

# ControlLogix/Studio 5000 Logix Designer

Studio 5000 Logix Designer Level 4:  
Kinetix 5700 (CIP) Programming



## Course Number

CCN144-A

## Course Purpose

After completing this course, you should be able to configure, test, tune, and program CIP Motion™ axes using the Studio 5000 Logix Designer® application.

Building upon the skills gained in the Studio 5000 Logix Designer Level 3: Project Development (CCP143) course, you will learn how to apply the Logix5000™ architecture to a multi-axis CIP™ motion control system. You will also practice efficient programming skills necessary for translating a machine specification document into reliable ladder logic code.

Because all Logix5000 products share common features and a common operating system, you will be able to apply the motion control configuring and programming skills you learn in this course to any of the Logix5000 controllers that are capable of motion control.

## COURSE AGENDA

### DAY 1

- Configuring a Studio 5000 Logix Designer Project for Integrated Motion over an EtherNet/IP Network
- Adding and Configuring EtherNet/IP Drives and Configuring CIP Servo Axes
- Testing Hardware for Integrated Motion Over an EtherNet/IP Network
- Tuning Axes over an EtherNet/IP Network
- Applying Programming Best Practices for Integrated Motion Applications Over an EtherNet/IP Network

### DAY 2

- Programming Instructions to Turn on and Turn off Servo Control
- Programming Instructions to Home and Stop Axes
- Programming Instructions to Move and Jog Axes
- Programming Shutdown and Recovery Instructions

### DAY 3

- Integrated Practice: Creating a Basic Integrated Motion Application Controlled over an EtherNet/IP Network
- Programming Group Motion Instructions
- Dynamically Altering Move Parameters
- Adding a Virtual Axis

### DAY 4

- Programming Gearing Instructions
- Programming Position Camming Instructions
- Programming Time Camming Instructions
- Integrated Practice: Programming Dependent Motion Instructions for an Integrated Motion Application Controlled over an EtherNet/IP Network

## WHO SHOULD ATTEND

Individuals who need to configure and program Logix5000 motion control systems should attend this course. In addition, only students who are already familiar with Logix5000 systems and general motion control should attend this course.

## PREREQUISITES

To successfully complete this course, the following prerequisites are required:

- Completion of the Motion Control Fundamentals course (Course No. CCN130) or equivalent knowledge of or experience with motion drives, feedback devices, and velocity and position loop systems
- Completion of the Studio 5000 Logix Designer Level 3: Project Development course (Course No. CCP143) or equivalent experience

## STUDENT MATERIALS

To enhance and facilitate the students' learning experiences, the following materials are provided as part of the course package:

- 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

## HANDS-ON PRACTICE

Throughout this course, you will have the opportunity to practice the skills you have learned through a variety of hands-on exercises using an ABT-TDK5700 workstation. Exercises focus on the skills introduced in each lesson. You will use the Kinetix workstation containing real and simulated devices to practice the tasks involved in programming a motion control application.

After configuring a project that contains the required hardware, you will program a variety of motion routines and motion instructions commonly used in integrated motion applications. Finally, you will begin to employ dependent motion in the form of gearing and camming instructions.

## NEXT LEARNING LEVEL

Once you have mastered the skills covered in this course, you will be prepared to attend other Rockwell Automation training courses that will enable you to optimize your motion control application. One example of such a course is the Studio 5000 Logix Designer Level 5: Advanced Motion Programming course (Course No. CCN190).

## COURSE LENGTH

This is a four-day course.

## IACET CEUS

Rockwell Automation is authorized by IACET to offer 2.8 CEUs for this program.







## TO REGISTER

To register for this or any other Rockwell Automation training course, contact your local authorized Allen-Bradley® Distributor or your local Sales/Support office for a complete listing of courses, descriptions, prices, and schedules.

You can also access course information via the Web at <http://www.rockwellautomation.com/training>

Rockwell Automation is accredited by the International Association for Continuing Education and Training (IACET) and is authorized to issue the IACET CEU. **Click here** to view the Rockwell Automation Certificate of Accreditation.

To be respectful of the environment, Rockwell Automation is transitioning some of its training courses to a paperless format. Students are asked to complete downloads and bring personal devices to these classes. A full list of digital/paperless courses is currently available through your local distributor.

Connect with us.    

[rockwellautomation.com](http://rockwellautomation.com) — expanding human possibility™

AMERICAS: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

EUROPE/MIDDLE EAST/AFRICA: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

ASIA PACIFIC: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Allen-Bradley, CompactLogix, ControlLogix, Kinetix, Logix5000, RSLinx, RSLogix 5000, Studio 5000 and Studio 5000 Logix Designer are trademarks of Rockwell Automation, Inc. Trademarks not belonging to Rockwell Automation are property of their respective companies.

Publication GMST-PP731C-EN-P – January 2020 | Supersedes Publication GMST-PP731B-EN-P – March 2018

Copyright © 2020 Rockwell Automation, Inc. All Rights Reserved. Printed in USA.