Level/Flow Process Control Learning System

T5552

PROCESS CONTROL

T5552

Interactive Multimedia Curriculum and Student Reference Guide

Learning Topics:

- Process Control Concepts
- Safety
- Manual Control
- Instrument Tags
- Piping and Instrumentation Diagrams
- Loop Controllers
- Final Control Elements
- Level Measurement
- Liquid Level Control
- Methods of Automatic Control
- Basic Flow Measurement and Control
- Control Loop Performance

Amatrol's Process Control Level and Flow Learning System (T5552) teaches two of the most common types of process control systems, flow and liquid level, and the basic concepts on which other systems are based. Learners study how to calibrate, adjust, install, operate, and connect these process control systems. The T5552 offers learners the ability to practice both manual and automatic control on a process control system, as well as study both open-loop and closed-loop systems. Process control systems provide precise control of liquids and gases in a wide variety of industrial applications including power generation, petrochemicals, and manufacturing.

The T5552 features industrial quality components mounted and plumbed in a closed loop circuit to control the water flow rate between two tanks or the liquid level in one tank. All of this is combined on a heavy duty, welded steel bench-top workstation that fits through a standard door! In order to fully utilize the system and maximize knowledge, Amatrol's world-class curriculum intricately describes basic process control components to ensure that learners understand the function and operation of each valve, transducer, and controller and the role that they play in a process control loop.

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Technical Data

Complete technical specifications available upon request.

Workstation: 66" L x 46" H x 28" W
- Welded steel tube construction

Centrifugal Pump
Electric Motor, single phase
Proportional Control Valve, pneumatically-operated
I/P Converter, 4-20ma input
Pneumatic Regulator and Pressure Gauge
Reservoir Tank, 10 gal.
Process Tank, 5 gal.
- 2-Compartment Baffle
- Drain Valve, ball type (2)
- 2-Way Valves (2)
- Liquid Level Transducer
- Float Switches, SPST (2)

Piping Network
- Pump Flow Control Valve
- Pump Valve
- Control Mode Valve (2)
- Flow Meter, rotameter type
- Pressure Gauges, 0-30 psig (4)
- Flow Transducer, paddlewheel type

Process Meter
- 4-20ma Input
- Alarm Relay Outputs, SPDT (2)
- Scalable Output Displays
- Digital Display, 3.5 digit
- Programmable

PLC I/O Interface
- Discrete Inputs (8) & Outputs (8)
- Analog Inputs (8) & Outputs (8)

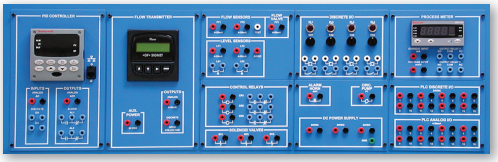
Relay Control Unit
- Control Relays, DPDT
- Selector Switch Inputs, 2-position (4)
- Output Indicators,(4)
- Pump Contractor Relay, 24 VDC
- Solenoid Valve Output Interface

Interactive Multimedia Curriculum (MB270)
Instructor's Guide (CB270)
Install Guide (DB270)
Student Reference Guide (H19708)
Additional Requirements:
- PID Controller Module (T5552-C1-A)
- Mobile Technology Workstation (82-610)
- Hand Tool Package (41205)
- Computer: See requirements: http://www.amatrol.com/support/computer-requirements

Required Utilities:
- Compressed Air (100psi)
- Electrical (120V/60Hz/1ph 15a)
- Water Source

Real-World Controllers

The T5552 features three types of controllers on its control panel: relay control for automatic on/off liquid level control, the PID controller for variable electronic control of either liquid level or flow, and PLC control for both on/off and PID control of the system. These controllers allow learners to practice process control procedures using both automatic and manual controls.



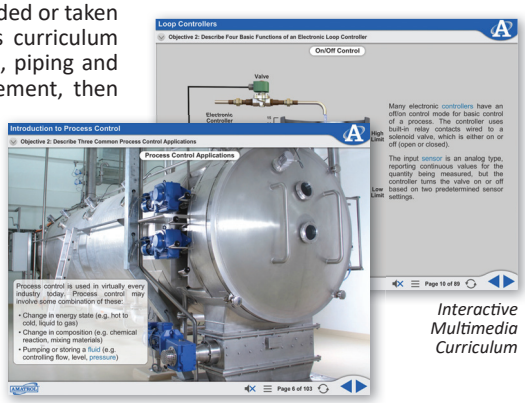
T5552 Control Panel

This learning system is extensively instrumented, enabling learners to observe the system's operation and more clearly understand the effects of external disturbances and their own adjustments. The T5552 includes pressure gauges upstream and downstream of each major component, rotameter-type flow meter, and a multifunction electronic process meter.

Process Control Curriculum with Unmatched Breadth and Depth

Amatrol's key partnerships with industry and educational leaders aided in finding a perfect balance between theoretical knowledge and real-world skills in order to produce a comprehensive level/flow process control curriculum that can be self-guided or taken in a classroom environment. Specifically, this curriculum covers process control safety, instrument tags, piping and instrumentation diagrams, and level measurement, then moves into system control functions such as liquid level control, automatic control methods, basic flow measurement and control, and control loop performance.

This curriculum is presented in an interactive multimedia format that utilizes 3D graphics, text, and audio, to thoroughly engage learners in the world of process control.



Interactive Multimedia Curriculum

Additional Transducers and Control Valves for Expanded Level and Flow Knowledge

T5552-F1 Smart Flow Transmitter

Learners can also easily interchange optional transducers and valves with the standard ones by using hand-tightened pipe unions and plug-in electrical connections. The T5552 includes two standard transducers, level and flow, and allows for additions from the T5552-F1, such as Smart Flow Transmitter, Pitot Tube Flow Transducer, Venturi Flow Transducer, and Orifice Plate Flow Transducer. The T5552 can also expand to include the Ultrasonic Liquid Level Learning System (T5552-L1).

Student Reference Guide

A sample copy of the Process Control Learning System's Student Reference Guide is also included with the system for your evaluation. Sourced from the system's multimedia curriculum, the Student Reference Guide takes the entire series' technical content contained in the learning objectives and combines them into one perfect-bound book. Student Reference Guides supplement this course by providing a condensed, inexpensive reference tool that learners will find invaluable once they finish their training making it the perfect course takeaway.

If you would like to inquire about purchasing additional Student Reference Guides for your program, contact your local Amatrol Representative for more information.

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