Industrial Process Control

Roxby Training Solutions Ltd, Unit 4 John Clarke Centre, Dockside Road,
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COURSE CONTENT

Aim

To provide a detailed knowledge and understanding of the principles of industrial automatic control and the practical application of these on process plant control systems.

Pre-requisite

Suited to those personnel who may require training towards multi-discipline engineering and who are required to perform an instrumentation role on return to their workplace.

Course Duration

The course will be of ten day's duration.

Optimum Number

The optimum number of persons on this course will be two.

Training Aids

Use will be made of lecture notes, audio-visual presentation.

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COURSE SYLLABUS

The Process Control System	The Elements of a Control Loop. Transducer/Transmitters. Current to Pressure Converters. Square Root Extractors.
Control Valves and Actuators	Spring and Diaphragm Actuators. Single and Double Port Valves. Control Valve Stroke and Adjustments. Types of Control Valves. Control Valve Trims and Characteristics. Application of Trims. Control Valves Characteristics.
Control Valve Positioners	Flapper and Nozzle Systems. The Pneumatic Relay Amplifier. Motion Balance Positioner. Forced Balance Positioner. Setting Up Valve Positioner. Electro-Pneumatic Positioner. Spilt Range Operation.
Closed Loop Control	Process Control Terms. Principles of the Feedback Loop. Controller Actions. Control Loop Stability.

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Modes of Control	On/Off (2-Step) Control. Differential Gap Control. Proportional Action. Proportional Control. Integral Action. P+I Control. Derivative Action. P+I+D Control.
Tuning Control Systems	Ultimate Sensitivity Method. Damped Oscillation Method. Reaction Rate Method.
Generation of 3-Term Control	Pneumatically. Electronically using Operational Amplifiers.
Distributed Control Systems	System Overview. Hardware and Software Addressing. Feedback Loop Configuration. Loop Tuning.
Complex Control	Cascade Control. Disturbance Feedforward Control.

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Disturbance Feedback Control.
Ratio Control.
Advanced Control.

Dates available on request

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