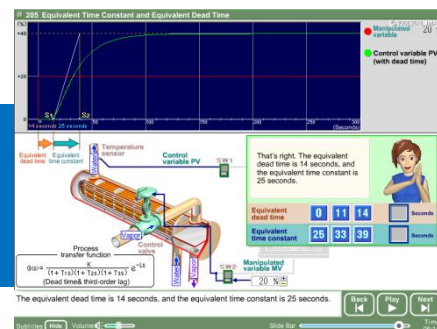


Control Basics Course (PID Control)



Purpose

Master PID control mechanisms and adjustment methods.

Characteristics

- ★ Master the control actions of controllers and their adjustment methods while getting experience with simulations of the various PID control curves.
- ★ Combining animated computer graphics, narration, and real video imagery, the explanations are given a sense of presence and realism.
- ★ With interaction provided in various places, students can progress through the materials at their own pace.

Curriculum

Introduction

Chapter 1 Basics of Feedback Control

Chapter 2 Process Characteristics

Chapter 3 Control Actions of Controllers

Chapter 4 Optimum Tuning

Chapter 5 Optimum Tuning Training of PID Controller

Who should take this course

Maintenance employees responsible for electricity or control facilities, administrators, field service workers involved in facility maintenance, and electricity or control workers

Course material outline

- ◆ Expected learning time: 5 hours
- ◆ Number of tests: 2
- ◆ Shortest duration: 129 minutes

Supervised by

Idemitsu Kosan Co., Ltd. Technical Training Center

Curriculum

Chapter 1 Basics of Feedback Control

- 101 Feedback Control
- 102 Control System

Chapter 2 Process Characteristics

- 201 Process Step Response
- 202 Process Step Response
- 203 Time Constant
- 204 Dead Time
- 205 Equivalent Time Constant and Equivalent Dead Time
- 206 Integral Processes

Chapter 3 Control Actions of Controllers

- 301 Control Actions of Controllers
- 302 Controller Response due to Proportional Action
- 303 Control System Response due to Proportional Action
- 304 Controller Response due to Integral Action
- 305 Control System Response due to Integral Action
- 306 Controller Response due to Derivative Action
- 307 Control System Response due to Derivative Action

Chapter 4 Optimum Tuning

- 401 What is Optimum Tuning?
- 402 PID Adjustment Steps
- 403 Optimum Tuning Using the Transient Response Method
- 404 Ratio Between the Equivalent Dead Time and the Equivalent Time Constant
- 405 Optimum Tuning of Integral Processes

Chapter 5 Optimum Tuning Training of PID Controller

- 501 Self-Balancing Processes (Self-Study Program)
- 502 Integral Processes (Self-Study Program)