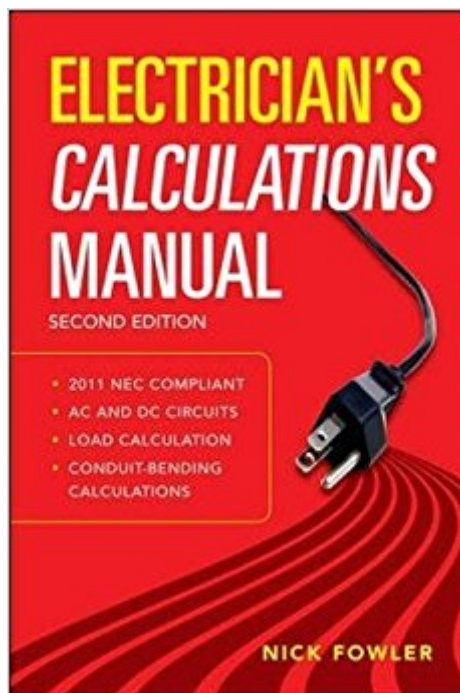




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# Electrician's Calculations Manual, Second Edition (P/L Custom Scoring Survey)



## Synopsis

THE ULTIMATE ON-THE-JOB COMPANION--FULLY UPDATED Thoroughly revised to reflect the 2011 National Electrical Code (NEC) and the latest industry advances, *Electrician's Calculations Manual, Second Edition* gives you quick access to the basic calculations needed for any given job. The book also serves as an ideal review for license preparation. End-of-chapter questions plus an end-of-book final test help reinforce the material covered. Written by a Master Electrician with more than 40 years of experience, this practical guide helps you:

- Find answers for both AC and DC circuits
- Solve problems related to motor circuits and transformers
- Calculate single-dwelling and multifamily loads
- Accurately figure requirements for commercial jobs
- Perform conduit-bending math
- Handle service entrance problems
- Understand the math behind electrical solutions
- And much more

## Book Information

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## Customer Reviews

Nick Fowler has been a practicing electrician for more than 40 years. He holds several state and Master Electrician licenses, and has been an electrical journeyman, foreman, and general foreman. Mr. Fowler is a member of International Brotherhood of Electrical Workers Local 191, Everett, Washington. He has worked on a large number of projects, ranging from large semiconductor chip plants, petrochemical refineries, large office buildings, and research facilities containing complex electrical systems, such as fire alarm, security, motor control, and HVAC control systems.

After further reading, I have amended my previous review downward. I don't much care to find errors in the final publication of technical material. I began finding errors in the overview. An example can be found in paragraph one of the overview, wherein the author says the peak-to-peak voltage is 1.414 times the RMS voltage. That is the peak voltage, not the peak-to-peak voltage. Also, in the second sentence of paragraph number five in the Generation, Transmission, and Distribution section of the Overview, the author states, "The faster the pushing of these electrons, the higher the voltage." This is incorrect. A higher voltage means there is a greater electromotive force (pressure) pushing the amperage (electrons) through a given resistance. The term "faster" is more relative to the cycles at which the voltage and amperage is motivated through a conductive median. And, I'm still trying to figure out how the author discovered 63.5 electrons in orbit about a copper (Cu) atom, (paragraph four); Or, how anyone might get one-half an electron orbiting about any element for that matter. They really don't make one-half electrons, do they? :-)

Although I have yet to find errors in the calculations, I have found the author's solution to at least one of the problems to be unusually oblique, even circuitous. For example, in Exercise 1-1, problem number 4 states: "A circuit has 1800 watts. What is the voltage if the circuit draws 15 amperes?" The solution given states: "To find the voltage, first find the ohms:  $P/I^2 = R$ ;  $1800/15^2 = 1800/225 = 8$  ohms;  $RI = E$ ;  $8 \times 15 = 120$  volts." Although this answer is technically correct, the author's method of obtaining it is tortuous--especially since the author stated prior to this problem that wattage is equal the voltage times the current ( $E \times I$ ). Hence, a more direct and much simpler method of obtaining the answer might have been to divide the 1800 Watts by 15 Amperes, which equals 120 volts, or mathematically:  $1800W/15A = 120$  volts.

An example of omission is the author's answer for question number seven (7) for the Chapter 4 Test. Question 7 asks: "What is the purpose of the first semiconductor between the conductor and the insulation in a shielded cable?" The author's answer is: "The semiconductor fills in between the outer strands and makes the conductor smooth and round. This cuts down the chance of the formation of an air pocket." The author begins answering this question by telling the reader where the semiconductor is placed--something already stated in the question. Then the author states that the semi-conductive layer about the conductor (the conductor shield) "...makes the conductor smooth and round..." only to follow that explanation with a statement about this semi-conductive layer reducing air pocket formations. The mention of air pocket formations in the answer introduces new and unexplained subject matter into this topic without discussion or exposition. Indeed, the author covers shielded cables over 600 volts in Section 4-6. At no time, either in the discussion within Section 4-6, or in his explanation for question number

7, does the author give an explanation to the reader as to why air pocket formations might pose a problem. Moreover, the author ignores the fact that an inherent characteristic of any stranded conductor is that "air pockets" exist within the interstitial space between the strands. Consequently, the author makes no attempt to reconcile this very obvious inconsistency. This has the effect of leaving the reader hanging on this subject. It is the errors, the meandering and incomplete answers the author employs for explaining problems that cause me to downgrade the rating of this book. What I initially perceived as a quick and enjoyable read turned into a quagmire of shallow prose, adolescent exposé, and technical errors and omissions. In closing, I will assume personal responsibility for not having performed better due-diligence. (It is as though the author did little or nothing to address complaints associated with the first edition.) So, to all prospective buyers of this edition, I say: "caveat emptor." Since this book is riddled with errors and omissions, I cannot in all good conscience recommend it.

not what i expected at all

A+ this book is great !!!

good reference .

JUST WHAT I WAS LOOKING FOR

n/c

GOOD

This book is awesome. Contains all the information that an electrician needs to know. I give this book 10 out of 10.

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