



## COURSE 7700

## PLC Controller Maintenance Logic Developer

### Overview

The Controller Maintenance - Logic Developer PLC course provides the student with the skills necessary to troubleshoot and repair faults in PLCs (90-30, 90-70, VersaMax, RX7i and RX3i). The class is taught using Logic Developer PLC software, which is part of the Machine Edition family of products and features the PACSystems RX3i Controller. The focus is on interpreting existing ladder logic programs for troubleshooting purposes. Students are taught how to use the troubleshooting tools to determine where faults have occurred and how to correct them.

### Topics

- Control System Fundamentals
- Application components and Logic Structure
- Basic Controller Variables, Data Types, and Numbering Systems
- Controller Scan
- Controller Hardware Overview
- System hardware components
- Finding Information
- Operating Proficy Machine Edition
- Orientation to programming environment and tools
- Best-Kept Secrets
- Projects and Targets
- Configuring Controller and IO
- Configure Controller, IO, and Option Modules
- Status indicators
- Assign Reference Addresses
- Hardware Reference View
- Import/Export
- Reports
- Working with Controllers
- Establish communications
- Project Validation
- Upload / Download / Verify
- Fault Tables
- Controller Status
- Working with Variables
- Variable concepts
- Variable Types
- Variable Access
- Variable attributes
- Introduction to LD Programming
- Basic operation
- LD Editor
- Basic LD logic elements (contacts, coils, counters, timers, and relational operators)
- Monitor LD logic execution
- Monitor Application Variables
- Data Watch, Data Monitor Utility, and Reference View Tables
- Modify application Variables
- Using Variable References
- Monitor Controller Without Original Project
- Modify Existing Program
- Working with Rungs
- Connecting LD Logic
- Creating New Variables
- Controller Equality Status
- Equality Status indicators
- Determine Controller component equality
- How to gain Controller and Project Equality
- Manage Controller Forces
- Detect and locate Controller Forces
- Clear and Unforce Variables
- Application Troubleshooting
- Using Search, Cross References, and References
- Controller and IO Faults
- Use Faults to diagnose system issues
- Fatal and Nonfatal Faults
- Clear and print Faults
- Save Fault Tables to file

### Prerequisites

Participants should be comfortable operating in a Microsoft Windows environment, and have a basic understanding of electrical/control fundamentals.

### Audience

This course is intended for anyone who will be troubleshooting GE Intelligent Platforms PLC control systems using Proficy Logic Developer PLC Machine Edition software. The course is designed for electrical technicians, electricians, and/or engineers beginning to work with Logic Developer PLC, who will be tasked with modifying and maintaining PLC programs and hardware.