aaon wiring diagram

aaon wiring diagram is a critical component for understanding, troubleshooting, and maintaining AAON HVAC equipment. This comprehensive guide delves into the intricacies of AAON wiring diagrams, offering insights for technicians, facility managers, and anyone involved with these sophisticated systems. We will explore the fundamental principles behind these diagrams, the common symbols you'll encounter, and how to effectively interpret them for various AAON unit types, from rooftop units to building automation system integrations. Understanding these diagrams empowers you to diagnose electrical issues, ensure proper installation, and optimize the performance and longevity of your AAON equipment, ultimately saving time and resources.

Understanding the Importance of AAON Wiring Diagrams

AAON wiring diagrams are not merely technical blueprints; they are the universal language of electrical communication within complex HVAC systems. These diagrams provide a visual representation of how electrical components are interconnected, detailing the flow of power and control signals. For professionals working with AAON equipment, a thorough comprehension of these diagrams is paramount for efficient and safe operation. Without this knowledge, troubleshooting electrical malfunctions can become a time-consuming and potentially dangerous endeavor. Accurate interpretation ensures that installations are performed according to manufacturer specifications, preventing costly errors and ensuring the system operates as intended.

The Role of AAON Wiring Diagrams in Troubleshooting

When an AAON unit experiences an electrical fault, the wiring diagram serves as the primary diagnostic tool. It allows technicians to trace circuits, identify potential points of failure, and understand the intended operation of each component. By following the schematic, one can systematically test individual circuits and components, isolating the source of the problem. This methodical approach, guided by the diagram, significantly reduces the guesswork involved in repairs. Furthermore, it helps in understanding the interactions between different control systems and power sources, which is crucial for complex AAON configurations.

Ensuring Proper Installation and Commissioning

The correct installation of any AAON HVAC unit relies heavily on adhering to the provided wiring diagrams. These diagrams outline the exact connections for power supply, control wiring, safety interlocks, and communication protocols. Deviations from the diagram during installation can lead to immediate operational issues, system damage, or safety hazards. During the commissioning phase, the wiring diagram is used to verify that all connections are correctly made and that the system is functioning according to

design parameters. This step is crucial for ensuring the unit's optimal performance and longevity from the outset.

Key Components of an AAON Wiring Diagram

AAON wiring diagrams are characterized by a specific set of symbols and conventions that represent various electrical components and their relationships. Familiarity with these elements is the first step toward effectively reading and understanding any AAON electrical schematic. The diagrams typically illustrate power distribution, control logic, safety circuits, and communication pathways. Each symbol has a defined meaning, and their arrangement depicts the functional flow of electricity through the system.

Common Electrical Symbols and Their Meanings

Understanding the lexicon of electrical symbols is fundamental. AAON diagrams utilize standard electrical symbols, often accompanied by alphanumeric designations. These symbols represent components such as relays, contactors, fuses, circuit breakers, switches, transformers, motors, and sensors. For instance, a series of parallel lines often denotes a switch, while a circle with an 'M' inside typically signifies a motor. Labels associated with these symbols provide specific information, such as voltage ratings, current capacities, or component identification numbers, which are vital for accurate interpretation.

- Relays: Control circuits for switching larger loads.
- Contactors: Similar to relays but designed for higher current applications.
- Fuses and Circuit Breakers: Overcurrent protection devices.
- Switches: Manual or automatic devices for opening or closing circuits.
- Transformers: Step up or step down voltage levels.
- Motors: Represented by symbols indicating their type and power.
- Sensors: Devices that detect environmental conditions (e.g., temperature, pressure).

Understanding Terminal Designations and Wire Colors

AAON wiring diagrams clearly label terminal points within the control panels and on various components. These terminal designations, often alphanumeric, correspond to specific wires in the physical installation.

Understanding these labels is crucial for tracing connections accurately. Similarly, wire colors play a significant role in identifying different circuits and voltage levels. While standard color codes exist, always refer to the specific diagram for the unit you are working on, as variations can occur. The combination of terminal designations and wire colors provides a roadmap for electrical connections.

Interpreting AAON Wiring Diagrams for Different Unit Types

AAON manufactures a wide array of HVAC equipment, and while the fundamental principles of their wiring diagrams remain consistent, specific layouts and complexities can vary significantly between unit types. Whether dealing with a large rooftop unit (RTU) or a smaller packaged terminal air conditioner (PTAC), the ability to interpret the corresponding diagram is essential. Different units have distinct control strategies, component configurations, and power requirements, all of which are meticulously detailed in their respective wiring diagrams.

Rooftop Unit (RTU) Wiring Diagrams

AAON RTU wiring diagrams are often extensive due to the integrated nature of these units, which typically include heating, ventilation, and air conditioning functionalities in a single package. These diagrams will detail power inputs for compressors, fans, and heating elements, as well as the intricate network of control wiring for thermostats, economizers, and safety interlocks. Understanding the sequence of operations as depicted in the diagram is key to troubleshooting RTU performance issues. Special attention should be paid to diagrams illustrating the interaction between different stages of cooling and heating, as well as ventilation control.

Air Handler Unit (AHU) Wiring Diagrams

For Air Handler Units, the wiring diagrams focus on the electrical connections for fan motors, heating and cooling coils, dampers, and various sensors. AHUs are often part of larger, centralized HVAC systems, so their diagrams will also illustrate connections to Building Automation Systems (BAS) and remote control panels. The complexity arises from the modular nature of AHUs, where different configurations of coils and accessories necessitate specific wiring approaches. Technicians will need to identify the power supply to the fan, control signals for dampers, and any integrated heating or cooling elements.

Variable Refrigerant Flow (VRF) System Wiring Diagrams

VRF systems, known for their energy efficiency and zoning capabilities, involve more intricate communication wiring between indoor and outdoor units, as well as centralized controllers. AAON VRF wiring diagrams will detail these communication lines, power feeds, and sensor connections for each zone. Understanding the master-slave configurations, refrigerant line sensor connections, and communication

protocols is critical for diagnosing issues in VRF installations. These diagrams often include specific wiring for optional accessories and advanced control features.

Advanced Concepts in AAON Wiring Diagrams

Beyond basic component identification, advanced AAON wiring diagrams encompass sophisticated control strategies, integration with Building Automation Systems, and specific safety features. Mastering these aspects allows for a deeper understanding and more effective management of AAON HVAC infrastructure.

Understanding Control Logic and Sequence of Operations

AAON wiring diagrams are instrumental in deciphering the control logic that governs the operation of their HVAC equipment. This includes understanding how different inputs (e.g., thermostat setpoints, sensor readings) translate into outputs (e.g., compressor engagement, fan speed adjustments). The sequence of operations, meticulously laid out in the diagram, explains the step-by-step process by which the unit activates its various functions under different conditions. This is crucial for diagnosing operational anomalies and ensuring the system is performing efficiently.

Integrating with Building Automation Systems (BAS)

Modern HVAC systems, including those from AAON, are increasingly integrated with Building Automation Systems for centralized monitoring and control. AAON wiring diagrams will clearly delineate the points of connection for BAS integration, specifying communication protocols such as BACnet or Modbus. Understanding these connections allows for seamless data exchange between the AAON unit and the central building management platform, enabling remote diagnostics, scheduling, and performance optimization. These diagrams will often show dedicated terminal blocks or network interfaces for BAS communication.

Safety Circuits and Failure Modes

Safety is a paramount concern in HVAC systems, and AAON wiring diagrams provide detailed information on integrated safety circuits. These include high-pressure cutouts, low-pressure cutouts, freeze protection sensors, and overcurrent protection devices. Understanding how these circuits are wired and how they function to prevent equipment damage or hazardous conditions is essential for safe maintenance and troubleshooting. The diagrams will illustrate the normal operation of these safety interlocks and how they interrupt power or signaling in the event of a fault.

Best Practices for Using AAON Wiring Diagrams

Effectively utilizing AAON wiring diagrams requires a systematic approach and adherence to best practices. These practices ensure accuracy, safety, and efficiency in all electrical-related tasks concerning AAON equipment.

Verifying Diagram Versions and Unit Specificity

It is imperative to ensure that the wiring diagram you are using precisely matches the specific AAON unit model, serial number, and any factory-installed options. Different revisions of the same unit may have subtle or significant changes in their electrical configurations. Always consult the documentation physically attached to the unit or accessible through AAON's official channels to obtain the most accurate and up-to-date wiring diagram for your particular equipment. Using an incorrect diagram can lead to misdiagnosis and incorrect repairs.

Systematic Troubleshooting Using the Diagram

When troubleshooting, approach the problem methodically by referencing the wiring diagram. Start with the symptoms reported and trace the relevant circuits on the diagram. Use a multimeter to test voltages, continuity, and resistances at specified terminal points as indicated by the diagram. Document your findings as you progress, marking tested components and observed readings on a copy of the diagram. This organized approach prevents missed steps and ensures all potential causes are investigated systematically.

Maintaining and Storing Diagrams

Proper maintenance and storage of AAON wiring diagrams are crucial for their long-term utility. Keep digital copies readily accessible and ensure physical copies are stored in a protected, easily retrievable location on-site, such as within the unit's service access panel or in a dedicated equipment manual binder. Regularly update your documentation if any modifications or repairs have been made that deviate from the original diagram. This ensures that the information remains current and accurate for future reference.

Frequently Asked Questions

Where can I find the most up-to-date Aaon wiring diagram for my specific HVAC unit?

The most reliable source for the latest Aaon wiring diagrams is typically the unit's official documentation. This includes the installation manual, service manual, or technical data sheets provided by Aaon. Many

Aaon distributors and authorized service partners also have access to these documents and can provide them upon request. Online portals hosted by Aaon for registered users or technicians may also offer digital access.

What are the common color codes used in Aaon wiring diagrams for power circuits?

While specific color codes can vary slightly based on the unit's voltage and configuration, common practices for power circuits in Aaon diagrams include: Black for L1 (hot), Red for L2 (hot), Blue for L3 (hot, if applicable, typically on 3-phase systems), White for Neutral, and Green or bare copper for Ground. Always verify with the specific diagram for your unit.

How do I interpret the symbols used in an Aaon wiring diagram?

Aaon wiring diagrams utilize standard electrical symbols to represent components like relays, contactors, transformers, fuses, motors, sensors, and switches. A legend or key is usually provided within the diagram or its accompanying documentation that explains each symbol's meaning. Familiarizing yourself with these common symbols is crucial for accurate interpretation.

What is the significance of the different lines and connections shown on an Aaon wiring diagram?

Lines on an Aaon wiring diagram represent electrical conductors. Solid lines typically denote power or control wiring, while dashed or dotted lines might indicate internal connections, control signals, or communication buses. Points where lines connect usually signify a direct electrical connection, while a small arc or bridge over a crossing line indicates no connection.

Can I use a generic HVAC wiring diagram to troubleshoot an Aaon unit?

It is strongly discouraged to use a generic HVAC wiring diagram for an Aaon unit. Aaon units are proprietary and have specific control systems, component layouts, and wiring configurations. Using a generic diagram can lead to misdiagnosis, incorrect repairs, and potential damage to the equipment. Always refer to the official Aaon documentation for your specific model.

What information should I look for on an Aaon wiring diagram when troubleshooting a specific component failure (e.g., a fan motor)?

When troubleshooting a fan motor failure, the Aaon wiring diagram will show its power source, control circuit connections (including any relays or contactors that energize it), safety interlocks, and its connection to the control board. You'll look for voltage readings at its terminals and at the control points to determine if the issue is with the motor itself, its power supply, or its control signal.

How does the Aaon thermostat or BMS interface with the unit as shown on the wiring diagram?

The Aaon wiring diagram will illustrate the low-voltage control wiring connecting the thermostat or Building Management System (BMS) to the unit's control board. This typically involves terminals for commands like call for heat, call for cool, fan on/off, and potentially occupancy or economizer signals. The diagram will show the specific terminal designations for these inputs.

What precautions should I take before making any modifications or repairs based on an Aaon wiring diagram?

Before making any modifications or repairs based on an Aaon wiring diagram, always ensure the unit is deenergized and locked out/tagged out. Verify that you have the correct diagram for the specific unit and its configuration. Wear appropriate personal protective equipment (PPE) and if you are not a qualified technician, it is advisable to consult with one.

How do I find the wire gauge and type specified in an Aaon wiring diagram for specific circuits?

While some Aaon wiring diagrams may explicitly state wire gauges and types, it's often implied by standard electrical codes and practices for the given circuit's amperage. The accompanying documentation or service manuals usually provide more detailed specifications for wiring. If in doubt, consult an Aaon technical representative or a qualified electrician.

What is the purpose of a 'schematic diagram' versus a 'point-to-point' wiring diagram from Aaon?

A 'schematic diagram' from Aaon illustrates the logical flow and functional relationships of electrical components without regard to their physical location. It's used to understand how the system operates. A 'point-to-point' wiring diagram, on the other hand, shows the physical connections between terminals and components, detailing the exact routing and termination of each wire, making it essential for installation and troubleshooting physical wiring.

Additional Resources

Here are 9 book titles related to AAON wiring diagrams, with short descriptions:

1. AAON HVAC Control Wiring: A Comprehensive Guide

This book delves into the intricacies of AAON HVAC system wiring diagrams, offering a foundational understanding of component identification and connection points. It breaks down common control circuit

configurations and explains how to interpret symbols and schematics specific to AAON equipment. Readers will gain the confidence to trace circuits and troubleshoot electrical issues effectively.

2. Interpreting AAON Schematic Diagrams: For Technicians

Designed for HVAC technicians, this guide provides practical methods for dissecting and understanding AAON schematic diagrams. It focuses on the relationship between components, power flow, and control logic as represented on paper. The book emphasizes common wiring practices used by AAON and offers step-by-step examples for real-world applications.

3. Electrical Troubleshooting with AAON Wiring: A Practical Manual

This hands-on manual equips technicians with the skills to diagnose and resolve electrical problems within AAON HVAC units. It pairs common troubleshooting scenarios with corresponding wiring diagrams, illustrating how to isolate faults. The book highlights essential testing procedures and the use of multimeters in conjunction with AAON schematics.

4. Modern AAON Control Systems: Wiring and Integration

Focusing on contemporary AAON control systems, this resource explores the wiring and integration of advanced features. It covers network communication protocols, sensor inputs, and actuator outputs as depicted in detailed wiring diagrams. The book is ideal for understanding the electrical pathways that govern complex building automation.

5. The Language of AAON Schematics: Decoding Wiring Diagrams

This book serves as a lexicon for understanding the specific visual language used in AAON wiring diagrams. It systematically explains the meaning of different line types, symbols, and annotations found on AAON schematics. By mastering this language, technicians can confidently navigate and interpret any AAON wiring diagram.

6. Power Distribution in AAON Equipment: Wiring Perspectives

This title concentrates on the electrical power distribution aspects within AAON HVAC units, as shown in their wiring diagrams. It details how power is routed from the main disconnect to individual components like compressors, fans, and control boards. The book offers insights into branch circuit protection and wiring best practices for safety and reliability.

7. Low Voltage Wiring for AAON Controls: A Detailed Examination

Dedicated to the low-voltage control circuits found in AAON systems, this book offers an in-depth look at their wiring. It explains the function and interconnections of thermostats, sensors, relays, and other low-voltage components. The guide is invaluable for understanding the precise signaling pathways that dictate system operation.

8. AAON Wiring Diagram Best Practices: Installation and Maintenance

This manual outlines the recommended practices for installing and maintaining AAON HVAC equipment based on their wiring diagrams. It stresses adherence to code requirements and manufacturer specifications for safe and efficient electrical connections. The book provides a framework for performing regular

maintenance checks by referencing the system's electrical architecture.

9. Troubleshooting Fault Codes with AAON Wiring References

This book bridges the gap between AAON wiring diagrams and system fault codes, offering a practical diagnostic approach. It explains how to use wiring schematics to trace the electrical paths associated with specific error indicators. By understanding these connections, technicians can more rapidly pinpoint the root cause of malfunctions.

Aaon Wiring Diagram

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AAON Wiring Diagrams: A Comprehensive Guide to Understanding and Utilizing Your HVAC System

This ebook provides a detailed exploration of AAON wiring diagrams, explaining their importance in HVAC system maintenance, troubleshooting, and installation, covering various models and offering practical guidance for both professionals and homeowners.

Ebook Title: Mastering AAON Wiring Diagrams: A Practical Guide for HVAC Systems

Contents:

Introduction: Understanding the significance of AAON wiring diagrams and their role in HVAC system operation.

Chapter 1: Deciphering AAON Wiring Diagram Symbols and Notations: A detailed explanation of common symbols, abbreviations, and color codes used in AAON diagrams.

Chapter 2: Identifying Your Specific AAON Unit and its Corresponding Diagram: Guidance on locating the correct diagram for your specific AAON HVAC model and serial number.

Chapter 3: Troubleshooting Common HVAC Issues Using Wiring Diagrams: Step-by-step

troubleshooting procedures for common problems, utilizing wiring diagrams for accurate diagnosis.

Chapter 4: Safe Practices and Precautions When Working with Electrical Components: Emphasis on safety protocols, including lockout/tagout procedures and electrical safety regulations.

Chapter 5: Wiring Diagrams for Specific AAON System Components: Detailed analysis of wiring diagrams for specific components like compressors, fans, and control boards.

Chapter 6: Advanced Troubleshooting Techniques and Interpreting Complex Diagrams: Guidance on interpreting more complex diagrams and addressing advanced troubleshooting scenarios.

Chapter 7: Connecting and Wiring New Components: Step-by-step instructions on safely connecting and wiring new components to your AAON system.

Chapter 8: Resources and Further Learning: A comprehensive list of helpful resources, including AAON's official website, manuals, and contact information.

Conclusion: Recap of key concepts and emphasizes the ongoing importance of understanding AAON wiring diagrams.

Detailed Explanation of Contents:

Introduction: This section will establish the importance of understanding AAON wiring diagrams for the proper operation, maintenance, and troubleshooting of AAON HVAC systems. It will highlight the potential consequences of misinterpreting or neglecting these diagrams.

Chapter 1: Deciphering AAON Wiring Diagram Symbols and Notations: This chapter will provide a visual dictionary of common symbols, abbreviations, and color-coding conventions used in AAON wiring diagrams. It will break down the meaning of each symbol, ensuring readers can accurately interpret the information presented.

Chapter 2: Identifying Your Specific AAON Unit and its Corresponding Diagram: This chapter will guide readers through the process of identifying their specific AAON HVAC unit model and locating the corresponding wiring diagram. It will emphasize the importance of using the correct diagram to avoid mistakes during maintenance or repairs.

Chapter 3: Troubleshooting Common HVAC Issues Using Wiring Diagrams: This chapter will use practical examples to demonstrate how wiring diagrams can be used to effectively troubleshoot common HVAC issues, such as compressor failure, fan motor problems, or control system malfunctions. Step-by-step instructions will be provided.

Chapter 4: Safe Practices and Precautions When Working with Electrical Components: This crucial chapter will highlight the importance of safety when working with electrical components. It will cover essential safety precautions, including lockout/tagout procedures, appropriate personal protective equipment (PPE), and adherence to relevant electrical codes and regulations.

Chapter 5: Wiring Diagrams for Specific AAON System Components: This chapter will dive deeper into the specifics of wiring diagrams for individual components, such as compressors, condenser fans, evaporator fans, and control boards. It will explain the function of each wire and its connection points.

Chapter 6: Advanced Troubleshooting Techniques and Interpreting Complex Diagrams: This chapter will address more complex troubleshooting scenarios and interpreting more intricate wiring diagrams. It will cover advanced diagnostic techniques and problem-solving strategies.

Chapter 7: Connecting and Wiring New Components: This chapter will provide step-by-step instructions and safety guidelines for connecting and wiring new components to an existing AAON system. It will cover various scenarios, ensuring readers can safely install new parts.

Chapter 8: Resources and Further Learning: This chapter will provide a comprehensive list of resources to aid users in further learning about AAON systems and wiring diagrams. This includes links to AAON's official website, manuals, technical support, and relevant industry standards.

Conclusion: This section will summarize the key takeaways from the ebook, reinforcing the importance of understanding and using AAON wiring diagrams for successful HVAC system

maintenance and repair. It will encourage readers to utilize the resources provided for ongoing learning and safe practices.

Keywords: AAON wiring diagram, AAON HVAC, HVAC wiring diagram, AAON troubleshooting, HVAC troubleshooting, AAON repair, HVAC repair, AAON installation, HVAC installation, AAON manuals, HVAC manuals, HVAC system diagrams, AAON parts, commercial HVAC, air conditioning wiring, refrigeration wiring.

FAQs:

- 1. Where can I find AAON wiring diagrams for my specific unit? You can typically find them on AAON's website, within the unit's documentation, or by contacting AAON customer support.
- 2. What are the common symbols used in AAON wiring diagrams? Common symbols include those for power, ground, various sensors, relays, and control components. The ebook provides a comprehensive list.
- 3. How do I safely troubleshoot electrical issues in my AAON system? Always disconnect power before working on any electrical components. Use appropriate safety equipment (PPE) and follow lockout/tagout procedures.
- 4. What should I do if I can't understand a particular part of the wiring diagram? Consult the AAON manual, contact AAON support, or seek assistance from a qualified HVAC technician.
- 5. Are there any online resources to help me interpret AAON wiring diagrams? Yes, AAON's website offers resources and support documentation. Other online forums and communities dedicated to HVAC may also provide assistance.
- 6. Can I use a universal HVAC wiring diagram for my AAON system? No, always use the specific wiring diagram provided by AAON for your unit model. Using the wrong diagram can lead to damage or safety hazards.
- 7. What are the potential consequences of misinterpreting an AAON wiring diagram? Incorrect wiring can lead to system malfunctions, damage to components, electrical shock, and even fire hazards.
- 8. How often should I review the wiring diagram of my AAON system? It's a good practice to familiarize yourself with the diagram before any maintenance or repair. Having a basic understanding is crucial for troubleshooting.

9. Can I perform all AAON HVAC repairs myself using only the wiring diagram? While the diagram is a helpful tool, some repairs require expertise and should be handled by a qualified HVAC technician.

Related Articles:

- 1. AAON Unit Installation Guide: A step-by-step guide to safely and correctly installing various AAON HVAC units.
- 2. AAON System Maintenance Checklist: A comprehensive checklist for regular maintenance, ensuring optimal performance and longevity.
- 3. Understanding AAON Control Panels: A detailed explanation of the functions and operation of AAON control panels.
- 4. Common AAON HVAC Problems and Solutions: A troubleshooting guide for common issues faced by AAON system users.
- 5. Interpreting HVAC Refrigerant Lines: A guide to understanding the role and function of refrigerant lines in an AAON HVAC system.
- 6. AAON Compressor Troubleshooting and Repair: A detailed guide on diagnosing and fixing issues related to AAON compressors.
- 7. Safety Precautions When Working on HVAC Systems: An in-depth discussion of essential safety procedures for working with HVAC equipment.
- 8. Choosing the Right AAON HVAC System for Your Needs: A guide on selecting the appropriate AAON system based on various factors.
- 9. AAON Parts and Components: A Comprehensive Guide: A detailed overview of the various parts and components used in AAON HVAC systems.

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or more of post-occupancy performance data and other project information, as well as lessons learned by project owners and developers, architects, engineers, energy modelers, constructors, and operators, each case study answers the questions: What were the challenges to achieving net zero energy performance, and how were these challenges overcome? How would stakeholders address these issues on future projects? Are the occupants satisfied with the building? Do they find it comfortable? Is it easy to operate? How can other projects benefit from the lessons learned on each project? What would the owners, designers, and constructors do differently knowing what they know now? A final chapter aggregates processes to engage in and pitfalls to avoid when approaching the challenges peculiar to designing, constructing, and owning a net zero energy building. By providing a wealth of comparable information, this book which will flatten the learning curve for designing, constructing, and owning this emerging building type and improve the effectiveness of architectural design and construction.

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Various types of air conditioners and heat pumps Estimating load and insulating pipes Electrical power for air conditioners Air-conditioning and refrigeration careers New refrigerants Electrical and electronic symbols used in schematics

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electric power generation is met with natural gas and renewables; and energy-related carbon dioxide emissions remain below their 2005 level from 2010 to 2035, even in the absence of new Federal policies designed to mitigate greenhouse gas (GHG) emissions.--Executive Summary (p. 2).

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engineers. Too often, standard textbooks seem to overlook some of the engineering realities of (roughly) how much things cost or how big of hardware for computer programs for simple algorithms are, sensing and actuation, of special systems such as PLCs and PID controllers, of the engineering of real systems from coverage of SISO theories, and of the special characteristics of computers, their programming, and their potential interactions into systems. In particular, students with specializations other than control systems are not being exposed to the breadth of the considerations needed in control systems engineering, perhaps because it is assumed that they are always to be part of a multicourse sequence taken by specialists. The lectures given to introduce at least some of these aspects were more effective when supported by written material: hence, the need for my notes which preceded this book.

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