

TIA Portal Programming 1 (SCT-PTTIAP1A)

Global Reference

SIMATIC Programming 1 in the TIA Portal (TIA-PRO1)

Type

Face-to-Face Learning

Duration and Continuing Education Units (CEU)

30 Hours over 4 Days
3 CEUs

Target Group

- Programmer

Short Description

This course is the first in a three-part series which builds basic programming skills with Siemens TIA Portal software. Students will learn TIA Portal project management, program design, and application development. This is an aggressively paced curriculum covering the S7 programming editor with Ladder, Function Block Diagram, and Statement List programming languages, as well as key TIA Portal software tools. This course takes a systems approach using the S7-1500 PLC, basic connectivity, and functionality of an KP700 HMI and ET200SP PROFINET I/O.

Objectives

- Complete a system hardware configuration
- Build, document, test, and troubleshoot a structured TIA Portal program
- Program using the multiple address and coding types
- Use symbolic addressing
- Use core application instructions, functions, and blocks
- Program using the processed analog values
- Generate data blocks
- Install PROFIBUS DP connectors onto PROFIBUS cables and test the cables for correct installation
- Establish communication to an HMI

Content

- System Overview
- Engineering Software "TIA Portal"
- Training Devices and Addressing
- Devices and Network
- PLC Tags
- Program Blocks
- Binary Operations
- Digital Operations
- Data Blocks
- Distributed I/O

- Human Machine Interface (HMI)
- Functions (FCs) and Function Blocks (FBs)
- Organization Blocks (OBs)
- Troubleshooting

Recommended Prerequisites

[Introduction to TIA Portal and Diagnostics: SCT-PTBADIA](#)

OR

[Introduction to TIA Portal and Diagnostics - Virtual: SCT-PTOILBADIA](#)

Note

Throughout the course, students will build a TIA Portal project from the beginning, learning proper program structure and documenting. Software diagnostic tools will be used for debugging both hardware and code. Various instruction sets, memory areas, program blocks, and libraries will be introduced to provide the student with solid concepts of structured programming. The course format consists of instruction and hands-on exercises. The course uses a conveyor model for realistic demonstrations and exercises. It is recommended that students take Introduction to TIA Portal ((SCT-PTPLC11A) to familiarize themselves with the software before taking this course.

Language

English

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