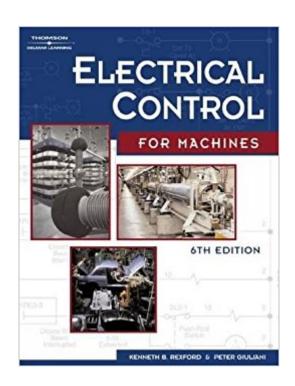


The book was found

Electrical Control For Machines, 6E





Synopsis

Now in its sixth edition, Electrical Control for Machines continues to provide an extraordinarily complete introduction to the range of technologies found in today's state-of-the-art industrial systems. By providing readers with a practical understanding of the logic and safety conditions required for efficient control of a single machine or a complex system, the authors define the field of industrial electrical controls in a manner that reflects the changes occurring in today's manufacturing and process industries. Central to the book is the belief that programmable, expandable, reliable, and versatile manufacturing systems require a conceptual understanding at the system level as well as detailed knowledge at the equipment level. In-depth discussions of state-of-the-art process and machine control devices, circuits, and systems for all types of industries are included, along with thorough explanations of how electrical and electronic components function in typical motion, pressure, temperature, sequential, safety, and quality control systems. Ideal for industrial process engineers, maintenance technicians, and engineering technology students, this edition is thoroughly updated and now features an introduction to the operation, configuration, and programming of programmable logic controls (PLCs) as well as new coverage of the expanding use of networks within industrial processes. Knowledge of basic theories of electricity and electrical circuits is assumed, and an entire chapter is devoted to discussion of safety and safety considerations.

Book Information

Hardcover: 560 pages

Publisher: Delmar Cengage Learning; 6 edition (December 26, 2002)

Language: English

ISBN-10: 0766861988

ISBN-13: 978-0766861985

Product Dimensions: 9.7 x 7.4 x 1 inches

Shipping Weight: 2.3 pounds (View shipping rates and policies)

Average Customer Review: 4.7 out of 5 stars 4 customer reviews

Best Sellers Rank: #642,689 in Books (See Top 100 in Books) #74 in Books > Engineering & Transportation > Engineering > Energy Production & Extraction > Power Systems #99 in Books >

Engineering & Transportation > Engineering > Electrical & Electronics > Electric Machinery &

Motors #347 in Books > Computers & Technology > Computer Science > Robotics

Customer Reviews

CHAPTER I 1.1 Transformers and Power Supplies 1.2 Control Transformers 1.2 Transformer

Regulation, 1.3 Temperature Rise in a Transformer 1.4 Operating Transformers in Parallel 1.5 Constant Voltage Regulators (CVR) 1.6 Uninterruptible Power Systems (UPS). CHAPTER 2 Fuses, Disconnect Switches, and Circuit Breakers 2.1 Protective Factors 2.2 Fuse Construction and Operation 2.3 Fuse Types 2.4 Let-Thru Current and I2t 2.5 Voltage and Frequency Surges 2.6 Circuit Breaker Types 2.7 Programmable Motor Protection 2.8 Electrical Metering and Voltage Protection 2.9 Selecting Protective Devices CHAPTER 3 Control Units for Switches and Communication 3.1 Oil-Tight Units 3.2 Push-Button Switches 3.3 Selector Switches 3.4 Heavy-Duty Switches 3.5 Indicating Lights 3.6 General Information on Oil-Tight Units 3.7 Circuit Applications 3.8 Annunciators 3.9 Light-Emitting Diodes (LEDs). 3.10 Membrane Switches 3.11 Liquid Crystal Displays CHAPTER 4 Relays 4.1 Control Relays and Their Uses 4.2 Timing Relays 4.3 Latching Relays 4.4 Plug-in Relays 4.5 Contactors CHAPTER 5 Solenoids 5.1 Solenoid Action 5.2 Solenoid Force and Voltage 5.3 Low Voltage 5.4 Over Voltage 5.5 AC Solenoids in DC 5.6 DC Solenoids on AC 5.7 50 and 60 Cycle Solenoids 5.8 Solenoid Temperature Rise 5.9 Circuit Applications 5.10 Variable Solenoids 5.11 Proportional Valves 5.12 Servo Valves CHAPTER 6 Types of Control 6.1 Open Loop vs. Closed Loop 6.2 Closed-Loop Control 6.3 Proportional Control 6.4 Proportional-Integral 6.5 Proportional-Integral-Derivative CHAPTER 7 Motion Control Devices 7.1 Importance of Position Indication and Control 7.2 Limit Switches-Mechanical 7.3 Limit Switch Symbols 7.4 Circuit Applications 7.5 Proximity Limit Switches 7.6 LED Indicators 7.7 Solid State Outputs 7.8 Detection Range 7.9 Hysteresis 7.10 Attenuation Range 7.11 Speed 7.12 Magnet-Operated Limit Switch 7.13 Vane Switches 7.14 Linear Position Displacement Transducers 7.15 Angular Position Displacement Transducers 7.16 Use or AC Synchronous and DC Stepping Motors 7.17 Servo Positioning Control 7.18 Sensing Theory 7.19 Flow Monitors CHAPTER 8 Pressure Control 8.1 Importance of Pressure Indication and Control 8.2 Types of Pressure Switches 8.3 Circuit Applications CHAPTER 9 Temperature Control 9.1 Importance and Temperature Indication and Control 9.2 Temperature Controllers 9.3 Controller Outputs 9.4 Additional Terms 9.5 Temperature Switches (Thermostats) 9.6 Circuit Applications CHAPTER 10 Time Control 10.1 Selected Operations 10.2 Types of Timers 10.3 Synchronous Motor-Driven Timers 10.4 Solid-State Timers 10.5 Circuit Applications CHAPTER It Count Control 11.1 Preset Electrical Impulses 11.2 Circuit Applications 11.3 Solid-State Counters CHAPTER 12 Control Circuits 12.1 Placement of Components in a Control Circuit CHAPTER 13 Motors 13.1 AC Motors-Theory of Operation 13.2 Polyphase Squirrel Cage Induction Motors 13.3 Single Phase Motors 13.4 Resistance Split-Phase Motors 13.5 Capacitor Start Motors 13.6 Permanent Split-Capacitor Motors 13.7 Shaded-Pole Motors 13.8 DC Motors 13.9 Brushless DC Motors CHAPTER14 Motor Starters 14.1 Overload

Relays 14.2 Across-the-Line (Full Voltage) Starters 14.3 Reversing Motor Starters 14.4 Multispeed Motor Starters 14.5 Reduced-Voltage Motor Starters 14.6 Solid-State Motor Starters 14.7 Starting Sequence CHAPTER 15 Introduction to Programmable Controllers 15.1 Primary Concepts in Solid State Control 15.2 Introduction to Programmable Logic Controllers 15.3 Programmable Logic Controllers Concepts 15.4 Input/Output (1/0) 15.5 Processor 15.6 Memory 15.7 Power Supplies 15.8 Programming 15.9 Examine On/Examine Off 15.10 Peripheral and Support Devices 15.11 Data Communication Highway 15.12 Converting from Relay Logic to PLC 15.13 PLC Application in Industry CHAPTER 16 Quality Control 16.1 Quality and Quality Control 16.2 Electrical and Electronic Circuits Used in Quality Control 16.3 Quality Achieved Through Machine and Process Monitoring 16.4 Process Tolerance (Standards) 16.5 Information Systems 16.6 Data Acquisition Systems 16.7 Personal Computer Software 16.8 Quality is Related to the Type of Control Being Used 16.9 Poor Quality As a Result of System Errors CHAPTER 17 Safety 17.1 Worker Safety 17.2 Electrical Worker's Safety 17.3 Machine Safety 17.4 Diagnostic Systems 17.5 Machine Safety Circuit 17.6 Programmable Controllers in Safety 17.7 Other Safety Conditions CHAPTER 18 Troubleshooting 18.1 Safety First 18.2 Analyzing the Problem 18.3 Major Trouble Spots 18.4 Equipment for Troubleshooting 18.5 Motors 18.6 Troubleshooting a Complete Control Circuit 18.7 Troubleshooting the Programmable Logic Circuit 18.8 Electronic Troubleshooting Hints CHAPTER 19 Designing Control Systems for Easy Maintenance. . 19.1 Design Considerations 19.2 Diagrams and Layouts 19.3 Locating, Assembling, and Installing Components APPENDIX A Summary of Electrical Symbols APPENDIX B Units of Measurements APPENDIX C Rules of Thumb APPENDIX D Electrical Formulas APPENDIX E Use of Electrical Codes and Standards APPENDIX F Application of Electrical Heat APPENDIX G Power Factor Correction APPENDIX H Concepts Used in Programmable and Solid State Controllers APPENDIX I Selecting a Transformer GLOSSARY INDEX

Mr. Chartrand holds a Bachelor of Science degree in electrical engineering from Queen¿s university in Kingston Ontario. He has been teaching digital courses for 20 years at Niagara College in Welland , Ontario. Mr. Chartrand has made industry contributions with various designs including interfacing an infrared camera to a PC, creating a digital circuit board used as a PC training system, and designing a control pendant for an air-filled medical bed. He also worked as a plant engineer for General Motors.Mr. Rexford received his professional degree from the College of Engineering at the University of Cincinnatti and is a registered Professional Electrical Engineer in Ohio.

Exact book needed for my Industrial controls class. This should be a great start for experienced or non-experienced alike to learn about electronics in Industrial settings

Good book to learn basic electrical control and components

I purchased the wrong item but I will keep it incase I ever need it. The item was delivered on time and in a secure package. The adapter looks very well made and sturdy. I will update if I get a chance to use it.

No color pics. Overpriced but overall ok.

Download to continue reading...

What Do Pulleys and Gears Do? (What Do Simple Machines Do?) (What Do Simple Machines Do?) (What Do Simple Machines Do?) Electrical Control for Machines Electrical Control for Machines, 6E Electrical Control of Fluid Power: Electric and Electronic Control of Hydraulic & Air Systems Mighty Monster Machines (Blaze and the Monster Machines) The Big Book of Blaze and the Monster Machines (Blaze and the Monster Machines) Mighty Monster Machines (Blaze and the Monster Machines) (Little Golden Book) Machines on a Construction Site (Machines At Work) Cranes (Machines at Work; Big Machines) Vintage Coca-cola Machines a Price and Identification Guide to Collectible Coolers and Machines AC-130H/U Gunships (Torque Books: Military Machines) (Torque: Military Machines (Library)) Strykers (Torque Books: Military Machines) (Torque: Military Machines (Library)) Electrical Insulation for Rotating Machines: Design, Evaluation, Aging, Testing, and Repair (IEEE Press Series on Power Engineering) Electrical Machines, Drives and Power Systems Motors for Makers: A Guide to Steppers, Servos, and Other Electrical Machines Electrical Machines, Drives and Power Systems (6th Edition) Electrical Transformers and Rotating Machines Electrical Machines with MATLAB®, Second Edition NLP: Neuro Linguistic Programming: Re-program your control over emotions and behavior, Mind Control - 3rd Edition (Hypnosis, Meditation, Zen, Self-Hypnosis, Mind Control, CBT) NLP: Persuasive Language Hacks: Instant Social Influence With Subliminal Thought Control and Neuro Linguistic Programming (NLP, Mind Control, Social Influence, ... Thought Control, Hypnosis, Communication)

Contact Us

DMCA

Privacy

FAQ & Help