



INDUSTRIAL TRAINING Workstation

GP Strategies Process Controls Training Station



The GP Strategies® Process Controls Training Station is designed to introduce maintenance personnel to the fundamentals of process instrumentation and process controls. The station features a process system that uses water to maintain either a tank level or a flow rate based on the instrumentation being employed.

Process controls fundamentals are taught and demonstrated on this unit to emphasize proportional, integral, and derivative action (PID) using an industrially rated HMI and programmable logic controller (PLC).

A pneumatic control valve is manipulated via the controller in order to maintain the system's process variable within required control bands.

The pump is controlled through a variable frequency drive, which communicates with the HMI and PLC to offer PID control through frequency control, not pneumatic control, of the valve.

This training station features HART-compatible SMART transmitters, ensuring industry standards are maintained.

Equipment Requirements

- 110V single phase power
- Water source
- Minimum of 30-pound air source for instrument and control loops





Standard Equipment Included

- HMI and PLC
- Variable frequency drive
- Pneumatic control valve
- HART-capable differential pressure detector
- I/P converter

The standard equipment options on the Process Controls Training Station allow for control and monitoring of a level control process through the use of differential pressure via a HART-compatible differential pressure transmitter. Multiple connection ports exist within the tank to allow for connection of various methods of level control and applications.

Optional equipment for the Process Controls Training Station includes the following:

Flow Measurement

Flow measurement devices that allow for specific application of various methods of flow control include:

- Mass flow meters: Coriolis meters and displacement-type meters
- Volumetric flow meters: Ultrasonic, magnetic, and vortex

GP Strategies can meet specialized requirements for specific flow meter models or applications to further enhance function and capabilities of the Process Controls Training Station.

Level Measurement

Level measurement devices, other than differential pressure transmitters, are optional on the Process Controls Training Station. These level transmitters include the following:

- Ultrasonic
- Float
- Capacitive
- Guided wave radar

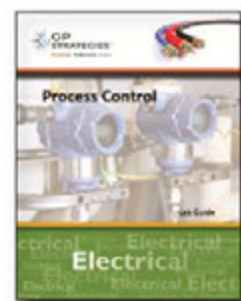
Control Methods

Optional control methods, such as motor-operated valves, can be requested on the Process Controls Training Station in order to enhance the training value and allow for training on comparable equipment for facility systems.

Courseware Pairing

The GP Strategies Process Controls Training Station pairs with the following GP Strategies Precision Maintenance Courseware:

- I&C-110: Instrumentation Overview
- I&C-115: Introduction to HART Communication
- I&C-200: Process Controls Fundamentals
- I&C-205: Introduction to Proportional-Integral-Derivative Systems
- I&C-210: Introduction to Proportional-Integral-Derivative Tuning
- I&C-300: Differential Pressure Cells
- I&C-305: Level Detection
- I&C-310: Flow Detection



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DATA SHEET



GP Item Number	Item Description	Unit Quantity
I&C-200-01	Process Control Equipment Frame	1
I&C-200-02	EXL6e5 Process Controller	1
I&C-200-03	Honeywell Differential Pressure Cell	1
I&C-200-04	I/P Converter	1
I&C-200-05	½" Pneumatically Actuated Diaphragm Control Valve	1
I&C-200-06	½ hp 3 Phase Centrifugal Pump	1
I&C-200-07	½ hp 120V to 3 phase 208V Drive	1
I&C-200-08	Fuse Kit for Drive	1
I&C-200-09	Electrical Enclosure	1
I&C-200-10	14 AWG Wiring	1
I&C-200-11	12/4 SOOW Cable	6 Feet
I&C-200-12	12/3 SOOW Cable	25 Feet
I&C-200-13	Terminal Board	5
I&C-200-14	24V DC Power Supply	1
I&C-200-15	Banana Plug	12
I&C-200-16	24V DC Relay	1
I&C-200-17	24V DC ½" Solenoid Valve	2
I&C-200-18	6" Diameter Tank	1
I&C-200-19	Water Reservoir	1
I&C-200-20	Pump and Drain Plumbing	1
I&C-200-21	Front Plumbing	1
I&C-200-22	Orifice Plate and Plumbing	1
I&C-200-23	Metering Valve	1
I&C-200-24	Ball Valve	6
I&C-200-25	Pressure Regulator	1
I&C-200-26	0-60 PSI Gauge	1
I&C-200-27	0-30 PSI Gauge	1
I&C-200-28	¼" Tubing	25 Feet
I&C-200-29	¼" NPT to ¼" Tubing Connector and Plug	9

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