# INTERFACING GAS SENSOR WITH ESP32 MICROCONTROLLER

**Aim:** To interface a Gas sensor with ESP32

## Components Required:

* ESP32 Microcontroller
* Gas sensor (MQ-2 sensor)
* Jumper wires
* PC/Laptop with Arduino IDE
* Serial communication cable

## Procedure:

1. Open Arduino IDE and enter the code.
2. Connect the Gas sensor (MQ-2 sensor) to ESP32 as per their pins
3. Connect the ESP32 to the PC/Laptop and upload the code to it
4. Verify the Output in the serial monitor.

## Code:

int sensorPin = A0; int sensorValue = 0; void setup() { Serial.begin(9600);

pinMode(sensorPin, INPUT);

}

void loop() {

sensorValue = analogRead(sensorPin); Serial.print("Gas Sensor Value: "); Serial.println(sensorValue); delay(1000);

}

**Result:** The circuit is constructed & observed the output of the MQ-2 sensor in the serial monitor

# INTERFACING GAS SENSOR WITH ARDUINO UNO

**Aim:** To interface a Gas sensor with Arduino.

## Components Required:

* Arduino UNO Microcontroller
* Gas sensor (MQ-2 sensor)
* Jumper wires
* PC/Laptop with Arduino IDE
* Serial communication cable

## Procedure:

* 1. Open Arduino IDE and enter the code.
  2. Connect the Gas sensor to Arduino UNO as per their pins
  3. Connect the Arduino UNO to the PC/Laptop and upload the code to it
  4. Verify the Output in the serial monitor.

## Code:

int sensorPin = A0; int sensorValue = 0; void setup() { Serial.begin(9600);

pinMode(sensorPin, INPUT);

}

void loop() {

sensorValue = analogRead(sensorPin); Serial.print("Gas Sensor Value: "); Serial.println(sensorValue); delay(1000);

}

**Result:** The circuit is constructed & observed the output of the MQ-2 sensor in the serial monitor

# INTERFACING FLAME SENSOR WITH ARDUINO UNO

**Aim:** To interface a Flame sensor with Arduino.

## Components Required:

* Arduino UNO
* Flame sensor
* Jumper wires
* PC/Laptop with Arduino IDE
* Serial communication cable

## Procedure:

* + 1. Open Arduino IDE and enter the code.
    2. Connect the Flame sensor to Arduino UNO as per their pins
    3. Connect the Arduino UNO to the PC/Laptop and upload the code to it
    4. Verify the Output in the serial monitor.

## Code:

int flameSensorPin = 12; void setup() {

pinMode(flameSensorPin, INPUT); Serial.begin(9600);

}

void loop() {

int flameValue = digitalRead(flameSensorPin); if (flameValue == LOW) {

Serial.println("Flame detected!");

} else {

Serial.println("No flame detected.");

}

delay(500);

}

**Result:** The circuit is constructed & Flame sensor is sensed.

# INTERFACING FLAME SENSOR WITH ESP32 MICROCONTROLLER

**Aim:** To interface a Flame sensor with ESP32 Microcontroller.

## Components Required:

* ESP32 Microcontroller
* Jumper wires
* PC/Laptop with Arduino IDE
* Serial communication cable

## Procedure:

1. Open Arduino IDE and enter the code.
2. Connect the Flame sensor to ESP32 Microcontroller as per their pins
3. Connect the ESP32 Microcontroller to the PC/Laptop and upload the code to it
4. Verify the Output in the serial monitor.

## Code:

int flameSensorPin = 12; void setup() {

pinMode(flameSensorPin, INPUT); Serial.begin(9600);

}

void loop() {

int flameValue = digitalRead(flameSensorPin); if (flameValue == LOW) {

Serial.println("Flame detected!");

} else {

Serial.println("No flame detected.");

}

delay(500);

}

**Result:** The circuit is constructed & Flame sensor is sensed.

# INTERFACING ALCOHOL SENSOR WITH ESP32 Microcontroller

**Aim:** To interface an Alcohol sensor with ESP32 Microcontroller

## Components Required:

* ESP32 Microcontroller
* Jumper wires
* PC/Laptop with Arduino IDE
* Serial communication cable

## Procedure:

* 1. Open Arduino IDE and enter the code.
  2. Connect the Flame sensor to ESP32 Microcontroller as per their pins
  3. Connect the ESP32 Microcontroller to the PC/Laptop and upload the code to it
  4. Verify the Output in the serial monitor.

## Code:

int alcoholSensorPin = A0; void setup() { Serial.begin(9600);

}

void loop() {

int sensorValue = analogRead(alcoholSensorPin); Serial.print("Alcohol Sensor Value: "); Serial.println(sensorValue);

delay(1000);

}

**Result:** The circuit is constructed & Alcohol sensor is sensed.

# INTERFACING ALCOHOL SENSOR WITH ARDUINO UNO

**Aim:** To interface an Alcohol sensor with Arduino UNO and to find the distance of object.

## Components Required:

* Arduino UNO
* Jumper wires
* PC/Laptop with Arduino IDE
* Serial communication cable

## Procedure:

1. Open Arduino IDE and enter the code.
2. Connect the Flame sensor to Arduino UNO as per their pins
3. Connect the Arduino UNO to the PC/Laptop and upload the code to it
4. Verify the Output in the serial monitor.

## Code:

int alcoholSensorPin = A0; void setup() { Serial.begin(9600);

}

void loop() {

int sensorValue = analogRead(alcoholSensorPin); Serial.print("Alcohol Sensor Value: "); Serial.println(sensorValue);

delay(1000);

}

**Result:** The circuit is constructed & Alcohol sensor is sensed.