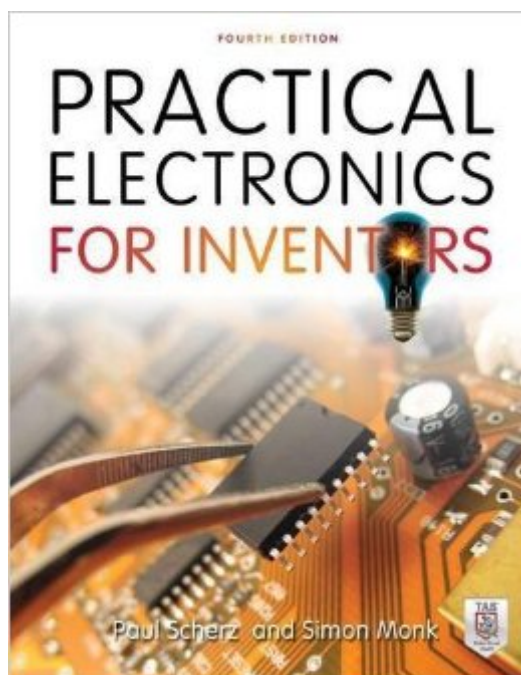# Practical Electronics For Inventors, Fourth Edition

Synopsis

A Fully-Updated, No-Nonsense Guide to ElectronicsAdvance your electronics knowledge and gain the skills necessary to develop and construct your own functioning gadgets. Written by a pair of experienced engineers and dedicated hobbyists, Practical Electronics for Inventors, Fourth Edition, lays out the essentials and provides step-by-step instructions, schematics, and illustrations. Discover how to select the right components, design and build circuits, use microcontrollers and ICs, work with the latest software tools, and test and tweak your creations. This easy-to-follow book features new instruction on programmable logic, semiconductors, operational amplifiers, voltage regulators, power supplies, digital electronics, and more. Practical Electronics for Inventors, Fourth Edition, covers:Resistors, capacitors, inductors, and transformersDiodes, transistors, and integrated circuits Optoelectronics, solar cells, and phototransistors Sensors, GPS modules, and touch screens Op amps, regulators, and power supplies Digital electronics, LCD displays, and logic gates Microcontrollers and prototyping platformsCombinational and sequential programmable logicDC motors, RC servos, and stepper motors Microphones, audio amps, and speakers Modular electronics and prototypes

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Customer Reviews

I teach an introductory class in electronics at a small university. The class is intended for scientists, not electrical engineers; so the emphasis is on basic knowledge, practical troubleshooting skills, and

design. I've used the Second Edition of this book a number of times with some satisfaction simply because the book covered most of what I needed. It was a great reference book for just about anything someone would want to know about electronics.However, there were some notable gaps in the Second Edition that I typically teach in an electronics class; specifically, I teach a section on transducers and microcontrollers. With the Third Edition, there are new sections on sensors (transducers) and microcontrollers, and now this book has everything in it that I could possibly want to teach. I've been using the Arduino for class the last couple of years because most scientists would use a microcontroller to design a piece of equipment instead of discrete gates and logic chips. So with these new additions, I cannot imagine any other book that would be needed for a class. So from this point forward, I will be using this book for EVERY electronics class that I teach.The detail in the book is in-depth enough for folks who want to know how everything works, BUT the person who wants to skip past the theory can certainly do that and STILL learn a lot from this book. As I teach, I tend to skip around within the book to cover what is important to me. The chapters are designed to be somewhat modular; for instance, I can teach the basics of analog electronics and transistors and then move to microcontrollers without necessarily having to spend a lot of time time on discrete logic chips.

I've never been so humbled by a book. I've only read about 250 pages but felt compelled to put my 5 stars in.Chapter 2 on Theory at 245 pages is worth the price of the book. Not content to tell you that a capacitor holds a charge, the authors give pictures of six types of capacitors along with their schematic representation, diagrams showing the open, charging and charged-but-not-charging state and another showing where the electrons are, formulae telling you what's going on in each of the diagrams and paragraphs describing how it works in theory. Then they move on to the real-world to include graphs showing the inductive and resistive elements that make a capacitor less like a capacitor. Then there are graphs showing how temperature affects the dielectric loss for six different types of capacitor. The variables (abbreviations) in the equations are defined, then described. You won't wonder what IR means. Concept after concept, component after component--the authors are relentless. Still, it's not dry--there's a point to all of it and you can skip the theoretical parts and just use the rest.There's no condescension and no chit-chat. The authors are to be commended for skipping every useless story of how an inventor discovered an electrical principle or invented a particular component. The water analogy is sometimes used to illustrate WHAT a component does, but never to avoid telling you HOW something works. If the authors decide to tell you how something works, hold onto your hat! There will be sub-atomic physics. There will be line drawings

with arrows going in several directions. You may see chemical equations. There will be equations and graphs and some calculus where needed.

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