

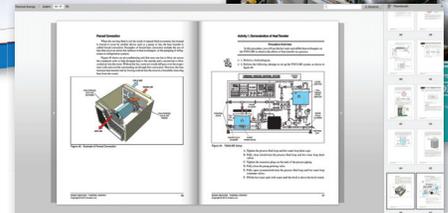
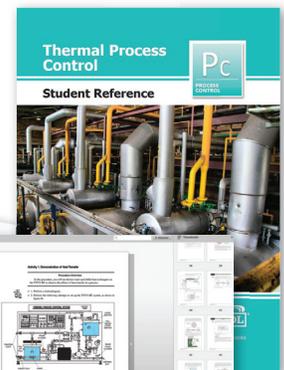
Temperature Process Control Learning System

T5553



T5553 (Shown with optional equipment: T5553-C2-A, T5553-R1A, & T5553-T1)

Student Reference Guide



Optional eBook Curriculum

Learning Topics:

- Process Control Concepts
- Instrument Tags
- Piping and Instrumentation Diagrams
- Thermal Energy
- Heat Exchangers
- Chillers
- Loop Controllers
- Current-to-Air Pressure (I/P) Converters
- Proportional Control Valves
- Thermocouples
- Resistive Temperature Detectors (RTDs)
- Thermistors
- Temperature Transmitters
- Temperature Control
- Methods of Automatic Control
- Control Loop Performance

Amatrol's Temperature Process Control Learning System (T5553) teaches learners how to install, calibrate, operate, adjust, and tune thermal process control systems in a wide variety of industrial applications, including food processing, chemical manufacturing, and biotechnology. Process control systems provide precise control of liquids and gases.

The T5553 features a heavy-duty, welded-steel workstation with industrial-quality components, which are mounted and plumbed in two water flow circuits, a process loop, and a heating loop that controls the temperature of water flowing in the process loop. All electrical components are connected to the control panel to allow learners to measure signals and connect the devices in a wide variety of control configurations, including PID control, on/off control, and manual control.



Technical Data

Complete technical specifications available upon request.

Process Control Workstation

Control Unit

- Process Indicator/Transmitter
- PLC I/O Interface
- Power Supply
- Operator Interface Station
- Lockout/Tagout Kit

Heating Loop Network

- Centrifugal Pump
- Single-Phase Electric Motor
- 3-Way Proportional Control Valve
- Current-to-Air Pressure (I/P) Converter
- Pneumatic Regulator
- Reservoir Tank (3-gal)
- Electric Heater
- Piping System
- Drain and Throttle Valves

Process Loop Network

- Centrifugal Pump
- Single-Phase Electric Motor
- Reservoir Tank (6-gal)
- Drain, 2-Way Bypass, Throttle, and 3-Way Manual Diverter Valves
- Piping System
- Flow Interlock Switch

Process Instrumentation

- Thermocouple (Type T)
- Resistive Temperature Detector (100 ohm pt.)
- Thermistor Probe (1000 ohm)
- Temperature Gauges (6)
- Rotameter Flow Indicators

Chiller

Lead Set

Type T Thermocouple Patch Cord

RTD/Thermistor Patch Cords (2)

Shorting Bars

Inor Configuration Software & Cable Assembly

Student Curriculum (B33301)

Instructor's Guide (C33301)

Installation Guide (D33301)

Student Reference Guide (H33301)

Additional Requirements:

- Single-Loop PID Controller Module (T5553-C1-A) or Dual-Loop PID Controller Module (T5553-C2-A)
- Mobile Technology Workstation (82-610)
- Hand Tool Package (41205)
- Computer (Visit www.amatrol.com/support/ computer-requirements for details.)

Utilities Required:

- Electricity (208 VAC/60 Hz/3 phase or 400 VAC/50 Hz/3 phase)
- Compressed Air Supply (100 psi)
- Water Source

Options:

- eBook Curriculum (E33301)
- Three-Channel Data Acquisition Learning System (T5553-R1A)
- Two-Channel Temperature Transmitter Module (T5553-T1)
- Connection Kit (33278) (Required To Connect Two Systems)

Practice Process Control Skills with Real-World Equipment

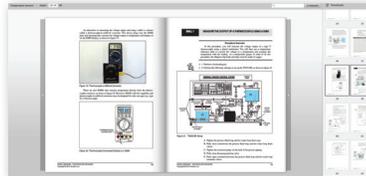
Amatrol's Temperature Process Control Learning System features an impressive variety of real-world components, including: a chiller that mechanically refrigerates the process fluid; three types of temperature sensors: thermocouple, thermistor, and RTD; a heating loop network; and an operator interface station. The system allows learners to observe what is happening inside the system, so they can evaluate the effects of external disturbances and their own adjustments. Learners will practice a variety of real-world skills, such as: control water temperature using a sensing bulb thermostat; connect and operate a loop controller in the manual mode; calibrate an I/P converter; connect and configure a temperature transmitter for a thermocouple; and configure and operate discrete inputs on a Honeywell UDC 3500 controller.



Train with Real-World Equipment

In-Depth Temperature Process Control Curriculum

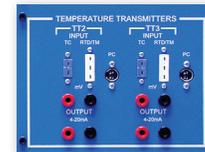
The T5553 includes an in-depth, comprehensive curriculum that provides a strong foundation in temperature process control, including these major topics: process control concepts and safety; instrument tags; piping and instrumentation diagrams; thermal energy; basic temperature control elements; loop controllers; final control elements; temperature sensors; temperature transmitters; basic temperature control; methods of automatic control; and control loop performance. The curriculum also features over 50 hands-on skills to prepare learners for real-world situations. The curriculum is also available in a convenient eBook format with enhanced features like keyword searches and zoom controls that enable users to quickly locate and view information.



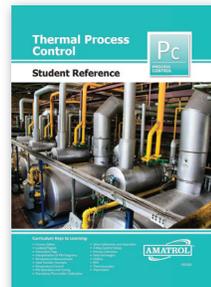
Optional eBook Curriculum

Expand Your System with Optional Equipment

The T5553 features two options for expansion. The optional Three-Channel Data Acquisition Learning System (T5553-R1A) teaches the fundamentals of data acquisition, including topics like: digital chart recorder menu, navigation, and configuration; thermocouple application; RTD application; and voltage/current applications. You can also add the optional Two-Channel Temperature Transmitter Module (T5553-T1) to provide two additional temperature transmitter channels.



T5553-T1 & T5553-R1A



Student Reference Guide

A sample copy of the Thermal Process Control Student Reference Guide is also included with the system for your evaluation. Sourced from the system's curriculum, the Student Reference Guide takes the entire series' technical content contained in the learning objectives and combines them into one perfectly-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.

