

Temperature Process Control Learning System

T5553

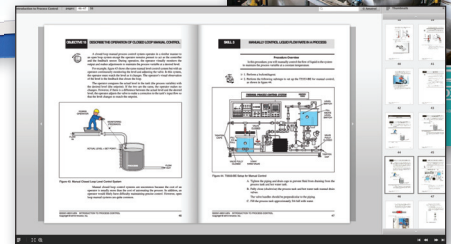
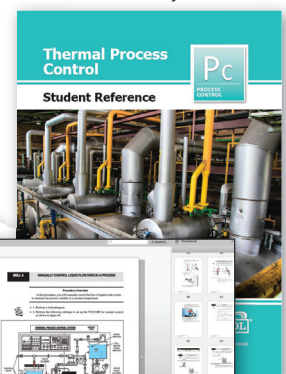
Pc

PROCESS
CONTROL



T5553 Shown With Options:
T5553-C2, T5553-R2, T5553-T1

Student Reference Guide



Optional eBook Curriculum

Learning Topics:

- Process Safety
- Lockout/Tagout
- Instrument Tags
- Interpretation of P&I Diagrams
- Temperature Measurement
- Heat Transfer Concepts
- Temperature Control
- PID Operation and Tuning
- Transducer/Transmitter Calibration
- Valve Calibration and Operation
- 3-Way Control Valves
- Process Indicators
- Heat Exchangers
- Chillers
- RTD
- Thermocouples
- Thermistors

Amatrol's Temperature Process Control Learning System (T5553) allows learners to study and practice calibrating, adjusting, installing, operating, and tuning thermal process control systems in industrial applications. Process control systems provide precise control of liquids and gases in a wide variety of industrial applications including food processing, chemical manufacturing, and bio-technology.

The T5553 includes a heavy-duty, welded steel workstation with industrial quality components, which are mounted and plumbed in two water flow circuits, a process loop and heating loop, to control the temperature of water flowing in the process loop. All electrical components are connected to the control panel to allow students 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

Heating Loop Network

- Centrifugal Pump
- Electric Motor, Single-Phase
- 3-Way Proportional Control Valve
- Pneumatic Regulator
- Reservoir Tank, 3 gal
- Piping System
- Throttle Valve

Process Instrumentation

- RTD, 100 ohm pt.
- Temperature Gauges (6)
- Rotameter Flow Indicators

Chiller

Student Curriculum (B33301)

Instructor's Guide (C33301)

Installation Guide (D33301)

Optional eBook Curriculum (E33301)

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 for optional eBook: <http://www.amatrol.com/support/computer-requirements>

Utilities:

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

Train With Real-World Components to Gain Process Control Skills

The T5553 is extensively instrumented with real-world components, enabling learners to observe what is happening inside the system and more clearly understand the effects of external disturbances and their own adjustments. Some of these components include a chiller, which uses mechanical refrigeration to cool the process fluid and provide a much wider temperature range than air-cooling; three types of temperature sensors: thermocouple, thermistor, and RTD; a heating loop network; and an operator interface station.

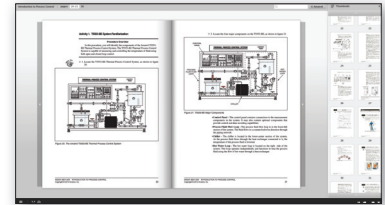
Learners can use these components to practice real-world skills, such as: control water temperature using a sensing bulb thermostat; connect and operate a loop controller in the manual mode; calibrate an I/P converter; connect and configure a temperature transmitter for a thermocouple; and configure and operate discrete inputs on a Honeywell UDC 3500 controller.



World-Class Curriculum Featuring Comprehensive Temperature Process Control Knowledge

Amatrol's T5553 curriculum features a comprehensive offering of temperature process control topics, including over 50 hands-on skills to prepare learners for real-world situations. Major topic areas include: 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.

In addition, Amatrol offers this curriculum in an optional eBook format. Amatrol's eBooks look like a real book and allow users to flip between pages with ease. Enhanced with features such as keyword searches and zoom controls that enable a user to quickly locate and view information, these eBooks are a fantastic learning tool.



Optional eBook Curriculum

Add Data Acquisition Skills with the T5553-R1A



T5553-R1A

The optional Three-Channel Data Acquisition Learning System (T5553-R1A) allows the T5553 to expand the thermal process control skills to include the fundamentals of data acquisition. Data acquisition systems consist of equipment used to receive, record, and analyze process data. The T5553-R1A includes major topics areas like: digital chart recorder menu, navigation, and configuration; thermocouple application; RTD application; voltage/current applications; and much more!

Student Reference Guide

A sample copy of the Temperature Process Control 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.

