

THE PERCENTAGE OF DETECTION OF PROPANE & BUTANE USING IOT & WIRELESS TECHNOLOGY

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Abstract - In this work we present how to catch the gas leakage using a gas sensor and also how to book a new cylinder impulsively by sending a message to agency. For this purpose we are using MQ-6 gas sensor because MQ-6 is very subtle to propane and butane which are main ingredient of LPG. In this kit, we are using load cell to estimate the weight of cylinder impulsively. The weight of cylinder is shown frequently on the screen i.e LCD and some 4-5 MQ-6 sensors will be set down in different location of a room, production of sensor will become high when the LPG leakage is contemporary. When the sensor production is high, buzzer will get switched on and a message will be sent to user and nearest gas agency via GSM. When the mass of cylinder is equal to threshold value, a notification will be sent to agency to book new cylinder. A statistical analysis of gas sensor and load cell is done.

Key words : LPG (liquefied petroleum gas); gas sensor MQ-6; buzzer (alarm); LED (light), mobile communication, 555 timers

1. INTRODUCTION

In this system, We avail how to recognize the gas drip using gas sensor. Also will present how to book a new cylinder impulsively by transferring a text message to distributor. In this work we are using MQ-6 sensor which is subtle to propane and butane (LPG). We need load cell to quantify the weight of gas in a cylinder. The mass of cylinder is shown on LCD. Some 4 -5 MQ-6 sensors will be put down in different locations of the room & then output of sensor will be up when there is a drip in gas. While the output of sensor is up the buzzer will turn on and notifications passed to nearest gas agency by utilizing GSM. This message will send when the weight o gas cylinder is equal to limit value. At this stage, analysis examination of gas sensor & load cell is done. Safety & security is most important in our day to day life, especially in our houses to avert flareup of gases. Now-a-days the flareup of LPG gas is growing& LPG fraud also growing homogeneously with it. Checking of gas in a cylinder, the measure of gas in a cylinder is constantly detected using a w Load cell. As soon as level matches with the mass of cylinder, a notification is forwarded to user & to agency to prearrange a cylinder.

2. RELATED WORK

1.Sushma Rani et al[4]; they have explained an android based involuntary gas perception and signal robot & also introduced a mini mobile robot which is efficient to recognize gas leakage. The robot will quickly read and send the informing message to android cell phone through wireless medium of communication like Bluetooth, if there is an of gas spot in a particular area. They have also developed an android solicitation & It is android based smart phone. It can obtain data from robot straight via Bluetooth. It gives a sign whenever there is a phenomenon of gas leakage. Also they can control the robot gesture through Bluetooth via using text commands & voice message.

2. Sebastian Ashok et al[5] ; In this particular paper they have explained regarding their ARM7 based machine-driven system. It is about LPG replenish reservation & drain perception. This paper is based on innovative approach that is uncomplicated to test as LPG cylinder booking unit gas drain observing unit & server system unit. They also used MQ6 sensor which is put down in the locality of the gas cylinder. The resistance of this sensor decreases as it's conductivity increases. It feds up the microcontroller & turns on the buzzer as well as exhaust fan. Then microcontroller convey a message as 'LPG gas leakage initiated in your home'. This message sends with the help of GSM module.

3. PROPOSED SYSTEM

In the work, We use IoT technology to make the technique to work fast with quick informing notifications of the gas drip and a motor to shut the knob of the cylinder for preventing further damage or accidents due to flare up. Here we use an web-app to get the response instantly from the system. The work comprises of GSM module, exhaust fan, microcontroller, a buzzer, LED for indication is utilized for informing nearest people and gas sensor to discover the gas leakage.

3.1 Functional unit description

Microcontroller Atmega328

The ATmega328 is a Microchip with jazzed-up Pico power and is a 8 bit Reduced instruction set computer microcontroller. The microcontroller has 32kb of flash memory which can be read and write, 1024B of EEPROM, 23 GPIO, 32 general purpose registers, 3 timers/counters, interrupts which are external and internal, a watch dog timer which is programmable with a internal oscillator, 2KB of static RAM, five power reduction modes. The microcontroller operates from 1.8v-5.5 v

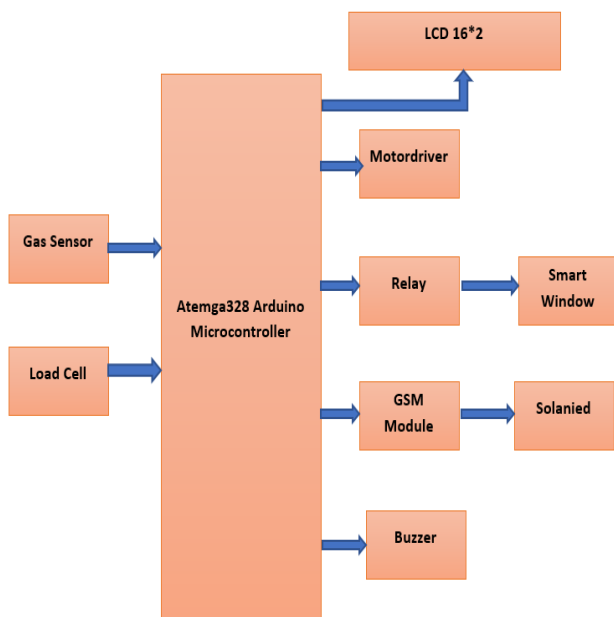


Fig -1: Block diagram of gas spill recognition

Buzzer

It is an audio signaling gadget. It may be electromechanical, mechanical or electronic. Electronic buzzers have many modern applications these days. Buzzers & beepers also includes alarms, timers and mouse click or keystroke.

LCD (16X2) Display

LCD stands for Liquid Crystal Display which are commonly used for portable electronic games. LCDs light emission is not directly but they are widely utilized in apps such as television, instrument panel, computer monitors, aircraft, cockpit displays etc. It is electrically modulated device which is made of pixels filled with liquid crystal which is arrayed in front of reflector.

Weight Sensor

This sensor is used to check the quantity of a flammable gas in the cylinder one may not be conscious about the quantity in cylinder and for this reason the amount of gas existing in the cylinder has to checked on regular basis. The load cell is required for weighing capacity. And for measurement purpose the weight sensor module is issued along with the load cell.

GSM Module

It can be refered as cellular structure & utilized to transmit versatile voice and also information command. GSM system works in 4 diverse recurrence ranges. A large portion of the GSM system works in the 900/1800 MHz groups. A portion of the nations in US and Canada uses 850MH bands and also 1900MHz since these are already allocated with the 900/1800 MHz band.

4. RESULT

The result of gas leakage system project is equivalent as proposed hardware model & components that are discussed in this chapter.

The results are shown below. Fig (6.1) shows the implementation of the gas drop out recognition system.



Fig-2 Implementation of Gas Leakage Sensor

4.1 Steps To Implement Proposed System:



Fig-3 Gas Leakage Detected

- If alcohol is detected, then the automatic message will send to a gas agency as well as to user.
- Now the new gas cylinder is booked.



Fig-4 SMS Sent to the User & Agency

have a brilliant feature that it can advice the urgency amenity if any accident happens.

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Fig-5 Automatic New Gas Cylinder Booked

5. CONCLUSIONS

Ultimately this system is designed by establishing a little quantity of LPG gas sensor module. This system detects the gas level in the air. If it surpasses the limit then a message will sent to a user via GSM module. Also buzzer will turn on to alert the nearest people. Then the message will display on screen. In real time home control system is very affordable as per as the safety is concerned. It has low maintainace cost. The author can add a subsystem to monitor a wastage & usage of a gas. This system is pliable to add a large number of sensors & relays. It is also flexible to add many software based intelligent function. This technique is an impulsive gas perception, alert & control system. In future this system can