RSLogix 5000 Training Seminar

Programming in Ladder Logic with Rockwell's RS 5000

Industrial and Building Automation Training:

Prerequisite: Attendees have had PLC training and/or experience with PLCs before attending this RSLogix 5000 training.

Date: Sept. 26-28, 2017 Location: St. Louis, MO.

(This class will fill quick, register before August!)

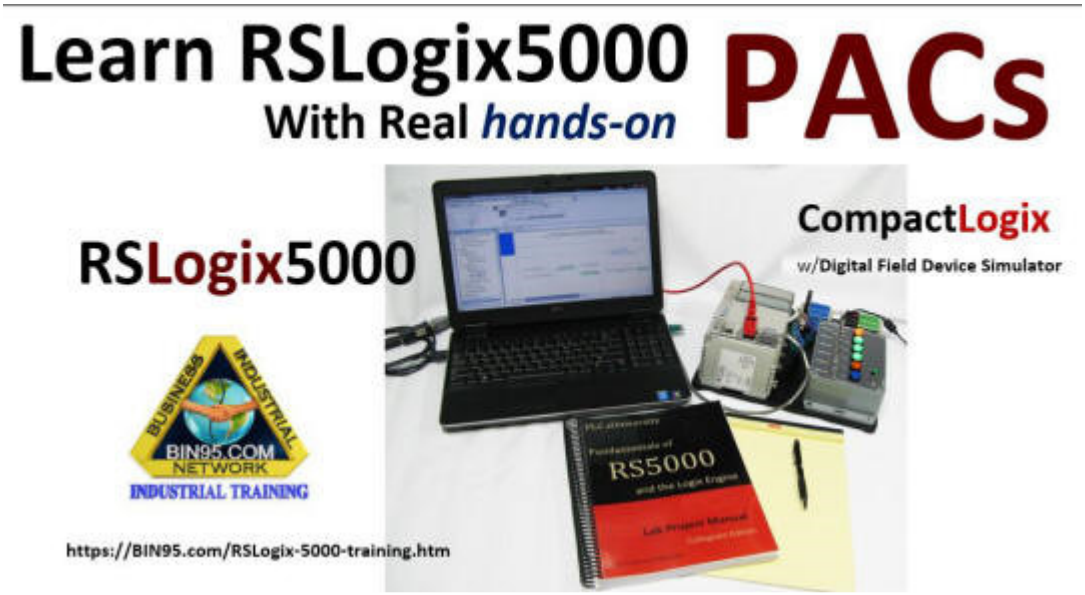
Register now with form on last page or online at https://bin95.com/rslogix-5000-training.htm

---

This 3 day RSLogix 5000 training seminar / workshop is a must for industrial and building automation professionals. It is phase 1 of PAC training; programming ladder logic with Rockwell - Allen Bradley's RS 5000. (2.4 CEUs) In following BIN95's prime directive of providing you the Best for Less, you will find our Compactlogix / Logix 5000 hands-on PAC training seminar lower cost than other providers. Additionally, we will provide each attendee with ...

☑ A free copy of the PLC programming project manual *($150 value)*
☑ An extra information CD
☑ Our PAC computer based certificate course CD *($199 value)*
☑ And our Structured Text Course CD! *($99 value)*

Undeniably, The Best for Less!



RSLogix 5000 Seminar Overview:

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 RSLogix 5000 programming software. With the great range of concepts to cover within the RSLogix 5000 PAC platform, any discussion of older PLC hardware platforms (RSLogix 500/PLC) will be only incidental in clarifying the Logix 5000 Engine. If person being registered for this PAC training seminar has not had require previous PLC training, we have a PLC training seminar schedule the week before this one. They can register for both that seminar and this one. See https://bin95.com/St-Louis_PLC_Training.htm

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 ladder logic and adding new ladder logic to implement process improvements of the process/machine controlled by the PAC.

Some of the lecture subjects and supporting lab projects using 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…

Each attendee on successful completion of this course will receive a Certificate of Completion with (2.4 CEUs) on it.

RSLogix 5000 Training Course Curriculum:

Day One – An Introduction to Industrial Automation

A. Lecture Session 1 – **Evolution of Electrical Control Systems**

1. Evolution of Machine/Process Control
2. Manual Control
3. Semi-Automatic Control
4. Automatic Control

B. Lab Session 1 – **RSLinx**('RSLinks'?)

1. Demonstration - RSLinx Classic Overview
2. Lab Session
    a) Using the laptops, cables and controller hardware at stations
    b) RSLinx Configuration
    c) DF-1 RS-232 driver
    d) Ethernet Driver
    e) Browsing RSWho
    f) Drilling down in RSWho
    g) Saving RSLinx Configurations
    h) Lab Discussion

C. Lecture Session 2 – **Basics of Industrial Controllers**

1. Programmable Logic Controllers – 75 minutes
2. Relay Coils and Bits of Memory
3. Number Systems – Millions of bits, how to organize…
4. Memory Structure
5. Field Devices
6. States of Memory Locations
7. Memory Mapping
8. Photoelectric sensors, sinking and sourcing

Lunch Break

E. Lecture Session 3 – **RSLogix 5000**

1. GUI layout
2. Main Menu
3. Sub Menus – Relevant Features only
4. Context sensitive features
5. Creating a new project
6. The memory map for this processor
7. Program files
8. Data files
9. File Types
10. I/O Files
11. Survey of the Instruction set
12. Difference between Online and Offline
13. Establishing communication with industrial controllers

14. Identifying controller program files, online, offline and archived…
15. Protecting the active program files in use and saving program files correctly

F. Lab Session 2 – **Creating a Project, adding I/O, Downloading and Keyboard Surfing the Data Table**

1. LAB Intro Demo
2. Lab Session
    a) Create a project
    b) Saving a project
    c) Downloading a project
    d) Going Offline/Online
    e) Configuring a Hardware Image
    f) Working with Module Defined Data Types
    g) Keyboard Surfing the Data Tables

G. Lecture Session 4 - **Electrical control circuits and I/O Interfaces**

1. Electrical vs. Ladder Logic Diagrams
2. Continuity versus True
3. No Continuity versus False
4. True Stop & False Start with True for seal-in.
5. Field Device State versus True-If-ON and True-If-OFF instructions.
6. Electrical control with sensors and relays
7. Multiple device control
8. PLC control with sensors and bits

H. Lab Session 3 – **Module Defined Data Types**

1. Lab Intro Demo
2. Lab Session
    a) Base Tags and Keyboarding the database
    b) First Rung
    c) Using I/O data types in logic
    d) Just for Fun 01
    e) Sneak Peek 01 – The Logix 5000 Engine
    f) Addressing bits in the Output Image
    g) Lab Discussion

Day Two – PLC Hardware and Basic Programming

I. Lecture Session 5 - **Evolution of Computer Control**

1. Single board computer control
2. Optical isolation with Opto-22
3. Expanding the limited I/O interface
4. Backplanes, data and control
5. PLC Input State Acquisition, Program Scan & Output State Update
6. A rack of memory
7. Chassis
8. I/O Modules
9. Memory layout
10. Timers, counters

11. Internal bits/words
12. Flexible memory mapping
13. Chassis
14. I/O Modules
15. Memory layout
16. Timers/Counters
17. Bits/Words
18. Active backplanes vs. passive backplanes
19. Program Files vs. Data Files
20. Field Circuits – I/O Module types
21. Input devices
22. Output devices

J. Lab Session 4 – **Ladder Logic Diagram Instructions**

1. Lab Demo
2. Lab Session
    a) Exploring the Logix 5000 Engine
    b) Buffering I/O Memory
    c) Just for Fun 02
    d) Logic that Remembers
    e) Aliasing Tags, adding descriptions
    f) Edit existing tags vs Creating a new tag
    g) Mode and Power Cycles
    h) Lab Discussion

K. Challenge One Pt 1 & 2, **Practical Application Example**

1. Part One
2. Part Two
3. Lab Discussions

Lunch Break</0>

M. Lab Session 5 – **One Shot Instruction – ONS**

1. Lab Demo
2. Lab Session
3. Lab Discussion

N. Lab Session 6 - **Timer Data Types**

1. Lab Demo
2. Lab Session – pg 155 – 169
    a) TON
    b) TOF
    c) RTO
    d) Lab Discussion

O. Challenge One Pt 3 & 4, **Practical Application Example**

1. Part Three
2. Part Four
3. Lab Discussions

P. Lab Session 6 - **Counter Data Types PAC/PLC Programming Examples**

1. Lab Demo
2. Lab Session – pg 180 – 186
    a) CTU – CTD - RES
3. Lab Discussion

Q. Challenge One Pt 5 & 6, **PAC/PLC Programming Examples**

1. Part Five
2. Part Six
3. Lab Discussions

Day 3 - Deeper into RSLogix 5000 & Compactlogix

R. Challenge One Pt 7, **Practical Application Example**

1. Part Seven
2. Lab Discussions

S. Lecture/Demo 6 - Controller and I/O Hardware

1. Removing, relocating and adding I/O modules
2. Kids, lids and space cadets – Setting up your display
3. Going Online with a processor without an offline project open
4. Going Online with an Offline project
5. Searching the project
6. Cross reference

T. Lecture Session 7 – **Understanding File Stacks used in LLDs**

U. Lab Session 7 - **Misc. File Stacks**

1. Lab Demo
2. Lab Session – pg 213 – 235
    a) Arrays
    b) Comparison Instructions
    c) EQU
    d) NEQ
    e) GRT
    f) LES
    g) LEQ
    h) GEQ
    i) MEQ
    j) Compound Comparisons
    k) LIM
3. Lab Discussion

V. Lab Session 8 – **Math & Logical PAC/PLC Programming Examples**

1. Lab Demo
2. Lab Session – pg 236 – 269
    a) ADD – SUB
    b) MUL _ DIV
    c) MOV
        (1) Just for Fun 03
    d) MVM

e) AND
(1) Just for Fun 04
f) OR – Bit wise
(1) Just for Fun 05
g) XOR
(1) Just for Fun 06
h) SWPB
i) NOT
j) BTD
(1) Just for Fun 07

3. Lab Discussion

Lunch Break

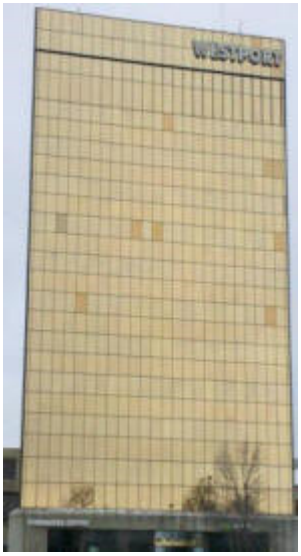
X. Lab Session 9

1. Demo – User Defined Data Types, GSV/SSV
2. Lab Session
3. Lab Discussions

Y. Lab Session 10 - Sequencing

1. Lab Line up and Introduction
2. Lab Session – pg 273 – 346
   a) Virtual Cylinders
   b) The Virtual Machine
   c) Sequence of Operation
   d) More Cylinders
   e) Sequencing with OTL/OTU logic
   f) Sequencing with Seal-In logic
   g) LEQ
   h) GEQ
   i) MEQ
   j) Compound Comparisons
   k) LIM
   l) Lab Discussion

Z. Wrap Up



RS 5000 Seminar Location:

Westport Gold Tower
111 West Port Plaza Dr., 10th Floor, Saint Louis, MO 63146
Located in heart of west port plaza, home to the best food, shopping and entertainment in St. Louis. Tap above link for map and nearby hotels.

← Westport Gold Tower (pictured on left) is your landmark so you know you are in the right place. It has Starbucks on 1st floor, our training on 10th floor. Can be seen from I-270 and anywhere in West Port Plaza complex. If you have problems, see our receptionist on 6th floor.

St. Louis, MO. Schedule: SEP 26-28, 2017
8:00am - Class Starts
12:00 - 1:00pm Lunch
5:00pm - Class Ends

Cost: Only $1450 *(After deducting value of free learning material provided with the seminar, your effective cost is only $1000 !!)*

The Best for Less !
(This class will fill quick, register before August!)
https://bin95.com/rslogix-5000-training.htm
Seminar fee does not cover meals, travel or hotel. But Lunch is on us!

Extras – Time permitting

1. **Maintaining Rockwell RS5000 Software revisions**
2. **Analyzing PAC program ladder logic**

RS Logix 5000/Compactlogix Instructor:
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.

The instructor for this class will be Tim ("The PLC Professor"), who has given hundreds of classes on the RSLogix 5000 PAC automation control platform since 2003. In the past, Tim has developed and delivered training for Rockwell Automation as well as being an R&D Testbed engineer for them. So, all of attendee's **Logix 5000, ControlLogix, CompactLogix** question will be able to be answered on the spot.

ControlLogix Training Registration

Learn RSLogix 5000 used for ControlLogix PAC (& Compactlogix PLC)

(*Note: Some refer to ControlLogix and CompactLogix as a PLC, actually they are a PAC.*)

ControlLogix training registration for Saint Louis, MO 63146.
Schedule: **Register Now** for **Sep 26 - 28, 2017**
(This will fill quickly. Register before Aug 2017)
To register online, see https://bin95.com/rslogix-5000-training.htm
This PAC course is also offered as On-Site PAC Training

Seminar Fee ...
$1450.

Registration Methods ...
1) **Online** (This page)
2) **Fax** (314) 584-7099
3) **Phone** (573) 547-5630
4) **Mail** this form to ...
Business Industrial Network
2 Cityplace Drive, Suite 200,
Saint Louis, MO 63141
5) **Email** all form information to
Training@bin95.com

Person submitting form:

Name

Title: Email:

Company Name:

Address:

City: Zip: State/Prov:

Phone: Fax:

---

3 Day Course Date: Sep 26-28 2017 in St. Louis $1450

(This will fill quickly. Register before Aug 2017)

Seminar Attendees:

Check mark this box to **confirm all attendees below have already had PLC training and/or experience**, as PLC training is a required prerequisite for this RSLogix 5000 PAC course. **>>>**

(Note: *If person wanting RSlogix 5000 PAC training has not had required PLC training, we have a 3-day PLC training seminar the week before this one. So, you can register them for that seminar too. See https://bin95.com/St-Louis_PLC_Training.htm for PLC*)

Name: Title:

Name: Title:

Name: Title:

Name: Title:

Payment Method: Amount to be charged per **attendee** is indicated by course selection above.
Please enter your credit card information below before submitting this secure form. You will also need to submit this form with contact information above filled out when paying with Check. When paying by PO, please fax copy of PO to 314-584-7099

Visa MasterCard AMX Check Enclosed (pay to Business Industrial Network) PO copy Sent

Card Number:

Expiration Date: Card Code:

Name on Card:

Signature:

Register online at https://bin95.com/rslogix-5000-training.htm

- Thank You -