Preface

Since 1989, this book has been used both as a textbook for programmable logic controller (PLC) courses and for self-study by thousands of professionals. This applications-based book provides a clear and concise presentation of the fundamental principles of programmable controllers for process and machine control. This fourth edition covers all phases of programmable controller applications from design and programming to installation, maintenance, and start-up. Coverage of all five standard PLC programming languages: Ladder Diagram, Function Block Diagram, Sequential Function Chart, Instruction List, and Structured Text has been increased in this fourth edition and numerous programming applications and examples have been added to more clearly explain each programming language.

The text provides a complete and comprehensive presentation on the design and programming of programmable controller–based control systems. The material also includes chapters on binary logic fundamentals, electrical and electronic principles, input and output systems, memory and addressing, programming languages, and data communication. Chapter 11 provides complete coverage of several typical PLC control applications. The final chapter covers design, installation, and maintenance of programmable controllers in detail.

All the chapters have been supplemented with new or improved example problems and exercises. Most of the illustrations in the book have been revised and improved. Answers to all the exercises have been added at the end of the book to assist students and instructors.

I would like to express my appreciation to my wife Ellen for the long hours spent reviewing all four editions. I would also like to thank the technical reviewers for making numerous constructive comments that improved the overall presentation of this fourth edition.