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Hampden Engineering Corporation is committed to providing the most up-to-date, practical hands-on training equipment.

Visit our home page at www.hampden.com to see what’s new at Hampden, or send us an E-mail at sales@hampden.com.
Hampden Engineering Corporation has been designing and manufacturing process simulators for engineering, technical, and industrial training programs since 1954. Hampden has earned its leadership position in the technical, vocational, and skills training field by integrating standard commercial instruments and controls into educational packages that facilitate the learning process.

Hampden’s educational simulators and programs embrace a wide gamut of products, processes, and industries. For example, you can obtain Hampden training programs in Basic Electricity; Basic Electronics; Digital Electronics; Microcomputers; Heating, Refrigeration, and Air Conditioning; Electrical Motors and Transformers; Electrical Power Transmission and Distribution; Pneumatics; Hydraulics; Kinematics; Robotics; Instrumentation and Controls; and Process Automation.

As more and more power and process plants automate, they require personnel with knowledge and skills in Electronics, Mechanics, and Automatic Control Theory. To assist in the training of operators, technicians, and maintenance personnel, Hampden provides unique instrumentation and Controls (ICS) Training Programs. In addition to the representative ICS Training Panels shown in this brochure, custom-designed simulators may be supplied to meet plant-specific training needs.

Each of the Hampden training simulators contains a realistic process for which variables (pressure, temperature, flow, level, etc.) are measured and controlled. The measuring and controlling instruments are standard commercial devices: Foxboro, for example. You may select from among standard commercial instruments from any manufacturer, thereby tailoring the training program to your own needs.

Hampden Instrumentation and Controls Trainers are fully compatible with audio/visual training programs available from such organizations as the Instrument Society of America.

All Hampden equipment may be equipped to operate on any voltage or frequency.

When desired, Hampden Control Simulators may contain a number of instructor-inserted faults for practical experience in troubleshooting.

Hampden Instrumentation and Controls Modules - Series H-ICS-7627

Hampden Instrumentation and Controls Modules - Series H-ICS-7627 provide a convenient and realistic way of training students in the fundamental concepts of process control and instrumentation. Students can connect, operate, adjust, and calibrate actual pneumatic and electronic instruments and controls.

The H-ICS-7627 Series consists of the following modules:

- H-ICS-7627-10 Process Plant Module
- H-ICS-7627-20 Control Panel Module
- H-ICS-7627-30 Flow Control Module
- H-ICS-7627-40 Level Control Module
- H-ICS-7627-50 Pressure Control Module
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- H-ICS-7627-61 Temperature Control Module - Air
- H-ICS-7627-70 pH Control Module
- H-ICS-7627-80 Dual-Channel Recorder Module
- H-ICS-7627-90 Remote Control Module
- H-ICS-7627-91 Process Digital Meter
- H-ICS-7627-97 Process Controller
- H-ICS-7627-CCS Computer Control System

Hampden H-9067 Instrumentation Test Bench

Hampden H-9067 Instrumentation Test Bench provides a complete platform for instrument calibration.

This unit consists of a fully outfitted equipment turrett mounted to a solidwood 1-3/4” thick work surface equipped with a high quality vise. The supporting storage cabinet is made to exceed industrial demands and is designed to provide generous storage space via its twelve (12) drawers (four drawers on left side and 8 on right side).
The Model H-ICS-8189-4 Instrumentation and Controls Trainer provides experience in setting up, tuning, operating, and troubleshooting actual instrument and control systems of the type used in the power and process industries. By simulating a different process loop, this unit provides instruction in the measuring and transducing of such physical variables as pressure, temperature, flow and level.

The Model H-ICS-8189 Process Control Trainer was developed to provide hands-on training for industrial process automation. The system consists of a clear process level tank, reservoir tank, pump and other instrumentation mounted on or in a mobile bench. This trainer provides measurement and/or control of flow, level and pressure utilizing microprocessor based control.

By simulating a different process loop, this unit provides instruction in the measuring and transducing of such physical variables as pressure, flow, level and pH.

The Hampden H-IPPT-3 Process Plant Trainer simulates a full-sized industrial plant. The process incorporates twin transparent towers containing two immiscible liquids, each having a different color and a different specific gravity. A separate control panel contains a full complement of indicators, recorders, and controllers, along with a complete tri-color graphic representation of the process.

Optional Equipment includes:
- MODEL H-ICS-X Computer control software/interface
- MODEL H-ICS-CS Computer system
- MODEL H-IPPT-3FP Fault program
- MODEL H-IPPT-PLC-5 Programmable Logic Controller
- MODEL H-ICS-CC Computer Work Station

Optional Style Panel:
- Cabinet style Control Panel is shown at right with optional interface and touch screen operation.

Optional Controls:
- Unit can be set up for Fieldbus operation or controlled via DeltaV Control System.
The Model H-ICS-PX Pressure Control Trainer is designed to provide complete instruction on the measurement and control of pressure. Pressure within the vessel is dependent on the speed of the pump and the open or closed position of hand valves that permit flowing water to bypass the pressure vessel.

The Model H-ICS-TX Temperature Control Trainer is designed to provide complete instruction on the measurement and control of temperature. The temperature is dependent on the current through the heater and on the position of the solenoid-operated three-way valve.

The Model H-ICS-X Instrument and Control Interface Package and Program consists of the hardware and software necessary to control the Hampden series of ICS panels. This is a graphically-oriented program, with documentation, to permit computer control of the panel’s controller.

NOTE: Instructor Insertable Faults are available as an option on the H-ICS-“X” Series when you specify Model H-ICS-200.

Sample Screens from Hampden’s Model H-ICS-X Software

The Model H-ICS-FT Flow Process Loop Trainer is designed to provide complete instruction on the measurement and control of flow.

The Model H-ICS-LT Level Process Loop Trainer is designed to provide complete instruction on the measurement and control of level.

The Model H-ICS-PT Pressure Process Loop Trainer is designed to provide complete instruction on the measurement and control of pressure.

The Model H-ICS-TT Temperature Process Loop Trainer is designed to provide complete instruction on the measurement and control of temperature.

The Model H-ICS-HET Heat Exchanger Process Loop Trainer is designed to provide instruction on the measurement and control of temperature utilizing a heat exchanger or a SCR. Temperature can be monitored with (4) thermocouples or from the RTD.

The Model H-ICS-APT Analytic Process Loop Trainer is designed to provide instruction on the measurement and control of pH, conductivity, and dissolved oxygen level as well as the temperature of water.

The Model H-ICS-pHT pH Process Control Trainer is designed to provide instruction on the measurement and control of pH.

NOTE: Instructor Insertable Faults are included with the H-ICS-“T” Series.
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Optional Equipment includes:
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- MODEL H-ICS-CS Computer system
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- MODEL H-ICS-CC Computer Work Station

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Optional Controls:
Unit can be set up for Fieldbus operation or controlled via DeltaV Control System.

REAL WORLD TRAINING
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Hampden Instrumentation and Controls Training Simulators

H-ICS-7627-20, H-ICS-7627-10, and H-ICS-7627-80

Hampden Instrumentation and Controls Modules - Series H-ICS-7627

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Hampden H-9058 Test Bench

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Hampden Engineering Corporation

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