For more Project details visit:

http://www.projectsof8051.com/gsm-based-vehicle-fuel-theft-detection-system-with-sms-indication/

Code	Project Title
1626	GSM based Vehicle Fuel Theft Detection System with SMS indication

Synopsis for

GSM based Vehicle Fuel Theft Detection System

With SMS indication

INTRODUCTION:

It has application in Car, Bikes and all other vehicles. This project has a GSM modem which send sms to owner of vehicle when there is fuel theft going on. Vehicle Petrol theft is one of the main concerns of many bike owners and car owners. Many times we have heard or some of us have already faced that petrol from their bike or cars has been stolen. Main intention of this project is to avoid such situation. In SMS based petrol theft detection system, we have used a Level sensor to detect the petrol level in petrol tank. If the level goes below certain threshold level then this sensor gives a particular signal to the microcontroller. Then microcontroller turns on the buzzer and sends SMS to the car/bike owner. Microcontroller is a main heart or Central Processing Unit of the system.

if we are driving our car or bike, in this case petrol or the diesel level will decrease which can trigger the microcontroller through the level sensor. To avoid this situation we have taken a signal from ignition key. Whenever the bike owner or car owner or driver inserts key into the ignition lock and switch it on then at that time a signal will be given to the microcontroller. This way microcontroller

understands that the bike/car has been started and so it will not monitor fuel level. We have provided bike ignition key with this project. Level sensor is turned on only when the key is removed from the ignition lock. So once the person gets out of the car then he/she will remove the key and system is activated.

BLOCK DIAGRAM
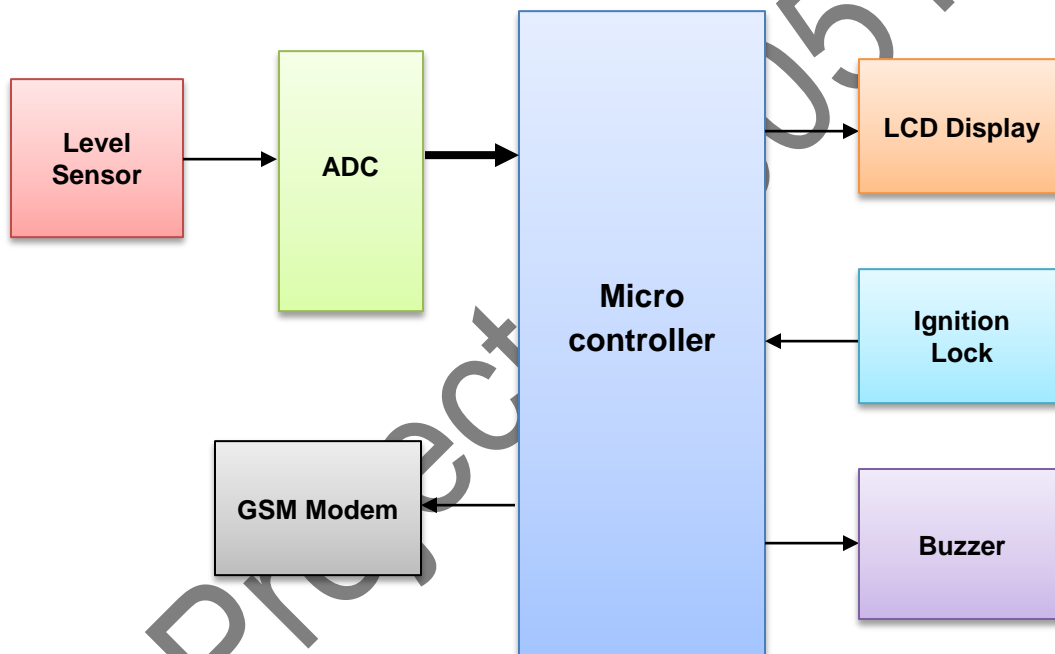
BLOCK DIAGRAM DESCRIPTION

1. Liquid level sensor: This is an important block at the input side of microcontroller. The function of liquid level is to detect the variation in fuel level and it gives variable output voltage as per the variations in level. This liquid level sensor can be used for any type of liquid. So it can be used for petrol as well as diesel or in some cases it can be used for water level detection as well.

2. ADC: ADC is analog to digital converter. Output of level sensor is in analog form and the 8051 microcontroller is not able to read the analog voltage signal, so we have used analog to digital converter. ADC reads the analog input voltage and gives digital output data which is corresponding to the analog data received. The output of ADC is 8bit format which is compatible to the microcontroller.

3. Microcontroller: We have used 89s51 microcontroller which is a 8051 series microcontroller. Various functions of microcontroller are:

i) To read the data from ADC which is the data received from level sensor.

ii) To read the signal from the ignition key.

iii) To calculate the variation in liquid level.

iv) To display various information in LCD display.

v) To turn on buzzer if the liquid level crosses threshold value.

vi) To send SMS when there is change in liquid level.

4. LCD display: It is known as Liquid Crystal Display. It displays various messages like "Ignition key inserted", "Ignition key removed", "Petrol theft is in progress", "Sending SMS", "SMS send successfully". It also displays variation in petrol level. We have used 16 by 2 alphanumeric display. LCD is mainly important for testing the project, however in actual use LCD is optional.

5. Buzzer or siren: Buzzer plays very important role in our project. A buzzer is turned on whenever petrol theft is going on or petrol is stolen. Buzzer will be turned on as soon as there is decrease in petrol level without ignition key. Loud noise of buzzer will draw attention of persons in the surrounding so they can come to know that something wrong is happening with the bike. This can save further fuel theft. We have used 12 volt buzzer for demonstration purpose.

6. GSM modem: GSM modem is used to send messages to the owner of the car or bike. We have to insert a GSM simcard into this GSM modem. Microcontroller sends the commands for sending SMS to

the GSM modem. These commands are sent through serial communication port. This technology is used because many times we go to the multiplex or theater or shopping mall and we park car on the road or in the parking area so we are not near the car or the bike. Whenever petrol theft is going on user will get SMS and user can rush to the bike or car to check the safety of bike.

APPLICATIONS:

1) This project can be used in Car, Bikes and all Vehicles.

2) This project can be used in various industries or companies which have bus or caps for their employees.

3) This project can be fitted in this transportation buses to detect the petrol theft.

ADVANTAGES

Advantages of GSM based Vehicle Fuel Theft Detection System with SMS indication:

1) This project is easy to use.

2) This system is fully automated and it does not require any human attention

FUTURE SCOPE

1. We can provide voice feedback system.

2. We can add vibration sensor to the car or bike. In case when the bike or car locked and somebody is try to open the door or open the bike lock then vibration will be produced and vibration sensor can sense this vibrations and turn on the buzzer.

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