

Studio 5000 Logix Designer Level 4: Kinetix 6000 (SERCOS) Programming

OEM: Rockwell Automation • Duration: 5 Days (40 hrs) • Code: CCN145

COURSE MODULES & TOPICS

Objectives

- Create a Studio 5000 Logix Designer project for a SERCOS motion application
- Add drives and configure SERCOS axes
- Test SERCOS hardware
- Autotune SERCOS axes
- Plan a motion project
- Create user-defined data types, an axis-level program shell, and axis-level tags
- Program the:
 - Axis-level dispatch and power up routines
 - Axis-level command routine
 - Axis-level waiting routine
 - Aborting, clearing, stopping, resetting, and starting routine
- Replicate the axis program
- Replicate an application-level program and the execute routines
- Add a virtual axis
- Program electronic gearing and camming
- Replicate the axis program and application-level program
- Add a virtual axis

Prerequisites

- Completion of the Motion Control Fundamentals course (CCN130) or equivalent knowledge of drives, feedback devices, and servo motion systems
- Completion of the Studio 5000 Logix Designer Level 3: Project Development course (CCP143) or equivalent experience

Student Materials

- Student Manual includes the key concepts, definitions, examples, and activities presented in this course
- Lab Book provides learning activities and hands-on practice. Solutions are included after each exercise for immediate feedback
- Studio 5000 Logix Designer and Logix5000 Motion Control Procedures Guide provides the steps required to complete common motion-related tasks within a Logix Designer project, as well as basic project organization tasks

Course Agenda

Day 1

- Creating a Studio 5000 Logix Designer Project for a SERCOS Motion Application
- Adding Drives and Configuring SERCOS Axes
- Testing SERCOS Hardware
- Autotuning SERCOS Axes

Day 2

- Programming MSO and MAH Instructions
- Programming MAM and MAJ Instructions
- Programming MAS and MSF Instructions
- Programming MASD, MASR, and MAFR Instructions
- Integrated Practice: Creating a Basic Integrated Motion Application

Day 3

- Programming Group Motion Instructions
- Programming MCD Instructions and Merging Motion Instructions
- Adding a Virtual Axis
- Programming MAG Instructions

Day 4

- Programming MAPC Instructions
- Programming MATC Instructions
- Integrated Practice: Programming Dependent Motion Instructions