

# Portable PLC Troubleshooting Training | Siemens S71200 eBook Curriculum



eBooks: E40070/E40080

Amatrol's Portable PLC Troubleshooting - Siemens S71200 eBook curriculum (E40070/E40080) provides a mobile option for teaching both basic and advanced applications, as well as sophisticated troubleshooting using the powerful Siemens S7-1200 PLC. Programming, operating, and troubleshooting skills on modern PLC systems are vital for future professionals. Amatrol's eBooks integrate an HMI panel, networking, and a variety of programming commands in order to teach real-world processes.

## In-Depth PLC Programming Curriculum

### What are the Basic Components of a PLC?

Amatrol's portable Siemens PLC troubleshooting eBooks start with the basics, such as the components of a PLC. Although the capabilities for expansion and function vary from model to model, most PLCs consist of five basic components: processor module, discrete input/output modules, power supply, I/O rack, and programming device.

- **Processor Module** - The processor module, or controller, handles the PLC's data processing. It consists of a central processing unit (CPU) and memory. The control program is stored in memory. The controller receives data input, processes information, and executes instructions.
- **Discrete Input/Output Modules** - S7-1200 PLCs can be connected to digital input modules, digital output modules, or modules that contain both digital inputs and outputs. A discrete input module provides the wiring terminals and circuitry that enables a PLC to sense the state or condition of a machine or application. A discrete output module provides the wiring terminals and circuitry that enable a PLC to control connected output devices.
- **Power Supply** - The power supply rectifies and regulates AC line power to 24 VDC power for processor and I/O module operation.
- **I/O Rack** - The I/O rack is typically a DIN rail, which provides a mechanical mounting surface for the controller's processor, power supply, and various input, output, and communications modules.

- **Programming Device** - PLCs are most commonly programmed using a standard PC running the appropriate programming software.

### **What are Six Types of PLC Faults?**

The portable Siemens PLC troubleshooting eBooks continue with advanced troubleshooting instruction.

PLC Troubleshooting involves all of the machine's subsystems, including mechanical, pneumatic, hydraulic, electrical, electronic, and programmable control systems. Because the PLC interacts with all of the other systems, a common practice is to troubleshoot failures using the PLC's tools and utilities. In some cases, the failure may be the PLC itself. Although the PLC is the most reliable component in the system, it does occasionally fail and the troubleshooter must be able to identify the problem.

There are six main categories of faults that can cause a PLC to fail:

- Processor Hardware
- Projects / Programs
- Power Distribution System
- Input / Output Modules (or Integrated I/O)
- Input / Output Field Devices
- Networks

## **Feature-Packed eBook Format**

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### **Comprehensive PLC Curriculum Teaches Hands-On Skills**

The portable Siemens PLC troubleshooting training system 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.

### **Feature-Packed eBook Format Makes Learning Convenient**

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. Amatrol's eBooks are available online and can be used by anyone with access to Amatrol's Learning Management System (LMS). Optionally, if you choose to use your own LMS, these eBooks are SCORM compatible to allow smooth integration into your current training system. Combined with our already extensive library of interactive multimedia titles, which are also SCORM compatible, users can now complete their entire course work online!

## **Additional Info**

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**Requires:**

- Computer (see [Computer Requirements](#))

**Options:**

- Portable PLC Troubleshooting Learning System - Siemens S71200 (990-PS712F)
- **NOTE:** Learning System Available Without Troubleshooting (Equipment: 990-PS712; eBook: 40070)

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