
Read Online Iec 60364 5 5

Getting the books **Iec 60364 5 5** now is not type of challenging means. You could not on your own going in imitation of book collection or library or borrowing from your connections to entry them. This is an definitely simple means to specifically get lead by on-line. This online revelation Iec 60364 5 5 can be one of the options to accompany you taking into consideration having additional time.

It will not waste your time. put up with me, the e-book will agreed vent you supplementary event to read. Just invest tiny become old to contact this on-line broadcast **Iec 60364 5 5** as without difficulty as evaluation them wherever you are now.

E62678 - GALLEGOS WILLIS

Covering major standards and relevant design issues, this book explains how to specify, install, and test a modern reliable structured cabling system and analyzes the terminology and physics behind the standards. The author empowers the reader with the skills required to read and understand standards and address problems raised by the need to design, procure, install, and test a modern cabling system, using both copper and optical fiber cable technology. He thoroughly discusses the technology and the vast number of standards that accompany it. The material is based on the design recommendations of ISO/IEC 11801. The appendix lists relevant standards and provides contacts for standards organizations.

Due to the complexity of power systems combined with other factors such as increasing susceptibility of equipment, power quality (PQ) is apt to waver. With electricity in growing demand, low PQ is on the rise and becoming notoriously difficult to remedy. It is an issue that confronts professionals on a daily basis, but few have the required knowledge to diagnose and solve these problems. Handbook of Power Quality examines of the full panorama of PQ disturbances, with background theory and guidelines on measurement procedures and problem solving. It uses the perspectives of both power suppliers and electricity users, with contributions from experts in all aspects of PQ supplying a vital balance of scientific and practical information on the following: frequency variations; the characteristics of voltage, including dips, fluctuations and flicker; the continuity and reliability of electricity supply, its structure, appliances and equipment; the relationship of PQ with power systems, distributed generation, and the electricity market; the monitoring and cost of poor PQ; rational use of energy. An accompanying website hosts case studies for each chapter, demonstrating PQ practice; how problems are identified, analysed and resolved. The website also includes extensive appendices listing the current standards, mathematical formulas, and principles of electrical circuits that are critical for the optimization of solutions. This comprehensive handbook explains PQ methodology with a hands-on approach that makes it essential for all practising power systems engineers and researchers. It

simultaneously acts as a reference for electrical engineers and technical managers who meet with power quality issues and would like to further their knowledge in this area.

This part of GB 3836 specifies the requirements for the design, construction, testing and marking of electrical apparatus with type of protection increased safety "e" intended for use in explosive gas atmospheres. This standard applies to electrical apparatus where the rated voltage does not exceed 11 kV r.m.s. a.c. or d.c. Additional measures are applied to ensure that the apparatus does not produce arcs, sparks, or excessive temperatures in normal operation or under specified abnormal conditions. This standard supplements and modifies the general requirements of GB 3836.1-2010. Where a requirement of this standard conflicts with a requirement of GB 3836.1-2010, the requirement of this standard takes precedence.

This handbook introduces a methodical approach and pragmatic concept for the planning and design of changeable factories that act in strategic alliances to supply the ever-changing needs of the global market. In the first

part, the change drivers of manufacturing enterprises and the resulting new challenges are considered in detail with focus on an appropriate change potential. The second part concerns the design of the production facilities and systems on the factory levels work place, section, building and site under functional, organisational, architectural and strategic aspects keeping in mind the environmental, health and safety aspects including corporate social responsibility. The third part is dedicated to the planning and design method that is based on a synergetic interaction of process and space. The accompanying project management of the planning and construction phase and the facility management for the effective utilization of the built premises close the book. The Authors Prof. em. Dr.-Ing. Dr. mult. h.c. Hans-Peter Wiendahl has been director for 23 years of the Institute of Factory planning and Logistics at the Leibniz University of Hannover in Germany. Prof. Dipl.-Ing. Architekt BDA Jürgen Reichardt is Professor at the Muenster school of architecture and partner of RMA Reichardt - Maas - Associate Architects in Essen Germany. Prof. Dr.-

Ing. habil. Peter Nyhuis is Managing Director of the Institute of Factory Planning and Logistics at the Leibniz University of Hannover in Germany.

This book highlights the essential theoretical and practical aspects of lightning, lightning protection, safety and education. Additionally, several auxiliary topics that are required to understand the core themes are also included. The main objective of the contents is to enlighten the scientists, researchers, engineers and social activists (including policy makers) in developing countries regarding the key information related to lightning and thunderstorms. A majority of developing countries are in tropics where the lightning characteristics are somewhat different from those in temperate regions. The housing structures and power/communication networks, and human behavioural patterns (that depends on socio-economic parameters) in these countries are also different from those in the developed world. As the existing books on similar themes address only those scenarios in developed countries, this book serves a vast spectrum of readership in developing

world who seek knowledge in the principles of lightning and a practical guidance on lightning protection and safety education.

This book reflects fundamentals to the power system and equips them to recognize and solve the transient problems in power networks and their components. Practicality has been a paramount concern in its preparation. Many pioneers of electrical engineering explored the transient behaviors of electric circuits. This book effectively helpful for the graduate, postgraduate studies and researches on power system transients and emergence & re-emergence the problems in the power system operations and control for new applications with new equipment. I have attempted to set out the fundamental ideas at the beginning of the book and made a consistent effort to show thereafter how one peels away the superficial differences in practical transient studies by referring to various books, researches, and physical industrial visits.

Electrical codes, standards, recommended practices and regulations can be complex subjects, yet are essential in both electrical design and life safe-

ty issues. This book demystifies their usage. It is a handbook of codes, standards, recommended practices and regulations in the United States involving electrical safety and design. Many engineers and electrical safety professionals may not be aware of all of those documents and their applicability. This book identifies those documents by category, allowing the ready and easy access to the relevant requirements. Because these documents may be updated on a regular basis, this book was written so that its information is not reliant on the latest edition or release of those codes, standards, recommended practices or regulations. No single document on the market today attempts to not only list the majority of relevant electrical design and safety codes, standards, recommended practices and regulations, but also explain their use and updating cycles. This book, one-stop-information-center for electrical engineers, electrical safety professionals, and designers, does. Covers the codes, standards, recommended practices and regulations in the United States involving electrical safety and design, providing a comprehensive refer-

ence for engineers and electrical safety professionals Documents are identified by category, enabling easy access to the relevant requirements Not version-specific; information is not reliant on the latest edition or release of the codes, standards, recommended practices or regulations

This Special Issue "Power System Simulation, Control and Optimization" offers valuable insights into the most recent research developments in these topics. The analysis, operation, and control of power systems are increasingly complex tasks that require advanced simulation models to analyze and control the effects of transformations concerning electricity grids today: Massive integration of renewable energies, progressive implementation of electric vehicles, development of intelligent networks, and progressive evolution of the applications of artificial intelligence.

Tired of trawling through the Wiring Regs? Perplexed by Part P? Confused by cables, conductors and circuits? Then look no further! This handy guide provides an on-the-job reference source for Electricians, De-

signers, Service Engineers, Inspectors, Builders, Students, DIY enthusiasts Topic-based chapters link areas of working practice – such as cables, installations, testing and inspection, special locations – with the specifics of the Regulations themselves. This allows quick and easy identification of the official requirements relating to the situation in front of you. The requirements of the regulations, and of related standards, are presented in an informal, easy-to-read style that strips away confusion. Packed with useful hints and tips, and highlighting the most important or mandatory requirements, this book is a concise reference on all aspects of the seventeenth edition IEE Wiring Regulations.

As a transient phenomenon can shut down a building or an entire city, transient analysis is crucial to managing and designing electrical systems. *Power System Transients: Theory and Applications* discusses the basic theory of transient phenomena—including lumped- and distributed-parameter circuit theories—and provides a physical interpretation of the phenomena. It covers novel and topical questions of power sys-

tem transients and associated overvoltages. Using formulas simple enough to be applied using a pocket calculator, the book presents analytical methods for transient analysis. It examines the theory of numerical simulation methods such as the EMTP (circuit-theory based approach) and numerical electromagnetic analysis. The book highlights transients in clean or sustainable energy systems such as smart grids and wind farms, since they require a different approach than overhead lines and cables. Simulation examples provided include arcing horn flashover, a transient in a grounding electrode, and an induced voltage from a lightning channel. **GROUNDS FOR GROUNDING** Gain a comprehensive understanding of all aspects of grounding theory and application in this new, expanded edition. Grounding design and installation are crucial to ensure the safety and performance of any electrical or electronic system irrespective of size. Successful grounding design requires a thorough familiarity with theory combined with practical experience with real-world systems. Rarely taught in schools due to its complexity, identifying and implementing the ap-

propriate solution to grounding problems is nevertheless a vital skill in the industrial world for any electrical engineer. In *Grounds for Grounding*, readers will discover a complete and thorough approach to the topic that blends theory and practice to demonstrate that a few rules apply to many applications. The book provides basic concepts of Electromagnetic Compatibility (EMC) that act as the foundation for understanding grounding theory and its applications. Each avenue of grounding is covered in its own chapter, topics from safety aspects in facilities, lightning, and NEMP to printed circuit board, cable shields, and enclosure grounding, and more. *Grounds for Grounding* readers will also find: Revised and updated information presented in every chapter. New chapters on grounding for generators, uninterruptible power sources (UPSs). New appendices including a grounding design checklist, grounding documentation content, and grounding verification procedures. *Grounds for Grounding* is a useful reference for engineers in circuit design, equipment, and systems, as well as power engineers, platform, and fa-

cility designers. [After payment, write to & get a FREE-of-charge, unprotected true-PDF from: Sales@ChineseStandard.net] This standard specifies the classification, characteristics, marking and product information, standard conditions for operation and installation in service and for installation, requirements for construction and operation and tests of portable devices for household and similar uses. This standard applies to PRCDs, consisting of a plug, a residual current device (RCD) and one or more socket-outlets or a provision for connection, functionally independent of, or functionally dependent on, line voltage. They do not incorporate overcurrent protection. They are intended for single-phase circuits for rated currents not exceeding 16A for rated voltages not exceeding 250V a.c. They are intended to provide protection against shock hazard in case of direct contact, in addition to the protection provided by the fixed installations for the circuit downstream.

This book offers a comprehensive approach to the assessment of fire hazards of electrical cables. The first part of the book describes division of

cables, main parameters of electrical cables, and fault scenarios of cables leading to fire or occupant injuries. The traditional approach to fire hazards of electrical cables assessment is also described in the first part. The second part of the book is focused on the creation and description of a new approach to fire hazard assessment of electrical cables. The new approach is based on the assessment of both ignition parameters of electrical cables and the impact of their fires on the surrounding area. The ignition parameters include critical heat flux, ignition temperature, and critical electrical current. The impact of cable fires on the surrounding area is expressed by the released heat, toxicity of combustion products (determined by the amount of released carbon oxides and oxygen consumed), and visibility (determined by the smoke extinction area). Newly created approach is practically illustrated on specific types of cables (power cables classified to B2ca and Fca reaction to fire class) in this book. The book is intended mainly for academics in the fields of both fire protection engineering and electrical engineering. Besides that, the pro-

professionals in fire safety will find valuable information concerning impact of electrical cables on the safety of occupants and structures during fire in the book. In addition, the book sheds light on the issue of fire safety of electrical cables for the professionals in both electrical and power engineering. Last but not least, the book is appropriate also for students in the fields of fire, electrical, and power engineering in bachelor, master, and Ph.D. degree.

Chapter 1: System Studies -- Chapter 2: Drawings and Diagrams -- Chapter 3: Substation Layouts -- Chapter 4: Substation Auxiliary Power Supplies -- Chapter 5: Current and Voltage Transformers -- Chapter 6: Insulators -- Chapter 7: Substation Building Services -- Chapter 8: Earthing and Bonding -- Chapter 9: Insulation Co-ordination -- Chapter 10: Relay Protection -- Chapter 11: Fuses and Miniature Circuit Breakers -- Chapter 12: Cables -- Chapter 13: Switchgear -- Chapter 14: Power Transformers -- Chapter 15: Substation and Overhead Line Foundations -- Chapter 16: Overhead Line Routing -- Chapter 17: Structures, Towers and Poles --

Chapter 18: Overhead Line Conductor and Technical Specifications -- Chapter 19: Testing and Commissioning -- Chapter 20: Electromagnetic Compatibility -- Chapter 21: Supervisory Control and Data Acquisition -- Chapter 22: Project Management -- Chapter 23: Distribution Planning -- Chapter 24: Power Quality- Harmonics in Power Systems -- Chapter 25: Power Qual ...

[After payment, write to & get a FREE-of-charge, unprotected true-PDF from: Sales@ChineseStandard.net] This Standard specifies the product properties, technical parameters and structural types that should be paid attention to during the selection and application of transfer switching equipment (T-SE), and the environmental conditions in use.

This book is an international view of the issues related to the safety and health of which the spaces for the provision of health services have as an intrinsic responsibility. Here we can observe works carried out by representatives of healthcare architecture and engineering from Argentina, Colombia, Italy, Japan, Spain, the United States of America, in addition to important Brazilian authors. Different looks and refl ec-

tions on multiple approaches of equally diverse interests of hospitals from all over the world. In this practical and accessible book, we present some contributions concerning the theme of Hospital and Healthcare Environment for Patient and Worker Safety with new contributions to security and risk reduction in healthcare environments.

Transportation Electrification Dive deep into the latest breakthroughs in electrified modes of transport In Transportation Electrification, an accomplished team of researchers and industry experts delivers a unique synthesis of detailed analyses of recent breakthroughs in several modes of electric transportation and a holistic overview of how those advances can or cannot be applied to other modes of transportation. The editors include resources that examine electric aircraft, rolling stock, watercraft, and vehicle transportation types and comparatively determine their stages of development, distinctive and common barriers to advancement, challenges, gaps in technology, and possible solutions to developmental problems. This book offers readers a breadth of foun-

dational knowledge combined with a deep understanding of the issues afflicting each mode of transportation. It acts as a roadmap and policy framework for transportation companies to guide the electrification of transportation vessels. Readers will benefit from an overview of key standards and regulations in the electrified transportation industry, as well as: A thorough introduction to the various modes of electric transportation, including recent advances in each mode, and the technological and policy challenges posed by them An exploration of different vehicle systems, including recent advanced in hybrid and EV powertrain architectures and advanced energy management strategies Discussions of electrified aircraft, including advanced technologies and architecture optimizations for cargo air vehicle, passenger air vehicles, and heavy lift vertical take-off and landing craft In-depth examinations of rolling stock and watercraft-type vehicles, and special vehicles, including various system architectures and energy storage systems relevant to each Perfect for practicing professionals in the electric transport industry, Trans-

portation Electrification is also a must-read resource for standardization body members, regulators, officials, policy makers, and undergraduate students in electrical and electronics engineering.

Due to the complexity, and heterogeneity of the smart grid and the high volume of information to be processed, artificial intelligence techniques and computational intelligence appear to be some of the enabling technologies for its future development and success. The theme of the book is "Making pathway for the grid of future" with the emphasis on trends in Smart Grid, renewable interconnection issues, planning-operation-control and reliability of grid, real time monitoring and protection, market, distributed generation and power distribution issues, power electronics applications, computer-IT and signal processing applications, power apparatus, power engineering education and industry-institute collaboration. The primary objective of the book is to review the current state of the art of the most relevant artificial intelligence techniques applied to the different issues that arise in the smart grid development.

Residual Current Devices: Selection, Operation, and Testing looks at the evolution in construction types of residual current devices and discusses the types and functional properties of contemporary systems. The principle of operation of elements is explained, along with the primary parameters of the devices and their selection and application, as well as the rules of backup protection of residual current devices. The requirements of the standards concerning the importance of obligatory use of devices are included, along with explanation of the needed protection in case of fault, additional protection, and protection against fire. The issue of residual current device operation in circuits with nonsinusoidal currents is detailed, giving special attention to the unique results of residual current device testing and tripping under distorted earth fault currents. In modern electrical and electronic installations, new complex challenges arise for designers and maintenance staff. This book is an essential guide to address those challenges, and its problem-solving section is useful for students, tutors, and academics, as well as engineers involved in the pro-

cess of design, maintenance, and verification of safety in low-voltage electrical installations. Explains the practical aspects of the selection and utilization of residual current devices Provides guidance on the operation of residual current devices in modern circuits characterized by nonsinusoidal earth fault currents Features remedies for challenges in unwanted tripping of residual current devices during the obligatory verification of low-voltage systems

A one-stop resource on how to design standard-compliant low voltage electrical systems This book helps planning engineers in the design and application of low voltage networks. Structured according to the type of electrical system, e.g. asynchronous motors, three-phase networks, or lighting systems, it covers the respective electrical and electrotechnical fundamentals, provides information on the implementation of the relevant NEC and IEC standards, and gives an overview of applications in industry. Analysis and Design of Electrical Power Systems: A Practical Guide and Commentary on NEC and IEC 60364 starts by introducing readers to the subject

before moving on to chapters on planning and project management. It then presents readers with complete coverage of medium- and low-voltage systems, transformers, asynchronous motors (AS-M), switchgear combinations, emergency generators, and lighting systems. It also looks at equipment for overcurrent protection and protection against electric shock, as well as selectivity and backup protection. A chapter on the current carrying capacity of conductors and cables comes next, followed by ones on calculation of short circuit currents in three-phase networks and voltage drop calculations. Finally, the book takes a look at compensating for reactive power and finishes with a section on lightning protection systems. Covers a subject of great international importance. Features numerous tables, diagrams, and worked examples that help practicing engineers in the planning of electrical systems. Written by an expert in the field and member of various national and international standardization committees. Supplemented with programs on an accompanying website that help readers reproduce and adapt calculations on their own

Analysis and Design of Electrical Power Systems: A Practical Guide and Commentary on NEC and IEC 60364 is an excellent resource for all practicing engineers such as electrical engineers, engineers in power technology, etc. who are involved in electrical systems planning.

This part specifies the performance requirements and test methods for SPDs installed on the DC side of a photovoltaic system. This type of SPD is used to reduce the impact of lightning induction or direct lightning on the DC side of photovoltaic power generation equipment. These appliances will be connected to the DC power circuit of a photovoltaic power generation equipment which has a rated voltage not exceeding 1500 V.

This book consists of chapters dedicated to the questions of cyber-physical system design and its usage for the chemical industry and new material design. Also, the contribution of the book covers scientific research and their results for cyber-physical systems design and application in the energy domain and solutions regarding engineering education for cyber-physical systems design. The book offers unique content for

researchers and practitioners who are looking for new knowledge and skills in the framework of Industry 4.0 solutions. The book also benefits researchers and practitioners in chemistry and new material design and manufacturing to understand how cyber-physical systems can be applied to increase efficiency and performance. The target audience of the book are practitioners, enterprises representatives, scientists, Ph.D. and master students who perform scientific research or applications of cyber-physical systems in the concept of Industry 4.0.

This Standard specifies the product classification, technical requirements and test methods of the inverters used for photovoltaic (PV) grid-connected system. This Standard is applicable to grid-connected PV inverter connected to PV source circuit.

[After payment, write to & get a FREE-of-charge, unprotected true-PDF from: Sales@ChineseStandard.net] This Standard specifies types and safety technical requirements of system earthing. Its purpose is to protect human and equipment safety. This Standard is applicable to the power grid of which the system nominal voltage is AC 220/380V.

This authoritative, best-selling guide has been extensively updated with the new technical requirements of the IET Wiring Regulations (BS 7671: 2008) Amendment No. 1:2011, also known as the IET Wiring Regulations 17th Edition. With clear description, it provides a practical interpretation of the amended regulations – effective January 2012 – offers real solutions to the problems that can occur in practice. This revised edition features: new material on hot topics such as electromagnetic compatibility (EMC), harmonics, surge protective devices, and new special locations including medical locations, and operative or maintenance gangways; highlights the changes that have been made in this latest Amendment and their impact in practice; examples of how to comply with the Wiring Regulations; fully-integrated colour including sixty brand new colour illustrations, twenty tables and new high-quality photographs. This essential guide retains its handy format, ideal for practicing electricians, trainee electricians and apprentices to carry with them for quick reference. It is a valuable resource for all users of BS 7671 who

want to understand the background to the Regulations; electrical engineers and technicians, installation and design engineers, consulting and building services engineers, also dedicated inspectors and testers.

This book features extensive coverage of all Distributed Energy Generation technologies, highlighting the technical, environmental and economic aspects of distributed resource integration, such as line loss reduction, protection, control, storage, power electronics, reliability improvement, and voltage profile optimization. It explains how electric power system planners, developers, operators, designers, regulators and policy makers can derive many benefits with increased penetration of distributed generation units into smart distribution networks. It further demonstrates how to best realize these benefits via skillful integration of distributed energy sources, based upon an understanding of the characteristics of loads and network configuration.

With energy resources becoming scarce and costly, and electrical energy being the most sought after form of energy, the designers of electrical systems

are faced with the challenge of guaranteeing energy efficiency, quality and scheduling to the satisfaction

Bei Veranstaltungen hat die Sicherheit des Publikums und aller Mitwirkenden oberste Priorität. Das vorliegende Werk liefert Veranstaltungstechnikern, Veranstaltern und Behördenvertretern praxisgerecht aufbereitete Informationen der relevanten Rechtsgrundlagen und Regelwerke zur Sicherheit in der Veranstaltungstechnik. Aus dem Inhalt: Erläuterungen zu grundlegenden Rechtsgrundlagen (MVStättV, Arbeitsschutzgesetz, Betriebssicherheitsverordnung) // Zusammenfassung und Einordnung von Rechtsgrundlagen und Regelwerken (z. B. BGV, DIN-Normen, TRBS) gruppiert nach Themen wie Beschallungsanlagen, Strom, Pyrotechnik u. v. m. // Checklisten zu Sicherheitskonzepten bei Veranstaltungen, verschiedenen Vorschriften und weiteren Arbeitsthemen wie Laser, Lasten, Personal, Rigging u. v. m. Die Checklisten zur Risikobeurteilung und Dokumentation von Schutzmaßnahmen stehen kostenlos in der Beuth-Mediathek zum Download bereit.

[After payment, write to & get a FREE-of-charge, unprotected true-PDF from: Sales@ChineseStandard.net] This Standard specifies the classification, size, shape and weight, technical requirements, test methods, inspection rules, packaging marks of steel stripes for welded steel pipe.

"This book provides guidance on how to select components, layout, install, test, certify, and troubleshoot a network system. It discusses designing industrial physical layers, network architectures, and components. The book educates the reader on the basics of noise, how to mitigate and abate it through installation techniques and selection of components that would provide a level of performance needed in a hostile industrial environment. The major topics include: grounding and bonding, IT and Industrial Control Networks, environmental considerations, ethernet security, MICE Tutorial, installation guidance, certification, troubleshooting."--PUBLISHER'S WEBSITE.

When planning an industrial power supply plant, the specific requirements of the individual production process are decisive for the design and mode

of operation of the network and for the selection and design and ratings of the operational equipment. Since the actual technical risks are often hidden in the profound and complex planning task, planning decisions should be taken after responsible and careful consideration because of their deep effects on supply quality and energy efficiency. This book is intended for engineers and technicians of the energy industry, industrial companies and planning departments. It provides basic technical network and plant knowledge on planning, installation and operation of reliable and economic industrial networks. In addition, it facilitates training for students and graduates in this field. In an easy and comprehensible way, this book informs about solution competency gained in many years of experience. Moreover, it also offers planning recommendations and knowledge on standards and specifications, the use of which ensures that technical risks are avoided and that production and industrial processes can be carried out efficiently, reliably and with the highest quality.

Od 1 stycznia 2014 r. zmieniły się wymagania

cieplne stawiane przegrodom zewnętrznym. Zaostrzono wymagania dotyczące maksymalnych współczynników przenikania ciepła - np. dla ścian zewnętrznych z 0,30 [W/m²K] do 0,25; 0,23; 0,20, które rozłożono w czasie na trzy etapy (2014, 2017, 2021). Zmieniła wartość graniczną wskaźnika sezonowego zapotrzebowania energii pierwotnej EP budynku w zależności od rodzaju budynku. Podano sposób obliczenia wartości EP oraz jej cząstkowe wartości maksymalne. Nowe Warunki Techniczne dla niektórych typów budynków zmienią niewiele, ale w odniesieniu do innych będą wyzwaniem do którego projektant będzie musiał przygotować odpowiednio materiały i technologie. Przed branżą stoi duże wyzwanie, które jest jednocześnie szansą na postęp w standardzie budownictwa. Nowe wymagania mają powodować zmniejszenie kosztów użytkowania budynków i obciążeń środowiskowych.

This Code is applicable to lightning protection design of newly built structures.

This highly illustrated and practical book surveys techniques available to protect LV equipment and

systems from lightning strikes and other surges. After examining the physical origins and effects of these phenomena, it concentrates on the components and applications of protective measures and systems, placed in the context of current IEC and VDE standards. This unique book provides the reader with a thorough background in almost every aspect of lightning and its impact on electrical and electronic equipment. The contents range from basic discharge processes in air through transient electromagnetic field generation and interaction with overhead lines and underground cables, to lightning protection and testing techniques. This book is of value to anyone designing, installing or commissioning equipment, which needs to be

secured against lightning strikes, as well as being a sound introduction to research students working in the field.

Annotation A comprehensive guide to the technology underlying drives, motors and control units, this title contains a wealth of technical information for the practising drives and electrical engineer.

This book, designed for engineers, technicians, designers and operators working with electrical networks, contains theoretical and practical information on the design and set-up of protection systems. Protection of Electrical Networks first discusses network structures and grounding systems together with problems that can occur in networks. It goes on to cover current and voltage transformers, protection functions, cir-

cuit breakers and fuses. Practical explanations of how protection systems function are given, and these, together with tables of settings, make this book suitable for any reader, irrespective of their initial level of knowledge.

A guide to electrical isolation and switching. It is part of a series of manuals designed to amplify the particular requirements of a part of the 16th Edition Wiring Regulations. Each of the guides is extensively cross-referenced to the Regulations thus providing easy access. Some Guidance Notes contain information not included in the 16th Edition but which was included in earlier editions of the IEE Wiring Regulations. All the guides have been updated to align with BS 7671:2001.