

# Motor Controls



## Description

Industrial Motor Controls teaches the basics of electricity and how energy is converted to perform work. Motor controls will be used to govern in predetermined manners the performance of electric motors.

## Skills

- Focuses on the development of academic knowledge, employability skills, and technical skills. As students progress through the curriculum, the classroom instructor uses a detailed rubric to subjectively evaluate the student's skill and proficiency.

## Objectives

- Define electric charge and electric current.
- Identify amps, volts, and ohms.
- Differentiate between insulators, conductors, and semiconductors.
- Describe the law of magnetism.
- Learn the basic parts of a DC motor and how it operates.

## Activities

- Lesson 1 Fundamentals of Electricity and Electronics
- Lesson 2 Electric Motors
- Lesson 3 Hand Tools, Instruments, and Safety
- Lesson 4 Trainer Layout and Assembly
- Lesson 5 Diagrams
- Lesson 6 Basic Control Circuit Wiring
- Lesson 7 Standard Control Circuit Wiring
- Lesson 8 Intermediate Control Circuit Wiring
- Lesson 9 Wiring a DC Motor with Speed Control
- Lesson 10 Wiring a Single-Phase Motor
- Lesson 11 Wiring a Split-Phase Motor with Load Center
- Lesson 12 Wiring a Three-Phase Motor
- Lesson 13 Forward/Reversing a Three-Phase Motor
- Lesson 14 On-Delay Timing Relays
- Lesson 15 Off-Delay Timing Relays
- Lesson 16 Float Switches
- Lesson 17 Pressure Switches
- Lesson 18 Wiring a 3-Position Selector Switch
- Lesson 19 Ladder Diagrams
- Lesson 20 Level 1 Review

## Standards

DEPCO courseware is developed from the Manufacturing Skill Standards Council (MSSC) and the National Skill Standards Board (NSSB). Close correlation with these standards will provide students with the skills and knowledge necessary for success in the workplace.

## Module Includes:

Training Manuals; Instructor's Manual; Installation CD; DEPCO Industrial Motor Controls Trainer, which includes a NEMA Enclosure, Power Distribution Panel Using an Allen Bradley PowerFlex 4 AC Drive, and the DEPCO Load Center. In Addition, the DEPCO Load Center can be purchased separately. Wire Spools, 110 V Motor (2), DC Motor, Three-Phase Motor, 2 Pole DC Motor Kit, D-Cell Batteries, Flat File, Lockout Tag (2), Padlock (2), Erasable Black Marker (2), Lockout Hasp, Rotating Electric Plug Lockout, FLUKE Digital Multimeter, FLUKE AC Current Clamp, Alligator Clip (2), Lead Extension (4), Phillips Screwdriver, Slotted Screwdriver, Wire Stripper/Cutter, Hex Key, Wrench, Safety Glasses (2), Contactor (2), Reversing Contactor, ON-Delay Timing Relay, Off-Delay Timing Relay, Multi-Function Timing Relay, Motor Protection Circuit Breaker, Tool Cabinet with Tool Trays, Headphones (2)

Computer is required and sold separately.

Note: Trainer Requires Only 110 V Power Supply (Three-Phase Power Not Required)

Academic Representative



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