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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
