

Delta PLC Programming and Industrial Automation

Course Description

This program focuses on Delta PLC hardware, WPLSoft / ISPSoft programming, ladder logic, industrial automation applications, and troubleshooting techniques. Participants gain hands-on experience with PLC wiring, programming, and problem-solving in real-time industrial automation scenarios.

Audience Profile

- Engineering students (Electrical, Electronics, Instrumentation, Automation)
- Industrial maintenance engineers
- Automation professionals and technicians
- Fresh graduates interested in industrial automation

Prerequisite

- Basic knowledge of electrical circuits and digital logic
- Familiarity with industrial automation concepts is helpful but not mandatory

Course Objective

- Introduce Delta PLC hardware and product range
 - Provide practical exposure to PLC wiring, configuration, and programming
 - Develop skills in ladder logic programming and troubleshooting
 - Prepare participants to implement automation solutions using Delta PLCs in industrial settings
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Module 1: Fundamentals of Automation & PLC

- Basics of industrial automation and control systems
- Introduction to PLCs and their role in automation
- Delta PLC product range overview (DVP, AS series)
- PLC hardware components and specifications
- Working principles and signal types (digital, analog)

Module 2: Delta PLC Architecture & Wiring

- PLC block diagram and working
- Power supply requirements and wiring
- I/O module addressing and configuration
- Interfacing sensors and actuators
- Hands-on wiring exercises with Delta PLC hardware

Module 3: WPLSoft / ISPSoft Software & Environment Setup

- Introduction to WPLSoft / ISPSoft
- Project creation and CPU selection
- Online/offline modes, uploading, and downloading
- Hardware communication (RS232, RS485, Ethernet)
- Hands-on: Connecting PLC to PC and basic program transfer

Module 4: Ladder Logic Programming Basics

- Ladder logic symbols and structure
- Bit logic instructions (NO, NC, coil, set/reset)
- Timer instructions (TON, TOF, TP)
- Counter instructions (CTU, CTD)
- Program debugging and simulation in WPLSoft / ISPSoft

Module 5: Intermediate PLC Programming

- Comparison and arithmetic instructions
- Move and data transfer instructions
- Internal relays and memory areas

Module 6: Troubleshooting, Diagnostics & Best Practices

- Common PLC programming errors and solutions
- Online monitoring and force testing
- Program backup and restore
- Safety guidelines in PLC automation

Practical Projects (Throughout Training)

- Motor start/stop with interlocking
- Traffic light control system
- Conveyor belt sequencing
- Automatic tank filling system
- Analog level control simulation
- Mini project combining multiple PLC functions