



Proficy Logic Developer Machine Edition

Course Description

The **Proficy Logic Developer Machine Edition** course familiarizes the student with the control logic development tool suite used to program the entire family of GE Intelligent Platforms industrial control hardware. Emphasis is given to understanding and operating in the development environment, understanding the available logic development options, generating programs using the ladder logic language and communicating with control targets (90/30, 90/70, VersaMax, RX7i and RX3i PLCs).



Who Should Attend?

This course provides the opportunity for individuals who are or who will be involved in programming, operating and troubleshooting control systems using Proficy Logic Developer (PLC). The course is designed for electrical technicians, electricians, and programmers beginning to work with Proficy Logic Developer PLC or those tasked with developing, modifying and maintaining PLC programs.

Are There Any Prerequisites?

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

What Tasks Will Be Taught in This Class?

Upon completion of this course, the student will be able to:

- Describe Control System Architecture & Operational Fundamentals
- Describe Basic Systems & Components (Series 90-30 or 90-70 or VersaMax, RX7i or RX3i)
- Operate Proficy Machine Edition
- Establish and Utilize Communications to the Controller
- Create a New Project - Basic Configuration of the Controller
- Expand Controllers and Describe Specialty Modules
- Create a New Project - A Ladder Logic Program
- Explain Relay and Contact Logic Elements
- Explain Timer and Counter Functions
- Work with Numbers in Relational and Arithmetic Operations
- Work with Data Move and Numerical Operations
- Work with bit operations

Course Length: 4 days

Suggested Class Size: 8 students

Course Hours: 9:00 am – 5:00 pm



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Course Agenda *(Schedule and timing may vary.)*

Day 1

Morning

Control System Architecture and Operational Fundamentals

Introduction to basic components to develop factory automation. Identify major components of Controllers and what roles Controllers play in this architecture. Controller operating concepts – scan, logic solution and communication. Explain the different numbering systems terms.

PLC Controller Operation and Components

Associate the basic controller components and describe operation of a basic 90-30 (or other selected PLC

Afternoon

PLC Controller Operation and Components - cont'd

Operating Proficy Machine Edition

Orientation to the ME Programming environment and purpose of the tools. Define a project and what it contains and create a project and open existing projects. Import a folder from VersaPro.

Day 2

Morning

Controller Communications

Establish communication to a PLC over Serial and Ethernet connections. Validate and download ladder program. Upload a program. Verify PLC equality; Flash Memory; Monitor/change references; Force Boolean variables; Use the controller diagnostic capabilities; View controller status information.

Afternoon

Creating a Project

Create and name a new project. Provide project and target documentation. Navigate through the project.

Configuring the Controller and I/O

Configure a Series 90-30 CPU Module; Configure I/O modules; Correlate physical I/O with data points; Identify and correct configuration errors; Export hardware configuration file; Print a configuration report.

Day 3

Morning

Ladder Logic Programming

Program using Relay Ladder Logic language; Assign addresses and variables to the program element; Document the program; Make offline and online changes to the program; Use the Call function to execute ladder diagram blocks; Configure the ladder diagram editor options.

Relay and Contact Logic Elements

Interpret the functionality of each contact and coil types; Develop basic series and parallel logic; Use digital system status references; Use the data monitor utility; Create a data watch list.

Afternoon

Relay and Contact Logic Elements cont'd

Timer and Counter Function

Program ladder logic application programs using timer and counter functions; Access timer/counter data; Download, debug and test ladder logic programs using timers and counters.

Relational and Math Operations

Use relational and math instructions in a ladder logic program; Configure the display format for cells in a ladder logic diagram and in a reference view table.



Day 4

Morning

Relational and Math Operations cont'd

Basic Data Manipulation

Develop and debug ladder logic programs using conversion and data move instructions; Download and run the program.

Afternoon

Bit Operation

Develop ladder logic programs using Bit operations.

Advanced Programming Concepts and Specialty Hardware

Discuss the toolbox; State the purpose and use of Proficy View; List the other language, networking and specialty modules available.