



Business Industrial Network

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Federal Contractor #: 5BC72

DUN # 829394449 (Veteran Owned Small Business)

A+ rating with the Better Business Bureau

5 Day - PAC Training CompactLogix w/Digital Field Device Simulator

The curriculum for this series is designed for electricians, technicians and engineers that have little or no experience with programmable automation controllers (PAC). **It is a prerequisite for this 3-day course that attendees have past training and/or experience with PLCs.** It is also suitable for technical personnel with experience using controllers other than Allen Bradley as well as those that need a refresher. The course starts at the most fundamental level with PACs and progresses with each additional Lecture/Lab combination.

The primary hardware platform used in this course will be CompactLogix with RSLogix5000 programming software. With the expansive range of concepts to cover with the Logix Engine, any discussion of older hardware platforms (RSLogix500/PLC) will be incidental in clarifying the 5000 Logix Engine.

Upon completion of this course, the learner takes away a solid understanding of what a Programmable Automation Controller is, how PACs are implemented and the necessary skills to analyze ladder logic diagrams for the purposes of troubleshooting, editing existing logic and adding new logic to integrate process improvements of the process/machine controlled by the PAC.

The learner will take away a solid understanding of what a PAC is, how PACs are implemented, and the necessary skills to analyze ladder logic diagrams for the purpose of troubleshooting the processes/machines controlled by a PAC. Attendees take home the project manual and a bonus disk that includes useful information and hardware manuals.

Some of the lecture subjects and supporting lab projects with a real PAC:

Computer hardware and operating systems on the shop floor

What is a programmable automation controller?

What is machine control and what is process control?

Mastering RSLinx w/Ethernet & RS232 on the shop floor – *reducing downtime...*

Using RSLogix5000 as a troubleshooting tool – *reducing downtime...*

Troubleshooting PAC Hardware – *reducing downtime...*

Recognizing and troubleshooting communication protocols and adapters...

Troubleshooting manufacturing processes with RSLogix5000 to *reduce downtime...*

Certification

A Certificate of Completion will be available for all attendees.

I. Day One

- A. Evolution of Electrical Control Systems, Classroom warmup...**
- B. Lab Session – RSLinx**
- C. Basics of Industrial Controllers – P1**
- D. Lunch Break**
- E. Lab Session – Creating a Project, adding I/O**
- F. Basics of Industrial Controllers – P2**
- G. Lab Session – Downloading and Keyboard Surfing the Data Table**
- H. Daily wrap up...**

II. Day Two

- A. RSLogix5000 – Graphical User Interface**
- B. Lab Session – Module Defined Data Types**
- C. Electrical control circuits and I/O Interfaces**
- D. Lunch**
- E. Lab Session - Module Defined Data Types**
- F. Evolution of Computer Control**
- G. Lab Session Ladder Logic Diagram Instructions**
- H. Daily wrap up...**

III. Day Three

- A. Lab Challenge One Pt 1 & 2, a Practical PAC Programming Example**
- B. Lab Session - One Shot Instruction – ONS**
- C. Lab Session - Timer Data Types**
- D. Lab Challenge One Pt 3 & 4, a Practical PAC Programming Example**
- E. Lunch**
- F. Lab Session - Counter Data Types**
- G. Challenge One Pt 5 & 6, a Practical PAC Programming Example**
- H. Challenge One Pt 7, a Practical PAC Programming Example**
- I. Lecture/Demo 6 - Controller and I/O Hardware**
- J. Daily wrap up**

IV. Day Four

- A. Understanding Arrays used in LLDs.**
- B. Lab Session – Misc.**
- C. Lab Session – Math & Logical**
- D. Lab Session – GSV/SSV**
- E. Lunch**
- F. Lab Session – Machine Sequencing**
- G. Lab Session – Machine Sequencing**
- H. Daily wrap Up**

V. Day Five

- A. Lab Session – Machine Sequencing**
- B. Communication between Controllers**
- C. CIP Messaging**
- D. PWM/PTO Welder Lab Challenge**
- E. Analyzing PLC program logic.**

VI. Fill in activities or Day Five

- A. Industrial Garage Door Opener**
- B. Plant Air Compressor Rotation Scheduling Lab Project**
- C. Loading, using, and maintaining Rockwell Software revision.**

Upon completion attendees will have learnt to work with PLCs safely and reliably while using best practices. They will be able to upload & download programs, modify existing programs, and troubleshoot using a PLC while minimizing downtime after taking this course.