



PLC CONTROLS

Condensed Course Outline

PLC FUNDAMENTALS

- ☐ PLC definitions & terminology
- ☐ History & applications
- ☐ PLC components
- ☐ How PLCs operate
- ☐ PLC vs. computers
- ☐ Number systems

PLC HARDWARE & I/O

- ☐ CPUs & memory
- ☐ Programming terminals
- ☐ Data recording & retrieval
- ☐ Discrete I/O modules
- ☐ Special I/O modules
- ☐ I/O specifications

PROGRAMMING BASICS

- ☐ Hardwired vs. programmed logic
- ☐ Processor memory organization
- ☐ Program scan
- ☐ Bit-level logic instructions
- ☐ Instruction addressing
- ☐ Branch construction
- ☐ Internal relays
- ☐ Ladder logic entry
- ☐ PLC software

CIRCUIT CONVERSIONS

- ☐ Seal-in circuits
- ☐ Electrical interlocks
- ☐ Latching relays
- ☐ Relay-to-PLC conversions
- ☐ Program editing & commissioning
- ☐ Monitoring & debugging

TIMERS & COUNTERS

- ☐ On-delay & off-delay timers
- ☐ Retentive timers
- ☐ Up & down counters
- ☐ High-speed counters
- ☐ Timer/counter combinations

DATA & MATH INSTRUCTIONS

- ☐ Data manipulation
- ☐ Data transfer
- ☐ Compare instructions
- ☐ Math operations
- ☐ File arithmetic

SEQUENCERS & PROGRAM CONTROL

- ☐ Sequencer instructions
- ☐ Bit & word shift registers
- ☐ Subroutines
- ☐ Program control instructions
- ☐ Interrupts & fault routines
- ☐ Safety circuitry

PLC TROUBLESHOOTING

- ☐ Electrical noise & grounding
- ☐ I/O faults
- ☐ Processor issues
- ☐ Ladder logic troubleshooting
- ☐ Preventive maintenance