Configuring and Testing Smart Field Devices Training

Description

Course Description

This five days course offers a broad perspective of smart field devices, including transmitters and valve -positioners. The emphasis is on more reliable information gathering, decreased maintenance time, ease-of-use, and multi-tasking capabilities. You will cover use in conventional systems, and enhancements/improvements when combined with digital control networks

Course Objectives

Participant will be able to:

1. Differentiate between analog and digital instruments
2. Understand how digital signal sampling works in digital instruments
3. Identify the strengths and weaknesses of digital instruments
4. Explain the basics of serial digital communications
5. Understand the effects of using digital instruments in closed loop control
6. Configure and calibrate smart/digital field devices
7. Configure intelligent control valves
8. Recognize the capabilities of HART™ communication
9. Understanding digital multivariable transmitter

Course Outlines

Analog vs. Digital Instruments:

- Analog Limitations,
- Calibration of Analog vs. Digital Instruments, and
- Flexibility of Digital Instruments

Digital Signal Sampling:

- Sampled Signal Characteristics,
- Output of A/D Converter
- Slow Sampling

Strength and Weaknesses of Digital Instruments:

- Effect on Performance,
- Multiple Measurement,
- Programming for Field Level Control,
- Future Development

Intelligent Control Valves:

- Digital Positioners,
- Diagnostic Tools,
- Adding PID Controllers to Control Valves

Serial Digital Communications:

- Parallel to Serial Converter,
- Modem

HART Communication:

- Features,
- Master/Slave Communications,
- Point-to-Point,
- Capabilities of HART

Proprietary Bus Systems:

- Overview of Bus Systems,
- Need for Open Bus System

SP50 Fieldbus:

- What It Is,
- How Instruments Operate

Intelligent Multivariable Transmitters:

- How they work,
- How they can transmit multiple variables