



Instrumentation and Sensors for Engineering Applications (Paperback)

By Arun Shukla, James W Dally

College House Enterprises, LLC, United States, 2016. Paperback. Condition: New. Language: English. Brand new Book. The first four chapters provide the foundation for understanding circuits, analog and digital signals, measurement systems and instruments for measuring voltage. Chapter 1 is an introduction to applications of measurement systems, where engineering measurements and process control are described. Chapter 2 provides methods for analysis of circuits. It includes a brief review of electrical and electronic principles important in understanding the operation of instrument systems. Chapter 3 covers digital recording systems and contains detailed descriptions of the analog-to-digital and digital-to-analog conversion processes. Chapter 4 gives a detailed description of potentiometer and Wheatstone bridge circuits, which condition sensor output. Also included is a treatment of several types of amplifiers and filter circuits. Chapters 5 through 10 deal with methods for measuring many different mechanical quantities. Chapter 5 describes sensors for measuring displacement and velocity of an object when a fixed reference for mounting the sensor is available. Optical methods including interferometers and digital image correlation have been added to this coverage. Chapter 6 provides an extensive treatment on the measurement of strain. It includes signal condition circuits, recording instruments, calibration methods, lead wire effects, electrical noise...



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