

[Allen Bradley Combined SLC500 and ControlLogix](#)

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Software	RSLogix 5000
Duration	5 Days
PLC-Type	SLC500 PLC / ControlLogix
Pre-Requisites	No prerequisites this is a beginners course
Maximum Delegates	6

Brief Description

- * Be able to troubleshoot an SLC 500 and ControlLogix PLC system in a competent and confident manner
- * Be able to recognise SLC500 and ControlLogix hardware and be able to replace modules when a fault occurs.
- * Be able to operate the Allen Bradley software to make it perform certain tasks.
- * Understand basic instruction set and be able to make minor modifications to software.
- * Be able to backup and restore a PLC program when required.
- * Be able to perform basic system diagnostics when a problem occurs.

Course Documentation

- * Training Log
- * Pre Course Exercises
- * Course Exercises
- * Post Course Exercises
- * Filofax Pocket Reference Guides x 2

Course Content

To fault find a system you need to know EXACTLY how it works HOW EXACTLY DOES A PLC WORK?

- * Am I getting the input to the PLC?
 - * The Led on the output card means i am getting voltage out right? does it?
 - * What exactly happens in between? ,theres more than just a program in the CPU
 - * How exactly does it scan the program?
 - * What is this Watchdog Timer? Is it that important?
 - * Can I use the same output twice? That's bad programming isn't it?
 - * A PLC is a logic controller, so use a logical approach to fault find it.
 - * What are the 8 simple test points to check?
 - * The PLC is in RUN, that means theres a program right? does it?
 - * FORCING a bit and toggling a bit is pretty much the same yeah? depends on which PLC
- Then you need to Know the specifics HOW DO I DO THE FOLLOWING? (some straight forward some not so)
- * Check power is ON and PLC is in right mode (RUN or Program)
 - * Check LEDs for fault definition
 - * Check and Change Modules if required (with spares and without spares)

- * System connection
- * Establish link to PLC (RSLinx, a major problem area these days)
- * Create a blank project and take a backup (just in case I mess up)
- * Open the correct project Off Line and link to PLC
- * Interrogate errors in Status table
- * Identify if it is a hardware or software fault?
- * Identify if it is a PLC or Comms fault
- * Change the battery
- * Check all settings against a template, Node Address etc.
- * Check Hardware Configuration
- * Clear Memory and Download program
- * Check software against latest copy (Compare function)
- * Monitor program
- * Searching for specific operands and instructions
- * Changing timer, counter values On Line
- * Making minor mods Off Line and On line
- * Check or create a Custom Monitor table to establish parameter status
- * Create a Histogram to monitor address transitions
- * Create a Trend to trend address status or values
- * Altering timer, counter and other data table values if required
- * Force a parameter if required
- * Toggling addresses to move program on in sequence
- * Call up documentation to assist with software diagnostics
- * Printing Cross Reference / Program Listings etc. Background information also covered

Understanding of the following:

- * Number formats, bits, words,
- * Binary, floating point, integer
- * Program blocks and Data Tables, B3, T4, N7 etc
- * How to monitor various blocks
- * Understand basic Ladder programs
- * Basic Instructions, contacts, Set, reset etc.
- * Timers, Counters
- * Comparators, Maths
- * Altering values in a data table
- * Toggling v Forcing
- * Back tracking through a program to establish where power flow stops
- * Overall reset procedure
- * Fault finding tips

Equipment

- * SLC500 and ControlLogix PLC
- * PC or Laptop
- * Simulator

Solutions, Not Courses.