



Training made possible through the
South Bend Pathways On Demand
Workforce Development Program

AC MOTOR CONTROLS AND RELAY LADDER LOGIC

Class Dates*: August 23 - 25

*Subject to change

Learn about the fundamentals of electrical power and theory, as well as the different types and uses of induction motors, windings types, motor starters and circuits, motor protection, ladder logic symbols, and diagrams.

Course Outline - Three (3) Days:

Safety Guidelines

- Personal protective equipment (PPE)
- General electrical safety
- Lockout/Tagout

Induction Motors

- Motor terminology and definitions
- Nameplate information
- Types of windings and how they function
- Types of single-phase motors and their uses
- Types of three-phase motors and their uses

Motor Starters

- Types of motor starters
- Sizing motor starters
- Motor starter circuits
- Reversing rotation of motors

Motor Protection

- Types of motor protection
- Placement of motor protection in the start circuit
- Sizing overload protection
- Motor control enclosures and selection

Ladder Logic

- Symbol recognition
- Using ladder logic

Prerequisites:

- None

LEARNING OBJECTIVES:

- Define general electrical safety and safe operation standards
- List types of induction motor windings and typical uses
- Compare single-winding, single-phase, and split-phase windings and motors
- Explain three-phase induction motors and their use
- Examine reversing motors
- Identify motor starters and starter circuits
- Describe the types of motor protection
- Explain how to protect overloading relays and their operation and sizing
- Identify motor enclosures
- Understand ladder logic
- Recognize ladder logic symbols and abbreviations
- Define logic statements
- Practice diagram generation