



# Programmable Logic Controllers: An Emphasis on Design and Application, Third Edition

*Kelvin T. Erickson*

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The complete reference for PLC programming - updated. This book presents a comprehensive treatment of programmable logic controllers (PLCs) with an emphasis on program design. This text stresses an organized approach to developing PLC programs - Given a set of operational specifications, how does one develop the PLC program? This book develops the design process: the tasks involved, breaking the program into manageable pieces, standard code for the various parts, and handling the sequential parts of the problem. Throughout, the book contains example problems demonstrating good design practice and culminates in two full-length case studies. Due to its popularity, ladder logic is employed in the majority of the text. However, the text also comprehensively covers the other four IEC 61131-3 languages: function block diagram, structured text, instruction list, and sequential function chart. These languages are covered for five PLCs: Allen-Bradley ControlLogix, Allen-Bradley SLC-500, Siemens S7, Modicon Unity, and GE. The main topics of this text are: 1. PLC programming languages (with emphasis on ladder logic) 2. Structured approach to sequential problems 3. Good program design practice 4. Troubleshooting techniques 5. PID control 6. Sensors and actuators 7. Factory communication networks 8. Human-machine interface (HMI) Most chapters include student problems. There is a companion website with supplementary material.

## **Changes for the Third Edition**

The third edition primarily updates the Rockwell and Siemens controllers and reorganizes the order of the processors, but there are other changes throughout. The major changes are: 1. The order of the processors in the text has changed to be according to their approximate market share in North America: Rockwell, Siemens, Modicon, and General Electric. 2. The Rockwell PLC-5 has been removed, but the MicroLogix and SLC-500 processors have been retained. 3. The Siemens S7-1500 and the recent Step7 Portal programming software has been added to the Siemens sections. 4. The Modicon M580 processor has been added to the Modicon sections. 5. Information on input and output buffering has been added to Chapter 2. 6. Chapter 18 has extensive updates to reflect recent developments in operator interfaces. This chapter also uses color in the figures illustrating HMI concepts. 7. Chapter 19 is updated for the newer industrial control systems security standards. 8. The multi-unit chemical process in Chapter 22 is now larger.

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Programmable Logic Controllers: An Emphasis on Design and Application, Third Edition can be one of your beginner books that are good idea. All of us recommend that straight away because this publication has good vocabulary that may increase your knowledge in terminology, easy to understand, bit entertaining but still delivering the information. The author giving his/her effort to put every word into delight arrangement in writing Programmable Logic Controllers: An Emphasis on Design and Application, Third Edition but doesn't forget the main level, giving the reader the hottest in addition to based confirm resource facts that maybe you can be certainly one of it. This great information can drawn you into fresh stage of crucial imagining.

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