

Variable Frequency Drives Installation Troubleshooting Practical Guides For The Industrial Technician Volume 2

This original contributed volume combines the individual expertise of eleven world-renowned professionals to provide comprehensive, authoritative coverage of state-of-the-art power electronics and AC drive technology. Featuring an extensive introductory chapter by power-electronics expert Bimal K. Bose and more than 400 figures, *POWER ELECTRONICS AND VARIABLE FREQUENCY DRIVES* covers each of the field's component disciplines and drives--all in one complete resource. Broad in scope and unique in its presentation, this volume belongs on the bookshelf of every industry engineer, professor, graduate student, and researcher involved in this fast-growing multidisciplinary field. It is an essential for teaching, research, development, and design.

A critical aspect of sustainability associated with water and wastewater systems is to maintain and manage infrastructure in the most efficient and economical manner while complying with environmental regulations and keeping rates at acceptable levels. Given the high cost of fuel, our growing population, and the associated increase in energy needs, it is important to address energy use and future energy availability for the treatment of the water we drink and the water we pollute. *Water & Wastewater Infrastructure: Energy Efficiency and Sustainability* addresses these issues, detailing the processes that can assist facilities to become more energy efficient and providing guidance to ensure their sustainability. The text begins with brief descriptions of the water and wastewater treatment industries. It then describes some of the basics of energy and discusses what planning for a sustainable energy future in water and wastewater treatment plants entails. The author explores energy-saving options and provides case studies to demonstrate how some facilities have used equipment, technology, and operating strategies to save money and reduce their impact. The energy-efficient technologies include combined heat and power (CHP), gas turbines, microturbines, reciprocating engines, steam turbines, and fuel cells. The author also addresses biomass power and biogas. The section on sustainability and renewable energy covers hydropower, solar power, and wind power as well as energy conservation measures for treating wastewater. Nine appendices provide individual case studies that present evaluations of energy conservation measures, results, payback analysis, and conclusions. This book addresses the challenges faced by water and wastewater treatment facilities by examining how they can operate in ways that provide economic and environmental benefits, save money, reduce environmental impact, and lead to sustainability.

A WORKBENCH-READY, FULLY ILLUSTRATED GUIDE TO SOLENOID DEVICES Learn how to design, troubleshoot, and maintain high-performance solenoid-based devices. Featuring photos, diagrams, charts, graphs, and schematics, this convenient handbook combines basic theory with control and testing methods encompassing a wide range of product configurations. Find out how to assess environmental factors, analyze components, maximize efficiency, and implement reliable controls. *Solenoid Control, Testing, and Servicing* offers extensive details on adding feedback and "smart solenoid control" to your circuits. Coverage includes: Electrical and electromagnetic principles Resistance, inductance, and turns testing Actuator and valve requirements Clutch/brake and contactor/relay tests AC and DC voltage control Coil-back EMF and contact arc suppression Voltage, current, and peak-and-hold control Linear and PWM proportional control Feedback and closed-loop techniques

"Spurious Correlations ... is the most fun you'll ever have with graphs."--Bustle Military intelligence analyst and Harvard Law student Tyler

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Vigen illustrates the golden rule that "correlation does not equal causation" through hilarious graphs inspired by his viral website. Is there a correlation between Nic Cage films and swimming pool accidents? What about beef consumption and people getting struck by lightning? Absolutely not. But that hasn't stopped millions of people from going to tylervigen.com and asking, "Wait, what?" Vigen has designed software that scours enormous data sets to find unlikely statistical correlations. He began pulling the funniest ones for his website and has since gained millions of views, hundreds of thousands of likes, and tons of media coverage. Subversive and clever, Spurious Correlations is geek humor at its finest, nailing our obsession with data and conspiracy theory.

An adjustable-speed drive (ASD) includes all devices that vary the speed of a rotating load, including those that vary the motor speed and linkage devices that allow constant motor speed while varying the load speed. The Variable Frequency Drive Evaluation Protocol presented here addresses evaluation issues for variable-frequency drives (VFDs) installed on commercial and industrial motor-driven centrifugal fans and pumps for which torque varies with speed. Constant torque load applications, such as those for positive displacement pumps, are not covered by this protocol. Other ASD devices, such as magnetic drive, eddy current drives, variable belt sheave drives, or direct current motor variable voltage drives, are also not addressed. The VFD is by far the most common type of ASD hardware. With VFD speed control on a centrifugal fan or pump motor, energy use follows the affinity laws, which state that the motor electricity demand is a cubic relationship to speed under ideal conditions. Therefore, if the motor runs at 75% speed, the motor demand will ideally be reduced to 42% of full load power; however, with other losses it is about 49% of full load power.

Complete Coverage of Control and Monitoring Systems Written by a veteran electrician with more than 40 years' experience, this practical guide walks you through the ladder diagrams and control devices of networked monitoring systems. Electrician's Guide to Control and Monitoring Systems focuses on installation, troubleshooting, and maintenance and includes coverage of the 2008 National Electrical Code. Electrician's Guide to Control and Monitoring Systems contains: Detailed drawings Step-by-step explanations of drawings Information on networks used in the field Drawings available online Ladder diagrams are broken down and rebuilt, making it easy to understand the symbols and language used in them. Hundreds of product photos and line drawings illustrate key details presented in the book, and additional drawings are available online. Essential for electrical contractors, electricians, and maintenance workers, this on-the-job resource also contains information on networks used in the field. Foreword by Michael I. Callanan, Executive Director, National Joint Apprenticeship Training Committee (NJATC). Drawings available at www.mhprofessional.com/egcms

"Created in cooperation with Fluke Corporation."

Because society depends greatly on electric energy, power system control and protection focuses on ensuring a secure and reliable supply of power. To operate the electric systems in safe mode, the power system component should be equipped with intelligent controllers. The Handbook of Research on Smart Power System Operation and Control is a collection of innovative research on the theoretical and practical developments in smart power system operation and control that takes into account both smart grid and micro-grid systems. While highlighting topics including cybersecurity, smart grid, and wide area monitoring, this book is ideally designed for researchers, students, and industry professionals.

This is the best way to learn ladder logic programming because it's like you were buying three different books: One for Theory, one for Lessons and a third one for Real applications. Learning about Programmable Logic Controllers is a real need for any technician/engineer who wants to work or applying for a job in the field of automation. It has been proven that it becomes a major disadvantage when you are

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educated on the technology of just one particular manufacturer, because most of the companies have at least two different PLC brands on their industrial processes. You become more competitive if you are able to easily switch from programming one PLC to another, like you were able to speak several languages. This book is not for you if you just plan to read or learn about a particular brand. Our approach is to teach general information and provide PRACTICE so it will be easier for you to understand ANY PLC brand. The first chapters will teach you about general theory and all the available PLC technologies using the most common terms and names of industrial automation; knowing the jargon is quite important when attending a job interview. The second part is dedicated to learn the basic ladder logic instructions used for programming any generic PLC. There is a software tool (for downloading) used to write and test each of the forty step by step hands-on lessons to help you in practicing on Ladder logic programming. The last part has fourteen industrial PLC applications with project drawings and ladder logic programs, which you can simulate. Practicing with real life examples will help you to understand and reinforce the concepts. There is some extra and useful material: A first bonus is a short chapter of basic understanding on electricity. You'll have to refresh this knowledge if you plan to make real connections on PLC applications. A second bonus: The basic ladder logic commands from several important PLC manufacturers : Allen Bradley(r), Siemens(r), General electric(r), Triangle Research(r) and PLC Direct(r). It will be easy for you to understand the basic concepts from any specific PLC Manufacturer's ladder logic since you already have learned the basic instructions. A third bonus: A Software Simulator is available for downloading so you can perform a hands-on practice of the lessons and the application projects by writing a program on your computer and performing all tests until it works as expected. This material is ideal for beginners and self-learners with no specific background because no prior knowledge is assumed or required. This book has already been selected by prestigious educational institutions all over the world to train students on industrial automation. The learning methodology used here will allow you to troubleshoot, test and debug any PLC application with DIGITAL inputs and outputs. Our second book (coming soon) will cover the ANALOG part. We look for positive reviews so we are the only ones providing support ,free of charge :On page 154 you find two e-mail addresses and the steps for you to get support to obtain and install the software, write a program, answer to your doubts and review of your answers to the questions from each chapter (in English and Spanish). Note to professors/instructors: . Please don't cut your students' wings by teaching a particular brand of PLC. Teach as many brands as possible. Important: Pocket PLC trainers are available for purchase so, in addition to the free software you can also practice with real PLCs. IMPORTANT: Your learning experience is important to us. The few negative reviews are from people who don't even read the text, practice the lessons or try the software. Reading our answers will prove that we never hide, that we try to contact you if needed and that we listen.

"This book introduces readers to a wide selection of case studies covering a multitude of supply chains in different economies of the world and examines major issues related to supply chain management"--Provided by publisher.

Electric Motors and Drives: Fundamentals, Types and Applications provides information regarding the inner workings of motor and drive system. The book is comprised of nine chapters that cover several aspects and types of motor and drive systems. Chapter 1 discusses electric motors, and Chapter 2 deals with power electronic converters for motor drives. Chapter 3 covers the conventional d.c. motors, while Chapter 4 tackles inductions motors – rotating field, slip, and torque. The book also talks about the operating characteristics of induction motors, and then deals with the inverter-fed induction motor drives. The stepping motor systems; the synchronous, switched reluctance, and brushless d.c. drives; and the motor/drive selection are also covered. The text will be of great use to individuals who wish to familiarize themselves with motor and drive systems.

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Considered one of the most innovative research directions, computational intelligence (CI) embraces techniques that use global search optimization, machine learning, approximate reasoning, and connectionist systems to develop efficient, robust, and easy-to-use solutions amidst multiple decision variables, complex constraints, and tumultuous environments. CI techniques involve a combination of learning, adaptation, and evolution used for intelligent applications. *Computational Intelligence Paradigms for Optimization Problems Using MATLAB®/ Simulink®* explores the performance of CI in terms of knowledge representation, adaptability, optimality, and processing speed for different real-world optimization problems. Focusing on the practical implementation of CI techniques, this book: Discusses the role of CI paradigms in engineering applications such as unit commitment and economic load dispatch, harmonic reduction, load frequency control and automatic voltage regulation, job shop scheduling, multidepot vehicle routing, and digital image watermarking Explains the impact of CI on power systems, control systems, industrial automation, and image processing through the above-mentioned applications Shows how to apply CI algorithms to constraint-based optimization problems using MATLAB® m-files and Simulink® models Includes experimental analyses and results of test systems *Computational Intelligence Paradigms for Optimization Problems Using MATLAB®/ Simulink®* provides a valuable reference for industry professionals and advanced undergraduate, postgraduate, and research students.

Whether you're a busy electrical engineer needing to brush up on motor starting, a time-challenged student new to the subject, or an interested layperson with an hour to spare, this book is the place to start. Steven McFadyen shares his expert knowledge of motor starting in a clear-cut, easily accessible way without time-consuming verbiage or self-aggrandizing discussions. Complete with circuit diagrams and thorough explanations of the most common motor starting methods - and challenges - this book is an invaluable reference. It has something to offer anyone keen to learn new things, while at the same time assisting practicing electrical engineers to design and implement reliable and functional motor starters.

The advance of variable speed drives systems (VSDs) engineering highlights the need of specific technical guidance provision by electrical machines and drives manufacturers, so that such applications can be properly designed to present advantages in terms of both energy efficiency and expenditure. This book presents problems and solutions related to inverter-fed electrical motors. Practically orientated, the book describes the reasons, theory and analysis of those problems. Various solutions for individual problems are presented together with the complete design process, modelling and simulation examples with MATLAB/Simulink on the companion website. A key focus of *Variable Speed AC Drives with Inverter Output Filters* is to examine the state variables estimation and motor control structures which have to be modified according to the used solution (filter). In most control systems the structure and parameters are taken into account to make it possible for precise control of the motor. This methodology is able to include modifications and extensions depending on specific control and estimation structures. Highly accessible, this is an invaluable resource for practising R&D engineers in drive companies, power electronics & control engineers and manufacturers of electrical drives. Senior undergraduate and postgraduate students in electronics and control engineering will also find it of value.

VFDs have become standard devices in today's electrical systems. Selecting the correct type of VFD for each motor application, installing and maintaining it are all required knowledge for electrical design engineers, operating engineers, and service mechanics. With so many types of VFDs available for both HVAC and industrial applications, knowledge of how they work is necessary for choosing the correct VFD and keeping it operating successfully. This book provides an understanding of industrial electronics, VFDs, and motors, and provides VFD selection and application guidelines. It even includes a comprehensive troubleshooting guide with procedures for correcting start-up and

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intermittent problems.

Annotation Written in straightforward "user" language, this book provides an authoritative, yet practical guide for the engineer or technician involved in specifying, applying, maintaining or operating variable frequency drives (VFDs). A comprehensive overview of starting controls and their application to various types of induction motors provides a valuable assessment of the advantages and disadvantages of each type of control. You'll find a helpful discussion of some of the latest electronic "smart" motor controllers, as well as a section covering the attributes and capabilities of the "wound-rotor motor," including how to configure a basic control system for it. A basis is given to compare motor torque and operating characteristics using "starters." The presentation provides a detailed evaluation of the most common versions of variable frequency drives. Current trends in addressing harmonic problems created by VFDs are discussed, along with use of new IGBT technology. Other topics include sizing and applying of VFDs, controlling enclosure heat, and energy saving opportunities.

The variable frequency drive industry is growing rapidly, and it is now more important than ever for technicians and maintenance personnel to keep VFD installations running smoothly! Part of the Electrician's Technical Reference Series, this field guide is ideal for gaining access to information about variable frequency drives, including how they work, how to apply them, and how to troubleshoot them. A hands-on reference, Variable Frequency Drives contains sufficient information for a technician to troubleshoot any AC variable frequency drive, virtually eliminating the need for manufacturer-specific manuals! Both industrial and commercial variable frequency drive applications are addressed, with discussion of installation issues, troubleshooting, metering, sizing and selection, energy savings with variable frequency drives, and more. A final chapter preps readers for future developments in variable frequency drive technology, while appendices feature addresses of relevant organizations and a bibliography of suggested readings.

Variable Frequency Drives Installation & Troubleshooting

Prepared by industry experts from the pump, motor and drive industries under the auspices of Europump and the Hydraulic Institute, this reference book provides a comprehensive guide to variable speed pumping. It includes technical descriptions of pumping systems and their components, and guides the reader through the evaluation of different speed control options. Case studies help illustrate the life cycle cost savings and process improvements that appropriate variable speed pumping can deliver. · Authoritative, global reference to Variable Speed Pumping, by Europump and the Hydraulic Institute · Combines the technical knowledge of pump, motor and control systems in one guide · Brings together all the concepts, metrics and step-by-step decision-making support you need to help you decide which VSD strategies are most appropriate · Will help you design and specify pumping applications that minimise life-cycle costs

Typical practical applications of VSDs in process control and materials handling, such as those for pumping, ventilation, conveyers, compressors and hoists are covered in detail. · Provides a fundamental understanding of the installation, operation and troubleshooting of Variable Speed Drives (VSDs) · Includes practical coverage of key topics such as

troubleshooting, control wiring, operating modes, braking types, automatic restart, harmonics, electrostatic discharge and EMC/EMI issues · Essential reading for electrical engineers and those using VSDs for applications such as pumping, ventilation, conveyors and hoists in process control, materials handling and other industrial contexts

This operations manual explains the basic principles of electrical power distribution, automation, and instrumentation in water distribution, treatment, and storage systems. Chapters cover hydraulic and electrical principles, electric motor controls, measurement instruments and displays, pumps and valves, and automatic and digital controls.

Process machines are critical to the profitability of processes. Safe, efficient and reliable machines are required to maintain dependable manufacturing processes that can create saleable, on-spec product on time, and at the desired production rate. As the wards of process machinery, we wish to keep our equipment in serviceable condition. One of the most challenging aspects of a machinery professional or operator's job is deciding whether an operating machine should be shut down due to a perceived problem or be allowed to keep operating. If he or she wrongly recommends a repair be conducted, the remaining useful machine life is wasted, but if he or she is right, they can save the organization from severe consequences, such as product releases, fires, costly secondary machine damage, etc. This economic balancing act is at the heart of all machinery assessments. Troubleshooting is part science and part art. Simple troubleshooting tables or decision trees are rarely effective in solving complex, real-world machine problems. For this reason, the authors want to offer a novel way to attack machinery issues that can adversely affect the reliability and efficiency of your plant processes. The methodology presented in this book is not a rigid "cook book" approach but rather a flexible and dynamic process aimed at exploring process plant machines holistically, in order uncover the true nature the problem at hand.

Modeling and Control of Power Electronics Converter Systems for Power Quality Improvements provides grounded theory for the modeling, analysis and control of different converter topologies that improve the power quality of mains. Intended for researchers and practitioners working in the field, topics include modeling equations and the state of research to improve power quality converters. By presenting control methods for different converter topologies and aspects related to multi-level inverters and specific analysis related to the AC interface of drives, the book helps users by putting a particular emphasis on different control algorithms that enhance knowledge and research work. Present In-depth coverage of modeling and control methods for different converter topology Includes a particular emphasis on different control algorithms to give readers an easier understanding Provides a results and discussion chapter and MATLAB simulation to support worked examples and real-life application scenarios

Practical Power Plant Engineering offers engineers, new to the profession, a guide to the methods of practical design, equipment selection and operation of power and heavy industrial plants as practiced by experienced engineers. The

author—a noted expert on the topic—draws on decades of practical experience working in a number of industries with ever-changing technologies. This comprehensive book, written in 26 chapters, covers the electrical activities from plant design, development to commissioning. It is filled with descriptive examples, brief equipment data sheets, relay protection, engineering calculations, illustrations, and common-sense engineering approaches. The book explores the most relevant topics and reviews the industry standards and established engineering practices. For example, the author leads the reader through the application of MV switchgear, MV controllers, MCCs and distribution lines in building plant power distribution systems, including calculations of interrupting duty for breakers and contactors. The text also contains useful information on the various types of concentrated and photovoltaic solar plants as well as wind farms with DFIG turbines. This important book:

- Explains why and how to select the proper ratings for electrical equipment for specific applications
- Includes information on the critical requirements for designing power systems to meet the performance requirements
- Presents tests of the electrical equipment that prove it is built to the required standards and will meet plant-specific operating requirements

Written for both professional engineers early in their career and experienced engineers, *Practical Power Plant Engineering* is a must-have resource that offers the information needed to apply the concepts of power plant engineering in the real world.

Project Report from the year 2015 in the subject Engineering - Power Engineering, , language: English, abstract: The project was to convert the control of three boiler feed water pumps to Variable Voltage Variable Frequency (VVVF) drives having a capacity of 750 m³/H @ 220 Kg/Cm² pressure and power rating of 6200 KW each. The main focus of this report is the design and development of the protection system, sequence of operation, bypass system, speed control system, drum level control and graphic interface. It also includes PID controller tuning for VVVF drive smooth control.

An in-depth exploration of shipboard power generation and distribution system design that utilizes variable frequency drives The variable frequency drive (VFD) application is a proven technology for shore-based applications. However, shore-based VFDs often are unsuitable for shipboard applications because the power generation and distribution fundamentals are completely different. *VFD Challenges for Shipboard Electrical Power System Design* explores the problems presented by variable frequency drives as they are applied in shipboard power generation and distribution system design and offers solutions for meeting these challenges. VFDs with configurations such as six pulse drive, 12 pulse drive, 18 pulse drive, active front end, pulse width modulation and many others generate many different levels of harmonics. These harmonics are often much higher than the regulations allow. This book covers a range of techniques used to provide ships with efficient energy that minimizes mechanical and electrical stress. This important book: Offers a comparison of shipboard grounding and VFD grounding Contains an analysis of the VFD effect in terms of shipboard power quality Includes specific examples of Department of Transportation standards regarding VFDs Written for commercial and naval engineers designing ships and/or shipboard power systems, *VFD Challenges for Shipboard Electrical Power System Design* is a comprehensive resource that addresses the problems and solutions associated with shipboard applications of VFD.

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Variable frequency drive - VFD - frequency drives - reductiemotor.

Solve the machinery failure problems costing you time and money with this classic, comprehensive guide to analysis and troubleshooting. Provides detailed, complete and accurate information on anticipating risk of component failure and avoiding equipment downtime. Includes numerous photographs of failed parts to ensure you are familiar with the visual evidence you need to recognize. Covers proven approaches to failure definition and offers failure identification and analysis methods that can be applied to virtually all problem situations. Demonstrates with examples how the progress and results of failure analysis and troubleshooting efforts can be documented and monitored. Failures of machinery in a plant setting can have wide-ranging consequences and in order to stay competitive, corporations across all industries must optimize the efficiency and reliability of their machinery. Machinery Failure Analysis and Troubleshooting is a trusted, established reference in the field, authored by two well-known authorities on failure and reliability. Structured to teach failure identification and analysis methods that can be applied to almost all problem situations, this eagerly awaited update takes in the wealth of technological advances and changes in approach seen since the last edition published more than a decade ago. Covering both the engineering detail and management theory, Machinery Failure Analysis and Troubleshooting provides a robust go-to reference and training resource for all engineers and managers working in manufacturing and process plants. Provides detailed, complete and accurate information on anticipating risk of component failure and avoiding equipment downtime. Presents documented failure case studies and analyzes the procedures employed to define events that led to component or systems failure. Includes numerous photographs of failed parts to ensure readers are familiar with the visual evidence they need to recognize.

Variable Frequency Drives - Installation & Troubleshooting This book explains just how to install and configure VFDs, including discussions of their functions, different control modes, how to program parameters, and how to troubleshoot and use fault code diagnostics. This book provides details that are essential for every technician wanting to develop a greater understanding of motor / drive technology and Pulse Width Modulation. Written by a technician for other technicians, Mr. Anderson focuses on areas of discussion relevant to the main objective - learning how to troubleshoot and quickly resolve drive problems. Contains easy to understand diagrams and testing procedures.

"Industrial Electrical Troubleshooting demonstrates the efficient use of certain electrical meters to troubleshoot relay-logic circuits with a single setting. Today, a generation of electronic meters is available to test voltage and continuity without changing the setting of the meter or de-energizing the circuit. Careful attention has been given to safety procedures throughout the book. Traditional troubleshooting techniques have not kept pace with this equipment though. Instructors and students will find comprehensive and up-to-date information for safely and efficiently locating problems and then troubleshooting online. Multimeters, clamp-on meters, ammeters, megohmmeters, proximity voltage meters, hand-held oscilloscopes and other meters are thoroughly discussed as plant electrical troubleshooting tools.

In the last few decades, electric drives have found their place in a considerable number of diverse applications. They are successfully replacing some other traditional types of drives owing to their better performance and excellent controllability. The introduction of electric drives is in most cases also beneficial from the ecological point of view as they are not directly dependent on fossil fuels and an increasing part of electric energy they consume is generated in renewable energy sources. This book focuses on applications of electric drives that emerged only recently and/or novel aspects that appear in them. Particular attention is given to using electric drives in vehicles, aircraft, non-road mobile machinery, and HVAC systems.

HVAC Water Chillers and Cooling Towers provides fundamental principles and practical techniques for the design, application, purchase,

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operation, and maintenance of water chillers and cooling towers. Written by a leading expert in the field, the book analyzes topics such as piping, water treatment, noise control, electrical service, and energy efficiency.

Overview of the workshop; papers related to design outcomes; papers related to the design process; case studies; country papers.

A fully up-to-date, hands-on guide to electric motors Keep electric motors running at peak performance! Electric Motor Maintenance and Troubleshooting, Second Edition explains in detail how all types of AC and DC motors work. Essential for anyone who needs to buy, install, troubleshoot, maintain, or repair small to industrial-size electric motors, this practical guide contains new information on three-phase motors along with coverage of the latest test instruments. Drawing on his more than 40 years of experience working with electric motors, expert author Augie Hand provides a wealth of tested procedures to pinpoint and correct any kind of issue. He'll help you decide whether to replace a motor, take it offline for repair, or repair it in place--decisions that can reduce down time. End-of-chapter questions reinforce the material covered in the book. Quickly and accurately diagnose electric motor problems and find effective solutions with help from this fully updated classic. Electric Motor Maintenance and Troubleshooting, Second Edition covers: Troubleshooting and testing DC machines AC electric motor theory Single-phase motors Three-phase induction motors Troubleshooting less common motors, including synchronous, two-speed one-winding, and multispeed Test instruments and services

Industrial Network Basics discusses how networks actually work but with an emphasis on industrial networking protocols and methods. Many of the most common and well known fieldbus applications are discussed, as well as the industrial Ethernet protocols typically used in motion and process control solutions. Industrial Ethernet, together with fieldbus network media, provide hybrid network topologies that are used in many machine and process control applications. Help current and future technicians gain a thorough understanding of today's electronic variable speed drives with this one-of-a-kind practical guide. ELECTRONIC VARIABLE SPEED DRIVES, 4E provides the information essential for mastering DC and inverter drive technology. Using a logical structure, this book introduces fundamental drive circuits before presenting more complex drive circuits. This new edition highlights the most current technology advances for drives. The authors use their extensive industry and teaching experience to present theory in a clear, straightforward manner with an emphasis on both troubleshooting and maintenance. New hands-on activities in this edition provide additional practice using the Allen-Bradley PowerFlex 70 while numerous waveform schematics guide readers through operating different types of drives and interpreting their circuitry. Specific chapters focus on digital regenerative DC drives and frequency inverters as well as mechanical and electrical installation, set-up, tuning, programming, operating, and troubleshooting of each drive. Depend on this concise, yet thorough, book to present the information professional

