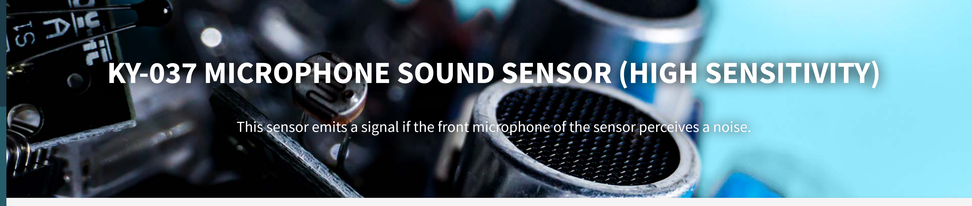
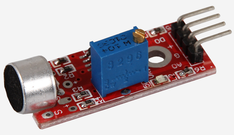


KY-037 MICROPHONE SOUND SENSOR (HIGH SENSITIVITY)

This sensor emits a signal if the front microphone of the sensor perceives a noise.



This sensor emits a signal if the sensor detects a noise. The sensitivity of the sensor can be adjusted by means of a controller.

NOTE ON USE

This sensor is ideally suited for threshold measurement. This means that the sensor emits a digital high signal as soon as a threshold value set by the user is exceeded. However, this also means that the analog measured values are not suitable for conversions, as the analog signal is also influenced by the rotary potentiometer.

Digital output: Via the potentiometer, a limit value for the received sound can be set, at which the digital output should switch.

Analog output: Direct microphone signal as voltage level

LED1 : Indicates that the sensor is powered

LED2 : Indicates that a noise has been detected

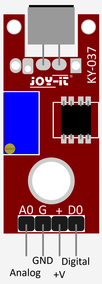
FUNCTION OF THE SENSOR

This sensor has three functional components on its circuit board: The front sensor unit, which physically measures the environment and outputs it as an analog signal to the second unit, the amplifier. This amplifies the signal depending on the resistance set on the rotary potentiometer and sends it to the analog output of the module.

Here it is to be noted: The signal is inverted. If a high value is measured, this results in a lower voltage value at the analog output.

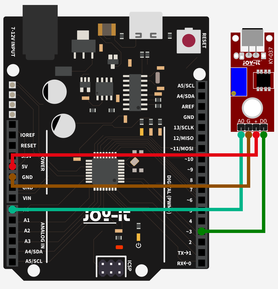
The third unit represents a comparator, which switches the digital output and the LED when the signal falls below a certain value. This value (and thus the sensitivity of the module) can be adjusted via the rotary potentiometer:

PIN ASSIGNMENT



CODE EXAMPLE ARDUINO

CONNECTION ASSIGNMENT ARDUINO



ARDUINO	SENSOR
5 V	+V
GND	GND
Pin 3	Digital Signal
Pin A0	Analog Signal

The program reads the current voltage value, which can be measured at the analog output, and outputs it on the serial port.

In addition, the status of the digital pin in the console is also indicated, which means whether the limit has been exceeded or not.

```
// Declaration and initialization of input pins
int Analog_Input = A0; // Analog output of the sensor
int Digital_Input = 3; // Digital output of the sensor

void setup  ( )
{
  pinMode (Analog_In, INPUT);
  pinMode (Digital_Inbox, INPUT);

  Serial.begin (9600)  ;  //  Serial output with 9600 bps
}

//  The program reads the current values of the input pins
// and output it on the serial output
void loop  ( )
{
  float Analog;
  int Digital;

  //Actual values are read out, converted to the voltage value...
  Analog =  analogRead (Analog_In)   *   (5.0 / 1023.0);
  Digital = digitalRead (Digital_Inbox)  ;

  //...  and issued at this point
  Serial.print  ("Analog voltage value:");  Serial.print (Analog,  4)  ;  Serial.print   ("V, ");
  Serial.print ("Limit:")  ;

  if (Digital==1)
  {
      Serial.println ("reached");
  }
  else
  {
      Serial.println ("not reached yet");
```

SAMPLE PROGRAM DOWNLOAD

KY037-Arduino.zip