

DC MOTOR OVER SPEED INDICATOR

MUHAMMAD NAJMI BIN FARID WAJDEE NURSHAHIRAH ATHRAH BINTI ROHMAN

TK 2851 .M84 2015

FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
MALAYSIA

MARCH 2015

TABLE OF CONTENTS

ACKNOWLEDGEMENT	i
ABSTRACT	ii
LIST OF FIGURES	1
LIST OF TABLES.	3
LIST OF ABBREVIATIONS	4
CHAPTER 1: INTRODUCTION	
1.1 Background Of Study	5
1.2 Problem Statements	5
1.3 Objectives	6
1.4 Scope Of Work	6
1.5 Project Contribution	6
CHAPTER 2: LITEREATURE VIEW	
2.1 Introduction	7
2.2 Scope Of Work	8
CHAPTER 3: MATERIALS AND METHODS	
3.1 Methodology	9
3.2 Block Diagram	10
3.2.1 Design Of Flow Chart	11
3.3 Experimental Setup	13
3.4 Equipment and Components	18
3.5 Description of Components	20

CHAPTER 4: CIRCUIT DESIGN AND OPERATIONS

4.1 Schematic Diagram	31
4.2 Circuit Operation.	32
4.3 Circuit Layout	33
CHAPTER 5: RESULTS AND DISCUSSION	
5.1 Software Simulation Result	34
5.2 Hardware Implementation Results	36
5.3 Circuit Testing and Troubleshooting	38
5.4 Data Analysis and Discussions	43
CHAPTER 6: CONCLUSION AND RECOMMENDATION	
6.1 Conclusion.	46
6.2 Recommendation	47
REFERENCES	49
ADDENINGER	50

ACKNOWLEDGEMENT

First of all, thanks to Allah for giving us chances and opportunities to complete our project report 'DC Motor Over Speed Indicator'. This success is because of the teamwork of each members, Muhammad Najmi B Farid Wajdee and Nurshahirah Athirah Bt Rohman. A lot of thank to Madam Masmaria Bt Abd Majid for her encouragement and support to ensure our project is in progressing according to plan and fulfill the requirement format for final year project. Besides, in completing this project report successfully, we also not forget to thank for our family and friends who are willing to contribute either directly or indirectly for giving us useful information and guidelines how to run our project circuit successfully.

Lastly, we are fully appreciated for all the advices, knowledge and cooperation until this project proposal is completely done. Thank you.

ABSTRACT

This project is designed for indicating over-speed and direction of rotation of the motor used in mini hand tools, water pump motors, toys and other appliances for DC motor. DC motor over speed indicator circuit is a circuit that constantly monitors the condition of the speed. When in forward rotation the yellow LED will light on, and during in reverse rotation the green LED will light on. Over speed happened is due to voltage increasing in dc motor, so that when over speed happen the red LED light on and the Piezo Buzzer will sound. The reason why an interest to work on this project has been developed is because of people don't know there is natural change in speed due change in load that make the device in over speed limit on the shaft. Besides, the speed control is done manually by some of automatic control device, so the percentage of injuries will getting higher. The immediate objective of this research project are to improve the safety of DC motor equipment. Besides, to reduce the number of accidents or injury in using DC motor equipment. In order to solve this problem, we choose 'DC Motor Over Speed Indicator'.