Process Instrumentation
Advanced Level Course

General Information

Course Code: PIA-PRFLTC2A
Length: 2 Days

Audience

This advanced course is intended for technical individuals responsible for routine maintenance and calibration of level instrumentation. Additionally, sales representatives responsible for selling and specifying these meters will benefit from this class.

Prerequisites

- Basic Level Course (PIA-PRFLTC1A)

Profile

This course covers programming, installation, and troubleshooting of level instrumentation such as the LUT 400, LR 560, and LG 250. It includes a complete review of Sonic Intelligence features, installation guidelines, and troubleshooting parameters. The course includes a hands-on exercise with the level instruments to reinforce the training presentation.

Objectives

Upon completion of this course, the student shall be able to:

- Fully program their level instrument for the selected application
- Install level instruments correctly in vessels
- Take Echo Profiles
- Troubleshoot the instrument and application if issues arise

Topics

1. Level Theories
   a. Ultrasonic
   b. Radar
2. Installation Considerations - Ultrasonics
   a. Application Challenges
   b. Transducer Frequencies
   c. Beam Angles
   d. Mounting Considerations
3. Installation Considerations - Radar
   a. Application Challenges
   b. Radar Frequencies
   c. Beam Angles
   d. Mounting Considerations
4. Sonic and Process Intelligence
   a. How it Works
   b. Dynamic TVT
   c. Echo Lock Window
   d. Filtering
   e. Algorithm
   f. Auto False Echo Suppression
   g. Manual TVT Shaper
5. Echo Profiles
   a. What is an echo Profile?
   b. Ringdown
   c. Echo Confidence
   d. Echo Strength
   e. Multiple Echo
6. Troubleshooting:
   a. How to determine: Echo Confidence, Signal Strength and Noise
7. Hand Programmer
   a. How to Use
   b. Shortcuts
8. Labs
   a. Taking Echo Profiles and using Sonic Intelligence Features