MOTOR SPEED CONTROLLER SYSTEM USING MICROCONTROLLER

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ABSTRACT

This project is to design the dc motor speed controller using a microcontroller. A sensor will be used as distance measuring element. The design system will automatically operate as sensor detecting certain distance the car is speeding. As a controlling center of the system, microcontroller will be used. The ultrasonic sensor is an option to the measurement of the distance between the vehicle and retrain object (another vehicle). In this project, dc motor is used to represent the speed of vehicles that is liable to change followed by the distance that is affected by the sensor.

Keywords:

DC motor, sensor ultrasonic, PIC16F84A and MPLAB IDE programming.

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CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

Nowadays, the fast growth of science and technology has been producing so many creations from time to time especially a vehicle. If we look at the statistic of an accident which is increasing, there are so many efforts produced by automobile manufacturers to enhance a few of safety characteristic to their product. One of the suggestions is to complete the vehicles with anti-accident system to decrease the number of accidents.

In this project, a system will be designed using microcontroller to reduce the speed of a car when an ultrasonic sensor detects another vehicle with certain measure of distance in between the vehicles. The ultrasonic sensor will be used to measure the distance between the vehicle and the object (another vehicle). Once, the sensor detects the range of the distance of the barrier and the vehicles are not safe; the sensor will send the signal to the transducer. Then, the signal will be converted to the pulses wave and send it to the design system to alarm the design system that the speed of the vehicle must be reduced automatically.

DC motor will be implemented to the design system to show the reduction of speed if there are any barriers in front of the vehicle. If nothing is blocking, the speed of the motor will not change. However, if the sensor detects that the distance between the barriers is a few meters in distance the motor will automatically stop or gradually reduce the speed of the motor. This distance will be set in microcontroller to ensure that the vehicle is in safe distance between the barriers as a limitation to the dc motor speed.