

## Sensors

- Flame/fire sensors
- HC-SR04 ultrasonic sensors
- Sound sensors
- MQ2 gas sensors
- IR sensors

Flame/fire sensors : It is the most sensitive to normal light and used to detect heat .It has 4 pins they are

Pin1 is VCC ( power supply)

Pin2 is GND

Pin3,4 are analog/digital input & output pins are based on program.

There are 4types in this sensor

1. IR single frequency
2. IR multi spectrum
3. UV flame detectors
4. UV/IR flame detectors

Features:

Response time is fast ,simple,responsive to flame range, accuracy etc.

Applications: In industrial heating,fire detection,fire alarm etc.

HC-SR04 ultrasonic sensor: It is used to find the distance of the objects.It contains two modules ,the transmitter and the receiver.The range of this sensor is 2cm-400cm.It contains 4pins they are

Pin1 VCC( power supply)

Pin2 trigger

Pin3 echo

Pin4 GND

## Features

Power supply=+5dc, Operating current =15A, measuring angle is 30degrees, resolution-0.3cm etc

Working principle :  $s=(v \times t)/2$

V is speed, t is time

Sound sensors : This sensor detects sound

This consists of 3 pins

Pin1 DC

Pin2 ground pin

Pin3 is the output pin

Features:

Operating range=3.3v, operating current=4-5A, impedance=2.2k

It used in smartphones, mikes, security systems.

MQ2 gas sensor : It know as metal oxide semiconductor type gas sensor .It is available in types used for sensing concentration of gas in air .It can sense 7 types of gases also used in detecting gold mines.

It has 3pins

Pin1 VCC

Pin2 ground

Pin3 analog and digital pin

IR sensor : This sensor depends on the wavelength, o/p power response. It consists of IR photo diode and IR led together called photo couples.

IR photo diode is different from normal photo diode, it detects only IR radiation , it's invisible to human eye

Pins are ground, VCC, digital output.

These are used in night vision camera, IR imaging devices.