

Hazardous Gas Detectors and Annunciators for Gas Geyser

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Abstract: In day to day life security plays major role. The main objective of this project is to design micro-controller based Carbon Mono-oxide and temperature detecting and alerting system. The Carbon Mono-Oxide gas and temperature get sensed by the sensor and compared with its respected threshold. If these sensed values exceed the threshold level then an alarm is generated immediately and also an alert message (SMS) will be sent to a registered mobile number through GSM. The advantage of this security system over manual method is that it offers quick response time and avoids the accident caused by the gas geyser.

Keywords: Sensors, Signals, Micro-controller, GSM Module, Arduino kit

1. Introduction

Now a day's security is most important factor in human life. There were many accidents caused in the bathroom due to the hazardous carbon monoxide gas emitted by the gas geyser. One such case was found that a 32 year old married woman died while taking a bath due to harmful carbon monoxide (CO) gas is emitted in the bathroom. Gas geysers were most probably used in the winter season. Carbon monoxide (CO) is emitted from the gas geyser while being used to boil the water for taking bath. Carbon monoxide is one of the leading causes of accidental poisonings. In this project the system detect hazardous carbon monoxide gas by using gas sensor and also the high temperature is sensed by the temperature sensor and provide these values to the micro controller if these values are greater than the threshold value then system gives output by three ways first is the visual signal as glowing LED, second by sound signal as giving alarm and third is by sending the SMS to the registered mobile number.

2. Literature survey :

The existing system such as home automation System which contain a home network including a GPRS/GSM gateway and wireless security sensor nodes are present. A low cost SMS based home

security system equipped with smoke detector, temperature sensor, humidity sensor and light sensor has used. The sensors are controlled by microcontroller and SMS is sent to the owner mobile by using GSM GPS Module.

Also there is one another existing system which the LPG gas leakage is detected by MQ-6 sensor and alarm is generated to alert the user.

In our proposed system we detect the harmful carbon monoxide gas emitted by the gas geyser and the high temperature by MQ-7 gas sensor and LM35 temperature sensor and compare these sensed values with threshold value if it exceeds the threshold value then alarm is generated to alert people and SMS will be send to the resisted mobile number using GSM sim900 rs232 and LED will glow as the visual signal.

3. Block Diagram

The following figure 3.1 shows the block diagram of system. It mainly contains following blocks:

1) Gas Geyser:

It contains two sensors, Temperature and Carbon monoxide. Carbon Monoxide sensor sense CO and temperature sensor sense temperature and provide these values to the micro controller

2)Microcontroller:

It compares sensed value with respected threshold value and sends to the GSM module and also generates alarm if sensed value goes above threshold

3)GSM Module:

Send SMS to the registered mobile number.

commands is used in the system. Appropriate alarm is generated to alert people as soon as the hazardous gas leakage is detected.

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