

A SIMPLE AND RELIABLE TOUCH SENSITIVE SECURITY SYSTEM

Adamu Murtala Zungeru¹, Jonathan Gana Kolo² and Ijarotimi Olumide³

^{1,2}School of Electrical and Electronic Engineering, University of Nottingham, Jalan Broga, 43500 Semenyih, Selangor Darul Ehsan, Malaysia
keyxlmzd@nottingham.edu.my, jgkolo@gmail.com

³Electrical and Electronic Engineering Technology, Rufus Giwa Polytechnic, Owo, Ondo, Nigeria
ijarotimiolumide@yahoo.com

ABSTRACT

This research focuses on detection of unauthorized access to residential and commercial buildings when the residents are far away from the access gate of the house. The system is a simple and reliable touch activated security system and uses sensor technology to revolutionize the standards of living. The system provides a best solution to most of the problems faced by house owners in their daily life. Due to its simple electronic components nature, it is more adaptable and cost-effective. The system is divided into three units; the power supply unit which employs the use of both DC battery and mains supply to ensure constant power supply to the circuit, the trigger unit which is responsible for activating the alarm unit and designed to have much time and period and moderate sensitivity in order to reduce the rate of false alarm, and the alarm amplitude unit which main function is to produce amplitude alarm sound when triggered by the trigger unit with the aim of producing a large audible sound that can alert the entire neighborhood or scare an intruder away. The design of the system was achieved by considering some factors such as economy, availability of components and research materials, efficiency, compatibility and portability and also durability in the design process. The performance of the system after test met design specifications. This system works on the principle of touch sensor. The general operation of the system and performance is dependent on the presence of an intruder entering through the door and touching any part of the door. The overall system was constructed and tested and it work perfectly.

KEYWORDS

Touch Sensor, Automation, Control System, Security, Electronic Circuit, Maximum Power Transfer

1. INTRODUCTION

Insecurity and crime constitute some of the major problems facing our immediate society today. People live with fear of being attacked by burglars, vandals and thieves. Despite all the effort, resources and time that has been devoted to the development of tools that will reduce crime rates and make the world a safer place to live, these problems are still on the increase. These gave rise to the need for an increasing development in the technology of alarm systems which utilizes various principles such as infrared motion detection, light (photo) sensitive electronic devices and so on. Even with the introduction of these alarm systems which have reduced greatly the level of insecurity, there is still a problem of false alarm which needs to be minimized [1]. In order to effectively reduce the level of insecurity and avoid false alarms which can create unnecessary unrest, a touch activated security system is required. This system if properly designed will provide security and ensure alarms are activated only when an unauthorized person try to gain access to the protected area or device by touching the entrance or any other part of the device.