

# Craft Skills

## Electrical Troubleshooting a Motor Controls Course Description

### COURSE AGENDA

#### Day 1

- Explaining Troubleshooting Philosophy
- Applying Basic Troubleshooting Methods
- Using the 7 Step Troubleshooting Method
- Distinguishing Contactors, Switches And Contacts
- Lab Exercises

#### Day 2

- Applying Motor Controls Fundamentals
- Determining Motor Controls Diagnosis And Repair
- Lab Exercises

#### Day 3

- Controlling AC Motors
- Inspecting Rotating Ac Machinery
- Using Customized Troubleshooting Techniques
- Lab Exercises

#### Day 4

- Troubleshooting Motor Controls Circuits
- Troubleshooting Intermittent Failures
- Lab Exercises

#### Day 5

- Applying Root Cause Analysis
- Lab Exercises
- Review
- Written Exam



### COURSE NUMBER: EM-206

#### Course Purpose

This course provides information on the concepts associated with systematic troubleshooting of instrumentation systems. Participants use practical application of troubleshooting techniques in exercise scenarios.

Upon completion of this course, you should be able to:

- Describe a systematic approach to troubleshooting
- Describe the techniques for inspecting rotating AC Machinery
- Describe how to troubleshoot motor control circuits
- Identify the basic symbols used in motor control circuits.
- Identify the function of various devices using standard symbology and device numbers.
- Develop a control circuit using a variety of common control features.
- Given an electric print of a motor starting circuit, troubleshoot basic problems associated with motor control circuits.
- Given an electrical print, identify power supplied for motor primary power and control power.
- Apply the 7 step troubleshooting process to electrical circuits
- Use the one-handed troubleshooting method to troubleshoot electrical circuits
- Identify the possible causes and suggested remedies of various contactor troubles.
- Troubleshoot electrical circuits using both voltage and resistance.

### ***Who Should Attend***

This course is designed for electrical maintenance technicians.

**Curriculum Note:** This course contains many of the lessons in the *Motor Control* course (Course No. EM-204) and the *System Problem Solving and Troubleshooting* course (Course No. GEN-003) in a consolidated, five-day format. Do not take all 3 courses.

### ***Prerequisites***

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

- Understanding of electrical theory and electrical systems

### ***Technology Requirements***

All technology is provided for student use in the classroom by Rockwell Automation. It is not necessary for students to bring any technology with them when attending this course.

### ***Student Materials***

To enhance and facilitate your learning experience, the following materials are provided as part of the course package.

- *Student Manual*, which contains the key concepts, definitions, and examples presented in the course
- *Lab Guide* which includes the hands-on exercises.

### ***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 also have the opportunity to combine and practice groups of key skills by completing multiple integrated practices during the course.

### ***Course Length***

This is a five-day course.

### ***Course Number***

The course code is EM-206.

### ***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>

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#### **Power, Control and Information Solutions Headquarters**

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