

Training Courses and Information

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

Do you need training courses for PLCs or drives? 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!

2007-2008 Training Schedule *

PLC Training

- Atlanta, GA September 11-13, 2007**
- Las Vegas, NV October 16-18, 2007
- Dallas, TX November 6-8, 2007
- Chicago, IL November 13-15, 2007
- Atlanta, GA December 4-6, 2007**
- Cleveland, OH January 29-31, 2008
- Irvine, CA February 26-28, 2008
- Louisville, KY April 8-10, 2008
- Atlanta, GA May 6-8, 2008**
- Chicago, IL June 10-12, 2008

Advanced PLC Training

- Atlanta, GA September 18-20, 2007**
- Las Vegas, NV October 23-25, 2007
- Atlanta, GA December 11-13, 2007**
- Cleveland, OH February 5-7, 2008
- Irvine, CA March 4-6, 2008
- Atlanta, GA May 13-15, 2008**
- Chicago, IL June 17-19, 2008

PID Training

- Las Vegas, NV October 9-11, 2007
- Chicago, IL February 12-14, 2008
- Atlanta, GA May 20-22, 2008**

AC Drives Training

- Atlanta, GA November 6-7, 2007**
- Irvine, CA March 11-12, 2008
- Atlanta, GA June 10-11, 2008**

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

** Classes held at AutomationDirect headquarters in Cumming, GA.

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 both 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 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 firm that designs and implements control applications, including programming and startup. Here's a brief list of Mr. Bell's qualifications and applications experience:

- Nearly 20 years of experience in PLC and control system design, for more than 45 facilities worldwide, including sites in the U.S., 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

Note: PID class and Drives class are taught by guest instructors chosen by Mr. Bell.

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:
info@interconnectingautomation.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
- Simple RLL programming including timers, counters, drums, basic math, and more.
- Advanced programming including number conversions, subroutines, RLL Plus, PID theory, etc.

Advanced PLC contents

Using training panels that contain our D4-450 CPU, a variety of I/O modules, operator panels, and **DirectSOFT**, you will:

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

Networking

- Serial RS-232 and RS-422
- Ethernet
 - MAC-IP-PLC-Addressing
- Networking with multiple PLCs
- 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

PID course contents

You'll use custom-built training panels to:

- Learn PID short cuts and tools
- Learn to setup, tune, troubleshoot and debug PID loops.
- Adjust the gain, reset, rate, and many other PID parameters, to see how they affect the loop

AC Drives contents

You'll use custom-built training panels with GS2 drives and Marathon motors for lots of hands-on experience with:

- AC induction motor and variable frequency drive fundamentals
- VFD power circuit analysis
- Installation requirements
- Constant and variable torque applications
- Best practices in preventive and corrective maintenance.

Training Videos, Books and Schools

“Introduction to PLC Logic and Principles” Training Video Set

Mr. Doug Bell of InterConnecting Automation, Inc., offers a basic PLC video training package.

The kit includes the following:

- Two video tapes showing examples of programming with *DirectSOFT*. You can get “Hands-On” experience by following along with the instructor who is using the same hardware. (*DirectSOFT* V2.4a, or later, can be used with this course.)
- Pre-wired PLC trainer based on the AUTOMATIONDIRECT DO-05AR PLC, with push-buttons, lights, selector switches and a programming cable ready to plug into your computer
- A DL05 Users Manual, which is referred to 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 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., offers 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 0-10 VDC meters
- Two 0-5 VDC potentiometers
- 24 VDC 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 InterConnecting Automation at: 414-425-8348 or 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 Instrument Systems and Automation Society (ISA) offers a wide range of classes that cover many different skill levels.

Instrument Systems and Automation Society (ISA)

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 another.