

MECHATRONICS BOOK SERIES

CONTROL AND INTELLIGENT SYSTEMS

Momoh Jimoh E. Salami
Abiodun Musa Aibinu
Yasir Mohd Mustafah



IIUM Press

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

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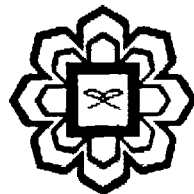
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EDITOR

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Published by:
IIUM Press
International Islamic University Malaysia

First Edition, 2011
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Perpustakaan Negara Malaysia

Cataloguing-in-Publication Data

Momoh Jimoh E. Salami, Abiodun Musa Aribinu, Yasir Mohd Mustafah: Mechatronics Book
Series: Control and Intelligent Systems

Bibliography p.
Includes Index
ISBN

ISBN: 978-967-418-176-5

Member of Majlis Penerbitan Ilmiah Malaysia – MAPIM
(Malaysian Scholarly Publishing Council)

Printed by :
IIUM PRINTING SDN.BHD.
No. 1, Jalan Industri Batu Caves 1/3
Taman Perindustrian Batu Caves
Batu Caves Centre Point
68100 Batu Caves
Selangor Darul Ehsan
Tel +603-6188 1542 / 44 / 45 Fax: +603-6188 1543
EMAIL: iiumprinting@yahoo.com

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Chapter 16

A Smart Car Surveillance System using Programmable Logic Controller (PLC)

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16.1 Introduction

This chapter discussed at designing a security system that will notify an owner of a car via Short Message Service (SMS) once the car alarm has been triggered. The Programmable Logic Controller (PLC) console is utilized as the main controller. The input and the output peripheral devices are interfaced to the PLC.

With a rapid increase in the number of vehicles on the road, there has also been an increase in thefts of vehicles, particularly cars. According to Seventh United Nations Survey of Crime Trends and Operations of Criminal Justice Systems (1998- 2000) [1], Malaysia has among the highest rates of car thefts in the world. In the year 2000 alone, 55,879 cases of car theft were reported, 2.41 per capita (per capita figures expressed per 1000 population) [2]. Malaysia is ranked no. 13 for the highest number of car theft cases in the world and no. 15 for the highest number of car thefts per capita. These alarming statistics necessitates for an enhanced security system, such as discussed in thus chapter, that would minimize the probability of theft and give the car owner some peace of mind. Cars fitted with such a security system would be much sought after by potential buyers.

The project is significant because the current system's weaknesses can be exploited by smart thieves. The security system to be designed will overcome the existing shortcomings by including additional security features. Once the car is tampered with, the owner will promptly receive a short message on their cellular phone, thereby making it possible for the owner to quickly proceed to their car and prevent a potential theft of their car or valuable belongings in the car.

16.2 Programmable Logic Controller Programming

The Keyence KV-16DR Programmable Logic Controller programming was done using the Ladder Builder for KV software. The programming was divided into several sections which consist of:

- Sending the Break Signal
- Arming of the Car Security System
- Disarming of the Car Security System
- Immobilizer
- Transmitting AT based commands to the GSM modem