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Nota di contenuto	Handbook of Electronic Weighing; Contents; Preface; Acknowledgements; 1 Load cell principles; 1.1 Magnetic transducers; 1.2 The Oscillating strings transducer; 1.3 Strain gauge load cells; 1.3.1 - Electrical properties of strain gauges; 1.3.2 - Specimen shapes - application of the strain gauges; 1.3.2.1 - Column type load cell; 1.3.2.2 - The bending beam load cell; 1.3.2.3 - The shear beam load cell; 1.3.3 Strain gauge load cells - Electrical circuitry; 1.3.4 Analysis of sources of error; 2 Load cell designs and installation principles; 2.1 Load cell designs 2.2 Load cell installation principles2.2.1 - Application of load; 2.3 Guide and restraining elements for the load carrier; 2.3.1 - Different types of guide and restraining elements; 2.4 Load cell installation in surface mounted static weighing systems; 2.4.1 - Weighbridges and platforms; 2.4.1.1 - Weighbridges fixed with beam flexures or rods; 2.4.1.2 - Free floating platform or weighbridge; 2.4.1.3 - Low profile weighbridges; 2.4.2 - High capacity weighbridge scales; 2.4.2.1 - Motor truck scales; 2.4.2.2 - Railway scales; 2.4.2.3 - Scrap scales 2.5 Load cell installation under hoppers and tanks2.5.1 - Mechanical requirements on foundation and load carrier; 2.5.2 - Force shunts -

pipe connections; 2.5.3 - Layout of load cell installation under hoppers and tanks; 2.6 Load cell installation in travelling cranes; 2.6.1 - Load cell installation in the hook assembly; 2.6.2 - Load cells in the hoisting crab; 2.6.3 - Battery powered electronic crane scale; 2.7 Load cell installation in continuous casters and transfer vehicles; 2.7.1 - Continuous casting machines; 2.7.2 - Transfer vehicles
2.8 Load cell installation in travelling weigh hoppers3 Weighing electronics and data processing; 3.1 General principles; 3.2 Weighing electronics; 3.2.1 Prerequisites on the weighing electronics; 3.2.2 Bridge excitation; 3.2.3 Electronic weighing instruments; 3.2.3.1 - Analogue display; 3.2.3.2 - Digital display; 3.2.4 Digital voltmeter systems; 3.2.5 Digitizing principles; 3.2.5.1 - Counting of unit pulses; 3.2.5.2 - The dual slope principle; 3.2.6 Ratiometric measurements; 3.2.6.1 - Voltage to frequency conversion; 3.2.7 Micro computer controlled load cell digitizer; 3.3 Data processing
3.3.1 - Data processing with microcomputer techniques3.3.2 - Computerized weighing; 3.4 Sources of error due to the electronics and electrical installation; 4 Static weighing systems; 4.1 System design and layout of technical procurement specifications; 4.2 Specification: Dual weighbridge truck weighing system; 4.3 Specification: Railway car scale; 4.4 Specification: Platform scales, integrated in a data processing system for yield analyses; 4.5 Specification: Roller conveyor scale; 4.6 Specification: Weighing system for transfer car
4.7 Specification: Overhead ladle crane scale with data transfer to the ground

Sommario/riassunto

This book describes the fundamental principles of electronic weighing, beginning with the theoretical background of the basic components and continuing with the theoretical formulas to calculate the weighing accuracy in different applications, including the influence on accuracy of external disturbing forces.It also describes the layout and optimum composition of weighing systems for static weighing and batching, in-motion weighing, belt conveyor weighing and flow control, as well as counting and checkweighing scales. Complete technical specifications are included, which, suppl