

TRAINING COURSES AND INFORMATION

Training by seasoned PLC veteran Doug Bell of InterConnecting Automation, Inc.

Do you need training courses for PLCs near you? Would you be interested in PLC training focused entirely on *DirectLOGIC* products? Would you be interested if the class was taught by someone who has used many of our products to solve difficult real-world application problems? Would you be even more interested if the training was held in a city near you? We thought so!

2004-05 Training Schedule *

PLC Training

- Atlanta, GA March 2 - 4, 2004
- Irvine, CA April 6 - 8, 2004
- Charlotte, NC May 4 - 6, 2004
- Orlando, FL June 22 - 24, 2004
- Las Vegas, NV Sept. 28 - 30, 2004
- Cleveland, OH Nov. 2 - 5, 2004
- Irvine, CA February 1 - 3, 2005
- Atlanta, GA April 5 - 7, 2005
- Milwaukee, WI May 10 - 12, 2005
- Orlando, FL June 28 - 30, 2005

Advanced PLC Training

- Dallas TX February 10 - 12, 2004
- Milwaukee WI March 23 - 25, 2004
- Atlanta GA May 11 - 13, 2004
- Atlanta GA May 18 - 19, 2004 (PID)
- Irvine CA June 1 - 3, 2004
- Las Vegas NV October 5 - 7, 2004
- Atlanta GA December 7 - 9, 2004
- Atlanta GA December 14 - 15, 2004 (PID)
 - Milwaukee WI March 1 - 3, 2005
 - Atlanta GA April 26 - 28, 2005
 - Atlanta GA May 3 - 4, 2005 (PID)
 - Irvine CA June 7 - 9, 2005

* Dates and cities subject to change. Confirm at time of class reservations.

If your city isn't listed here, or if you need an on-site class, custom class etc., then please call the folks at InterConnecting Automation. They can usually create a class to suit a wide variety of special requirements.

Mr. Doug Bell of InterConnecting Automation, Inc. has been using our products and competitive products for almost 20 years.

He has years of design and consulting experience, has been the focus of PLC magazine articles, and now offers PLC training classes taught at various locations around the country.

Mr. Bell started his career as an Electronics Technician on the factory floor at Crown Cork & Seal, one of the world's premier suppliers of cans and closure systems. So, he can relate to the day-to-day problems associated with using and troubleshooting PLC systems. After his stint at Crown, he established a very successful design firm that designs and implements control applications, including programming and startup. Here's a brief list of Mr. Bell's qualifications and applications experience:

- Almost 20 years of experience in PLC and control system design, for more than 45 facilities worldwide, including sites in the U.S., Spain, Belgium, France, Germany, England, and Mexico
- Managed various automation projects including specification, procurement, programming, site startup and maintenance
- Applications experience, including electronic feeder controls, HVAC controls, automated test stations, coating systems, printing lines, motion control systems, high-speed applications, communication systems, device-level network applications, PC-based control solutions, HMI systems, etc.
- Experience in training both factory technicians and operations personnel

AUTOMATIONDIRECT does not set prices or take reservations for these classes. For additional information, course prices, schedules, reservations, contact:

InterConnectingAutomation
12154 North Ridge Trail
Hales Corners, WI 53130

Phone: 414-425-8348

Fax: 414-425-8363

E-mail:

icauto@execpc.com

Web site:

www.interconnectingautomation.com

PLC course contents

You'll use custom-built training panels that contain our D4-450 CPU, a variety of I/O modules, operator panels, and *DirectSOFT*.

- PLC family overview for all *DirectLogic* products
- Basic PLC theory of operation including CPU, bases, discrete I/O, analog I/O, and communications
- System configuration techniques
- Specialty module features
- Simple RLL programming including timers, counters, drums, basic math, and more.
- Advanced programming including number conversions, advanced approaches such as subroutines, RLL Plus, PID theory, etc.

Advanced PLC contents

You'll use custom-built training panels that contain our D4-450 CPU, a variety of I/O modules, operator panels, and *DirectSOFT*

- Create programs based on specs given to you in class
- Learn table and pointer commands and their use
- Wire, program and use Terminator and 205 remote I/O
- Writing and structuring programs using Stage
- Debug, diagnose and program PLC over cell phone
- Scaling multiple analog inputs using one rung

Networking

- Serial RS 232 and RS 422
- Ethernet
 - MAC-IP-PLC-Addressing
- Networking with multiple PLCs and PLC Master/Slave
- Control motor speed from a master PLC to a slave w/motor/encoder setup
- Learn to use Read and Write commands and the wiring of a network

TRAINING VIDEOS, BOOKS AND SCHOOLS

“Introduction to PLC Logic and Principles” Training Video Set

Mr. Doug Bell of InterConnecting Automation, Inc. is now offering a basic PLC video training package.

The kit includes the following:

- Two video tapes showing examples of programming with **DirectSoft V3.0**. You can get 'Hands-On' experience by following along with the instructor who is using the same hardware. (**DirectSoft V2.4a** can be used with this course, although **V3.0** is recommended)
- Pre-wired PLC trainer based on the **AUTOMATIONDIRECT D0-05AR PLC**, with push buttons, lights, selector switches and a programming cable ready to plug into your computer
- A **DL05 Users Manual**, which is used throughout the video and is great for future reference

Benefits of this video course:

- Work in the privacy of your own home/office
- No need to travel anywhere — your family won't have to do without you!
- Learn at your own pace — take a break when you need it
- Refer back to the video at any time — you'll still have the hardware to experiment with

Overview of course content:

- Basics: introduction, basic wiring, logic AND & OR, sensors, relays, reasons for using a PLC, **AUTOMATIONDIRECT PLC families**
- CPU Internals: scan time, addressing, I/O (Xs and Ys), commands
- I/O: inside the I/O boards, octal addressing, programming methods -- hand held programmer - **DirectSOFT**
- **DirectSOFT**: getting started, the launch pad, links, offline vs. online programming, maneuvering through & using **DirectSOFT**, creating and editing rungs
- Programming & Debugging: using inputs and outputs, debugging and status mode, PLC commands, troubleshooting

“PLC Analog I/O” Training Video Set

Mr. Doug Bell of InterConnecting Automation, Inc is now offering a PLC Analog I/O training video set.

The kit includes the following:

- Two 2-hour analog training videos, firmware upgrade instructional video, a pre-wired analog trainer and **DL05 analog I/O module and manual**. This unit is a “plug-and-play” add-on to the **DL05 PLC Trainer** or any existing **DL05 PLC**.

PLC Pre-wired Analog I/O Trainer:

- Two 0-10VDC meters
- Two 0-5VDC potentiometers
- 24VDC wall-mount power supply
- **DL05 analog combo module**, plus pre-wired cable from the trainer to the module, ready to plug into your **DL05 PLC trainer** or any existing **DL05 PLC**.

Benefits of this video course:

- Work in the privacy of your own home/office
- No need to travel anywhere — your family won't have to do without you!
- Learn at your own pace — take a break when you need it
- Refer back to the video at any time — you'll still have the hardware to experiment with.

Overview of course content:

- Analog I/O principles - voltage, current, thermocouples
- PLC analog modules - input, output, thermocouple
- Configuring the analog I/O modules in the PLC
- **DL05 PLC analog tutorial** includes configuration, wiring, scaling (standard and non-standard) and programming, using the potentiometers and voltmeters on the trainer unit
- Application programming examples, including controlling motor speed with a drive and an analog output card in a PLC

To order the PLC Logic and Principles video or the PLC Analog I/O video, contact InterConnectingAutomation at: Ph. 414-425-8348 or go online at: www.interconnectingautomation.com

PLC training books

(Please note we do not sell these books, they are for reference only!)

Here is a list of generic training books that teach some of the basics of PLCs.

Title: Programmable Controllers, Theory and Implementation

Authors L. A. Bryan
Publisher: Industrial Text Company, Atlanta, GA

Strengths: good programming examples

Title: Fundamentals of Programmable Logic Controllers, Sensors, and Communications, 2nd Edition

Author: Jon Stenerson
Publisher: Prentice Hall, Englewood Cliffs, NJ
ISBN: 0-13-746124-0

Strengths: excellent for the basics, even shows RLL Plus concepts (Stage) which are specific to our PLCs.

Title: Programmable Logic Controllers

Authors: Frank D. Petruzella
Publisher: Macmillan/McGrawHill, New York, NY

Strengths: good reference, but examples are somewhat different from methods used with our PLC products

Training through technical schools, colleges, and organizations

Many local technical schools and community colleges also offer several courses that could certainly help you to understand many basic principles that relate to PLCs. We would suggest courses in the following areas.

- Basic Electricity/Electronics
- Industrial Electricity
- Instrumentation
- Programmable Controls
- Microprocessors (optional)

There are also other organizations that specialize in offering PLC related information and/or training courses. The ISA the Instrument Systems and Automation Society offer a wide range of classes that cover many different skill levels.

Instrument Society of America
67 Alexander Drive
P.O. Box 12277
Research Triangle Park
Raleigh, NC 27709
Ph.919-549-8411 www.isa.org

Note: AutomationDirect has not evaluated any classes, instructors, and/or materials provided by any organization listed. Therefore, we are not in a position to recommend one over the other.