Flowmeters
SITRANS FUG1010 Clamp-On Gas Flowmeters Advanced

General Information

Course Code: PIA-PRFNGC2A
Length: 2 Days

Audience

This is an advanced course intended for technical individuals responsible for maintenance and operation of SITRANS FUG1010 Natural Gas clamp-on flowmeters.

Prerequisites

- SITRANS FUS/FUE 1010 Clamp-On Products (PIA-PRFCOC1A)
- Knowledge of Natural Gas 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 FUG flowmeter systems designed for the Natural Gas Industry. It includes a complete review of the hardware components and software menu structure related to the natural gas flowmeters. This course also provides an in-depth review of application details including pressure requirements AGA-8 table construction and implementation, system troubleshooting, and data communication using the SiWare software package. The course also includes hands-on exercises with actual flowmeter systems and to reinforce the training presentations.

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:

- Evaluate their application for clamp-on gas measurement
- Select the appropriate sensors for their application.
- Fully program their meter for the selected application
- Create and upload an AGA-8 table
- Select a suitable installation location
- Perform a sensor installation
- Perform system start-up
- Enable local compensation for gas parameters
- Utilize a flow computer for Std volume compensation
- Verify system performance
- Troubleshoot, diagnose & correct operational issues
- Communicate and collect operational data utilizing Siemens SiWare.

Topics

1. Review of Clamp-On Flowmeter Theory
   a. Special Considerations for Gas Systems
2. System Hardware
   a. Gas System Meter Configurations
   b. Sensor Types and Utilization
   c. Sensor Mounting Hardware
   d. Soundcoat Theory & Utilization
3. Software Menu
   a. Required Program Data
   b. Gas Parameters
   c. Specific Programming Gas Meter Type
4. Installation
   a. Soundcoat installation
   b. Sensor Mounting Methods
   c. Flow & Temp Sensor Location
   d. Straight Run Requirements
   e. Pipe Configuration Tool
   f. Cable Connections
5. Start-Up
   a. Initial Makeup Process & Results
   b. Zeroing
   c. Saving Sites
   d. Flow Data – Std Volume Correction
   e. Gas Composition
   f. Optional Programming
6. Verification
   a. The Diagnostic Menu
   b. Primary Performance Indicators
   c. Signal Graph Analysis
   d. Gas Compensation Data
   e. Compensated Data via a Flow Computer
7. Troubleshooting
   a. Detection Fault
   b. Test Mode Utilization
   c. Sensor “Air-Test”
   d. Low Signal Corrective Action
   e. Pressure Minimums
   f. Sensor Signal Quality
   g. Local Compensation
   h. Beam Blowing – Hf Parameter
8. Communication
   a. SiWare Intro & Utilization
   b. Creating & Uploading an AGA-8 Table
9. Labs
   a. Site Programming Exercise
   b. Table-Top System Exercise
   c. SiWare Exercise
   d. Troubleshooting Exercise