



MOTION DETECTOR CIRCUIT

MUHD. YUSUF SYAFIQ BIN ROZANI
MUHAMMAD NAQUIDDIN BIN AZMI

TJ
214.5
.M84
2015

FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
MALAYSIA

MARCH 2015

ACKNOWLEDGEMENT

First and foremost, we offer our humble selves upon the almighty god, Allah thanks for the strength given to us amidst through the hardship in completing the project.

Next, we offer my sincerest gratitude to my supervisor Pn. Nur Affida M.Zin for the guidance and instruction given to carry out the whole Final Year Project. In performing our projects, we had to take numerous guidelines from her and some respected persons. The completion of this project was a product from all the supporters. The explanation given to us really did help out to carry out the project given out for a year. Continuous guidance and support from supervisor made us a team for the whole year. Thus, the completion of this Final Year Project considered as an achievement to us as a team.

Greatest gratitude were also given to our lecturers involve in teaching us for the whole years. We also would like to offer our gratitude to the lecturers involve for the guidance given and spend some time with us to explain some points that guide us to the completion of this project. Lastly, I offer my regards and blessings to my colleagues and all of those who supported me directly and indirectly in any respect during the completion of projects.

ABSTRACT

The motion detector circuit is actually a circuit that detect physical object intrusion on its sensor. In this project the sensor used is the infrared sensor which is consists of the light emitting diode and a photo transistor (LDR).The light emitting diode which produces an infrared light to the phototransistor. Thus, if there is any intrusion or any object pass through between the lines of light, the circuit will energized the output. In this project the circuit cover the security purpose by acting as an alarm circuit with the infrared light as the transmitter the light to the sensor. Therefore the circuit have to be setup properly to achieve a good result in producing the alarm sound in good sensitivity. The circuit have two parts which consist of the transmitter with light emitting diode (LED) at the end and the receiver part with the phototransistor act as the switch or trigger. The output for this circuit is two, which are LED at the receiver part act as indicator light and buzzer. The projects are conduct and have been successfully operate.

LIST OF FIGURES

Figure 1.1: The operational flow chart	6
Figure 1.2: The methodology flow chart	7
Figure 2.1: The symbol for a photo resistor and the picture of it	11
Figure 2.2: The picture of IC NE555	12
Figure 2.3: The pin out layout	12
Figure 2.4: Thyristor	14
Figure 3.1: Schematic diagram of the transmitter circuit	15
Figure 3.2: The Schematic Diagram of the whole circuit	16
Figure 4.1: Initial circuit before voltage excitation	18
Figure 4.2: Equivalent circuit for thyristor excitation	18
Figure 4.3: Initial setup of motion detector circuit	19
Figure 4.4: The output of the hardware implementation of the circuit	20

LIST OF ABBREVIATIONS

LED	Light Emitting Diode
FYP	Final Year Project
LDR	Light Dependent Resistor
IC	Integrated Circuit
IR	Infrared
SCR	Silicon Controlled Rectifier