

## Standard Handbook For Electrical Engineers Sixteenth Edition

Brimming with solutions to day-to-day problems in electrical system design; operation and maintenance; this standard-setting reference will help power your electrical engineering skills into the twenty-fifth century. --

Standard Handbook for Electrical Engineers Sixteenth Edition McGraw Hill Professional

THE MOST COMPLETE AND CURRENT GUIDE TO ELECTRICAL ENGINEERING For more than a century, the Standard Handbook for Electrical Engineers has served as the definitive source for all the pertinent electrical engineering data essential to both engineering students and practicing engineers. It offers comprehensive information on the generation, transmission, distribution, control, operation, and application of electric power. Completely revised throughout to address the latest codes and standards, the 16th Edition of this renowned reference offers new coverage of green technologies such as smart grids, smart meters, renewable energy, and cogeneration plants. Modern computer applications and methods for securing computer network infrastructures that control power grids are also discussed. Featuring hundreds of detailed illustrations and contributions from more than 75 global experts, this state-of-the-art volume is an essential tool for every electrical engineer. Standard Handbook for Electrical Engineers, 16th Edition, covers: Units, symbols, constants, definitions, and conversion factors \* Electric and magnetic circuits \* Measurements and instruments \* Properties of materials \* Generation \* Prime movers \* Alternating-current generators \* Direct-current generators \* Hydroelectric power generation \* Power system components \* Alternate sources of power \* Electric power system economics \* Project economics \* Transmission systems \* High-voltage direct-current power transmission \* Power system operations \* Substations \* Power distribution \* Wiring design for commercial and industrial buildings \* Motors and drives \* Industrial and commercial applications of electric power \* Power electronics \* Power quality and reliability \* Grounding systems \* Computer applications in the electric power industry \* Illumination \* Lightning and overvoltage protection \* Standards in electrotechnology, telecommunications, and information technology

Accompanying CD-ROM has the complete text of the book in PDF format and over 100 live, interactive formulas.

The Standard Handbook for Electrical Engineers has served the EE field for nearly a century. Originally published in 1907, through 14 previous editions it has been a required resource for students and professionals. This new 15th edition features new material focusing on power generation and power systems operation – two longstanding strengths of the handbook that have recently become front-burner technology issues. At the same time, the entire format of the handbook will be streamlined, removing archaic sections and providing a quick, easy look-up experience.

The Standard Handbook of Electronics Engineering has defined its field for over thirty years. Spun off in the 1960's from Fink's

Standard Handbook of Electrical Engineering, the Christiansen book has seen its markets grow rapidly, as electronic engineering and microelectronics became the growth engine of digital computing. The EE market has now undergone another seismic shift—away from computing and into communications and media. The Handbook will retain much of its evergreen basic material, but the key applications sections will now focus upon communications, networked media, and medicine—the eventual destination of the majority of graduating EEs these days.

Up-to-date coverage of every facet of electric power in a single volume This fully revised, industry-standard resource offers practical details on every aspect of electric power engineering. The book contains in-depth discussions from more than 100 internationally recognized experts. Generation, transmission, distribution, operation, system protection, and switchgear are thoroughly explained. Standard Handbook for Electrical Engineers, Seventeenth Edition, features brand-new sections on measurement and instrumentation, interconnected power grids, smart grids and microgrids, wind power, solar and photovoltaic power generation, electric machines and transformers, power system analysis, operations, stability and protection, and the electricity market. Coverage includes:

- Units, symbols, constants, definitions, and conversion factors
- Measurement and instrumentation
- Properties of materials
- Interconnected power grids
- AC and DC power transmission
- Power distribution
- Smart grids and microgrids
- Wind power generation
- Solar power generation and energy storage
- Substations and switch gear
- Power transformers, generators, motors, and drives
- Power electronics
- Power system analysis, operations, stability, and protection
- Electricity markets
- Power quality and reliability
- Lightning and overvoltage protection
- Computer applications in the electric power industry
- Standards in electrotechnology, telecommunications, and IT

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The Electrical Engineer's Handbook is an invaluable reference source for all practicing electrical engineers and students. Encompassing 79 chapters, this book is intended to enlighten and refresh knowledge of the practicing engineer or to help educate engineering students. This text will most likely be the engineer's first choice in looking for a solution; extensive, complete references to other sources are provided throughout. No other book has the breadth and depth of coverage available here. This is a must-have for all practitioners and students! The Electrical Engineer's Handbook provides the

most up-to-date information in: Circuits and Networks, Electric Power Systems, Electronics, Computer-Aided Design and Optimization, VLSI Systems, Signal Processing, Digital Systems and Computer Engineering, Digital Communication and Communication Networks, Electromagnetics and Control and Systems. About the Editor-in-Chief... Wai-Kai Chen is Professor and Head Emeritus of the Department of Electrical Engineering and Computer Science at the University of Illinois at Chicago. He has extensive experience in education and industry and is very active professionally in the fields of circuits and systems. He was Editor-in-Chief of the IEEE Transactions on Circuits and Systems, Series I and II, President of the IEEE Circuits and Systems Society and is the Founding Editor and Editor-in-Chief of the Journal of Circuits, Systems and Computers. He is the recipient of the Golden Jubilee Medal, the Education Award, and the Meritorious Service Award from the IEEE Circuits and Systems Society, and the Third Millennium Medal from the IEEE. Professor Chen is a fellow of the IEEE and the American Association for the Advancement of Science. \* 77 chapters encompass the entire field of electrical engineering. \* THOUSANDS of valuable figures, tables, formulas, and definitions. \* Extensive bibliographic references.

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