IOT Based Gas Detection System

Saranya.M[1], Priya Dharshini.L[2] , Nithishkumar.L[3], Dhanush.R[4]
[1]*Assistant Professor, Electrical and Electronics Engineering, SNS college of Engineering, Coimbatore, India*
[2,3,4]*Electrical and Electronics Engineering, SNS College of Engineering, Coimbatore , India*

Abstract- LPG is an essential fuel in our daily life. In these modern days, LPG gasis used in every kitchen for cooking, as well as it's used in different industries and factories. While it is a very useful burning fuel, but it is a highly explosive gas. Normally LPG gas is available in a cylinder. The LPG gas is heavier than air, when it leaks from a cylinder it flows along the floor and it can happen an explosion and cause fire accidents. So, in this project, we will build the IOT Based Gas Leakage Detector system, that can detect LPG gas and alert us through LCD display and Light indicator as well indicating the concerned person so that it can save us from a big explosion or fire accident. Many accidents occur in day to day life like explosion because of LPG Leakage. Major harm is caused if gas leakage is not detected early but now we can detect the gas leakage using the MQ5 sensor. In this IOT gas leakage detector device itwill display the level of the gas.

Keywords – Nodemcu; MQ2 Gas Sensor; I2C Module; LCD; LED.

INTRODUCTION

LPG is an essential fuel in our daily life. In these modern days, LPG gas isused in every kitchen for cooking, as well as it's used in different industries and factories. While it is a very usefulburning fuel, but it is a highly explosive gas. Normally LPG gas is available in a cylinder. The LPG gas is heavier than air, when it leaks from a cylinder it flows along the floor and itcan happen an explosion and cause fire accidents. So, in this project, we will build the LPG Gas Leakage Detector system, that can detect LPG gas and alert us through Sounds and Light indicator. It can save us from a big explosion or fire accident. The LPG gas is heavier than air, when it leaks from a cylinder it flows along the floorand it can happen an explosion and cause fire accidents. So, in this project,we will build the IOT Based Gas Leakage Detector system, that can detect LPG gas and alert us through LCD display and Light indicator as well indicating the concerned person so that it can save us from a big explosion or fire accident. Many accidents occur in day-to-day life like explosion because of LPG Leakage. Major harm is caused if gas leakage isnot detected early but now, we candetect the gas leakage using the MQ5 sensor.

BLOCK DIAGRAM

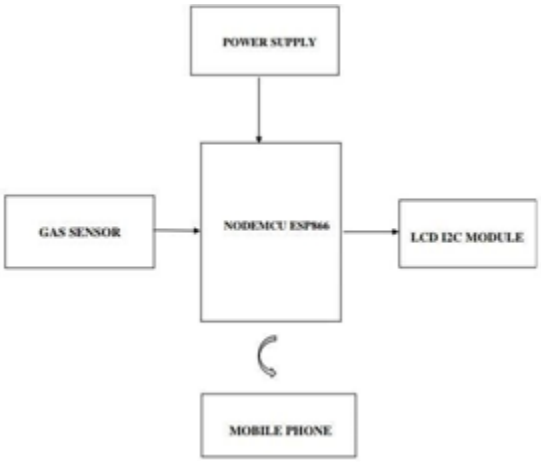
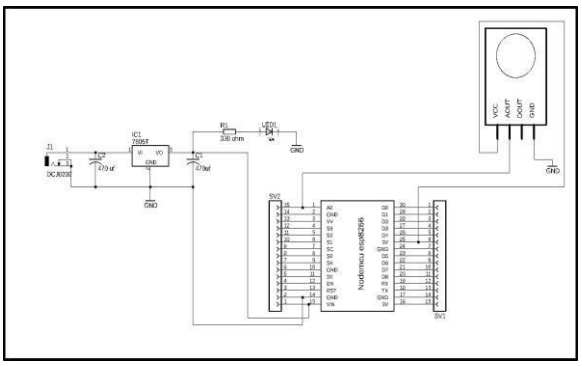


FIG 1: Block Diagram of gas detection

HARDWARE



In this IOT gas leakage detector ,device will get connected to WIFI maximum parameter can be set accordingly. Such IOT as well as Arduino based gas leakage detector systems can be installed in homes, hotels LPG gas storage areas. In this LPG gas detector system sense the LPG gas using MQ5 gas sensor. This device will continuously monitor the

level of LPG gaspresent in the air. While monitoring, if the value of LPG gas in air is within the set limit then the RGB LED on the circuit willglow green giving a safe sign. And whenever the gas exceeds above the predefined limit than the RGB LED willglow red and simultaneously solenoid value will turn off and update it over IOT.This will help in detecting gas leakage in the surrounding.

PROTOTYPE

The sensing element is accomplished by detecting 6 differing kinds of combustiblegases on label sensitivity. This sensing element may be labeled mistreatment in the potentiometer fitted within the jailbreak board of the MQ6 gas sensing element. The sensing element dispenses associate degree analog output. The MQ- 6(LPG Gas Sensor) will observe gas concentrations in any place from 200 to 10000ppm. The sensor output is associatedegree analog resistance. Combining with the sensing element module is stopped through a 4-pin board compatible header.

NodeMCU is an open source platform based on ESP8266 which can connect objects and let data transfer using the Wi-Fi protocol. In addition, by providingsome of the most important features of microcontrollers such as GPIO, PWM, ADC, and etc, it can solve many of the project's needs alone.

RESULT

MQ2 gas sensor sends the signal to theNODEMCU ESP2866 after attentive the gas leakage. NODEMCU the other visible Join devices such as LCD, LED convey active signals. is sent by the WIFI module to the supplied mobile number. As a result. In practice, resultsare noticed by the people surrounding the area are displayed on the LCD and a LED indicates the crisis to the peopleby making the light indicte.

CONCLUSION

The advantage of this simple gas leak detector is its simplicity and its ability to warn about the leakage of the LPG gas . This system uses IOT technique to send alert massage to respective person if no one is there in the house and then gas leaks occurs, WIFI moduleis there to send immediate messages to the respective person regarding thegas leak.

REFERENCE

www.researchgate.com