



AC Motor Controls and Relay Ladder Logic

Course Number 310

Course Description

This course covers the fundamentals of electrical power and theory. The course begins with a review of safety and safe operation in the electrical industry. Students will review the different types and uses of induction motors, windings types, motor starters and circuits, motor protection, ladder logic symbols, and diagrams.

Prerequisites: None

Course Length: 5 Days

Text Books: Motors manual

Course Outline	Learning Objectives
Safety Guideline <ul style="list-style-type: none">- PPE- General electrical safety- Lock out/Tag out	<ul style="list-style-type: none">• Define safety and safe operation standards• Name types of induction motor windings and typical uses
Induction Motors <ul style="list-style-type: none">- Motor terminology and definitions- Name plate information- Types of windings and how they function- Types of single phase motors and their uses- Types of 3 phase motors and their uses	<ul style="list-style-type: none">• Compare single winding, single phase, split phase• Explain three phase induction motors• Examine reversing motors• Identify motor starters and starter circuits• Define motor protection• Overload relays, operation, and sizing• Identify motor enclosures• Read ladder logic
Motor Starters <ul style="list-style-type: none">- Types of motor starters- Sizing motor starters- Motor starter circuits- Reversing rotation of motors	<ul style="list-style-type: none">• Compare symbols and abbreviations• Define logic statements• Practice diagram generation
Motor Protection <ul style="list-style-type: none">- Types of motor protection- Placement of motor protection in the start circuit- Sizing overload protection- Motor control enclosures and selection	
Ladder Logic <ul style="list-style-type: none">- Symbol recognition- Using ladder logic- Developing sound ladder logic- Troubleshooting motors and motor control logic	

