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| **1. Vibration Sensor** |
| int ledPin = 13;  int vib=A3;  void setup()  {  pinMode(ledPin, OUTPUT);  pinMode(vib, INPUT); //set EP input for measurment  Serial.begin(9600); //init serial 9600  }  void loop()  {  long measurement=pulseIn (vib, HIGH);  delayMicroseconds(50);  Serial.print(" VIB : 00001 : hertz :" );  Serial.println(measurement);    if (measurement > 10)  {  digitalWrite(ledPin, HIGH);  }    else  {  digitalWrite(ledPin, LOW);  }  } |
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| **2.Ultrasonic Sensor** |
| const int trigPin = 9;  const int echoPin = 10;  long duration;  int distance;  void setup()  {  pinMode(trigPin, OUTPUT); // Sets the trigPin as an Output  pinMode(echoPin, INPUT); // Sets the echoPin as an Input  Serial.begin(9600);  }  void loop()  {  digitalWrite(trigPin, LOW);// Clears the trigPin  delayMicroseconds(2);  digitalWrite(trigPin, HIGH);// Sets the trigPin on HIGH state for 10 micro seconds  delayMicroseconds(10);  digitalWrite(trigPin, LOW);  duration = pulseIn(echoPin, HIGH);// Reads the echoPin, returns the sound wave travel time in microseconds  distance= duration\*0.034/2;// distance= (Time x Speed of Sound in Air (340 m/s))/2  Serial.print("ULT:00002:cm:Distance: ");  Serial.println(distance);  delay(2000);  } |
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| **3. Touch Sensor** |
| int Led = 13 ;  int buttonpin = 3; // define Metal Touch Sensor Interface  int val ;  void setup ()  {  Serial.begin(9600);  pinMode (Led, OUTPUT) ;  pinMode (buttonpin, INPUT) ; // define metal touch sensor output interface  }  void loop ()  {  val = digitalRead (buttonpin) ; // digital interface will be assigned a value of 3 to read val  if (val == HIGH) // When the metal touch sensor detects a signal, LED flashes  {  digitalWrite (Led, HIGH);  Serial.print("TCH:00003:XX:");  Serial.println("Sensor is touched");  delay(1000);  }  else  {  digitalWrite (Led, LOW);  Serial.print("TCH:00003:XX:");  Serial.println("Sensor is not touched");  delay(1000);  }  } |
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| **4. Smoke Sensor** |
| float sensor=A0;  float gas\_value;  void setup()  {  pinMode(sensor,INPUT);  Serial. begin(9600);  }  void loop()  {  gas\_value=analogRead(sensor);  Serial.print(" SMK : 00004 : milliVolt : ");  Serial.println(gas\_value);  } |
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| **5.Temperature Sensor** |
| float temp;  int tempPin=0;  void setup()  {  Serial.begin(9600);  }  void loop()  {  temp=analogRead(tempPin);  temp=temp\*0.48828125; //Voltage in milliVolts = (reading from ADC) \* (5000/1024) // centigrade temperature = (analog voltage in mV) / 10  Serial.print(" TMP : 00005 :degree C : ");  Serial.println(temp);  delay(1000);  } |
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| **6. Magnetic Reed Switch** |
| const int REED\_PIN = 2; // Pin connected to reed switch  const int LED\_PIN = 13; // LED pin - active-high  void setup()  {  Serial.begin (9600);  pinMode (REED\_PIN, INPUT\_PULLUP);  pinMode(LED\_PIN, OUTPUT);  }  void loop()  {  while(Serial.available()>0)  {  int proximity = digitalRead(REED\_PIN); // Read the state of the switch  if (proximity == LOW) // If the pin reads low, the switch is closed.  {  Serial.print(“ MRS : 00006 : XX : ”);  Serial.println("Switch closed");  digitalWrite(LED\_PIN, HIGH); // Turn the LED on  delay(1000);  }  else  {  Serial.print(“ MRS : 00006 : XX : ”);  Serial.println("Switch open");  digitalWrite(LED\_PIN, LOW); // Turn the LED off  delay(1000);  }}  } |
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| **7. Soil Moisture Sensor** |
| const int soil\_sensor = A0; // Analog input pin that the soil moisture sensor is attached to  int sensorValue = 0; // store sensor input value  void setup()  {  Serial. begin(9600);  }  void loop()  {  sensorValue = analogRead(soil\_sensor);  Serial.print(" SMS : 00007 : milliVolt : " );  Serial.println(sensorValue);  delay(1000);  } |
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| **8. PIR Sensor** |
| int pir\_sensor=7; //The output of PIR sensor connected to pin 7  int sensor\_value; //variable to hold read sensor value  void setup()  {  pinMode(pir\_sensor,INPUT); // configuring pin 7 as Input  Serial. begin(9600); // To show output value of sensor in serial monitor  }  void loop()  {  sensor\_value=digitalRead(pir\_sensor);// Reading sensor value from pin 7  if(pir\_sensor>0)  {  Serial.print(" PIR : 00008 : Volts : " );  Serial.println(sensor\_value);  delay(2000);  }  else  {  Serial.print(" PIR : 00008 : Volts : " );  Serial.println(sensor\_value); // Printing output to serial monitor  delay(2000);  }  } |
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| **9.IR sensor remote** |
| #include <IRremote.h>  int RECV\_PIN = 11;  IRrecv irrecv(RECV\_PIN);  decode\_results results;  void setup()  {  Serial.begin(9600);  irrecv.enableIRIn(); // Start the receiver  }  void loop(){  if (irrecv.decode(&results))  {  Serial.print(“IR : 00009 :”)  Serial.println(results.value, HEX);  irrecv.resume(); // Receive the next value  }  } |
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| **10.Stepper Motor** |
| #include <Stepper.h>  int in1Pin=8;  int in2Pin=10;  int in3Pin=9;  int in4Pin=11;  #define STEPS 64  Stepper motor(STEPS, in1Pin, in2Pin, in3Pin, in4Pin);  void setup()  {  pinMode(in1Pin,OUTPUT);  pinMode(in2Pin,OUTPUT);  pinMode(in3Pin,OUTPUT);  pinMode(in4Pin,OUTPUT);  Serial.begin(9600);  motor.setSpeed(500);  }  void loop() {  if(Serial.available())  {  int steps =Serial.parseInt();  motor.step(steps);  }  } |