

GSM Based Fire/Smoke Detection, Alarm and Protection System.

About This Project:

In this project, we are going to build a GSM Based Fire/Smoke Detection, Alarm & Protection System. Using Arduino, LM35 Temperature Sensor and GSM Module. The objectives of this fire detector using Arduino is to sense the surroundings for occurrence of fire/Smoke with help of MQ 2 Smoke Sensor, and send a SMS alerts to user mobile numbers stored inside the Arduino program if fire is detected (using GSM Module). This fire alarm project make use of modern communication technologies. The Smoke/Fire detector alarm system using GSM communication has been designed and developed for making our life more easy and secured. We use 5V from Arduino board and use 5V DC power supply for GSM Module. We use the GSM module for SEND a SMS to user mobile. Our system consists of Smoke/fire sensor to detect any smoke/fire as soon as it is encountered. The smoke sensor sends a signal to the Arduino as soon as smoke is detected so that Arduino can process it further. When fire occurs the main 220 voltage line is cut off with a relay So that there is no more damage through current. Our project has one more additional feature when the fire is detected the alarm are sounds and a water pump motor are start via relay module at the same time Attempts were made to bring the fire under control by spraying water. We use a temperature sensor in order to detect fire. The temperature sensor instantly sends a signal to the Arduino on fire detection. In case of fire, I have used a LCD display where all the facts can be seen. Once the Arduino receives signal from the sensors, it processes the input and then sends a signal to the GSM module to send a SMS to the intended authorities so that they may take appropriate action.

Block Diagram:

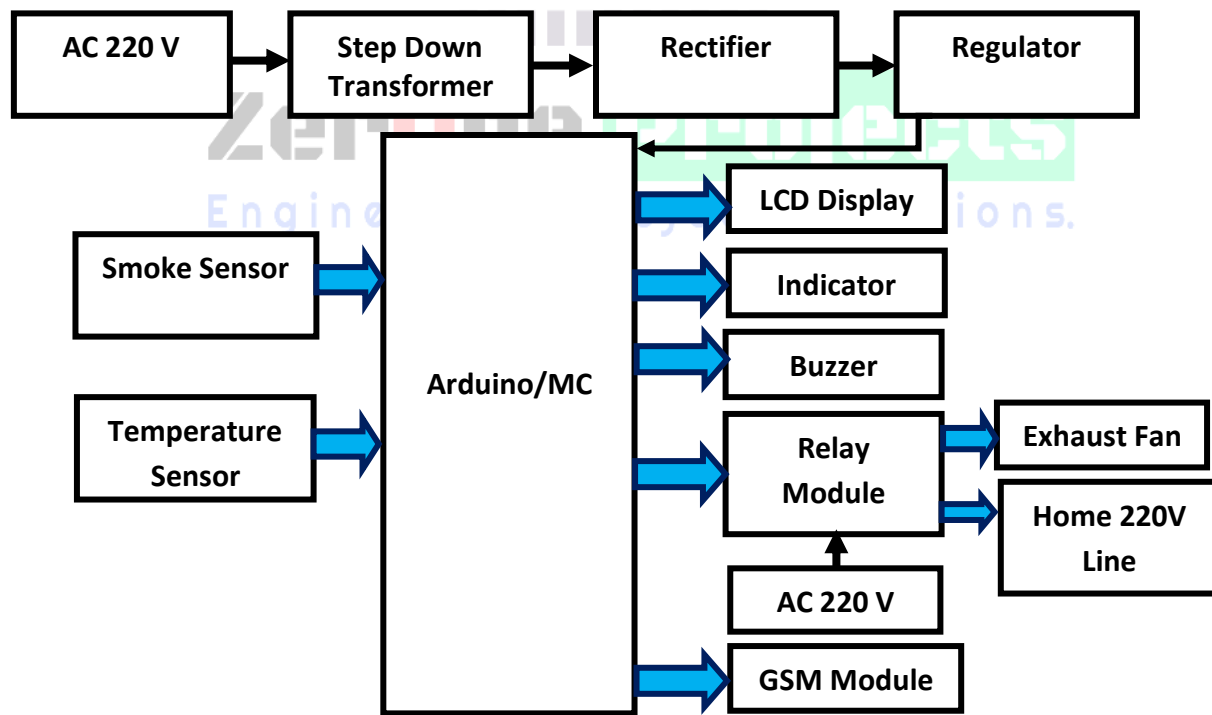


Figure: Block Diagram of GSM Based Fire/Smoke Detection, Alarm and Protection System.

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Required Instrument:

- Arduino.
- LCD Display.
- Smoke Sensor.
- Temperature Sensor.
- GSM Module.
- Relay.
- Indicator LED.
- Buzzer.
- Transformer.
- Diode.
- Voltage Regulator.
- Capacitor.
- Resistor.

Advantages:

- GSM based Smoke/Fire Alarm & protection system are very useful in remote locations where human interaction is limited. Such systems are useful in mines, industrial areas, factories etc.
- Night Owl – We all know owls don't sleep during night. GSM based Fire Alarm system helps to monitor locations and alert during fire that occurs in night time.
- Quick Actions to shut down Fire – 90% of fire damages occur due to lack of early fire detection. A fire attack is usually silent and people will know about fire only when it has spread across a large area. GSM based Fire Alert system gives warning immediately a mobile numbers and hence remedy actions can be taken quickly. This helps to prevent major damages and losses created by a fire accident.
- Very Cost Effective.
- Easy To Install This System.

Applications:

The project has a major application in the

- This project can be widely used in Industries, Shopping malls, Hospitals & Offices.

N.B: *Any modification of this project can be done as per your requirement. We will make the project according to your needs. Contact us with your any innovative engineering projects idea. We will help you to implement your project.*

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