

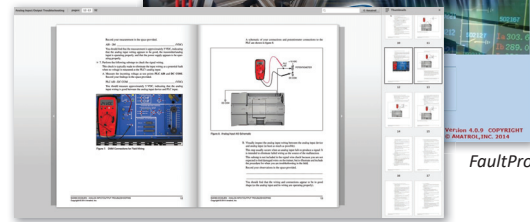
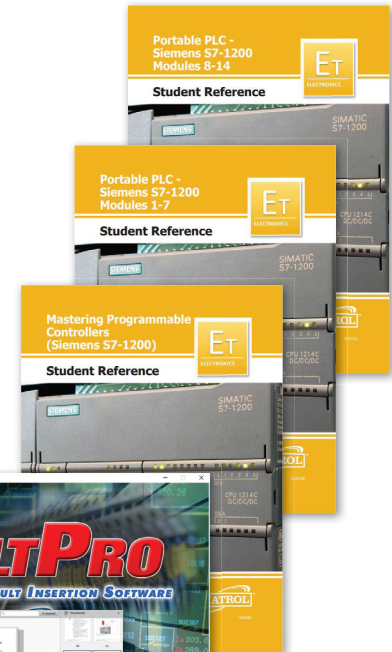
# Portable PLC Troubleshooting Learning System – Siemens S7-1200

990-PS712F



990-PS712F

Student Reference Guides



FaultPro

Optional eBook Curriculum

## Learning Topics:

- Programmable Logic Controllers
- HMI Panel Operation
- PLC Program Operations
- PLC Programming
- PLC Motor Control
- PLC Timer and Counter Instructions
- Event Sequencing
- Program Control Instructions
- Math and Data Move Instructions
- HMI Application Editing
- Analog Inputs and Outputs
- PLC Motion Control
- PLC Systems Troubleshooting
- Analog I/O Troubleshooting
- Analog Application Troubleshooting

Amatrol's Portable PLC Troubleshooting Learning System — Siemens S71200 (990-PS712F) teaches programmable logic controller (PLC) programming, operation, and applications used throughout industry. The system also utilizes FaultPro, the industry's premier computer-based fault insertion system. FaultPro enables learners to develop key PLC troubleshooting skills, such as PLC input and output testing, software testing, and application troubleshooting.

The 990-PS712F features real-world components, such as the powerful Siemens S7-1200 PLC and a Siemens Human Machine Interface (HMI) panel. Combined with Amatrol's in-depth curriculum, learners will gain both theoretical and hands-on knowledge by studying industry-relevant applications and troubleshooting skills that will build a strong foundation for a rewarding career in a variety of industries.



## Technical Data

Complete technical specifications available upon request.

### Portable Workstation

#### Siemens S7-1200 Programmable Controller

- Digital Inputs (24 VDC, Sink/Source) (14)
- Digital Outputs (Solid State – MOSFET) (10)
- Analog Inputs (Voltage, Single-Ended, 0 to 10V, 10-Bit) (2)
- Analog Output (-10V to +10V 12-Bit or 0 to 20 mA 11-Bit)

#### Siemens Step 7 Basic Software

#### Siemens HMI Panel

- 5.7" TFT with 256 Colors
- Touch Screen with 6 Tactile Function Keys
- Ethernet Interface (TCP/IP)

#### Siemens Ethernet Switch, 4-Port

#### FaultPro 4.0 Electronic Troubleshooting Software

#### Fault Controller

#### 24 VDC Power Supply

#### 12 VDC Power Supply

#### I/O Simulator

- Green Normally-Open Pushbutton
- Red Normally-Closed Pushbutton
- Black Normally-Open Pushbuttons (2)
- Two-Position Selector Switches (4)
- Red Indicators (6)
- Yellow Indicator
- Green Indicator
- Potentiometer for Analog Input Adjustment

#### Thermostatic and Analog Temperature Applications

- Discrete Temperature Sensing Switch
- Fan
- Solid-State, Relay-Controlled Heater
- Scaled Temperature-Sensing Circuit

#### Reversing Starter and Variable Speed Motor Control Applications

- Selector Switch
- Inductive Proximity Sensors (3)

#### Stepper Motor Control Application

- Stepper Motor Drive
- Stepper Motor

#### Circuit Breaker

#### Master Control Relay Circuit

#### USB Cable

#### Cat. 5E Patch Cable

#### Student Curriculum (B40070/B40080)

#### Instructor's Guides (C40070/C40080)

#### Installation Guides (D40070/D40080)

#### Student Reference Guides (H19709/H19710/H40080)

#### Additional Requirements:

- Computer (Visit [www.amatrol.com/support/](http://www.amatrol.com/support/) computer-requirements for details.)

#### Utilities Required:

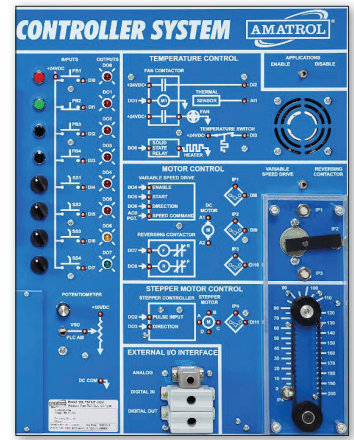
- Electricity: 100-240 VAC, 50-60 Hz, 1 phase

#### Options:

- eBook Curriculum (E40070/E40080)
- Mobile Technology Workstation (82-610)

## Rich Applications: Basic through Advanced

Amatrol's Portable PLC Troubleshooting Learning System — Siemens S71200 (990-PS712F) features multiple real-world applications that enhance learning by allowing students to see their programs control real systems. In addition to a discrete I/O simulator with discrete switches and indicators, the system includes application circuits and components for thermostatic temperature control, analog temperature control, reversing constant-speed motor control, variable speed motor control with feedback, and stepper motor control. These circuits include basic and advanced applications starting with discrete I/O projects and extending to projects involving motion control and analog I/O.



Application Circuits

## Cutting-Edge PLC Troubleshooting

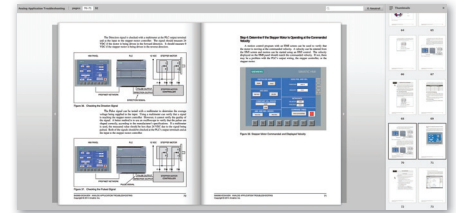
The 990-PS712F with FaultPro includes a variety of electronic faults that present realistic situations that technicians encounter on the job. This allows learners to develop important PLC troubleshooting skills, like PLC input and output testing, software testing, and application troubleshooting. Learners will practice skills, such as using a six-step sequence to troubleshoot a PLC system, troubleshooting a PLC routine that performs on/off control using an analog input, and testing a PLC-controlled PWM output device. FaultPro's computer-based faults automatically track progress, enabling learners to gain troubleshooting skills in a self-paced environment that ensures that faults are inserted safely, protecting both learners and equipment.



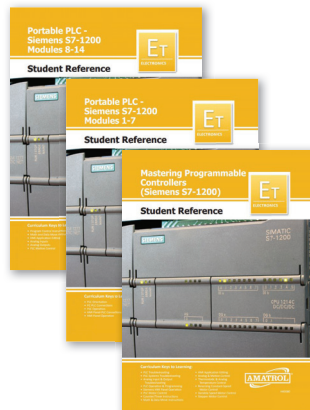
FaultPro

## In-Depth PLC Curriculum Teaches Hands-On Skills

The 990-PS712F features in-depth curriculum that teaches a wide variety of PLC topics, from basic operation and programming to troubleshooting. Learners will apply theoretical knowledge to hands-on skills that build real-world experience. For example, learners will practice hands-on skills, such as: configuring the IP address of an S7-1200 PLC; downloading and running a PLC project that performs logic operations; entering and operating a PLC project that uses seal-in logic to control a motor; troubleshooting a PLC-controlled variable speed drive; and troubleshooting a PLC-controlled PWM temperature control application. 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



## Student Reference Guide

Sample copies of the Portable PLC — Siemens S7-1200 and Mastering Programmable Controllers (Siemens S7-1200) Student Reference Guides are also included with the system for your evaluation. Sourced from the system's curriculum, the Student Reference Guides take the entire series' technical content contained in the learning objectives and combine them into perfectly-bound books. Student Reference Guides supplement this course by providing condensed, inexpensive reference tools that learners will find invaluable once they finish their training, making them the perfect course takeaways.

