



River Publishers

Electrical Machinery Control Fundamentals

Authors:

Dale R. Patrick, USA

Stephen W. Fardo, Department of Applied Engineering and Technology,
Eastern Kentucky University, USA

Vigyan (Vigs) Chandra, Eastern Kentucky University, USA

Brian W. Fardo, Department of Applied Engineering and Technology and
the Noel Studio for Academic Creativity, Eastern Kentucky University,
USA

Electrical Machinery Control Fundamentals is a textbook that was designed using a systematic and sound method to provide an overview of electrical machinery control for industrial automation. Key concepts are presented using a big picture or systems approach without an abundance of disconnected information. Real-world applications, procedures, and operations are stressed throughout the seven major units of the book. Mathematical operations are simplified, and problems are solved by basic applications.

Electrical Machinery Control Fundamentals provides a very comprehensive educational package for your understanding of the many aspects of electrical machinery control for industrial automation. The features of the book are, in summary: (1) the comprehensive overview of the subject area; (2) logical organization with associated activities included; (3) an abundance of illustrations; and (4) many laboratory activities included in the accompanying laboratory manual.

TABLE OF CONTENTS

Unit I - Electrical Basics

- Introduction to Electrical Systems
- Electrical Tools and Safety
- Electrical Components, Symbols, and Measurement
- Review of Electrical Circuits
- Magnetism and Electromagnetism

Unit II - Electrical Distribution Basics

- Distribution Systems
- Electrical Distribution Equipment
- Single-phase and Three-phase Distribution Systems

Unit III - Electric Motor Basics

- Direct-current Motors
- Single-phase Alternating-current Motors
- Three-phase Alternating-current Motors
- Special Purpose Machinery and Motion Control Systems

Unit IV - Electrical Machinery Control Basics

- Electrical Control Basics
- Machinery Control Systems

Unit V - Electronic Control Basics

- Electronic Devices
- Electronic Sensing Systems

Unit VI - Industrial Electronic Control Systems

- Industrial Timing Systems
- Optoelectronic Control

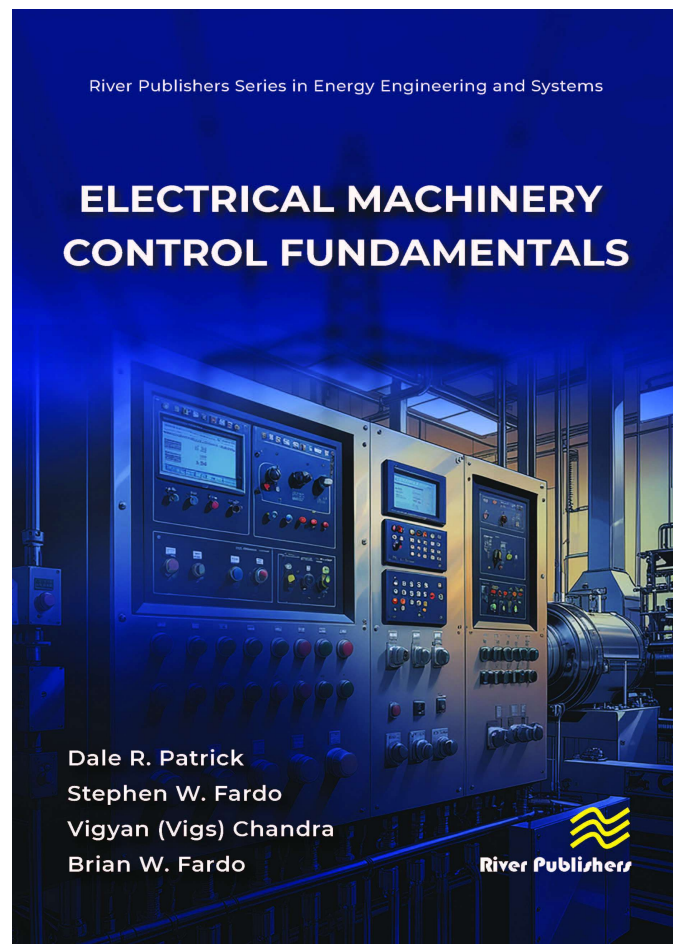
Unit VII - Digital Control Basics and Applications

- Basics of Digital Control
- Computer Systems
- Programmable Logic Controllers and Microcontrollers
- Industrial Robotics
- Preventive Maintenance and Troubleshooting

Appendix A - Calculator Examples

Appendix B - Right Triangles and Trigonometry

Appendix C - Basic Electrical Symbols



River Publishers Series in Energy Engineering and Systems

ELECTRICAL MACHINERY CONTROL FUNDAMENTALS

Dale R. Patrick
Stephen W. Fardo
Vignyan (Vigs) Chandra
Brian W. Fardo



River Publishers Series in Energy Engineering and Systems

ISBN: 9788743810049

e-ISBN: 9788743810032

Available From: September 2026

Price: € 133.70

KEYWORDS:

Electrical machines, electrical power system, power measurement, alternative power systems, alternating current power systems, direct current power systems, power distribution, power equipment, single-phase distribution systems, three-phase distribution systems, power control systems, electrical loads, electrical heating systems, electrical lighting systems, electrical motors, electrical generators



www.riverpublishers.com
marketing@riverpublishers.com