

Learn how to setup, configure, and program the **Allen-Bradley ControlLogix Family** of Programmable Automation Controllers in **PAC Basics**

Level 1 Lesson Topics:

(Included with Standard and Extended courses)

Hardware

- Design of System
- Overview of System Components
- ControlLogix Controller Anatomy
- Manuals and Documentation

Software

- Packages and Versions
- RSLogix 5000 vs Studio 5000
- Update: Windows Patch Issues
- RSLogix and Studio 5000 First Look
- Controller Properties
- Tasks, Programs, Routines, Tags

Communications

- Ethernet and ControlNet Addressing
- How to setup RSLinx Classic Drivers
- Flashing Controller and Module Firmware

Programming

- Adding Local, Ethernet, and ControlNet I/O
- Testing and Troubleshooting I/O Config
- Controller and Program Tags
- How Ladder Logic Diagrams (LD) differ in ControlLogix compared to A-B PLCs & SLCs
- Creating a Motor Control Ladder Routine
- Using Photo Eyes for Part Sensing (LD)
- How Function Block (FBD) Routines work
- Create a Machine Runtime FBD Routine
- How User Defined Data Types (UDT) work
- Create and use UDTs in Part Counting

Level 2 Lesson Topics:

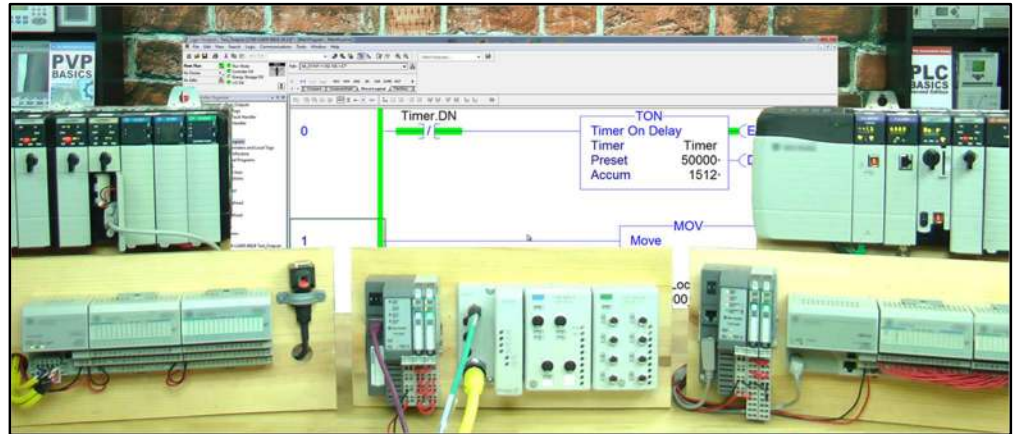
(Included with Extended course only)

Advanced Programming

- How Structured Text (ST) Routines work
- Calculate Scrap Ratios using ST Routine
- Sequential Function Chart (SFC) Routines
- Part Count, Copy, Reset Routine using SFC
- Changing a Project's Version
- Duplicating and Re-using Code
- How Add-on Instructions (AOI) work
- Create, Download, and Use AOIs
- Using PlantPAx Objects AOIs
- Using Produced and Consumed Tags
- Messaging ControlLogix Controllers
- Messaging Controllers over DF1
- Messaging Controllers over DH+
- Messaging Controllers over Ethernet
- Bonus: Legacy PLC Comm Setup

VFD Integration (Digital Only)

- PowerFlex VFD Integration
- Using LD and VFDs for Motor Control
- Using FBD for VFD Motor Control
- Controlling VFDs over Ethernet



PAC Basics is designed for those students who are already familiar with PLCs, and would like to learn how to setup, program, and troubleshoot the ControlLogix family of Programmable Automation Controllers (PACs) using RSLogix 5000 and Studio 5000.

What students will learn:

- Understanding the overall design of ControlLogix system and components
- How to configure a system's Controllers, I/O, and Communications Modules
- How to setup Ethernet, Serial DF1, and USB drivers in RSLinx Classic
- The difference between RSLogix 5000 and Studio 5000
- How to setup, configure, and edit RSLogix and Studio 5000 projects
- How to add, edit, and test Local, Ethernet, and ControlNet I/O
- Understanding Controller and Program tags
- How to create and edit Tags and Aliases
- How to setup, configure and edit Tasks, Programs, and Routines
- Understanding how Ladder Logic differs in ControlLogix when compared with other PLCs
- How to create, test, run, and troubleshoot Ladder Diagram Routines
- Understanding Function Block Diagram Routines, and how they Execute
- How to create, test, run, and troubleshoot Function Block Diagram Routines
- How to create and use User Defined Data Types
- And many additional advanced topics in the **Extended Edition**

What students need to complete hands-on exercises:

- Windows 7, 8, or 10 PC with Ethernet or USB
- A CompactLogix or ControlLogix PAC with a communications port compatible with the student's PC (Ethernet, USB, etc.)
- A version of RSLogix 5000 or Studio 5000 that is compatible with the student's PC, and with the student's CompactLogix or ControlLogix PAC

Course Editions (Note: Online courses include instructor support, completion certificate, and lifetime access for a single user)

- **TAS-PAC21-O** PAC Basics Standard Online Course (Level 1 Topics, upgradeable to Extended) **\$99⁹⁹**
- **TAS-PAC22-O** PAC Basics Extended Online Course (Level 1 and Level 2 Topics) **\$199⁹⁹**

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