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measurement noise; 5.3 Introduction to signal processing; 5.4 Analogue signal filtering; 5.5 Other analogue signal processing operations; 5.6 Digital signal processing; References and further reading; Chapter 6. Electrical indicating and test instruments; 6.1 Digital meters; 6.2 Analogue meters; 6.3 Cathode ray oscilloscope; 6.4 Digital storage oscilloscopes; References and further reading; Chapter 7. Variable conversion elements; 7.1 Bridge circuits; 7.2 Resistance measurement; 7.3 Inductance measurement; 7.4 Capacitance measurement
7.5 Current measurement 7.6 Frequency measurement; 7.7 Phase measurement; 7.8 Self-test questions; References and further reading; Chapter 8. SIGNAL TRANSMISSION; 8.1 Electrical transmission; 8.2 Pneumatic transmission; 8.3 Fibre-optic transmission; 8.4 Optical wireless telemetry; 8.5 Radio telemetry (radio wireless transmission); 8.6 Digital transmission protocols; References and further reading; Chapter 9. Digital computation and intelligent devices; 9.1 Principles of digital computation; 9.2 Intelligent devices; 9.3 Self-test questions; References and further reading
Chapter 10. Instrumentation/computer networks 10.1 Introduction; 10.2 Serial communication lines; 10.3 Parallel data bus; 10.4 Local area networks (LANs); 10.5 Gateways; 10.6 HART; 10.7 Digital fieldbuses; 10.8 Communication protocols for very large systems; 10.9 Future development of networks; References and further reading; Chapter 11. Display, recording and presentation of measurement data; 11.1 Display of measurement signals; 11.2 Recording of measurement data; 11.3 Presentation of data; 11.4 Self-test questions; References and further reading
Chapter 12. Measurement reliability and safety systems

Sommario/riassunto

'Measurement and Instrumentation Principles' is the latest edition of a successful book that introduces undergraduate students to the measurement principles and the range of sensors and instruments that are used for measuring physical variables. Completely updated to include new technologies such as smart sensors, displays and interfaces, the 3rd edition also contains plenty of worked examples and self-assessment questions (and solutions). In addition, a new chapter on safety issues focuses on the legal framework, electrical safety and failsafe designs, and the author has also concentrated on
