

Online Training TIA Portal Service 1 Course (TIA-SERV1)

Short Description

The Totally Integrated Automation Portal (TIA Portal) forms the work environment for integrated engineering with SIMATIC STEP 7 and SIMATIC WinCC. In this first part of the SIMATIC TIA Portal service training, we teach you the handling of the TIA Portal, basic knowledge about the structure of the SIMATIC S7 automation system, configuration and parameterization of hardware, and the basics of programming. You also receive an overview of HMI, PROFINET IO / PROFIBUS, Distributed I/O and connecting drives. You will learn to diagnose and clear simple hardware faults and software errors. You will thus be capable of reducing downtimes in your plant. You can deepen your theoretical knowledge with numerous practical exercises on a TIA system model. This consists of a SIMATIC S7 automation system, ET200SP distributed I/O, Touchpanel, drive, and a belt driven model conveyor.

Objectives

On completion of this course the participant will be able to do the following:

Understand the fundamentals of interaction of the TIA components
Observe the automation system using "Project View" in the "TIA Portal" engineering platform
Analyse, change, and expand small STEP 7 programs
Configure, parameterize, and exchange SIMATIC S7 hardware modules
Diagnose simple hardware faults caused by the wiring fault connector
Diagnose and correct simple program errors using the block editor
Perform commissioning of TIA components
Develop a working system comprising a CPU, HMI, Distributed I/O, Operations Panel, Conveyor System and a Drive

Content

Overview and significant performance characteristics of the SIMATIC S7 system family.
Program execution in automation systems.
Binary and digital operations.
Symbolic and Absolute Addressing.
Setup and assembly of the automation system.
Monitoring and modifying I/O addresses.
Addressing and controlling the conveyor system.
Hardware and software commissioning of components within the SIMATIC S7 automation system using TIA Portal.
SIMATIC S7 Module, hardware configuration and parameterisation.
Installation and Integration of the Touch Panel (TP700).
Installation and Integration of the Sinamics G120 drive.
Installation and Integration of the PROFINET IO system (ET-200SP).
PROFINET IO system configuration.
Saving and documenting the implemented program changes with TIA Portal.
Uploading and Re-installing the contents of the CPU Memory.
Increased understanding of course contents through 'guided' practical exercises on TIA system model.

Prerequisites

An awareness of automation technology.
Knowledge of Microsoft Windows.
You can use the online tests below to find out whether you have sufficient prior knowledge to participate effectively in the course you wish to attend. If you answer more than 70 % of the questions correctly you are well prepared to take part in the course.

[Test TIA-SERV1](#)

Note

This course is not a Programming Course (although programming elements exist within), for Programming, please consider the 'TIA Portal Programming 1 Course'.

This course is also suitable for those using S7-1200 based systems. This training course is not appropriate for trainees using S7-200, S7-300 or S7-400 based systems. For more information concerning details of S7-300, and S7-400 please see the section called Simatic S7 PLC.

To take part in this course you will require access to a PC/Laptop with capability to use the following software, microphone and speakers or headset, good Wi-Fi or cabled internet connection, an additional visual display unit, and also a separate device to access the pdf course notes:-

- MS Teams Tenant – required to facilitate instructor presentation and interaction via the Virtual Classroom.
 - Invitation to access the DI Virtual Lab (VLAB) – all TIA Portal software will be hosted in the Virtual environment.
- VLAB is a digital training and learning platform that provides expert knowledge content as courses that can be used for live hands-on learning experiences and better user experience. VLAB is a cloud-based platform to provide any kind of hardware/software environment.

Host System Requirements

The following are the minimum system requirements that must be set up to work with VLAB.

- PC with internet access and a minimum data transfer rate of 15 Mbit/s.

Note: It is recommended to set up screen with a resolution of 1920*1080 pixels (full HD) to display the course document material and environment system in parallel.

If required, you can also use two screens.

- Firewall must not block access to VLAB.

Note: Your firewall must allow Websockets (wss:// connections over TCP and HTTPS over port 443).

- HTML5-capable web browser (such as Chrome, Safari, or Firefox).
 - Siemens login credentials for both internal employees and external participants.
- Again, as there will be at least two active sessions of software being utilised on this course, you will find it convenient to connect an additional external monitor to your PC/Laptop. The second device could be used to host the pdf course files.

Type

Online-Training

Duration

5 days

Language

en

Fee

3,050 GBP