

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

Standard Course Lessons:

(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

Advanced Course Lessons:

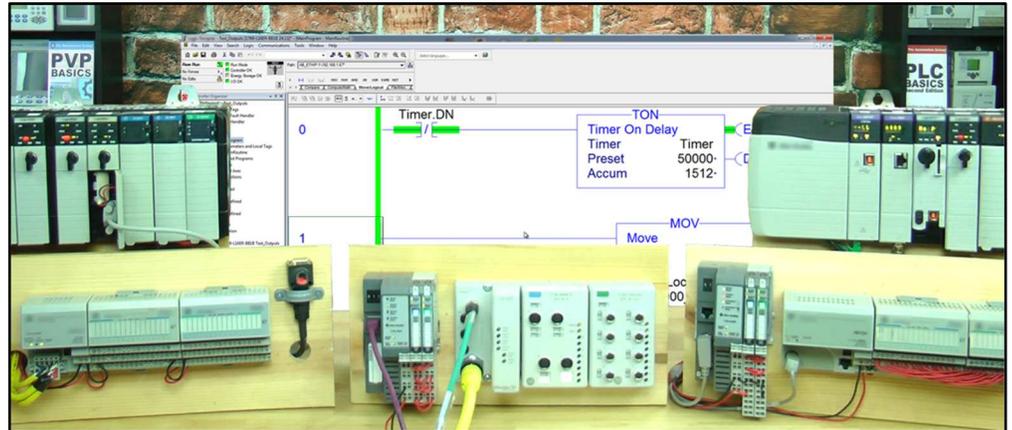
(Included with Extended course only)

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)

- **PAC Basics Standard Online Course** (upgradable to extended online course) **\$119**
- **PAC Basics Extended Online Course** (includes all Standard and Extended lessons) **\$349**
- **PAC Basics Extended DVD Course** (does not include "digital only" VFD lessons) **\$349**

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The Automation School's Group Enrollment Program

The Automation School offers group enrollment to our business customers who need to enroll multiple employees in one or more of our courses.

Employers who utilize group enrollment gain access to several benefits, including group discounts based on the number of students being enrolled.

Our group enrollment program also provides employers with the ability to track student progress using a complimentary "group progress" webpage accessible to designated "group leaders."

This webpage not only allows the tracking of student progress, but also provides individual quiz scores and overall completion status. Access to this level of detail has been especially helpful to employers who incentivize their employees to successfully complete the courses they're enrolled in.

And just like with standard enrollees, students enrolled through the group enrollment process will have access to their courses *for as long as they are employed by the company who enrolled them*, as none of our courses come with any artificial deadlines or expiration dates.

So, if you're considering enrolling three or more employees in courses at The Automation School, I invite you to reach out to us for a free group enrollment quote.

Sincerely,

Shawn Tierney,
Instructor and Founder, The Automation School

Common "Group Enrollment" Questions

"What do I need to provide you with in order to enroll a group of employees in online courses at The Automation School?"

First, in order for us to provide you with a group enrollment quote, we'll need to know how many students you want to enroll (minimum of three,) and which courses you wish to enroll them in. This information can be submitted to us using our Group Enrollment Inquiry Form [HERE](#).

Then when you place your group enrollment order, you'll need to provide us with the name of each student as well as their company email address. If you wish to make use of the student tracking webpage, we'll also need at least one group manager's name and email address as well.

"After enrolling a group of employees, if one of them leaves my department or our company can I pass that seat onto to a replacement?"

Yes! As long as the original enrollee has not completed more than 25% of the course, we can pass the former enrollee's seat on to a new employee *totally free of charge!* If the original student has completed more than 25% of the course, their seat can be re-allocated at a pro-rated cost (*i.e. if the previous student completed 50% of the course, reallocating their seat would cost 50% of a new seat*)

"How can I find out more about enrolling a group of my employees in online courses at The Automation School?"

To get in contact with us about group enrollment, just fill out our short Group Enrollment Inquiry form [HERE](#), and we'll typically get in touch with you within one business day!