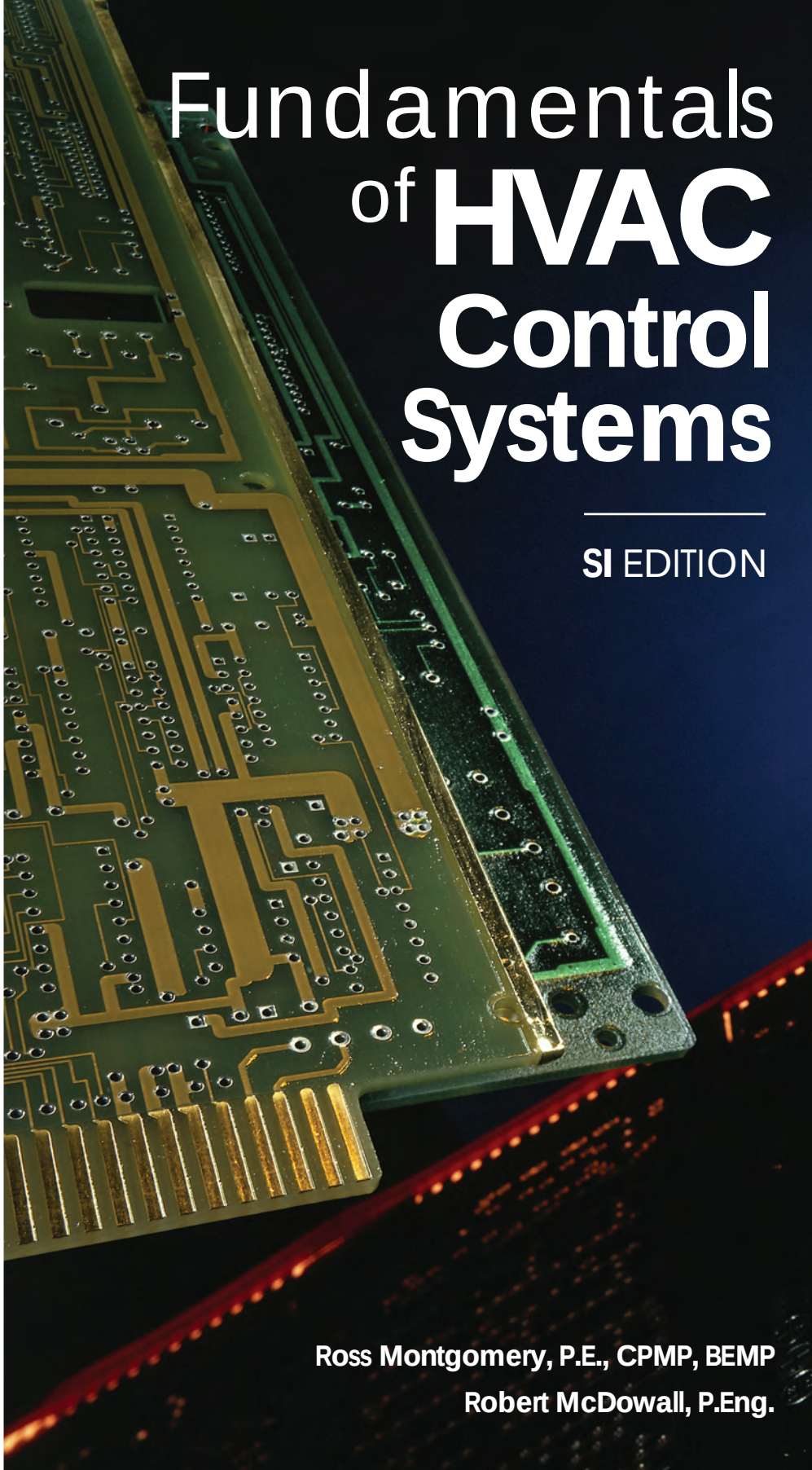
Fundamentals of HVAC Control Systems

SI EDITION



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ASHRAE®

Fundamentals of HVAC Control Systems

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Chapter 1

Introduction to HVAC Control Systems

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Study Objectives of Chapter 1

Chapter 1 introduces basic control concepts. It begins with a discussion of why controls are required in HVAC systems and a brief history of the development of control products. Next, we introduce the concept of a control loop, the basic building block of all control systems, and the various control strategies and algorithms used in control loops. After studying this chapter, you should understand:

Why controls are necessary in HVAC systems.
The difference between open and closed control loops.
How two-position, floating, and modulating control loops work.
Proportional control.
Integral and derivative control action in modulating control loops.
How to tune control loops.
The difference between direct acting and reverse acting.
Difference between normally open and normally closed.
How controlled devices may be sequenced using a single controller.