

SIMATIC – Motion Control 1 in the TIA Portal

General Information

Course Code SCT-PTTIAMC1A
Global Code TIA-MC1
Length 3 Days
CEUs 1.9

Audience

This course is for Programming and/or Commissioning Engineers who are responsible for maintaining systems with Siemens motion-based control systems.

Prerequisites

- TIA Portal Programming 1 (Face to Face or Virtual)
- OR
- AB to S7 in TIA Portal

Profile

In this technology course, attendees will program the SIMATIC S7-1500 or S7-1200 controllers in the TIA Portal. They will be able to precisely control the motion of axes with the integrated motion control functions while learning step by step the benefits and use of these functions.

After each learning step, attendees will deepen their knowledge through hands-on programming. After attending the course, they will understand the interaction of the technological functions. Each learner will be able to select and configure appropriate technology objects, such as speed axis, positioning axis and synchronous axis, as well as integrate them into the program.

SPECIAL NOTE: The motion control function of standard CPUs is seamlessly extended with technology CPUs. In the SCT-PTTIAMC2A course, learners will work with the T-CPU and learn the benefits of functions such as absolute synchronous operation and camming.

Objectives

Upon completion of this course, the student shall be able to:

- Precisely control the motion of axes with the integrated motion control functions.
- Interpret the interaction of the technological functions.
- Commission the SINAMICS servo controller for use in the TIA Portal.
- Select and configure appropriate technology objects, such as: speed axis positioning axis, synchronous axis and integrate them into a program.

Topics

1. Basics of motion control
2. SpeedAxis technology object
3. PositioningAxis technology object
4. Homing and traversing movements
5. Programming with PLCopen
6. Error messages and diagnostics
7. Communication and libraries
8. Output cam and measuring input
9. Closed-loop control and optimization
10. SynchronousAxis technology object
11. Practical exercises on training devices with SIMATIC S7-1500 and SINAMICS drives