AC and DC Fundamentals Including Safety

Course Number 290

Course Description

This course covers the fundamentals and principles of AC and DC electric. Electrical safety procedures, lock out/tag out, and OSHA compliance are reviewed. The operation and use of relay contacts, input / output devices and measuring instruments are then covered.

Prerequisites: None

Course Length: 3 Days

Text Books: TBD

Course Outline

Safety Guidelines

- PPE
- General electrical safety practices
- Lock out/Tag out
- OSHA requirements

Electrical Fundamentals

- Ohm's Law
- Watt's Law
- Electrical symbols
- Series and parallel resistance and capacitance calculations
- Voltage drop calculations

Meter Use

- Multi-meter functions
- AMP meters
- Megohm meters

Electrical Schematics

- Use of symbols in electrical prints
- Reading ladder logic drawings
- Contact arrangements in ladder logic
- Motor start/stop circuits with overload protection
- Types of input devices
- Types of output devices
- Use of input devices as feedback from output devices
- Overload protection in electrical circuits

Learning Objectives

- Review electrical safety
- Explain Lock out/ tag out procedures and why they are used
- Know the most common OSHA violations
- Review of electrical fundamentals and symbols
- Work with power formulas
- Know the proper application when using voltmeters, amp meters, and megohm meters
- Explain voltage and current
- Finding resistance and capacitance for parallel and series circuit
- Find difference of normally open and normally closed relay contacts
- Explain differences in limit, proximity, and photo switches
- Review of 3 different output devices including valves, motors, and fans

CFC INDUSTRIAL TRAINING
7042 Fairfield Business Drive
Fairfield, Ohio 45014-5480
phone : 513-874-3225, fax : 513-874-3229
www.cfc-solar.com