

# Detection of Fuel Level and Accident Control

Manjula K<sup>1</sup>

Assistant Professor, Dept of Information Science and Engineering, SKIT, Karnataka, India<sup>1</sup>

**ABSTRACT:** There is a common enough problem nowadays the car and the bike owners face in India and also the accidents which happen in the remote areas that are left un-attended. There are number of petrol pumps that will try and con you by short-fueling or short changing you when you go to fill your car or bike, unless you stay alert. Due to distracted driving, speeding, reckless driving there are many accidents which take place in remote area. These accidents are left un-noticed and un-attended most of the times in remote areas and highways. In this paper, we are using a fuel sensor and a piezoelectric sensor to overcome the above mentioned problems.

## I. INTRODUCTION

Petrol bunk frauds are very common in recent times. Many of the petrol bunks today manipulate the pumps in such a way that it will display the amount entered, but in real the quantity of the fuel filled in the tank is much lesser than the displayed value. This results in huge profit for the petrol bunks and the customers are cheated at the same time. We use a fuel sensor which is embedded in the tank to calculate the amount of the fuel filled in the tank. The result will be an analog value which will be converted into digital value by the use of an analog to digital converter.

While coming to the accidents that are taking place in the remote areas and highways the number goes on increasing, the accidents are not come to the notice of the notice of the public for hours and days together. Due to this reason, there is loss of life many a times because emergency aid cannot be provided. Here we make use of a piezoelectric sensor. The pressure on the vehicle will be measured by this sensor and will be compared with threshold force value. If the pressure on the vehicle is greater than the threshold value then buzzer will be activated.

## II. METHODOLOGY

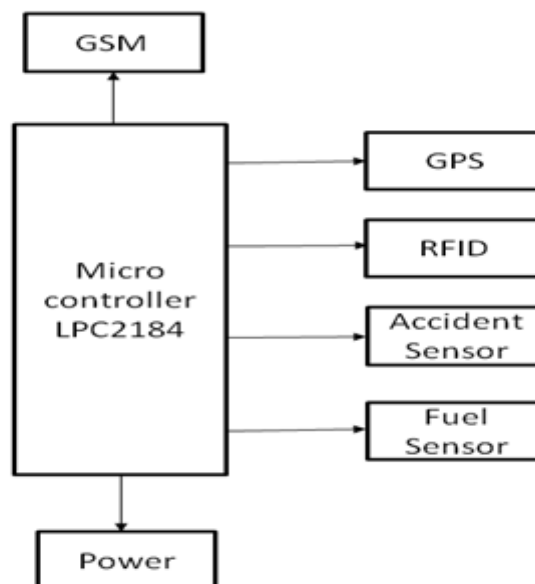


Fig1: Block diagram of proposed system

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In petrol bunk fraud application, whenever the fuel is filled into the tank, the fuel sensor will sense the amount of fuel filled and the message will be sent to the vehicle owner. To accomplish this task, components such as fuel sensor, analog to digital convertor, GSM are used.

Here we use ultrasonic sensor to sense the fuel level. Ultrasonic sensor will measure the distance to an object using sound waves. The data obtained from the ultrasonic sensor will be in analog form. To convert this analog data to digital data, we use analog to digital convertor. The digital data obtained will be sent to the microcontroller and the microcontroller will send that to GSM using which the owner receives the message.

In accident detection application, whenever an accident occurs, if the force is greater than the threshold force, then the accident sensor will get activated and the message will be sent to the nearest hospital and police station. To accomplish this task we use accident sensor, GSM and GPS.

The accident sensor we use here is piezoelectric sensor. It is used to measure piezoelectric effect such as changes in pressure, acceleration, force etc by converting them to electrical charge. Global Positioning system is used to measure the latitude and longitude of the location where the accident took place. Global System for Mobile communication is used to send the location and information about the accident to the nearest hospitals and police station.

### III. FLOW DIAGRAM

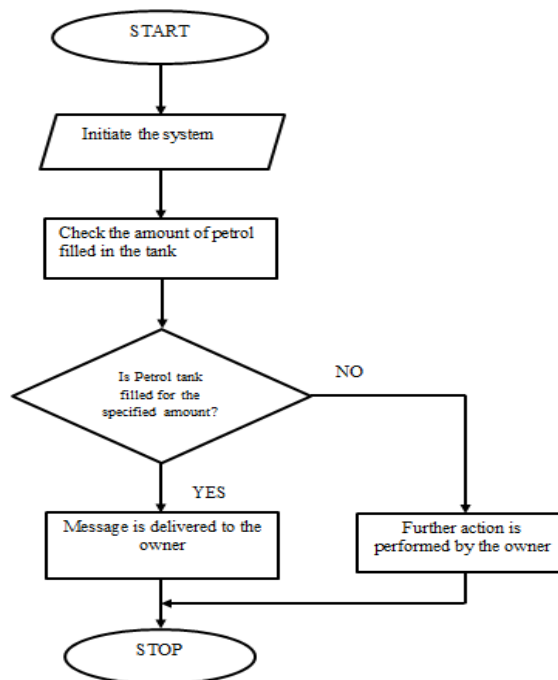


Fig2: Flow Diagram of fuel theft

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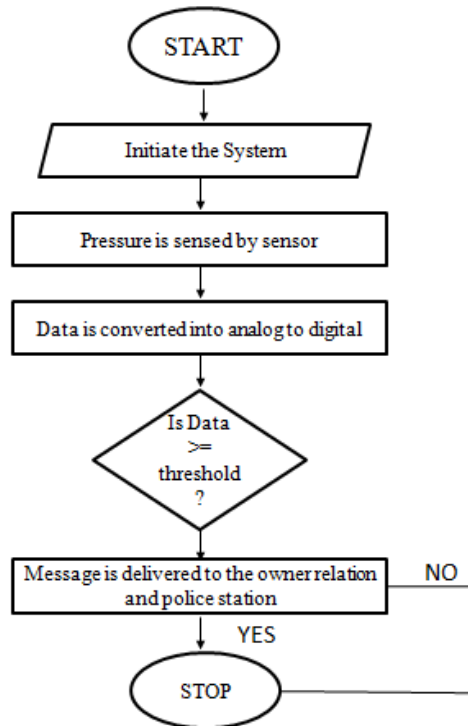


Fig3: Flow chart of Accident Detection

#### IV. FUTURE ENHANCEMENT

The RFID tag used in this project consists of all the personal details regarding the owner. We can use this card to save the money like we do in metro cards and the money with respect to the amount of fuel filled can be deducted automatically.

#### REFERENCES

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