



Allen-Bradley PLC-5 Intermediate I Programming & Troubleshooting Module: 202

Ladder logic programs often contain a combination of contacts, coils, timers, and counters with additional instructions manipulating data in the program at the word level. The Intermediate I course explores the compare, compute, data conversion, file manipulation, block transfer, and message instructions. Programs using these instructions include data gathering, calculations, date and time stamping, shift reports, data concentration, totaling, averaging, etc.

The Intermediate I course develops the skills necessary to trace the flow of word information into, through, and out of logic programs using the word and file manipulation instructions. This additional programming knowledge provides the ability to comprehend and troubleshoot detailed control circuits. In addition, the system status and diagnostic data is reviewed and used to help diagnose and solve in-plant control problems quickly. *This course is conducted using Rockwell RSLogix-5, 6200, or Advanced Interface (AI) software, depending on student preference.*

Objectives

- Refresh knowledge of the major functional components of the Allen-Bradley PLC-5 programmable control system.
- Explore in detail the data table files and the additional file types present in the Enhanced versus Classic controller.
- Discuss how to take advantage of program files as subroutines and in the Enhanced controller as active program files.
- Discover the impact multiple active program files have on the processor scan sequence and the overall contribution to system performance.
- Refresh knowledge of the contact, coil, timer, and counter instructions.
- Explore and test the functionality of the comparison, math, data conversion, file manipulation, message, and block transfer instructions.
- Apply these instructions to create and test your own programs in extensive hands-on lab sessions designed to stimulate and develop a logical approach to problem solving.
- Explore the fault, processor input interrupt (PII), and selectable timed interrupt (STI) subroutines.
- Understand the block transfer instructions, BTR and BTW, and what they are used for.
- Read and write information on the Data Highway Plus (DH+) network using global data and the message instruction.
- Create methods to test programs, develop traps, and to follow the flow of information through a series of instructions.
- Develop advanced troubleshooting skills, learn to gather clues to help eliminate non-problem spots, and draw attention to possible problem areas. Isolate hardware and software problems from field device problems.