Ministry of Higher Education and Scientific Research

University of diyala

Collage of Engineering

Dep. of Communication

Simulation of PROGRAMMABLE LOGIC CONTROLLER [PLC]

Research Submitted to

College of Engineering, University of Diyala

As part of Requirements of the Degree of Bachelor Science in communication Engineering

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1434 2013

Abstract

A Programmable Logic Controller (PLC) is a specialized computer used for the control and operation of manufacturing process and machinery. A junior/senior level PLC course in a four-year electrical engineering technology institution mainly covers the following topics:

PLC hardware components, developing fundamental PLC wiring diagrams, basics of PLC programming, timers, counters, program control instructions, data manipulation instructions, math instructions, sequencer and shift register instructions, PLC installation, editing and troubleshooting. After the lectures, students practice PLC programming using RSLogix® from Rockwell Automation. Students are able to observe the operation of the program and make necessary modifications as necessary. Towards the end of the semester, students have learned the basic PLC programming instructions. It is a good time to enhance their practical problem solving abilities by working on an extensive design project using PLCs. This paper discusses three separate design projects aided with PLCs to solve practical process and machinery problems in industrial environments.

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