



Troubleshooting Programmable Logic Controllers 32 Hours

Course Description:

This course covers the need-to-know information necessary to troubleshoot most common PLC problems. Students will cover the components and their functions, how the PLC operates as a system and how to perform field operation and troubleshooting using a PC or laptop.

LOGIC OPERATION

- Basic Logic Operation
- Logic and Ladder Diagrams
- Relay Logic and Ladder Diagrams
- Boolean Algebra

NUMBER SYSTEMS, CODES, AND FORMATS

- Understanding the decimal, Octal, Binary, and Hexadecimal Systems
- Understanding the Various Coding Systems used in PLC Applications
- Converting from one Coding System to another
- Register Formats and Contents

PROGRAMMING TOOLS

- Functions of the Programming Tool
- Basic types of tools, their characteristics and Applications
- Factors to consider in the selection of a programmer

THE INPUT/OUTPUT SYSTEM

- Principle types and classes of I/O in interfaces
- Digital data vs Analog Data
- Word oriented interfaces and Selected smart Modules

PROGRAMMABLE CONTROLLER LANGUAGES

- Ladder Logic Programming
- Boolean Algebra Statements
- Higher Level Language Programming

SIZING AND SELECTION OF PROGRAMMABLE CONTROLLERS

- Estimating the Number of I/O modules required for an application
- CPU and Memory Sizing and Selection
- Interpreting the significance of I/o specs provided by the Manufacturer
- PLC Selection check list and Specification Development

INSTALLATION AND DIAGNOSTICS

- Basic Precautions for Installation and Checkout of a PLC
- Basic Requirement for Wiring a PLC
- Debugging and Diagnostic capabilities of a PLC

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