

Alcohol Detector

Introduction

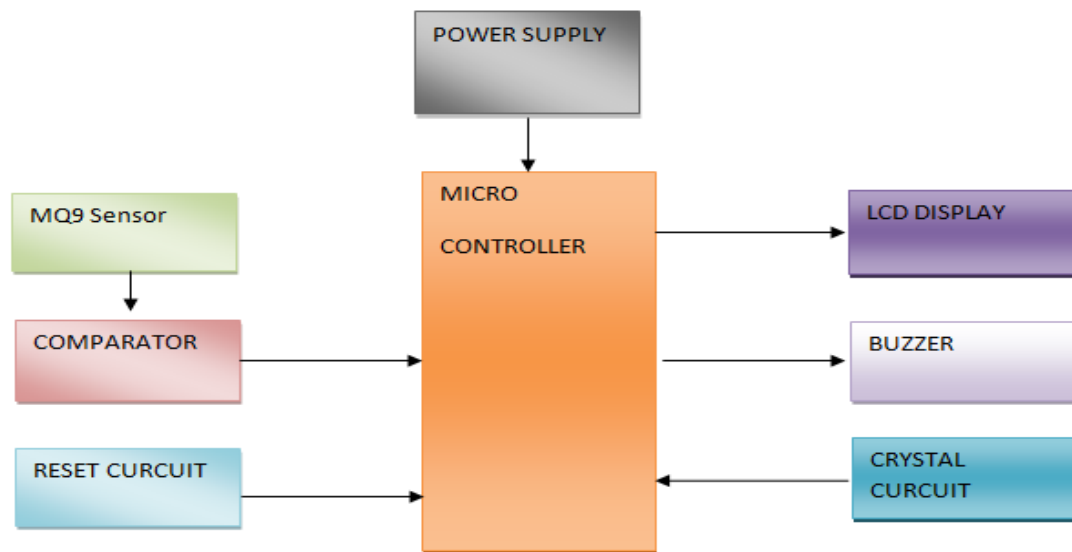
This low cost alcohol detector mini project can be used in college campus, hospitals. It can also be used in Companies. This low cost alcohol detection system can be installed in a vehicle to detect if the driver has drunk the alcohol.

This is an important sensor based project implemented using microcontroller. In this project, we have interfaced MQ series gas sensor with 8051 microcontroller. We cannot interface alcohol sensor directly to the 8051 microcontroller because the output of gas sensor is in analog format. The 8051 microcontroller recognizes only digital input. The best and the low cost solution for this is to connect a comparator between gas sensor and Microcontroller. Comparator contains an operational amplifier comparator has two inputs. One input is from the sensor and another is from the Potentiometer. Whenever the sensor value crosses threshold limit then the comparator output goes high. In this way microcontroller comes to know that the alcohol percentage is more than the threshold limit. Potentiometer can be used to vary the trigger level or the threshold limit.

We have provided a piezoelectric buzzer in this project. This Buzzer will be turned on whenever this project detects the alcohol. This Buzzer helps to alert the people that the person undergoing the test for alcohol detection has consumed alcohol. This buzzer is driven through a transistor.

We have also provided LCD display in this alcohol detector mini project. LCD display shows two messages. Whenever you turn on the project, LCD shows project title. And whenever alcohol is detected, system shows message as Alcohol sensor crossed limit.

Block Diagram



Component

- Microcontroller
- LM 358 comparator.
- LCD display
- Piezoelectric buzzer
- Transformer
- Voltage regulator
- Bridge rectifier
- Filter capacitor
- Crystal
- Resistor
- Capacitor
- Transistor
- Potentiometers

Advantage

The main advantage of this system is the low cost implementation. Because of this low cost, it can be used at many places. The normal alcohol detectors which are available in market have a considerable cost, so everyone cannot afford those systems. But with this project we are proposing a low cost solution for alcohol detection system.

Application

This is one of the Microcontroller based mini projects which have application in college campus, companies and various organizations. It can detect if the student or the employee has consumed alcohol.

This breath analyzer project has main application in drunk and drive detection. It can be used as alcohol detector for vehicle.