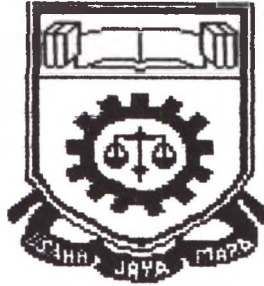


FACULTY OF ELECTRICAL ENGINEERING
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FINAL REPORT OF DIPLOMA PROJECT

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SMOKE DETECTOR\ALARM

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1.0 ABSTRACT

A smoke detector is an important unit for any industrial firm. This smoke alarm is design to provide an alarm whenever smoke collects near the ceiling. The report summarized the introduction and application of smoke detector. This circuit use a dc +12 voltage supply, IC 555 (timer), PNP transistor to run the circuit. Most of the building, factory and etc use this design. This appurtenances normally used for high exertion and structure to stride up celebrate nightly tesitrities. It also familiarly used as a conduct for signal as a next step for the action. The majority of erection that normally founded in using this appurtenances such as hospitals, schools, complex centre etc. The pay price for this appurtenances also fairly acceptable and congruent. The market soldered for this appurtenances none broad wide.

2.0 Acknowledgements

Needless to say, great pains have been taken in preparing this paperwork and as well as the project itself. The modifications, corrections and additions sent by the lecturers and also friends have been included while amendments by the reference itself have also been incorporated.

This project has been towards attempts at making each project as error-free and comprehensive as possible. We wish to thank those individuals especially Cik Taniza Tajuddin our beloved supervisor, who gives us the guidance and correct way to make a successful *Smoke Detector/Alarm*. Not forgetting, the library for giving us the opportunity to use their reference books for our project and paperwork. Also we like to thank our friends who like to cooperate with us on helping us in preparing the materials.

With this project, it can give us the knowledge on how to make a *Smoke Detector/Alarm*, especially for the future trends. I hope that our project will be useful for other students who are taking this project in future.

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5.0 INTRODUCTION

Smoke detector/alarm is design to provide an alarm whenever smoke collects near the ceiling. Nowadays, smoke detector is becoming so important because it can prevent fire from broke out especially to an industrial firm. The design structure is not so complex because it used just one IC 555 (timer) in the circuit. The sensor of the device consists of two sections that are:

1. The light beam projector
2. The light beam receiver

Both the projector and the projector tube are made of opaque material each measuring 10-cm in length and 2-cm in diameter. The LDR and the lamp along with their reflectors are installed in their respective tubes. Both the tubes are kept at right angle to each other and the whole is assembly is mounted inside a suitable ventilated opaque enclosure. This arrangement should ensure that the light from the projector is not received by the LDR either directly or indirectly in the absence of smoke.

The enclosure should be uniformly ventilated from all sides, such that there can be free movement of smoke from all sides. It has to be placed very close to the ceiling, as smoke is lighter than air and thus will rise towards the ceiling. In the absence of smoke the lighter from the projector is prevented from entering the receiver due to their geometrical positions. In darkness, the LDR has high resistance and hence transistor BC177 is in cut-off region. This kept the reset terminal of IC 555 (wired in astable mode) to ground level and the alarm is kept off.

On the appearance of smoke in between the adjacent tubes placed at right angles, the light due to its physical properties gets scattered. The inner section of the receiver tube gets illuminated and is spoiled by the LDR. This reduces the resistance of the LDR and the transistor saturates. This is turn operates the alarm along with the LED lamp connected in its emitter terminal. The cost of the unit is reasonable and demanding in the market.