level, pressure, and flow. The device allows for the creation of simple and advanced process loops using common, industrial-quality instruments and controllers. An "open architecture" allows for integration of alternate instrumentation as needed to address local training needs. Variable demand and supply disturbances can be inserted using solenoid valves in combination with metered ball valves.

Take Control of Process Control Training Using Real-World Components

The device includes the capability of establishing cascade, feedforward, feedback, feedback split range, ratio, and three-element control schemes. Clear PVC piping allows the student to see process changes based on control parameters or intentional disturbances. Quick-disconnects are provided allowing the training aid to be connected to other similar units or a temperature process trainer, facilitating more complex process systems.

The trainer can be configured to create one complex process loop, accommodating two students, which addresses pressure, level, and flow. Alternately, the device can be outfitted to address each of these three variables individually. Standard, user-supplied, or user-specified instruments of any brand can be easily installed, either on a mounting stanchion or on a built-in, 19-in. instrument rack.

FEATURES & SPECIFICATIONS

- One-piece, welded, 1/8" wall, tubular steel frame
- Four, 4" diameter casters, two with locks
- Integral, 19" x 70" high, instrument mounting rack, with silk-screened instrument and controller panels

- Rack-mounted, locking storage box for accessories
- Front panel faces fabricated from marine-grade 1/2" plywood and covered with a .040" thick, high-durability, surface treatment
- Clear, 1/2" diameter, PVC piping components throughout
- Clear acrylic tank, 3 gallon capacity
- Primary reservoir, 20 gallon capacity
- Centrifugal pump, 1/2 HP
- Circuit breaker with GFI circuit protection
- Two solenoid valves, allowing for the creation of flow supply and demand disturbances both at the tank outlet and in a bypass surrounding the control valve
- Power distribution panel, mounted in instrument rack including on/off power switch, GFI receptacle, fuses for all circuits, and 12 electric "free line" connections to the front panel
- Front panel-mounted, operator control panel, including switches and pilot lights for: a pump, and two solenoid valves, as well as control relay connections for equipment, 24 VDC power supply terminals and electric "free line" connections. A regulator with gauge controlling a 0-60 psi air supply with associated fittings and a second instrument air gauge with associated fittings, is also mounted on this panel
- Master instrument air supply regulator
- 24 VDC Power supply
- Five, process quick-disconnect hose fittings allowing for connection to other process trainers, and pump down
- Quick-disconnect fittings located throughout, allowing for attachment of instruments
- Variable-area flow meter
- Two orifice plates and associated flanges, with tubing connections
- Industrial-quality, pneumatic control valve
- Pipe stanchion, allowing for attachment of differential pressure transmitters and pressure transmitters at varying heights

PRODUCT DIMENSIONS

- 33.5-in. L x 48-in. W x 76-in. H (860 x 1220 x 1930 mm)
- 375lbs. (170kg)

UTILITIES 115V/60Hz/1Ph power

INCLUDES

- Centrifugal Pump

- 20 Gallon Reservoir
- 3 Gallon Tank
- Circuit Breaker
- Power Distribution Panel
- Control Panel
- Instrument Air Supply Regulator
- 24 VDC Power Supply
- Variable Area Flow Meter
- Pneumatic Control Valve
- Two Orifice Plates
- Caster Set
- Pipe Stanchion
- #601-500 Use/Exercise Guide

OPTIONS

- Recommended #910 Free-Standing Instrument Rack
- #464-037 - PLC Package, AB Micro850
- #600-007 - PLC Interface Panel
- #600-021 HART Ultrasonic Level Transmitter
- #600-022R Economy Ultrasonic Level Transmitter (4-20Ma Output) - Rosemount
- #600-025 Vortex Flow Meter - Rosemont
- #600-033 Coriolis Effect Flow Meter - Rosemount
- #600-034 Paddle Wheel Flow Meter - Omega
- #600-035 Turbine Flow Meter - Omega
- #600-055 Gage Pressure Transmitter, 4-20 Ma Output
- #600-058 I/P Transducer
- #600-106 U-Tube Manometer (Dwyer)
- #601-022 Economy Ultrasonic Level Transmitter (4-20Ma Output)

REQUIREMENTS

- #600-006A - Economy Standard Test and Calibration Equipment Package
- #600-105 - Differential Pressure Gauge, 0-400" H2O
- #601-001EH Standard Instrument & Control Package (3-Variable) - Endress & Hauser

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