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Control Loop Foundation Batch and Continuous Processes

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Control Loop Foundation Short Course

Introduction

Background

Measurement

Analyzers

Final Elements

Field Wiring and Communications

Control Strategy Documentation

Operator Graphics and Metrics

Process Characterization

Control Objectives

Single Loop Control

Tuning and Loop Performance

Multi-loop Control

Model Predictive Control

Process Modeling

Applications

Accessing the book web Site

Open Discussions book drawing & Wrap-up

- Historic Perspective
- Basic Transmitter Types, Limitations
- Examples of On-line Analyzers
- Valves and Variable Speed Drives
- Traditional, HART, FF , WirelessHART
- Plot Plan, Flow Sheet, P&ID, Loop Diagram
- Considerations in Display Design
- Identifying process dynamics and gain

- PID basics, selecting PID structure, action
- Manual and automated tuning techniques
- Feedforward, Cascade, Override, Split-range
- Addressing Difficult Dynamics, Interactions
- Process simulation for Checkout/Training
- Continuous, Batch, Combustion, Distillation

Control Loop Foundation Short Course

Control Loop Foundation—Batch and Continuous Processes

By Terrence Blevins and Mark Nixon



- Short Course will provide a summary of key points and examples from Control Loop Foundation
- All workshops and application examples in the book are based on DeltaV control capability. This book is available at www.isa.org and this week at the ISA booth.
- The application section is designed to show how control techniques may be combined to address more complex process requirements
- The book web site may be accessed to perform the workshops and to obtain hands-on experience using application example. Copies of the modules and trends may be downloaded from the web site and imported into a DeltaV system.
- A new class, Control Loop Foundation - **Course 9025**, Is available through the education department.

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Introduction

- Control Loop Foundation address the concepts and terminology that are needed to work in the field of process control.
- The material is presented in a manner that is independent of the control system manufacturer.
- Much of the material on the practical aspects of control design and process applications is typically not included in process control classes taught at the university level.
- The book is written to act as a guide for engineers who are just starting to work in this field.
- Experienced control engineers will benefit from the application examples on process control design and implementation of multi-loop control strategies.