

Description of Supplementary Content

This content is for the text, *Programmable Logic Controllers: An Emphasis on Design and Application*, 4th Ed. by Kelvin T. Erickson, published in 2023 by Dogwood Valley Press LLC.

The additional problems with solutions is on the "Solved Problems" page.

Sections:

1. PLC programs for chapter examples
2. PID tuning demonstrator program
3. Design documentation for the coal handler project in Chapter 22
4. Design documentation for the multi-unit chemical process in Chapter 22
5. Programming guides for the PLC processors

1. Chapter Example PLC Programs

These are the text examples. The programs are arranged by PLC processor. The zip files for the various processor families and the software used to generate the programs are:

CLogix-1, -2, -3, -4, -5, -6	ControlLogix (Studio 5000 Rev 34)
Emerson	Emerson RX3i (Proficy ME Rev 9.5)
MLogix	MicroLogix (RSLogix 500 Rev 9)
Modicon	Modicon M340 (ControlExpert Pro 15.0)
S7_300 Classic	S7-300/400 (Step7 Classic Rev 5.5)
S7_300 TIA-1, -2	S7-300/400 (Step7 Portal Rev 17)
S7_1500-1, -2	S7-1500 (Step7 Portal Rev 17)
SLC500	SLC-500 (RSLogix 500 Rev 9)

When the files in each downloaded zip file is extracted, the examples are organized by chapter. Each project has an associated pdf file to view a report/print-out/listing of the project, so one does not need the programming software to view the solution. For most of the pdf files, one will want to print it with the page scaling set to "Reduce to fit printer margins."

The project files for the Rockwell Automation processors may be viewed directly by the appropriate programming software by opening the project file:

ControlLogix (Studio 5000)	.acd file extension
SLC-500/Micrologix (RSLogix 500)	.rss file extension

For the other processors, one must restore/retrieve the project from a backup:

Emerson (Proficy Machine Edition)	Restore project from .zip file
Modicon	Open .sta file (will restore project) Will probably receive a warning prompt about a different hardware catalog. Select "Yes" to continue conversion.

S7 (Step7 TIA)	Open .zap17 file (will restore project and convert to
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S7 (Step7 Classic)

newest version). Each project contains a S7-300 solution and a S7-1500 solution
Retrieve project from .zip file (with Step7 Classic ver 5.5) Note that Pkzip or 7-zip will not restore the project. One MUST use "Retrieve" with Step7 Classic ver 5.5 or later

The sequences for Example 21.4 are included with the ControlLogix, Emerson, Modicon, and S7-1500 solutions as an Excel file.

2. PID Tuner

The "PID_Tune.zip" file contains a PID tuning demonstrator program. Within the zip file, the "AAPIDTune_InstallNotes.pdf" contains the installation instructions.

3. Coal Handler Control System Documents

The files in "Coal_Handler.zip" document the coal handling system. Read the document "AADescription of Project Files.pdf" for more details on the coal handling system documentation.

4. K Chemical Process Project Files

The files in "Chem_Process.zip" document the K Process fictional chemical plant. Read the document "AADescription of Project Files.pdf" for more details about the files in the archive.

The files in "Chem_Proc_CLogix.zip" document the ControlLogix implementation of the control and HMI. Read the document "AADescription of CLogix Files.pdf" for more details about the files in the archive.

Other controller implementations will be added as they become available.

5. Programming Guides for the PLC Processors

The following files are in "Programming_Guides.zip":

Lab1.pdf

Simple lab exercise. Using in conjunction with the files below.

Emerson Proficy.pdf

Emerson Proficy ME Rev 9.5 for RX3i

Modicon_ControlExpert.pdf

RSLogix500_MicroLogix.pdf

RSLogix500_SLC500.pdf

Step7_S7_1500

Step7_S7_300

Studio 5000.pdf

Schneider ControlExpert Pro 15.0 for M340 or
M580

Allen-Bradley RSLogix 500 Rev 9 for MicroLogix
1400

Allen-Bradley RSLogix 500 Rev 9 for SLC-5/05
Step7 Portal Rev 17 for S7-1500

Step7 Portal Rev 17 for S7-300

Rockwell Studio 5000 Rev 34 for ControlLogix