

1. Record Nr.	UNINA9910960361603321
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Titolo	Power electronics design : a practitioner's guide / / Keith H. Sueker
Pubbl/distr/stampa	Burlington, MA, : Elsevier/Newnes, c2005
ISBN	9786610629480 9781280629488 1280629487 9780080459929 0080459927
Edizione	[1st edition]
Descrizione fisica	1 online resource (273 p.)
Disciplina	621.31/7
Soggetti	Power electronics - Design and construction Electronics - Design and construction
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	front cover; copyright; table of contents; front matter; List of Figures; List of Tables; Preface; body; 1. Electric Power; 1.1. AC versus DC; 1.2. Pivotal Inventions; 1.3. Generation; 1.4. Electric Traction; 1.5. Electric Utilities; 1.6. In-Plant Distribution; 1.7. Emergency Power; 2. Power Apparatus; 2.1. Switchgear; 2.2. Surge Suppression; 2.3. Conductors; 2.4. Capacitors; 2.5. Resistors; 2.6. Fuses; 2.7. Supply Voltages; 2.8. Enclosures; 2.9. Hipot, Corona, and BIL; 2.10. Spacings; 2.11. Metal Oxide Varistors; 2.12. Protective Relays; 3. Analytical Tools; 3.1. Symmetrical Components 3.2. Per Unit Constants 3.3. Circuit Simulation; 3.4. Simulation Software; 4. Feedback Control Systems; 4.1. Basics; 4.2. Amplitude Responses; 4.3. Phase Responses; 4.4. PID Regulators; 4.5. Nested Control Loops; 5. Transients; 5.1. Line Disturbances; 5.2. Circuit Transients; 5.3. Electromagnetic Interference; 6. Traveling Waves; 6.1. Basics; 6.2. Transient Effects; 6.3. Mitigating Measures; 7. Transformers and Reactors; 7.1. Transformer Basics; 7.2. Construction; 7.3. Insulation Systems; 7.4. Basic Insulation Level; 7.5. Eddy Current Effects; 7.6. Interphase Transformers 7.7. Transformer Connections 7.8. Reactors; 7.9. Units; 7.10. Cooling;

7.11. Instrument Transformers; 8. Rotating Machines; 8.1. Direct Current Machines; 8.2. Synchronous Machines; 8.3. Induction (Asynchronous) Machines; 8.4. NEMA Designs; 8.5. Frame Types; 8.6. Linear Motors; 9. Rectifiers and Converters; 9.1. Early Rectifiers; 9.2. Mercury Vapor Rectifiers; 9.3. Silicon Diodes--The Semiconductor Age; 9.4. Rectifier Circuits--Single-Phase; 9.5. Rectifier Circuits--Multiphase; 9.6. Commutation; 10. Phase Control; 10.1. The SCR; 10.2. Forward Drop; 10.3. SCR Circuits--AC Switches; 10.4. SCR Motor Starters; 10.5. SCR Converters; 10.6. Inversion; 10.7. Gate Drive Circuits; 10.8. Power to the Gates; 10.9. SCR Autotapchangers; 10.10. SCR DC Motor Drives; 10.11. SCR AC Motor Drives; 10.12. Cycloconverters; 11. Series and Parallel Operation; 11.1. Voltage Sharing; 11.2. Current Sharing; 11.3. Forced Sharing; 12. Pulsed Converters; 12.1. Protective Devices; 12.2. Transformers; 12.3. SCRs; 13. Switchmode Systems; 13.1. Pulse Width Modulation; 13.2. Choppers; 13.3. Boost Converters; 13.4. The 'H' Bridge; 13.5. High-Frequency Operation; 13.6. Harmonic Injection; 13.7. Series Bridges; 14. Power Factor and Harmonics; 14.1. Power Factor; 14.2. Harmonics; 14.3. Fourier Transforms; 14.4. Interactions with the Utility; 14.5. Telephone Influence Factor; 14.6. Distortion Limits; 14.7. Zero-Switching; 15. Thermal Considerations; 15.1. Heat and Heat Transfer; 15.2. Air Cooling; 15.3. Water Cooling; 15.4. Device Cooling; 15.5. Semiconductor Mounting; 16. Power Electronics Applications; 16.1. Motor Drives and SCR Starters; 16.2. Glass Industry; 16.3. Foundry Operations; 16.4. Plasma Arcs and Arc Furnaces; 16.5. Electrochemical Supplies; 16.6. Cycloconverters; 16.7. Extremely Low-Frequency Communications

Sommario/riassunto

This book serves as an invaluable reference to Power Electronics Design, covering the application of high-power semiconductor technology to large motor drives, power supplies, power conversion equipment, electric utility auxiliaries and numerous other applications. Design engineers, design drafters and technicians in the power electronics industry, as well as students studying power electronics in various contexts, will benefit from Keith Sueker's decades of experience in the industry. With this experience, the author has put the overall power electronics design process in the context o
