

S7 Automation Maintenance 2 (US-S7300S2C)

Type

Instructor-led Learning

Duration and Continuing Education Units (CEU)

4.5 Days
3 CEUs

Target Group

- Maintenance
- Reliability

Short Description

This course is the second of a two-part series designed for maintainers of and “first responders” to Siemens S7 automated control systems. Maintenance technicians, electricians, and supervisors who need to develop active skills using their Siemens hardware system, should attend this course to maximize process uptime. This course also provides a great platform for those new to automation systems and state-of-the-art industrial electronics.

Automation Maintenance 2 is a new course designed for using Performance-Based Learning strategy which adopts current Adult Learning and Development standards and practices. The result is a course with well-defined performance-based learning objectives that emphasizes task-based assessments of student performance. To successfully complete each module in the course, a student must demonstrate his/her ability to perform a specific automation task demonstrating the application of automation knowledge and skills.

Objectives

- Commission the Hardware Station using the SIMATIC Manager and set PG/PC interface for MPI/DP and PROFINET communications
- Commission the HMI by setting up a physical HMI to communicate over PROFINET and downloading an HMI project
- Use the S7 diagnostic tools to diagnose, troubleshoot and restore a faulted system to normal operation from both hardware and software faults
- Set up and use the Report System Error (RSE) CPU reporting tool and display diagnostic messages on the HMI
- Monitor Organization Blocks, Function Blocks Function Calls and Data Blocks using absolute and symbolic addressing
- Monitor Boolean, math, comparison, timer, and counter control logic for a PLC conveyor system making light modifications and simple code debugging
- Monitor code written in Function Block Diagram (FBD) and Statement List (STL)
- Create and monitor a reusable block with parameter passing
- Complete an end-of-week comprehensive student project to reinforce and demonstrate learned skills

Content

- Commission the Hardware Station over PROFINET
- Commission the HMI over PROFINET
- How to set up the CPU's Report System Error (RSE) function
- Hardware Troubleshooting and Diagnostics

- Monitor conveyor system functionality
- Absolute addressing & Symbolic addressing
- Managing symbol names
- Data Blocks (DB)
- Monitoring, debugging Math/Comparison Logic Timers and Counters
- ET200Pro I/O station
- Basic Software Troubleshooting skills and debugging of simple code functional errors
- Analog
- Intro to Function Block Diagram (FBD)
- Statement List (STL) instructions
- Reusable Blocks

Mandatory Prerequisites

[S7 Automation Maintenance 1: US-S7300S1C](#)

Note

Automation Maintenance 2 is a course designed with brief instructor led discussions followed by numerous hands-on exercises using a Totally Integrated Automation (TIA) plant model to develop and reinforce practical experience. The TIA plant model consists of an S7-300 automation system, ET200S and ET200pro distributed I/O stations, SIMATIC HMI Touch Panel, and a working conveyor model, all communicating over PROFINET. Students perform hardware and software diagnostics and troubleshooting as well as restoring a faulted PLC system to a normal operating state. This course builds on the knowledge obtained in Automation Maintenance 1 (SCT-S7300S1C) and offers 60% hands-on lab time and 40% lecture/discussion/Q and A.

Language

English

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