

AUTOMATION ACADEMY

A u t o m a t i o n S y s t e m s T r a i n i n g S p e c i a l i s t s

Course Title: Siemens S7 1200/1500 Level 2/3 TIA Portal

The Siemens S7 1200/1500 Level 2/3TIA Portal training course has been designed to familiarise Electricians, Technicians and Maintenance Engineers previous experience of S7 1200/1500 systems to the intermediate and higher level facilities associated with the operation and maintenance of Siemens S7 1200/1500 controllers and the Siemens TIA Portal programming software.

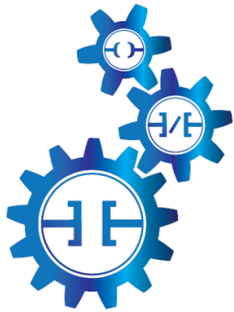
Where possible, application specific exercises, actual drawings and plant programs will be used to allow the students to gain the greatest possible benefit from the course.

Course Objectives:

- ☒ To revise and further develop an understanding of Siemens S7 Ladder (LAD) instructions.
- ☒ To introduce students to Statement List (STL) representation and operation (not S7 1200).
- ☒ To introduce students to Function Block Diagram (FBD) representation and operation.
- ☒ To use and understand complex data types including UDT's and Struct in Data Blocks.
- ☒ To be able to use and understand the operation of a number of extended PLC instructions in all programming languages depending on plant program usage.
- ☒ To understand the operation of the Organisation Blocks (OB's) commonly used in application programs.
- ☒ Creating and understanding Function Blocks (FB's) within the project.
- ☒ The use of System Functions (SF's) and System Function Blocks (SFB's).
- ☒ Profibus and Profinet hardware configuration, operation and fault finding methods.
- ☒ To further understand higher level features within Function Blocks (FB's).
- ☒ To understand how the Simatic HMI is connected and configured within the TIA project.

Course Content:

Creating the level 2/3 training project and topics revision as necessary.
Ladder programming exercises using high level instructions.
Statement List programming exercises using high level instructions.
Creating a Data Block using UDT's and Struct data types.



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Adding typical project OB's to the level 2/3 training project.
Creating a Function Block using the interface with STAT and TEMP variables.
Adding the newly created FB's into the level 3 training project.
Using System Functions and System Function Blocks in the level 2/3 program.
Creating a Function Block to control and monitor a VSD on Profibus/Profinet.
Creating the total system of PLC, VSD and HMI to mimic plant operations.
Using WinCC Flex to develop the HMI system and integration into the level 3 PLC project.

Customised training included in the course cost.

As part of this training course we will include custom application exercises for your own plant and processes, this value added option creates immediate payback for students on plant. It will have the benefit of the students becoming familiar with key areas of your PLC project(s) during the training course. This option does require the supply of your plant drawing and program listings at least 2 weeks prior to the course start date.

Course Duration: 4 Days

Documentation: Siemens S7 1200/1500 Level 2/3 TIA Training Manual.

Equipment per student: Siemens S7 1200/1500 controller

Programming laptop

Plant simulator

Web link: [Siemens S7 1200/1500 Level 2/3 TIA Portal](#)