

# Johnson Controls Institute Course

## Introduction to HVAC Digital Control Systems (#375)

\$1,0455/~~\$895~~  
(1.3 CEU)

**Direct Digital Controls have revolutionized the HVAC industry. Discover the advantages of DDC control in this introductory two-day course.** Classroom discussions provide a basic understanding of the features, architecture and capabilities of Direct Digital Control (DDC) controllers in a Facility Management System. Hands-on lab exercises focus on developing the basic skills necessary for configuring controllers, tuning PI control loops, and troubleshooting.

### DAY ONE

AM: Evolution of Controls: Pneumatic to Digital  
Computer and DDC Terminology  
DIP Switch Setup and Binary Numbering System  
PM: Inputs to Direct Digital Control (AI, BI)  
Analog and Binary Sensors  
Outputs from Direct Digital Control (AO, BO)  
Software Data Points (Analog and Binary)  
ESO Precautions  
LAB: Interfacing to a Controller  
LAB: Electronic Measurements and Controller Setup

### DAY TWO

AM: Control Loop Types (P, PI, PID, ON/OFF)  
Reset Control and Sequence of Operations  
LAB: Control Loop Tuning Concepts  
PM: Programming Direct Digital Controls  
Types of Programming:  
– Line/Function  
– Menu/Function  
– Graphical/Function  
Overview of Facility Management Systems

Course ends at 3:30 p.m.

