

# Motion Control

Motion Control Fundamentals using  
Kinetix 5700 (CIP) Servo Drives



**Rockwell  
Automation**



**Allen-Bradley**  
by ROCKWELL AUTOMATION

## Course Number

CCN132

## Course Purpose

Upon completion of this course, you should be able to demonstrate fundamental motion control concepts common to all Rockwell Automation motion control systems.

This course is designed to provide you with an understanding of the concepts, terminology, functionality and applications of motion control. This course will also allow you to establish the foundation you need before learning the skills necessary to maintain and program motion control systems.

This course does not address motion control system design or specific motion control software programming. If you are seeking training in these areas, you should enroll in the relevant Rockwell Automation training courses, making sure you have fulfilled the prerequisites for those courses prior to enrollment.

## COURSE AGENDA

### DAY 1

- Identifying a Motion Control System
- Tracing the Power Supply to the Servo Drive
- Identifying Servo Drive Problems
- Identifying Motor Types and Components

### DAY 2

- Identifying Motor Feedback Devices
- Identifying and Scaling Loads
- Tracing Signal Flow Through the Servo Drive
- Creating a Motion Profile

### DAY 3

- Identifying and Applying a Reference to a Servo Drive
- Identifying the Elements of an Integrated Motion Application Using Logix 5000 Controllers
- Identifying Motion Modules and Axis Tags Using Studio 5000 Logix Designer Software

## WHO SHOULD ATTEND

Individuals who need to learn basic motion control concepts for their job or as a prerequisite for attending other motion control courses should attend this course.

## PREREQUISITES

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

- A background in basic electricity, electronics, and computer concepts
- One of the following courses:
  - *Studio 5000 Logix Designer Level 1: ControlLogix Fundamentals and Troubleshooting* (Course Number CCP299)
  - *Studio 5000 Logix Designer Level 1: CompactLogix Fundamentals and Troubleshooting* (Course Number CCP298)

## 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 Procedures Guide
  - Provides the steps required to complete common motion-related tasks within a Studio 5000 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. These exercises focus on the skills introduced in each lesson.

You will use a Kinetix® 5700 workstation (Catalog Number ABT-TDK5700) containing real and simulated devices to practice the tasks involved in working with a motion control application.

## NEXT LEARNING LEVEL

Once you have an understanding of the topics and skills covered in this course, you may want to attend specific Motion training such as:

- *Studio 5000 Logix Designer Level 4: Kinetix 5700 (CIP) Programming* (Course Number CCN144-A)
- *Kinetix 5700 Troubleshooting and Project Interpretation* (Course Number CCN202)

## COURSE LENGTH

This is a three-day course.

## IACET CEUS

Rockwell Automation is authorized by IACET to offer 2.1 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.

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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

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