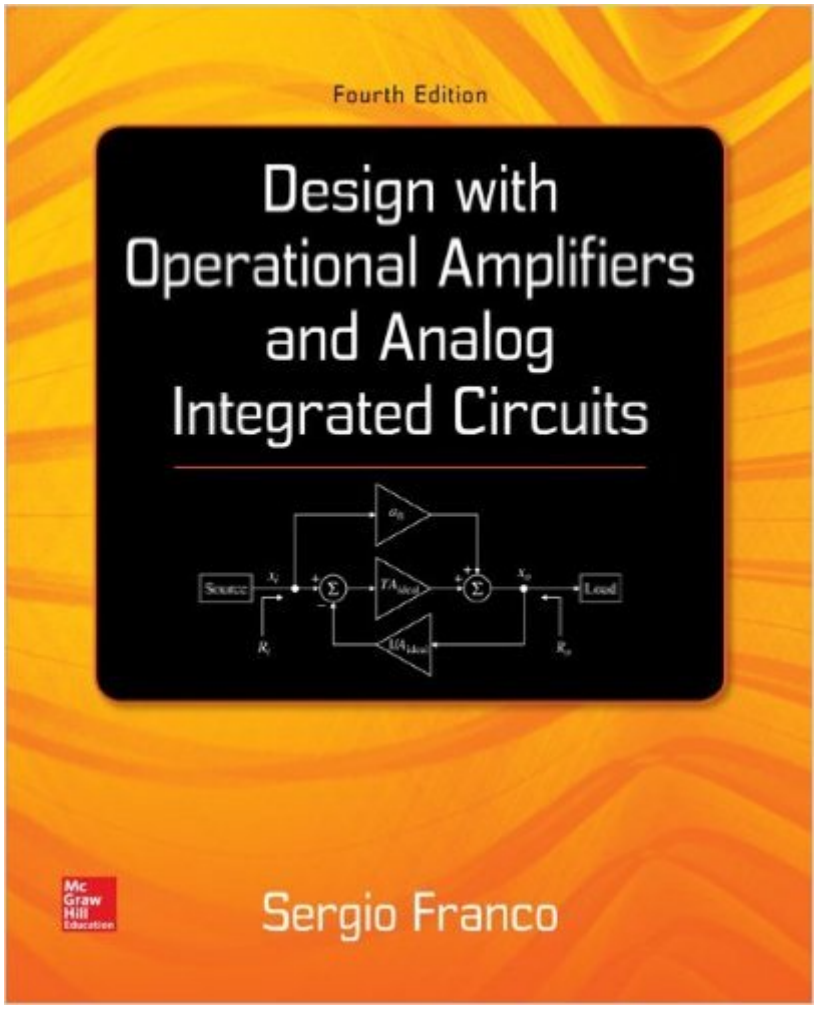
Design With Operational Amplifiers And Analog Integrated Circuits (McGraw-Hill Series In Electrical And Computer Engineering)



Synopsis

Design with Operational Amplifiers and Analog Integrated Circuits combines theory with real-life applications to deliver a straightforward look at analog design principles and techniques. An emphasis on the physical picture helps the student develop the intuition and practical insight that are the keys to making sound design decisions. This book is intended for a design-oriented course in applications with operational amplifiers and analog ICs. It also serves as a comprehensive reference for practicing engineers. This new edition includes enhanced pedagogy (additional problems, more in-depth coverage of negative feedback, more effective layout), updated technology (current-feedback and folded-cascode amplifiers, and low-voltage amplifiers), and increased topical coverage (current-feedback amplifiers, switching regulators and phase-locked loops).

Book Information

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Customer Reviews

A cursory examination of this book reveals a few disappointing errors that, to be fair, are common, at least in part, in other books on the subject:1) The author neglects to mention that the 741 has a typical gain of 200V/mV only at DC.2) The author incorrectly refers to the amplifierâ ™s forward path gain â œaâ • as the â œopen loop gainâ •. This is wrong because the open loop gain is, in fact, the gain round the opened feedback loop. Indeed, the open loop gain is more commonly referred to as the loop gain. A quick perusal of any feedback control theory textbook should disabuse doubters of this common fallacy.3) The author states, wrongly, that an op amp should ideally have an

infinitely large gain. Never mind that an infinitely large forward path gain is not physically realisable, but this is false precisely because the error voltage required to drive the amplifierâ ™s forward path, and, therefore, generate the output voltage, becomes zero when the forward path gain is infinite. This means the negative feedback would be completely unable to control the amplifierâ ™s output voltage by controlling the error voltage which is permanently fixed at zero volts while the output saturates at one of the supply rails. Therefore, an ideal op amp should have a forward path gain which only approaches or tends to infinity without actually being equal to infinity.4) The author further states that the negative feedback delivers whatever voltage is required to drive the ideal op ampâ ™s error voltage to zero. This is not true, even in the ideal case, because with a zero error voltage the forward pathâ ™s infinite gain will deliver an infinite output voltage.