

TYPES OF CONTROL (REF:OTSTOC001)

Course Objectives

To gain an understanding of the different types of controls and their modes.

Course Description

This lesson presents the principles of single-loop control and the applications of feedback control in the industrial environment. Also introduced are various control modes including on/off, proportional, integral, and derivative control.

Who Should Attend

This course is targeted for new control and measurement engineers.

Pre-Requisites

This lesson is designed for participants familiar with measurement fundamentals. An understanding of algebra is also recommended.

Course Outcome

At the end of this course you will be able to understand the types of Control.

Course Outline

Day 1

Introduction

Simple On-Off Control (Two step control)
Disadvantages of on-off control
Proportional control
Disadvantages of proportional control
What is 'offset'?
How is offset reduced?

Day 2

Integral control action
Proportional-plus integral control action (two term controller)
Disadvantages of proportional plus integral control
What is derivative control?
Where is derivative control used
Proportional plus integral plus derivative control (the three term controller)

Day 3

Complex control systems

Cascade control
Ratio control
Split range control

Day 4

Methods of controller tuning

Open and closed loop tuning methods
Process reaction curve method

Day 5

Methods of controller tuning

Ziegler Nichols method
Trial and error method

Course Review and Feedback

