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| Nota di contenuto | Process Control Engineering; Contents; 1. Introduction; 2. Information Structures in Process Control Engineering; 2.1. Principles; 2.2. Architectural Principles for Information Structuring; 2.3. Applications in Process Control Engineering; 3. Knowledge about the Process; 3.1. Principles; 3.2. Analysis Methods for Process Quantities; 3.3. Process Models; 3.4. Modeling; 3.5. Management and Utilization of Information; 4. From Process Knowledge to Process Control; 4.1. Principles; 4.2. Feedback Control; 4.3. Optimal Control; 4.4. Binary Control; 4.5. Operational Control of Process Plants 5. The Process Control System and its Elements: Process Sensor Systems 5.1. Principles; 5.2. Process Sensor System Technology; 5.3. Sensor Systems for Special Applications; 5.4. The Market for Sensors and Sensor Systems; 5.5. Field Installation and Cable Routing; 6. The Process Control System and its Elements: Process Actuator Systems; 6.1. Principles; 6.2. Actuator Systems for Material and Energy Streams; |

6.3. Electrical Drives in the Chemical Industry; 6.4. Electric Power Supply Systems; 7. The Process Control System and its Elements: Distributed Control Systems; 7.1. Principles
7.2- System and Component Structure 7.3. Process Control Operating System; 7.4. General System Services; 7.5. Design and Commissioning; 8. The Process Control System and its Elements: Information Logistics; 8.1. Principles; 8.2. Functional Structures and Information Flow in Production Companies; 8.3. Computer Communications Between and Within Control Levels; 8.4. Computer Communications in Industrial Production; Standards; 8.5. MAP/TOP: Protocol Standards for Information Integration in Production Companies; 8.6. Field Bus Systems; 8.7 Quality Assurance: Conformance and Interoperability Tests
8.8 Methods and Tools for Protocol Specification 8.9. Steps Toward Computer- Integrated Production; 9. Computer-Aided Methods; 9.1 Principles; 9.2 System Analysis; 9.3. CAE System for Process Control Engineering; 9.4. Structure of a CAE System; 9.5. Aids for Hardware Design; 9.6. Aids for Software Design; 9.7. Outlook; 10. Design and Construction of Process Control Systems; 10.1. Principles; 10.2. Organizational Requirements; 10.3. Decision Phase; 10.4. Specifications; 10.5. Execution Phase; 10.6. Quality Assurance; 10.7. Process Control Rooms; 11. Operation; 11.1. Principles
11.2. Human-Process Communications 11.3. Process Analysis and Process Optimization; 11.4. Maintenance Strategies; 12. Standards, Committees, and Associations; 12.1. Principles; 12.2. Standardization Bodies and Other Organizations Involved in Standardization; 12.3. Technical and Scientific Bodies; 12.4. Shows and Fairs; 13. Integration of Knowledge-Based Systems in Process Control Engineering; 13.1. Principles; 13.2. Knowledge-Based Approach; 13.3. Knowledge Engineering; 14. Appendix; 14.1. Glossary; 14.2. Abbreviations; 15. References; 16. Index

Sommario/riassunto

This book surveys methods, problems, and tools used in process control engineering. Its scope has been purposely made broad in order to permit an overall view of this subject. This book is intended both for interested nonspecialists who wish to become acquainted with the discipline of process control engineering and for process control engineers, who should find it helpful in identifying individual tasks and organizing them into a coherent whole. A central concern of this treatment is to arrive at a consistent and comprehensive way of thinking about process control engineering an
