Tuning Of Industrial Control Systems
Synopsis

Suitable for beginners, this book takes a practical but systematic approach to tuning. The aim is to provide insight into tuning procedures rather than a series of formulas to be memorized. The author gives helpful rules of thumb to speed the learning process during field training. The text begins with a discussion of common techniques for measuring the dynamic response of a process and choosing appropriate performance criteria. Later chapters cover selection and tuning of feedback control modes, including computer- and microprocessor-based controllers, and advanced modes. The second edition includes numerous examples of tuning, including the effect of hysteresis in flow control loops, averaging and tight level control, cascade control of a jacketed chemical reactor, feedforward control of a heater, and loop interaction and ratio control in a blender. Also included is an introduction to a model reference control and a chemical reactor control example to illustrate it.


Book Information

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Customer Reviews

A practical, but systematic approach to tuning. This book is designed as a self-study guide for both beginners and experienced practitioner who want to learn more about the tuning of industrial control
systems. The book is organized as follows:

- Introduction and overview.
- Feedback controllers.
- Open-loop characterization of process dynamics.
- How to tune feedback controllers.
- Mode selection and tuning common feedback loops.
- Computer feedback control.
- Feedforward and ratio control.
- Multivariable control systems.
- Adaptive and self-tuning control.
- Suggested reading and study material.
- Solutions to all exercises.

I am an Industrial Practitioner of Process Control. I have been working for more than 16 years as an Instrumentation, Automation, and Process Safety and Control Engineer for the Oil & Gas Industry. I have found this book to be a very useful refresher on tuning methods.

If you are looking for a more in-depth and broad treatment of process control topics, but still oriented towards practical industrial applications, you might want to consider Bela Liptak’s Instruments Engineer’s Handbook Volume 2 - Process Control and Optimization. I own both books and I have made extensive use of both of them, proving to be a very effective combination to solve day to day problems in my job.

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