P.O. Box 340, Turtleford, SK, S0M 2Y0
Ph: 1-800-661-1663 Fx:1-877-845-3233
info@canada-training-group.ca

PLC Programming, Maintenance & Troubleshooting: Rockwell 500 Based PLCs

Cost: $2249.00

City & Prov	Dates	Code
Edmonton, AB	Apr 02, 2012 - Apr 05, 2012	OR12031
Halifax, NS	Sep 24, 2012 - Sep 27, 2012	OR12019
Richmond, BC	Oct 22, 2012 - Oct 25, 2012	OR12020
Winnipeg, MB	Dec 03, 2012 - Dec 06, 2012	OR12022

The first 2 days of this 4 day course will provide a solid foundation in PLCs for those with little or no programming experience and will be an invaluable refresher for those already acquainted. This comprehensive course utilizes simulation software to introduce programming, and industry standard PLC hardware to introduce hardware concepts. Participants will perform hands-on experiments connecting a variety of real world input/output field devices to the PLC. Skills needed to perform program changes will be learned as well as techniques for identifying hardware faults as participants learn how to interpret ladder logic for the purpose of troubleshooting.

The last 2 days will focus on Analog I/O. As such, the course will include discussions and activities involving Analog I/O hardware connection and configuration, plus advanced ladder logic instructions used when working with Analog I/O. This course utilizes a combination of simulation software and industry standard PLCs. Participants will complete a number of hands-on exercises involving the connection of analog field devices into process systems and will create and download various programs to operate them. This course builds upon participant's knowledge of troubleshooting techniques by using the programming software to interpret, isolate, and diagnose problems.

Hardware: PC Laptops; Allen Bradley Micrologix 1500 PLCs
Software: Rockwell 500
Emulation: Logixpro

Who Should Attend:
Engineers, Electricians, Instrumentation Mechanics, Technicians, and Maintenance Managers

PLC ORIENTATION AND ANALYSIS
Objective: Describe the evolution of the PLC and how it controls industrial processes.
SUBTOPICS:

- Introductions
- Origin and evolution of the PLC
- Types, applications
- Parts of a PLC
- Programming methods/ devices

LADDER LOGIC PROGRAMMING
Objective: Demonstrate how to write simple programs utilizing standard PLCs.
SUBTOPICS:

- Ladder logic
- PLC terms
- Relay Instruction palette
- Write programs
- Simulation exercises

PLC I/O ADDRESSING AND PRINT READING
Objective: Demonstrate how to read ladder logic diagrams, interpret I/O data tables and addressing.
SUBTOPICS:

- Memory map, image tables, program scan
- I/O field device connections
- Data addressing
- Programs created and run on trainer

PLC MAINTENANCE AND TROUBLESHOOTING
Objective: Apply concepts and theories in a practical manner.
SUBTOPICS:

- Hardware exercises programmed
- Installation and execution on PLC trainer
- Examination and review

PLC FOUNDATION AND MACHINE LANGUAGE
Objective: Learn the programming vernacular and the applications of machine logic.
SUBTOPICS:

- Foundational review
- Number systems used by PLCs
- Negative numbers and error codes
- ASCII encryption

PLC ADVANCED PROGRAMMING
Objective: Assemble basic commands to achieve complex processes.
SUBTOPICS:

- From discrete bits to data words
- Key to advanced instructions: Moving the words around
- Some Useful Advanced Instructions
- Write programs
- Simulation exercises

PLC ANALOG APPLICATIONS
Objective: Learn the interactions and applications of analog and digital components.
SUBTOPICS:

- PLC Analog components and operations
- Installing analog I/O modules
- Configuring analog modules

- Analog I/O field device connections

PLC HANDS ON SKILL DEVELOPMENT
Objective: Prove the practical skills learned during training.
SUBTOPICS:

- Hardware exercises programmed, installed and run on trainer
- Reinforcement and wrap up

"Very informative and thorough with regards to all aspects of PLC operation, hook up and maintenance."
- Derek Blake, Electrician, Ushitau

"I thought this course was great. I really enjoyed the hands on and the simulator exercises. This course was very useful and practical to my job."
- Dwain Shannon, Technician, CBC Transmissions

"Great content that starts at a very basic level and steadily builds up. If you are new to PLC's, this course is the right place to start. It is a really good refresher for experienced people as well."
- Kevin Taylor, Electrical Engineer, SaskPower

"I liked how much detail the course went into and how challenging some of the exercises were. The troubleshooting was also great and encouraged us to think."
- Francis Mlilo, Plant Technologist, SaskPower

"I thought this course was well organized and very useful for a broad spectrum of attendees. I would recommend it as an excellent course to all people who will be working with PLC's."
- Bob Doerr, Electronic Technician, SaskPower

Highly recommended!! Anyone interested in PLC's, this is the course is a must.
- Chris Edmunds, BC Ferries