SMC sm

OUR KNOWLEDGE IS YOUR POWER

AUTOMATION

**TUE. JUN. 5 -
THU. JUN. 7**
8 AM - 5 PM

SMC SEDALIA
1616 W. MAIN ST.
SEDALIA, MO 65301

INDUSTRIAL PROCESS CONTROL & INSTRUMENTATION

TRAINING EVENT

In this automation-focused course, you will learn the basic concepts and details of Pressure, Flow, Temperature, and Level. Each of these will be explained using multiple technologies for measuring. An introduction of Smart Instruments (HART) and benefits will be taught.

This course will also review:

· Piping and Instrumentation Drawing symbols and schematics
· Process library options for operator interface and system controller
· Industrial signals, scaling, and integration into process control systems
· Section on control valves and implementation considerations
· PID loop theory
· Hands-on labs using SMC's fully integrated process cart

+ HANDS-ON

Throughout this course, you will have the opportunity to practice the skills you have learned through a variety of hands-on exercises.

COST

$2,000
Includes lunch each day

REGISTER

To register, contact Ashli Anderson at aanderson@smcelectric.com by Tuesday, March 29.

INDUSTRIAL PROCESS CONTROL & INSTRUMENTATION

SCHEDULE

Day 1

I. Introduction to Process

- Identification of the Components that make up a Process Control System, & Terminology used in Process Control Systems
- Definition of Continuous Process Systems & Characteristics
- Definition of Batching Process Systems & Characteristics
- Definition of Discrete Process Systems & Characteristics

II. P&ID (Piping & Instrumentation Diagram or Process & Instrumentation Diagram

- Definition of P&ID – What is it & why use it?
- Schematic Symbols & Drawing Standards (ANSI / ISA S5.1)
- Equipment Reference & Labeling (ANSI / ISA S5.1)
- Lab - Complete P&ID for Process Cart

III. Programmable Logic Controller & Graphical User Interface

- Ethernet/IP Introduction (Not In-depth)
- Introduction to Compactlogix system
    - a. Studio 5000 - Open Blank Program and Configure Processor
    - b. Configure Local Chassis IO
    - c. Add Powerflex 525 Profile
    - d. General Introduction to Data Types & Add-On Instructions
    - e. Add Point IO w/ HART Card
- Introduction to HART (Highway Addressable Remote Transducer)
    - a. What is HART? Usage?
    - b. Point to Point / Multidrop
    - c. Smart Instrument Benefits
- Introduction to FactoryTalk View ME
    - a. Create Design File
    - b. Plant PAX Process Library Overview

Day 2

I. Pressure

- Definition of Pressure
- Types of Pressure Measurements
- Mechanical Pressure Indicators
- Electronic Pressure Measurements

II. Flow

- Definition of Flow
- Mass Flow vs Flow Meters
- Difference between Flow Indication, Switch and Meter

III. Control Valves

- Common types of valves
- Common Actuators

IV. Temperature

- Definition of Temperature
- Temperature Scales / Converting
- Temperature Measurements

Day 3

I. Level

- Point Level vs Continuous Measurement
- Types of Level Measurements / Indicators – Pros / Cons

II. PID Loop

- PID Theory / Terminology

III. PIDE Tuning

- Apply Gains to PIDE to demonstrate response
- Demonstrate PIDE Autotune Functionality