Process Instrumentation  
SITRANS FUH1010 Clamp-On Hydrocarbon Flowmeters Advanced

**General Information**

Course Code: PIA-PRFLHC2A  
Length: 2 Days

**Audience**

This is an advanced course intended for technical individuals responsible for maintenance and operation of SITRANS FUH Hydrocarbon clamp-on flowmeters.

**Prerequisites**

- SITRANS FUS/FUE 1010 Clamp-On Products (PIA-PRFCOC1A)
- Knowledge of Hydrocarbon Industry terminology

**Profile**

This advanced course builds on the information covered in the basic clamp-on flowmeter training class. It covers the specific theory, programming, setup, operation, and verification of the SITRANS FUH flowmeter systems designed for the Hydrocarbon Industry. It includes a complete review of the hardware components and software menu structure related to the 3 types of HPI flowmeters. This course also provides an in-depth review of application details including liquid table construction and implementation, system troubleshooting, and data communication using the SiWare software package.

This course can be taught at the customer’s site and customized to meet the customer’s needs. With advance notice, customer specific applications can be taught.

**Objectives**

Completion of this course will enable the student to:

- Select the appropriate flowmeter type and sensors for their application.
- Fully program their meter for the selected application
- Select a suitable installation location
- Perform a sensor installation
- Perform system start-up
- Create and modify (optimize) a liquid table
- Verify system performance
- Troubleshoot, diagnose & correct operational issues
- Communicate with and collect operational data utilizing SiWare Software

**Topics**

1. Review of Clamp-On Flowmeter Theory  
   a. Liquident & Liquid Table Theory
2. System Hardware  
   a. The 3 types of HPI Systems
   b. Sensors
   c. Sensor Mounting Hardware
3. Software Menu  
   a. Required Program Data
   b. Liquid Table Basics
   c. Specific Programming for Meter Type
4. Installation  
   a. Sensor Mounting Methods
   b. Flow & Temp Sensor Location
   c. Straight Run Requirements
   d. Pipe Configuration Tool
   e. Cable Connections
5. Start-Up  
   a. Initial Makeup Process & Results
   b. Flow Data – Std Volume Correction
   c. Liquid table configuration
6. Verification  
   a. The Diagnostic Menu
   b. Primary Performance Indicators
   c. Signal Graph Analysis
   d. Liquid Reference Data Collection
   e. Validating & Modifying the Liquid Table
7. Troubleshooting  
   a. Detection Fault
   b. Test Mode Utilization
   c. Low Signal Corrective Action
   d. Aeration/Cavitation Diagnosis
   e. Sensor Signal Quality
   f. Liquid Identification
8. Communication  
   a. SiWare Intro & Utilization
9. Labs  
   a. SiWare
   b. Liquid Table Exercise
   c. Troubleshooting Exercise