RESUME

Owners of the first edition of this classic handbook know that no other book covers the functions and inner workings of electronic instruments as completely as the Electronic Instrument Handbook. Used by both experienced practitioners and newcomers alike, it provides authoritative and easy access to all aspects of measurement tools and technologies. Thoroughly updated, this edition covers not only all the newer types of instruments but also the major changes in instrument technology.

With contributions from leaders in both industry and academia, the Electronic Instrument Handbook starts with the building blocks of instruments and progresses through stand-alone instruments, instrument systems, and virtual instruments. It includes in-depth information on analog-to-digital conversion ... microprocessors in instruments ... lightwave technology ... VXI and other busses ... controllers ... user interfaces ... software in instruments ... and transducers.

This handbook is the only book that explains what each instrument is used for, how it works, how to choose the correct one for an application, and how to get the most out of it in use.

CONTENTS IN BRIEF

Contributors xix
Foreword by Dr. Frederick E. Terman xxi
Preface xxiii

Part 1 Introduction to Electronic Instruments
Chapter 1. Measurements and Instruments Tim Healy 1.1
Chapter 2. Calibration, Traceability, and Standards David R. Workman 2.1
Chapter 3. Basic Electronic Standards David R. Workman 3.1

Part 2 Basics of Electronic Instrumentation
Chapter 4. Introduction to Electronic Instruments Randy Coverstone 4.1
Chapter 5. Transducers J. Fleming Dias 5.1
Chapter 6. Analog-to-Digital Converters John J. Corcoran 6.1
Chapter 7. Signal Sources Charles Kingsford-Smith 7.1
Chapter 8. Microwave Signal Sources William Heinz 8.1
Chapter 9. Signal Processing Howard Hilton 9.1
Chapter 10. Microprocessors in Electronic Instruments Joseph E. Mueller 10.1
Chapter 11. Power Supplies James S. Gallo 11.1
Chapter 12. Instrument-User Interfaces Janice S. Bradford 12.1

Part 3 Current and Voltage Measurement Instruments
Chapter 13. Voltage, Current, and Resistance Measuring Instruments Scott Stever 13.1
Chapter 14. Oscilloscopes Alan J. De Vilbiss 14.1
Chapter 15. Power Measurements Ronald E. Pratt 15.1

Part 4 Signal and Waveform Generation Instruments
Chapter 16. Oscillators, Function Generators, Frequency and Waveform Synthesizers Charles Kingsford-Smith 16.1
Chapter 17. Pulse Generators Andreas Pfaff 17.1
Chapter 18. Microwave Signal Generators William Heinz 18.1

Part 5 Frequency and Time Measurement Instruments
Chapter 19. Electronic Counters and Frequency and Time Interval Analyzers Gary D. Sasaki 19.1
Chapter 20. Precision Time and Frequency Sources John A. Kusters 20.1
Chapter 22. Phase Noise Instruments Dieter Scherer 22.7
Electronic Attitude Director Indicator (EADI). The EADI is an advanced version of attitude and electric attitude indicators previously discussed. In addition to displaying the aircraft’s attitude, numerous other situational flight parameters are displayed. Most notable are those that relate to instrument approaches and the flight director command bars. Annunciation of active systems, such as the AFCS and navigation systems, is typical. Now in an up-to-the-minute third edition, the bestselling Electronic Instrument Handbook, by top technical author Clyde F. Coombs, Jr. and over 30 leading experts, helps you design, select and operate conventional, virtual, and network-based electronic instruments. From calibration, traceability standards, data acquisition, transducers, analog-to-digital conversion, signal sources, processors and microprocessors, power supplies