

# INFRARED MOTION SENSOR

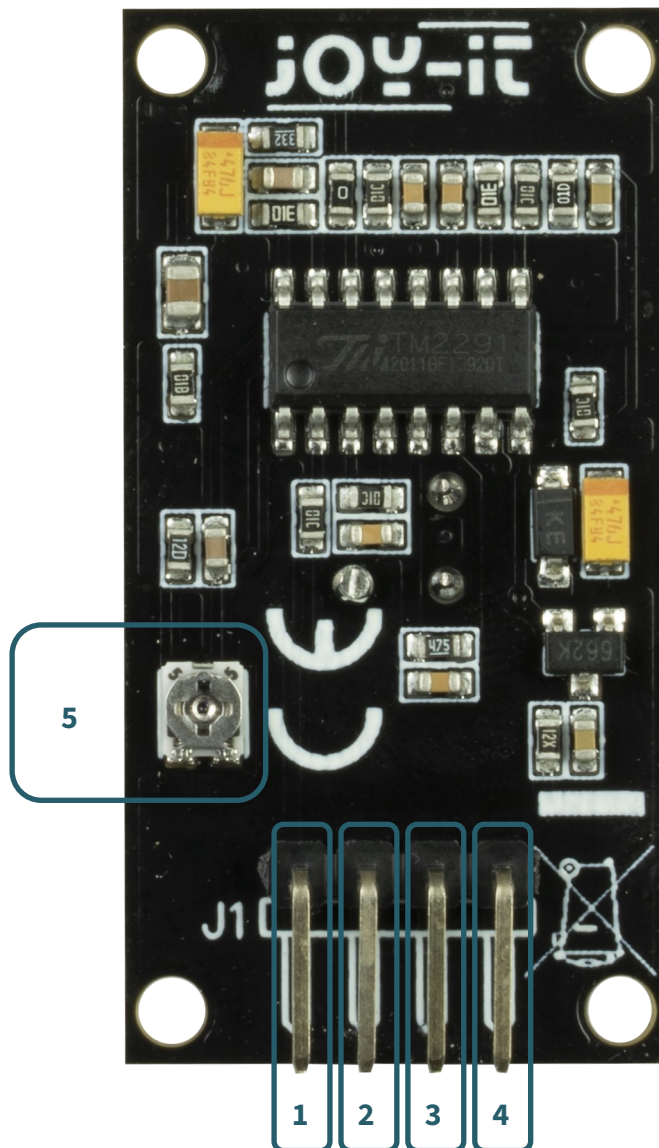
SBC-PIR



## 1. GENERAL INFORMATION

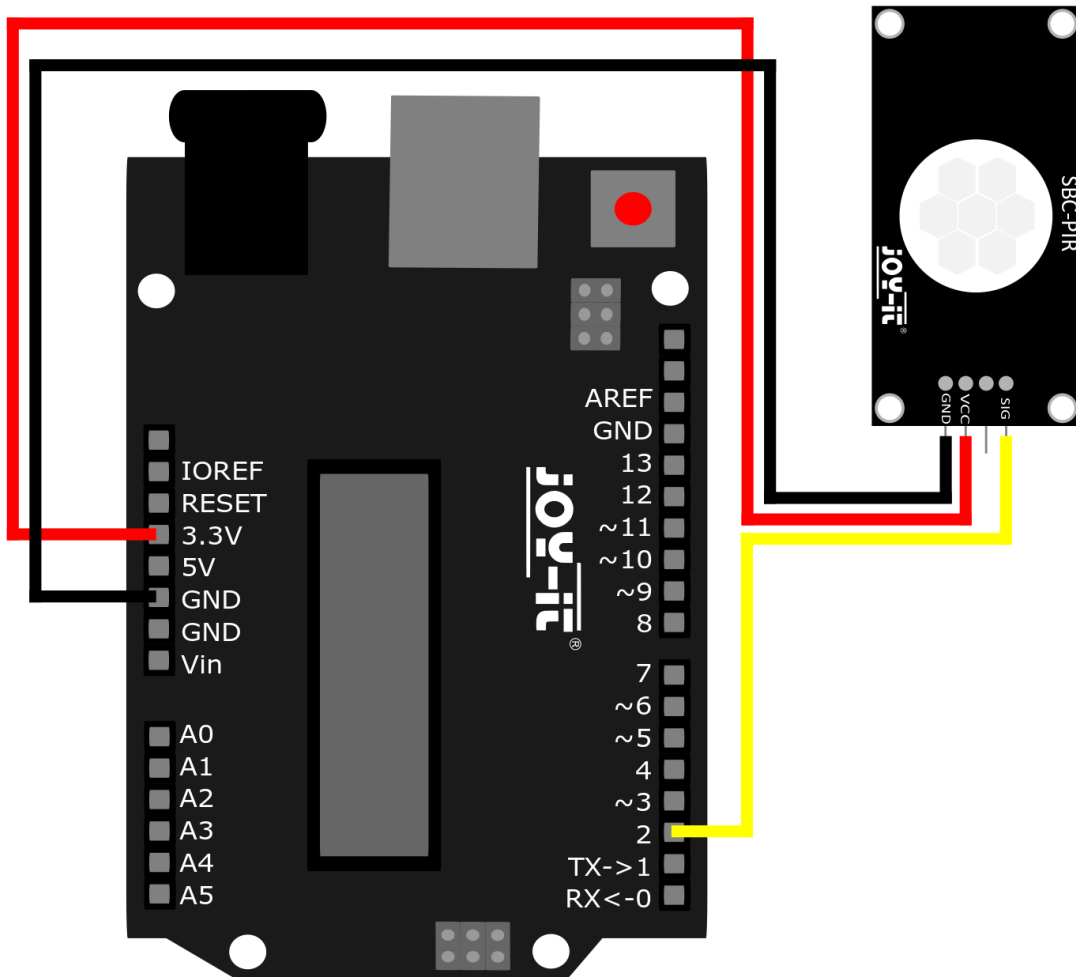
Dear customer,  
thank you very much for choosing our product.  
In the following, we will introduce you to what to observe while starting up and using this product. Should you encounter any unexpected problems during use, please do not hesitate to contact us.

## 2. DEVICE OVERVIEW



Digit	Function
1	Signal pin
2	NC (not connected)
3	VCC pin (3 - 5 V)
4	GND pin
5	Potentiometer Turn clockwise to increase sensitivity. Turn counter clockwise to decrease sensitivity.

### 3. USE WITH ARDUINO



Sensor	Arduino
Sig	Pin 2
VCC	Pin +5V
GND	Pin GND

### 3.1 CODE EXAMPLE ARDUINO

After connecting the SBC-PIR, as shown above, we will now connect the Arduino to our PC using the included cable. Then we will open our Arduino IDE. If you don't have it yet you can download it [here](#) and install it. After that we select our Arduino under **Tools > Port**. Under **Tools > Board** we select "Arduino Uno" and under **Tools > Programmer** we select "ArduinoISP".

After the above steps we will now simply copy the following code into our IDE.

```
#define PIR_MOTION_SENSOR 2 //PIN for the PIR-Sensor
#define LED 13 //PIN for the OnBoard LED
int sensorValue;

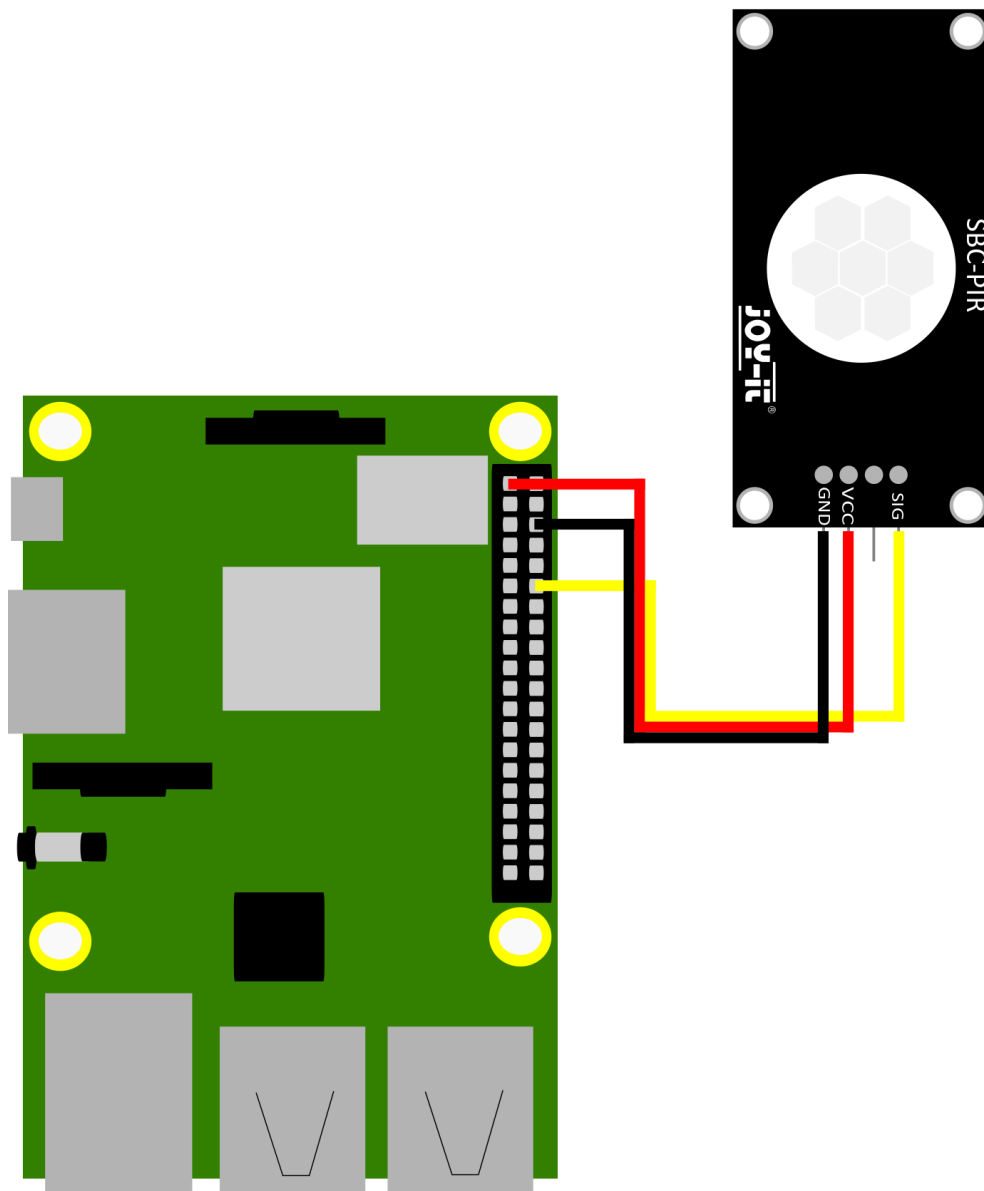
void setup()
{
  // Pin setup
  pinMode(PIR_MOTION_SENSOR, INPUT);
  pinMode(LED, OUTPUT);
  Serial.begin(9600);
}

void loop()
{
  sensorValue = digitalRead(PIR_MOTION_SENSOR);
  if(sensorValue == HIGH)
  {
    Serial.println("Movement detected");
    delay(1000);
  }
  else
  {
    Serial.println("No movement detected");
    delay(1000);
  }
}
```

## 4. USE WITH RASPBERRY PI



These instructions were written under Raspberry Pi OS Bookworm for the Raspberry Pi 4 and 5. It has not been checked with newer operating systems or hardware.



Sensor	Raspberry Pi
Sig	GPIO 18 [Pin 12]
VCC	3,3V [Pin 1]
GND	Ground [Pin 6]

## 4.1 CODE EXAMPLE RASPBERRY PI

Now create a new Python file by entering the following command in the terminal:

```
nano SBC-PIR.py
```

Now insert the following code example into the file.

```
from gpiozero import MotionSensor
import time

# Initialize the PIR sensor on pin 18
pir = MotionSensor(18)

print("PIR sensor active!")

try:
    while True:
        pir.wait_for_no_motion()
        print("No movement...")
        time.sleep(0.5) # Wait for 0.5 seconds

        pir.wait_for_motion()
        print("Movement detected!")
        time.sleep(0.5) # Wait for 0.5 seconds

except KeyboardInterrupt:
    print("Program interrupted by user.")
```

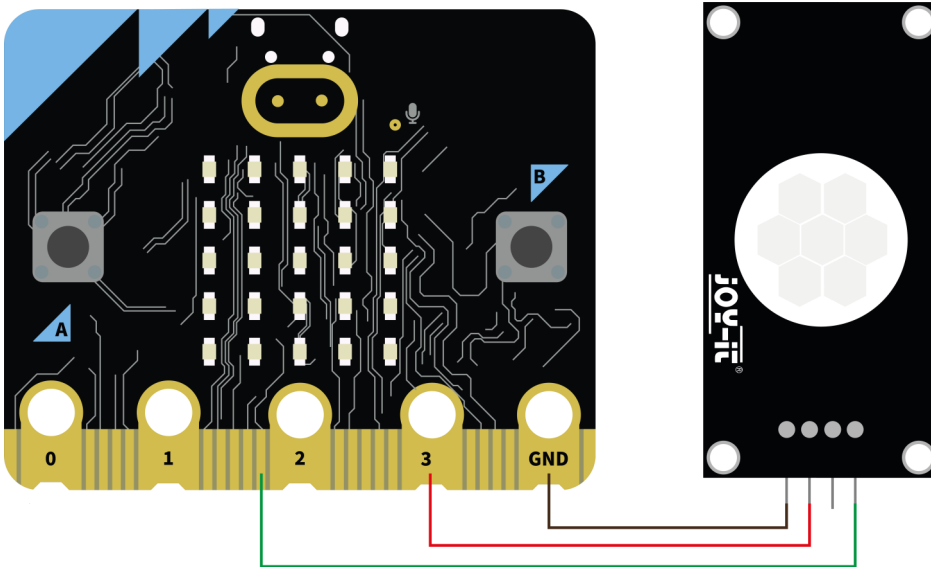
After all this save the file with **CTRL+O** and **ENTER** and exit with **CTRL+X**.

Then execute the code by entering this command:

```
python3 SBC-PIR.py
```

Stop the code by using **CTRL+C**.

## 5. USE WITH THE MICRO:BIT



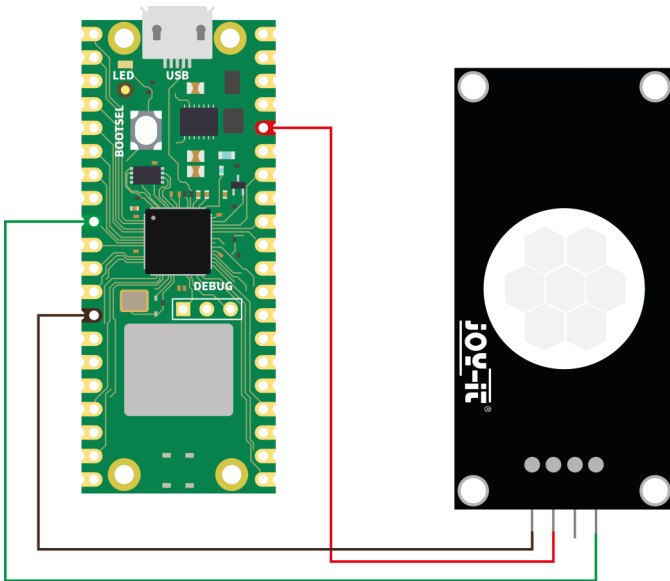
Sensor	micro:bit
Sig	Pin 12
VCC	Pin +3,3V
GND	Pin GND

### 5.1 CODEEXAMPLE MICRO:BIT

After you have connected the sensor to your micro:bit, you can now create a new MakeCode project. Take the following example there to test the functionality of your sensor:

```
forever
  set pin to digital read pin P12
  if pin = 1 then
    serial write line "Movement detected"
  else
    serial write line "No movement detected"
```

## 6. USE WITH THE RASPBERRY PI PICO



Sensor	Raspberry Pi Pico
Sig	Pin 6
VCC	Pin +3,3V
GND	Pin GND

### 6.1 CODE EXAMPLE RASPBERRY PI PICO

After you have connected the sensor to your Raspberry Pi Pico, you can now transfer the following example to your Raspberry Pi Pico to test the functionality of your sensor:

```
from machine import Pin

pir_pin = Pin(6, Pin.IN)

def on_motion_detected(pin):
    print("Movement detected!")

pir_pin.irq(trigger=Pin.IRQ_RISING, handler=on_motion_detected)
```



## 7. ADDITIONAL INFORMATION

Our information and take-back obligations according to the Electrical and Electronic Equipment Act (ElektroG)



### Symbol on electrical and electronic equipment:

This crossed-out dustbin means that electrical and electronic appliances do not belong in the household waste. You must return the old appliances to a collection point. Before handing over waste batteries and accumulators that are not enclosed by waste equipment must be separated from it.

### Return options:

As an end user, you can return your old device (which essentially fulfils the same function as the new device purchased from us) free of charge for disposal when you purchase a new device. Small appliances with no external dimensions greater than 25 cm can be disposed of in normal household quantities independently of the purchase of a new appliance.

### Possibility of return at our company location during opening hours:

SIMAC Electronics GmbH, Pascalstr. 8, D-47506 Neukirchen-Vluyn, Germany

### Possibility of return in your area:

We will send you a parcel stamp with which you can return the device to us free of charge. Please contact us by email at [Service@joy-it.net](mailto:Service@joy-it.net) or by telephone.

### Information on packaging:

If you do not have suitable packaging material or do not wish to use your own, please contact us and we will send you suitable packaging.

## 8. SUPPORT

If there are still any issues pending or problems arising after your purchase, we will support you by e-mail, telephone and with our ticket support system.

Email: [service@joy-it.net](mailto:service@joy-it.net)

Ticket system: <https://support.joy-it.net>

Telephone: +49 (0)2845 9360 - 50 (Mon - Thur: 09:00 - 17:00 o'clock CET,  
Fri: 09:00 - 14:30 o'clock CET)

For further information please visit our website:

[www.joy-it.net](http://www.joy-it.net)