SIEMENS

SIMATIC S7-1200 & S7-1500 with TIA Portal (CO-TIA1215)

Objectives

After attending the course, you can do the following:
- Understand the fundamentals of interaction of the TIA components
- Solve simple programming tasks using elementary STEP 7 instructions
- Reliably operate the "TIA Portal" engineering platform
- Program simple plant functions with basic STEP 7 instructions in the ladder
- Perform simple commissioning of TIA components
- You can deepen your theoretical knowledge with numerous practical exercises on a TIA system model. This consists of a SIMATIC S7-1200 and SIMATIC S7-1500 automation system, ET 200SP distributed I/O, drive SINAMICS G120.

Target Group

- Maintenance engineers
- Service engineers
- Programmers
- Commissioning engineers

Content

Hardware:
- System overview of SIMATIC controller families
- SIMATIC S7-1200 and S7-1500 family in detail
- Hardware configuration of SIMATIC controller in TIA Portal STEP7
- S7-1200 and S7-1500 module spectrum

TIA portal:
- TIA portal products and scope
- Digitalization in planning phase: TIA selection tool
- License management for TIA Portal
- Overview of framework

Software and Programming concepts:
- Working with PLC tags
- Bit logic instructions
- Concept of RLO
- Programming rules
- Elementary data types
- Arithmetic and logic operations
- Working with watch tables
- Analog value processing
- Linear v/s structured programming approach
- Effective programming using function and function blocks
- Standardization in programming as a basis for enabling digitalization
- Use and need of data blocks
- Types of data blocks
- Concept of Organization blocks
- SIMATIC security services for machine and plant security

Communication - Explanation and demo only:
- SINAMICS G120 drive integration with S7-1200/S7-1500 controller on Profinet(PN)/ Profibus DP protocol
- S7-1200/S7-1500 controller with remote station on Profinet(PN) protocol.

Troubleshooting and diagnostic topics:
- Significance of LED indication on different modules
- Diagnosis using diagnostic buffer
- Cross-references, call structure, assignment list, dependency structure
- Memory resource allotment
- Memory overlap identification
- Trace configuration tool
- Project backup
- Forcing, renaming, and rewiring concepts
- Project comparison
- Remote diagnostics using web server

HANDS ON:
- Application example-based exercises after each topic.
- Individual labs will be allotted to each participant.

Prerequisites

- Basic know how about automation technology is essential
- Basic knowledge of electrical technology and digital electronics is essential

Note

TECHNICAL REQUIREMENT:

- A computer or laptop with Windows 7/10 OS and a stable internet connection. (We recommend a data transfer rate of 16 Mbit/s.)
- Microsoft Teams platform for technical presentations and demo.

(We recommend using desktop app for best possible use of all functions).

- Goggle Chrome internet browser for assessing virtual lab solution for hands-on

Type

Online-Training

Duration

6 days

Language

en