AUTOMATIC VEHICLE STARTER SYSTEM BASED ALCOHOL BREATH ANALYZER SENSING

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ABSTRACT

This alcohol sensor is suitable for detecting alcohol concentration from the breath of the people, just like your common breathalyzer. It has the high sensitivity and fast response time. It provides an analog resistive output based on alcohol concentration. This sensor unit offers very high sensitivity, combined with a fast response time. In this project, the frame composing and working flow of the system are described.

. 1.1 INTRODUCTION

This alcohol sensor is suitable for detecting alcohol concentration on your breath, just like your common breathalyzer. It has a high sensitivity and fast response time. Sensor provides an analog resistive output based on alcohol concentration. This sensor unit offers very high sensitivity, combined with a fast response time. In this paper, the frame composing and working flow of the system are described.

2. Existing system architecture:

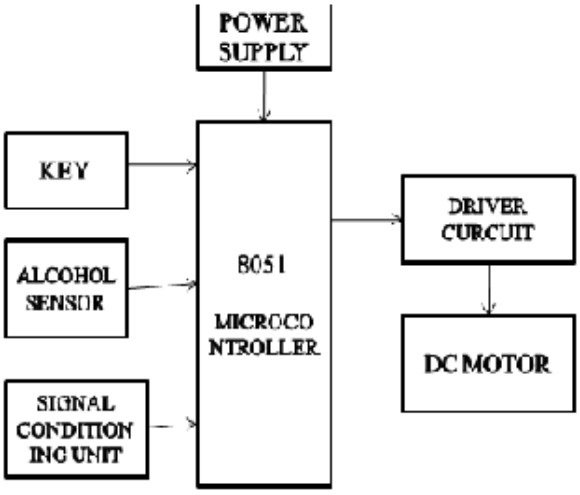
In the existing system the alcohol sensing devices are not familiarly used often.The vehicle drivers who are disobey the rules and regulations in the roads because of the alcohol usage. Hence we propose this system.

2.1 *Motivation:*

Now a days, most of the case of accident causes from drink and drive. Because of it, people who drunk and the people who is innocent suffer. So, to reduce this type of problem this concept is implemented.

3. Proposed System architecture:

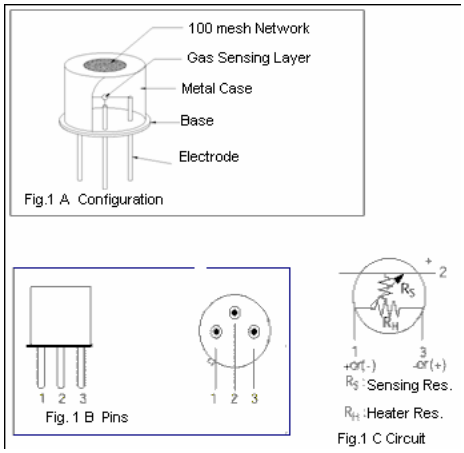
The purpose of the project is to provide a fast and safe environment for Road users. The Alcohol Sensor used here to sense the Driver breathing to avoid Drunk and Drive. Using this type of Sensor we can able to identify the alcohol usage. Based on these we can control the engine motor through Microcontroller. The Microcontroller has the engine control. If there is no alcohol sensing in breathing of driver. The controller will trigger to start the motor.



Microcontroller manufacturers have been competing for a long time for attracting choosy customers and every couple of days a new chip with a higher operating frequency, memory and upgraded A/D converters available in the market.However, the most of them had the same or at least very similar architecture known in the world of microcontrollers as "8051 compatible".?

The whole story has its beginnings in the far 80s when Intel launched the first series of microcontrollers called the MCS 8 051. Even though these microcontrollers had quite modest features in comparison to the new ones, it conquered the world very soon and became a standard for what nowadays is called the microcontroller. The main reason of success and popularity is a skillfully chosen configuration which satisfies different needs of a large number of users allowing at the same time constant expansions (refers to the new types of microcontrollers). sThis is the reason for having a great number of various microcontrollers which basically are solely upgraded versions of the 8051 family

Alcohol Sensor for use in Breathalyzer's or in an alarm unit, that is used to detect the presence of alcohol vapors. This sensor offers very high sensitivity, combined with the fast response time. This unit will work with a simple drive circuit and offers excellent stability with long life. When all the acetic acid is cleared out of the FUEL CELL and the instrument is ready to analyze another sample.



The ULN2003 is a monolithic high voltage and high current Darlington transistor arrays. It consisting seven NPN darlington pairs that features high-voltage outputs with common-cathode clamp diode for switching inductive loads. The collector-current rating of the single Darlington pair is about 500mA. The darlington pairs may be paralleled for higher current capability. Applications includes , hammer driver, lamp drivers,relay driver, display drivers (LED gas discharge), logic buffers , and line drivers .The ULN2003 has a 2.7kW series base resistor for each Darlington pair for operation directly with TTL or 5V CMOS devices

A DC motor is designed to run on DC electric power. Two examples of DC designs are Michael Faraday's homopolar motor ,and the ball bearing motor. which is (so far) a novelty and the most common DC motor types are the brushed and brushless types,.Which use the internal and external commutation respectively to create an oscillating AC current from the DC source—so they are not

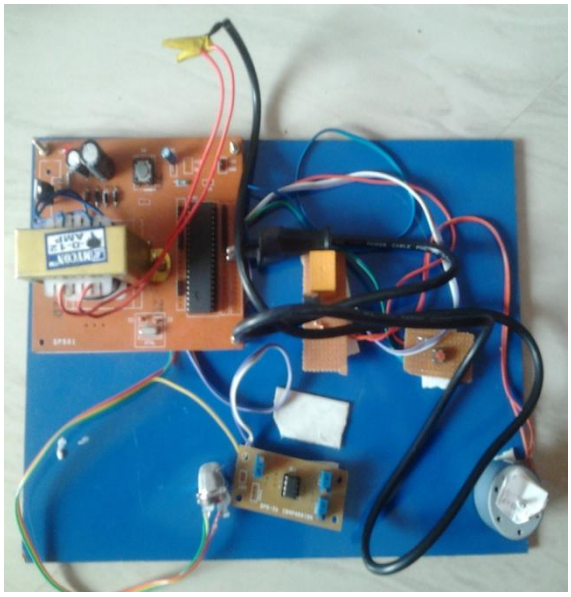
purely DC machines in a strict sense.We in our project are using brushed DC Motor, which will operate in the ratings of 12v DC 0.6A which will drive the flywheels in order to make the robot move

At the lowest level, keyboards are organized in a matrix form of rows and columns. The CPU accesses both the rows and column through ports. therefore, with two 8-bit ports, 8*8 matrix of keys can be connected to the micro controller. When a key pressed, a row and column make a connect;while there is no connection between row and column. IBM PC keyboards having , a single microcontroller (consisting of microprocessor, RAM , EPROM, and several ports all on a single chip) takes care of software and hardware that interfacing keyboard. In such systems, it is the function of programs stored in the EPROM of microcontroller to scan the keys continuously, identify which has been activated, and sent it to the motherboard.

The power supply is the most important section of all electronic devices as all devices work only with DC. DC from a battery has an advantage of being portable and ripple free. The DC voltage required for this project is a supply of +5V. LM78 SERIES IC is used to obtain the signal in the range which is compatible to the microcontroller

3.1 Implementation:

This concept is implemented in vehicle (light or heavy).in this project alcohol sensor is used to detect the person who is drunk or not. If the result is +ve. Sensors trigger the relay that is connected to the engine of the vehicle. Because of it engine is stop.



4. Results:

If the result is in positive then relay will stop the engine and it will reduce the chance of accident. While if result is in negative then relay will not stop.

This module is implemented at the staring of the vehicle.

5. Conclusions and future work:

The above results support the hypothesis that it is possible to prevent drivers from causing accidents due to drunkendriving. Since this method deals with biological signals to identify the presence of alcohol, it

is more efficient than the previous techniques. Moreover it is evident that power spectrum of EEG is affected by alcoholic intake. So, as and when the product actually enters the market as a standard equipment/accessory of the vehicle, it will surely yield much greater benefits of saving thousands of human lives on roads every year.

In future we can enhance the system by implementing this in vehicles to reduce the accident.In this system, we will attach the GSM and GPS module that lead to inform the exact location of the drunken person.

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