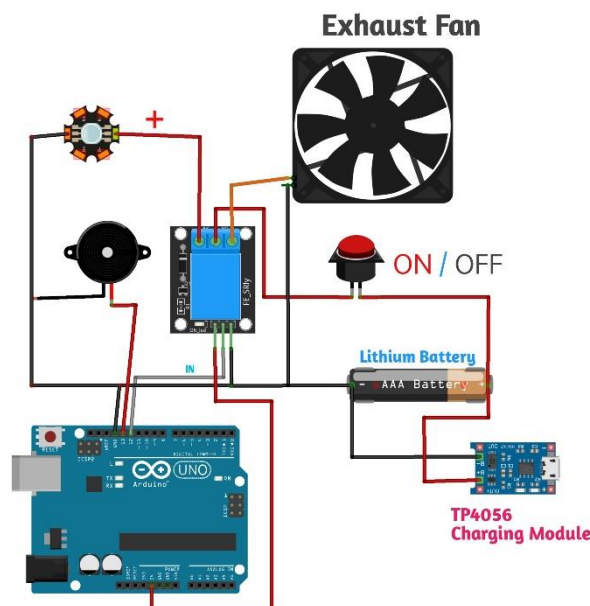


LPG Gas Detector using Arduino

ABSTRACT:

In this gas detector system it sensor gas leakage. If the gas in air is normal then the LED on the circuit will glow green giving a safe sign and whenever sensor senses the gas then the red led glow i.e., green goes off, sends a message and make a phone call to the owner and power goes off.

These kinds of alert systems are used in modern buildings, schools, hotels, etc. For sensing the flammable gases we are using an MQ-2 Gas sensor with Arduino in our project. You can also read articles on IoT and basic electronics published by us. Make the connections according to the given circuit diagram and then upload the given code.



LPG Gas leakage detector using arduino

Components Required

ARDUINO BOARD:

The Arduino Uno board is often utilized in radar detector projects for its ease of use, versatility, and compatibility with various sensors and components, enabling efficient development and implementation of radar detection functionalities.



MQ2 GAS SENSOR:

The MQ-2 is a smoke and combustible gas sensor from Winsen. It can detect flammable gas in a range of 300 - 10000ppm. It's most common use is domestic gas leakage alarms and detectors with a high sensitivity to propane and smoke.



BUZZER:

The buzzer is a device that can emit a sound when active. In this series, the buzzer is used as a marker indicating that will sound when the gas leak detector detects a gas leak.



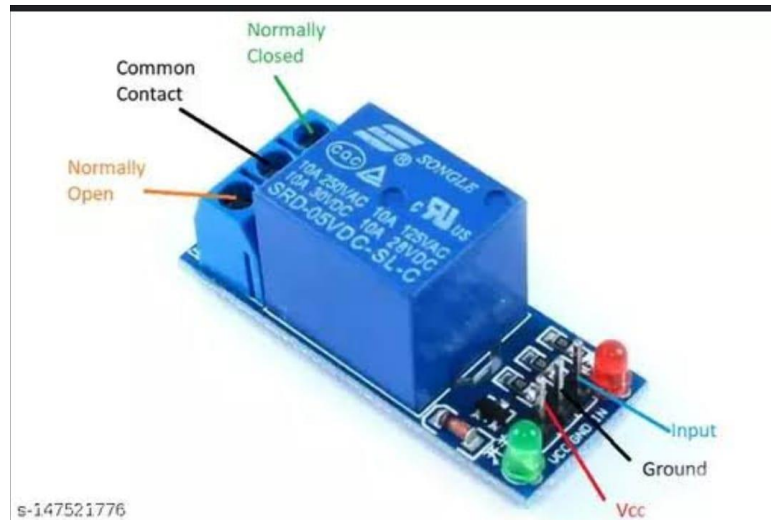
MALE-FEMALE JUMPER WIRES:

Male-female jumper wires are commonly utilized in radar detector projects to facilitate easy connections between different components, enabling quick prototyping and modification of circuit configurations without the need for soldering.



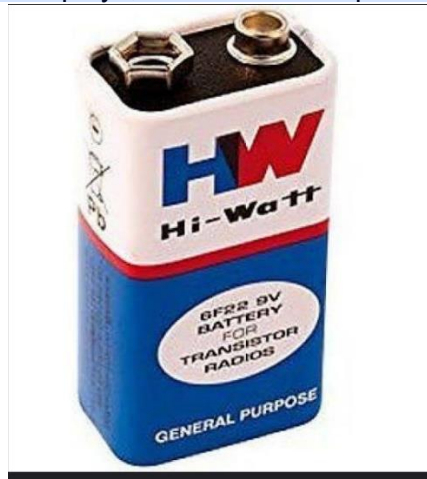
RELAY :

The Single Channel Relay Module is a convenient board which can be used to control high voltage, high current load such as motor, solenoid valves, lamps and AC load. It is designed to interface with microcontroller such as Arduino, NodeMCU, etc.



9V BATTERY:

A nine-volt battery, either disposable or rechargeable, is usually used in smoke alarms, smoke detectors, walkie-talkies, transistor radios, test and instrumentation devices, medical batteries, LCD displays, and other small portable appliances.



SWITCH:

A switch is used to complete or break an electric circuit in order to use an electric appliance. When a switch is in the ON position, it completes the circuit and allows current to flow through. Similarly, a switch is in the OFF position when it breaks the circuit and prevents current from passing through.



EXHAUST FAN:

Exhaust fans are used to facilitate the removal of odours, fumes and smoke from an area. They draw air out of the room entirely and expel it to the outside to accomplish this task. Therefore, exhaust fans must be connected to proper venting systems with adequate airflow



FAN, LIGHT AND MOTOR:

A ceiling fan with lights is a great addition to any bedroom because it provides a soft glow at night without being too bright. The lights can be turned off if you want to save energy, and the fan can be used to circulate air throughout the room.



APPLICATIONS:

- *Residential Use*:** LPG gas detectors are often installed in homes, apartments, and other residential spaces where LPG (liquefied petroleum gas) is used for cooking, heating, or other purposes. They help detect leaks and prevent accidents like fire or explosions.
- *Commercial Kitchens*:** Restaurants, hotels, and other food service establishments often rely on LPG for cooking. Gas detectors in these settings help ensure the safety of staff and customers by promptly alerting to any leaks.

3. ***Industrial Settings***: Industries that use LPG for various processes, such as manufacturing, drying, or heating, employ gas detectors to maintain a safe working environment and prevent accidents.

4. ***Laboratories***: Laboratories where LPG is used for experiments or as a fuel source also benefit from gas detectors to mitigate the risk of leaks and potential fires.

5. ***Caravans and Campervans***: LPG is commonly used in caravans and campervans for cooking, heating, and powering appliances. Gas detectors are essential in these confined spaces to alert occupants to any leaks.

Overall, LPG gas detectors play a crucial role in safeguarding lives and property by providing early detection of leaks and preventing potential accidents associated with LPG usage.

CONCLUSION:

In conclusion, Arduino-based LPG detection systems offer a versatile, cost-effective, and customizable solution for monitoring and alerting against LPG leaks in various settings, contributing to enhanced safety and peace of mind for users.

PRESENTED BY:

PANKAJ KUMAR SHAH - 228T1A05B5

P. RAJESH -228T1A05D1

K. VAMSI KRISHNA -228T1A0578