

ELECTRIC MOTOR CONTROLS TRAINING

“Master the Fundamentals and Applications of Electric Motor Control Systems”

Schedule

Date	Venue	Fees (Face-to-Face)
01 – 05 Sep 2025	Dubai, UAE	USD 3495 per delegate

► Available delivery methods: In-House Training

Introduction

The Electric Motor Controls Training is designed to provide participants with the knowledge and skills to effectively work with electric motor control systems. This course covers essential concepts in motor control technology, including the principles of motor control circuits, PLCs (Programmable Logic Controllers), and motor protection. By the end of this course, participants will be equipped with the tools to design, troubleshoot, and optimize electric motor control systems for a variety of industrial applications.

Through a mix of theoretical learning and practical hands-on sessions, participants will gain a deep understanding of control mechanisms, electrical safety standards, and the key components used in electric motor control systems, ensuring they can work safely and efficiently in the field.

Objectives

- By the end of this course, participants will be able to:
- Understand the fundamental principles behind electric motor controls.
 - Design and wire basic electric motor control circuits.
 - Troubleshoot and maintain various motor control systems, including PLC-based systems.
 - Learn motor protection techniques and safety standards.
 - Work with industry-standard components used in motor control systems.

Why Attend

- Gain hands-on experience with designing and troubleshooting motor control systems.
- Learn motor protection methods and industry standards for safe operation.
- Enhance your technical skills and competence in the field of electrical engineering.
- Understand the practical applications of motor controls in industrial environments.
- Increase your employability by mastering essential motor control and PLC concepts.

Target Audience

This program is designed for:

- Electrical engineers and technicians working with motor control systems.
- Maintenance professionals and field engineers in industries with motor-driven machinery.
- Automation engineers looking to expand their knowledge of PLCs and motor control.
- Anyone interested in understanding and improving electric motor control systems.

Individual Benefits

Key competencies that will be developed include:

- Expertise in designing and operating electric motor control systems.
- Ability to troubleshoot and maintain motor control systems in various environments.
- In-depth understanding of motor protection and safety measures.
- Proficiency in working with PLCs and other control technologies.
- Improved confidence in applying motor control knowledge in real-world scenarios.

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Enhanced skills in managing and optimizing motor control systems.
- The ability to reduce downtime and improve the efficiency of motor-driven equipment.
- Greater understanding of electrical safety standards and motor protection techniques.
- Knowledge of best practices for maintaining motor control systems, leading to fewer failures.
- A strategic approach to implementing advanced motor control techniques across projects.

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings – Overview of electric motor controls and their key components.
- Case Studies – Real-world scenarios of motor control system applications in various industries.
- Workshops – Hands-on sessions for wiring motor control circuits and troubleshooting.
- Peer Exchange – Group discussions and experience sharing on motor control challenges and solutions.
- Tools – Practical exercises using industry-standard tools and techniques.

Course Outline

Detailed 5-Day Course Outline

Training Hours: 7:30 AM – 3:30 PM **Daily Format:** 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Introduction to Electric Motor Control Systems

- Module 1: Overview of Electric Motor Controls (07:30 – 09:30)
- Understanding different types of electric motors and their functions.
- Basic principles of electric motor control circuits.
- The role of relays, switches, and circuit breakers in motor control.
- Module 2: Electrical Safety and Standards (09:30 – 11:30)
- Key electrical safety standards for motor control systems.
- Safe working practices with electrical equipment.
- Understanding protection devices for electric motors.

Day 2: Motor Control Circuits and Components

- Module 3: Basic Motor Control Circuits (07:30 – 09:30)
- Introduction to motor starters, contactors, and overload relays.
- Wiring a simple motor control circuit.
- Understanding the operation of a typical motor control system.
- Module 4: Advanced Motor Control Components (09:30 – 11:30)
- PLCs and their application in motor control.
- Understanding variable frequency drives (VFD) and soft starters.
- Hands-on session wiring and configuring advanced motor control components.

Day 3: Troubleshooting and Maintenance

- Module 5: Motor Troubleshooting Techniques (07:30 – 09:30)
- Identifying common faults in motor control circuits.
- Techniques for troubleshooting and diagnosing faults.
- Using multimeters and other tools for motor circuit diagnostics.
- Module 6: Preventive Maintenance for Motor Systems (09:30 – 11:30)
- Best practices for maintaining electric motor systems.
- Strategies for extending the life of motor-driven systems.
- Key inspection and testing techniques for motor control systems.

Day 4: PLCs in Motor Control Systems

- Module 7: Introduction to PLCs (07:30 – 09:30)
- Overview of PLCs and their role in automation.
- Basics of PLC programming for motor control.
- Hands-on PLC programming for simple motor control tasks.
- Module 8: Integrating PLCs with Motor Control Systems (09:30 – 11:30)
- Programming PLCs to control electric motors.
- Setting up and configuring PLC-based motor control circuits.
- Troubleshooting PLC-based motor control systems.

Day 5: Advanced Motor Protection and Optimization

- Module 9: Motor Protection and Control Strategies (07:30 – 09:30)
-

- Advanced techniques for protecting electric motors.
- Understanding motor overload protection, fault detection, and emergency shutdowns.
 - Integrating motor protection into control systems.
 - Module 10: Optimizing Motor Control Systems (09:30 - 11:30)
 - Strategies for improving the performance and efficiency of motor control systems.
 - Use of VFDs for motor speed control and energy savings.
 - Hands-on session optimizing motor control circuits for efficiency.

Certification

Participants will receive a Certificate of Completion in Electric Motor Controls, validating their expertise in motor control systems, troubleshooting, and motor protection strategies.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

In-House / Customized Training Interested in running this course for your team? Please contact us:	TEL: +601116373203	EMAIL: info@mawaevents.net
--	--	--

Follow us: [Facebook](#) [Twitter](#) [YouTube](#) [LinkedIn](#) [Instagram](#)

© Material published by MAWA Events shown here is copyrighted. All rights reserved. Any unauthorized copying, distribution, use, dissemination, downloading, storing (in any medium), transmission, reproduction or reliance in whole or any part of this course outline is prohibited and will constitute an infringement of copyright.