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# INSTRUMENTATION AND CONTROL FUNDAMENTALS FOR INDUSTRIAL ELECTRICAL PROFESSIONALS



7-day course  
**\$799**

November 3-4, 2015 - Toronto, ON

November 17-18, 2015 - Edmonton, AB

November 5-6, 2015 - Winnipeg, MB

November 19-20, 2015 - Richmond, BC

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- PLC Digital Handbook- Value \$20
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QUOTATION  
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[www.electricityforum.com/forums/instrumentation-control.html](http://www.electricityforum.com/forums/instrumentation-control.html)

# INSTRUMENTATION AND CONTROL FUNDAMENTALS

## COURSE DESCRIPTION

This Instrumentation and Control for Electrical Professionals course is intended for electrical engineering and maintenance professionals, electrical technologies and technicians, and consulting electrical engineers who wish to learn how modern instrumentation and control systems are designed to control HVAC, water and wastewater, manufacturing, petrochemical and other industrial processes.

The course is intended for those who work in related disciplines such as electrical, mechanical, chemical and civil. The course utilizes a comfortable learning pace, and live demonstrations.

Packed with valuable information, the course takes the mystery out of instrumentation and control systems, and explains it all in clear, plain language.

Our Instrumentation for Electrical Professionals Training course is designed to instruct electrical control professionals on how to successfully integrate a Instrumentation and control technologies into their actual day-to-day industrial electrical processes. It not only deals with the hardware and software, but all the surrounding systems that must be compatible to achieve a safe and reliable Instrumentation and control systems.

## AGENDA - DAY 1

SESSION 1: INSTRUMENTATION AND CONTROLS INTRODUCTION

SESSION 2: TWO-STATE CONTROL: RELAYS AND TIMERS

SESSION 3: PROGRAMABLE LOGIC CONTROLLERS

SESSION 4: ANALOG LOOPS

SESSION 5: ANALOG CONTROL WITH PLCs

SESSION 6: CONTINUOUS AND BATCH PROCESS CONTROL

SESSION 7: FEEDFORWARD CONTROL

SESSION 8: FEEDBACK CONTROL

SESSION 9: PROCESS LOOP RESPONSE AND DYNAMICS

SESSION 10: PID CONTROLLERS

SESSION 11: CONTROLLER TUNING

SESSION 12: P&I DIAGRAMS

**Instructor: Glen Horne**  
Camenex Control Systems

## AGENDA - DAY 2

SESSION 13: INSTRUMENT TERMINOLOGY

SESSION 14: INSTRUMENT ACCURACY & ERROR

SESSION 15: TEMPERATURE MEASUREMENT

SESSION 16: PRESSURE MEASUREMENT

SESSION 17: LEVEL MEASUREMENT

SESSION 18: FLOW MEASUREMENT

SESSION 19: ON LINE ANALYSERS

SESSION 20: VARIABLE SPEED MOTOR DRIVES

SESSION 21: SAFETY AND MISSION CRITICAL SYSTEMS

SESSION 22: DIGITAL COMMUNICATIONS

SESSION 23: SCADA

SESSION 24: FIELD CONTROL SYSTEMS (FCS)

### WHO SHOULD ATTEND?

- Industrial, commercial, institutional electrical engineers, and technologists
- Consulting Electrical Engineers
- Project engineers
- Design engineers
- Field technicians
- Electrical technicians
- Plant operators
- Plant engineers
- Electrical supervisors

### COURSE BENEFITS

- Understand how instrumentation & control systems work - in plain language
- Be able to communicate intelligently with the I&C people in your company
- Work more effectively with I&C contractors
- Be able to design basic control systems
- Be able to create, load and debug basic PLC programs
- Understand how to specify instruments
- Understand SCADA, DCS and DDC systems—where and why they are used
- Understand the concepts of the new generation of digital controls
- Be able to read instrument and control drawings
- Know how to commission and test new installations

### TUTORIAL TIMETABLE:

Start: 8:00 a.m.

Coffee Break: 10:00 a.m.

Lunch (Not Included): 12:00 noon

Refreshment Break: 2:30 p.m.

Finish: 4:30 p.m.



(905) 686-1040



(905) 686-1078

**ON-LINE:**

www.electricityforum.com/forums/  
instrumentation-control.html

**MAIL:**

The Electricity Forum  
1885 Clements Rd., Unit 218  
Pickering, ON L1W 3V4

**ATTENDEE INFORMATION**

To receive registration fee discounts, you must REGISTER AND PREPAY prior to the course date.

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

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**Register 3 Delegates at Full Price  
and get the 4<sup>th</sup> Registration FREE!**

# SAVE \$50

REGISTER AND PREPAY 14 Days prior to course date and receive an early bird discount of \$50 off the full price.

**REGISTRATION FEES**

The registration fee to attend the two-day basic Instrumentation and Control course is \$799.00 + tax. The registration fee includes: all course materials, a free magazine subscription to Intelligent Power Today magazine, our latest PLC Handbook, a \$100 coupon towards any future 2015-16 Electricity Forum event (restrictions apply), refreshments. Lunch included.

**REGISTRATION INCLUDES 30-BOOK LIBRARY**

Register for our Instrumentation and Control course and we will include a FREE Electricity Forum Collection of 30 Digital Industrial Electrical Handbooks (Value \$99). The collection of digital handbooks includes more than 3,000 pages of information on a wide range of subjects involving Electrical Safety, Electrical Protection, Power Quality and Grounding, Electrical Maintenance, Transformer Testing, CB and Switchgear Maintenance Motors and Drives, AND MORE!!

**WHEN & WHERE**

(Please check the date/location where you want to attend the course)

## INSTRUMENTATION AND CONTROL FUNDAMENTALS FOR INDUSTRIAL, COMMERCIAL & INSTITUTIONAL POWER SYSTEMS

Toronto, ON - November 3-4, 2015

Hampton Inn and Suites  
3279 Caroga Drive, Mississauga, ON  
905-672-4820

Winnipeg, MB - November 5-6, 2015

Four Points by Sheraton Winnipeg International Airport  
1999 Wellington Avenue  
Winnipeg, MB  
Tel: 204-775-5222

Edmonton, AB - November 17-18, 2015

Sawridge Inn Edmonton South  
4235 Gateway Blvd NW  
Tel: 780-438-1222

Richmond, BC - November 19-20, 2015

Holiday Inn Vancouver Airport  
10720 Cambie Road  
Richmond, BC  
Tel: 604-821-1818

**Limited Seating! Register Today!**

## INTERESTED IN ON-SITE INSTRUMENTATION TRAINING?

Contact Randy Hurst, President, The Electricity Forum.

Write to Randy Hurst at [randy@electricityforum.com](mailto:randy@electricityforum.com) or you can also go to our on-site electrical training quotation page and ask for a FREE quotation:

<http://www.electricityforum.com/on-site-training-feedback.htm>