

SIMATIC - Motion Control in the TIA Portal

OEM: Siemens • Code: TIA-MC

COURSE DESCRIPTION

In this course, you will learn to program the motion control functions integrated in the SIMATIC S7-1500 or S7-1200 controllers using TIA Portal. Core topics are the technology objects speed axis, positioning axis and synchronous axis.

AUDIENCE PROFILE

- Programmer
- Commissioning engineers
- Engineering personnel

PREREQUISITES

- Knowledge of programming in the TIA Portal (equivalent to knowledge after completion of the TIA-PRO1 or TIA-SERV2 course)
- [Technical requirements](#) > V Lab
- Note
- Included in the course price: Free access to the digital learning platform [SITRAIN access](#) – starting one week before the start of the course until two weeks after the end of the course.
- With the Learning Membership, you can deepen or repeat the content of this Learning Event as well as continue your education on other interesting topics.

COURSE OBJECTIVES

By the end of this course, participants will be able to:

- You will program the SIMATIC S7-1500 or S7-1200 controllers in TIA Portal. You will be able to precisely control the motion of axes with the integrated motion control functions.
- In this technology course, you will learn step by step the benefits and the use of these functions. After each learning step, you will deepen your knowledge with hands-on programming.
- After attending the course you will understand the interaction of the technological functions. You will be able to select and configure appropriate technology objects, such as speed axis, positioning axis and synchronous axis, and integrate them in your program.
- You will deepen your theoretical knowledge through numerous practice-oriented exercises in our virtual learning environment with SIMATIC S7-1500.

Module 1: Content

- Overview of the S7-1500T Technology-CPU, basics of Motion Control
- SpeedAxis and PositioningAxis technology objects
- Programming with Motion Control instructions
- Homing and traversing movements
- Closed-loop control and optimization
- Error messages and diagnostics
- Output cam and measuring input technology object
- SynchronousAxis technology object
- Absolute and relative gearing
- Cam disc technology object
- Kinematics technology object
- Interplay between Motion Control and Safety Integrated
- Practical exercises on training devices with SIMATIC S7-1500(T) and SINAMICS drives