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.