

# ELECTRICAL

## LADDER DRAWINGS I & II

WE IMPROVE WORKPLACE SAFETY & PERFORMANCE

### TRAINING DESCRIPTION:

These 2 days of training are designed for both the beginner and the experienced electrical maintenance person. In today's workplace, the ability to effectively use the electrical ladder drawings for your machines and equipment is essential for working in a safe and efficient manner. The information provided in this seminar will cover electrical ladder drawings used by domestic and international manufacturers for both relay and PLC controlled machines and equipment.

Several multiple page electrical ladder drawings will be examined and discussed to compare the various symbols, cross-reference and numbering systems that are used. You will learn how to use these systems for troubleshooting by participating in instructor led examples.

A portion of this seminar is dedicated to international electrical ladder drawings, their basic symbols, and the standards that are associated to them. Actual international style electrical ladder drawings will be covered to explain the differences and similarities to standard ANSI style electrical ladder drawings.

You will also learn how to read and understand the different electrical ladder drawings used with PLC controlled machines and equipment. We will discuss the various symbols and terminology, and provide the student with information that is needed for troubleshooting these systems.

### TRAINING TOPICS:

#### DRAWING BASICS

- Drawing Types
- Laws and Facts
- Symbols
- Control and Power
- Input Devices
- Output Devices



#### NUMBERING AND GUIDANCE SYSTEMS

- Device Numbering
- Line, Wire and Multiple Page Numbering
- Guidance Symbols
- Print Examples

#### IEC DRAWINGS

- Device Symbols
- Print Example

#### TROUBLESHOOTING

- ANSI Ladder Drawings
- IEC Ladder Drawings

#### PLC DRAWINGS

- PLC Basics
- Logic Symbols
- Ladder Logic Vs. Ladder Drawings
- Troubleshooting Example

#### CLASS DISCUSSION AND REVIEW

**2-DAY  
TRAINING**

CLASS SIZE: UP TO 20  
CLASS LENGTH: 12 HOURS  
CLASS NUMBER: S\_E402

**Lewellyn**  
TECHNOLOGY