PASSIVE INFRARED MOTION SENSOR

SEN-HC-SR501

1. GENERAL INFORMATION

Dear customer,

thank you for choosing our product. In the following, we will show you how to use this device.
Should you encounter any unexpected problems during use, please do not hesitate to contact us.

This passive infrared motion sensor has the possibility to adjust the sensitivity, hold time and pulse rate.

Sensitivity

The sensitivity of the infrared sensor can be adjusted with one of the potentiometers. The sensitivity will be lower if you turn the potentiometer clockwise.
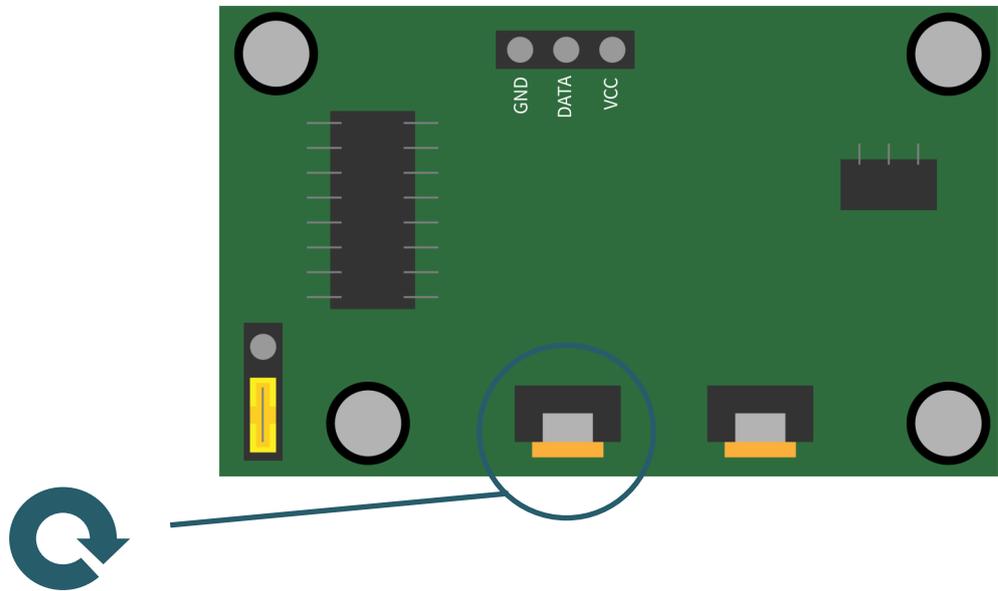

Hold time

For this sensor, the hold time sets how long the sensor will remain active when motion is detected and the signal output remains set as active. You can set this with the second potentiometer. If you turn the potentiometer clockwise, the holding time becomes longer.
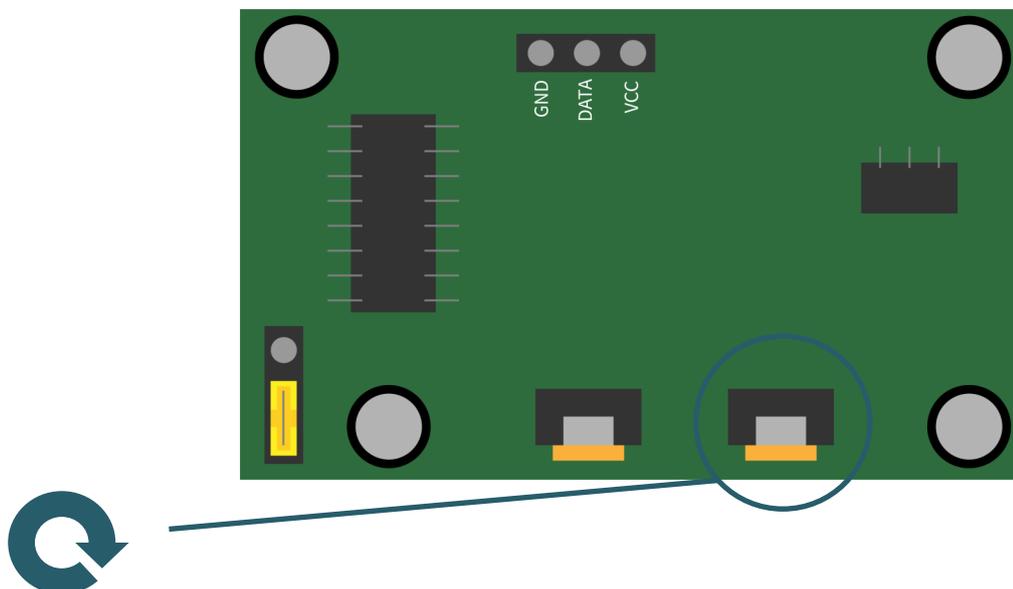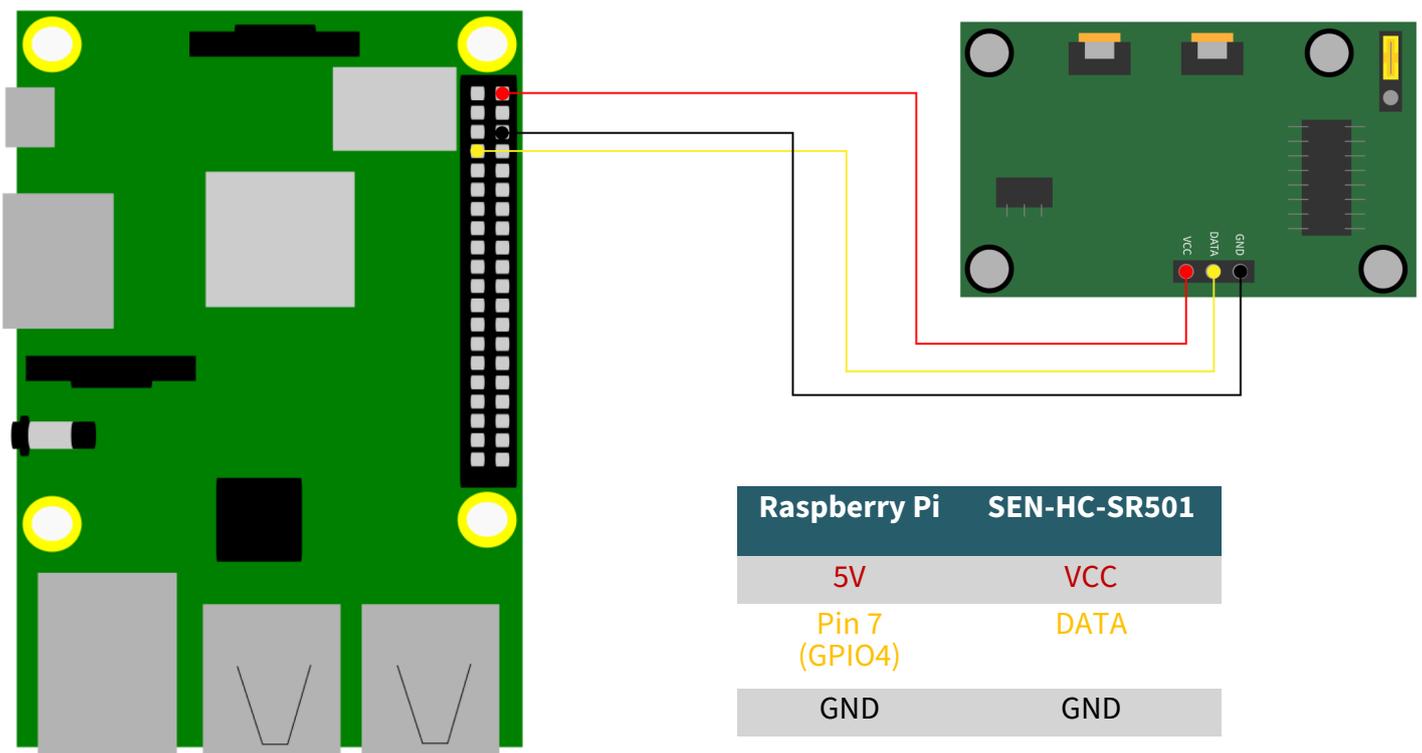
Pulse rate

The pulse rate describes how often the sensor can trigger. The sensor can detect a movement only once or several times. The default setting is multiple detection of movements. You can set this with a jumper on the back of the board.

Connection

Raspberry Pi	SEN-HC-SR501
5V	VCC
Pin 7 (GPIO4)	DATA
GND	GND
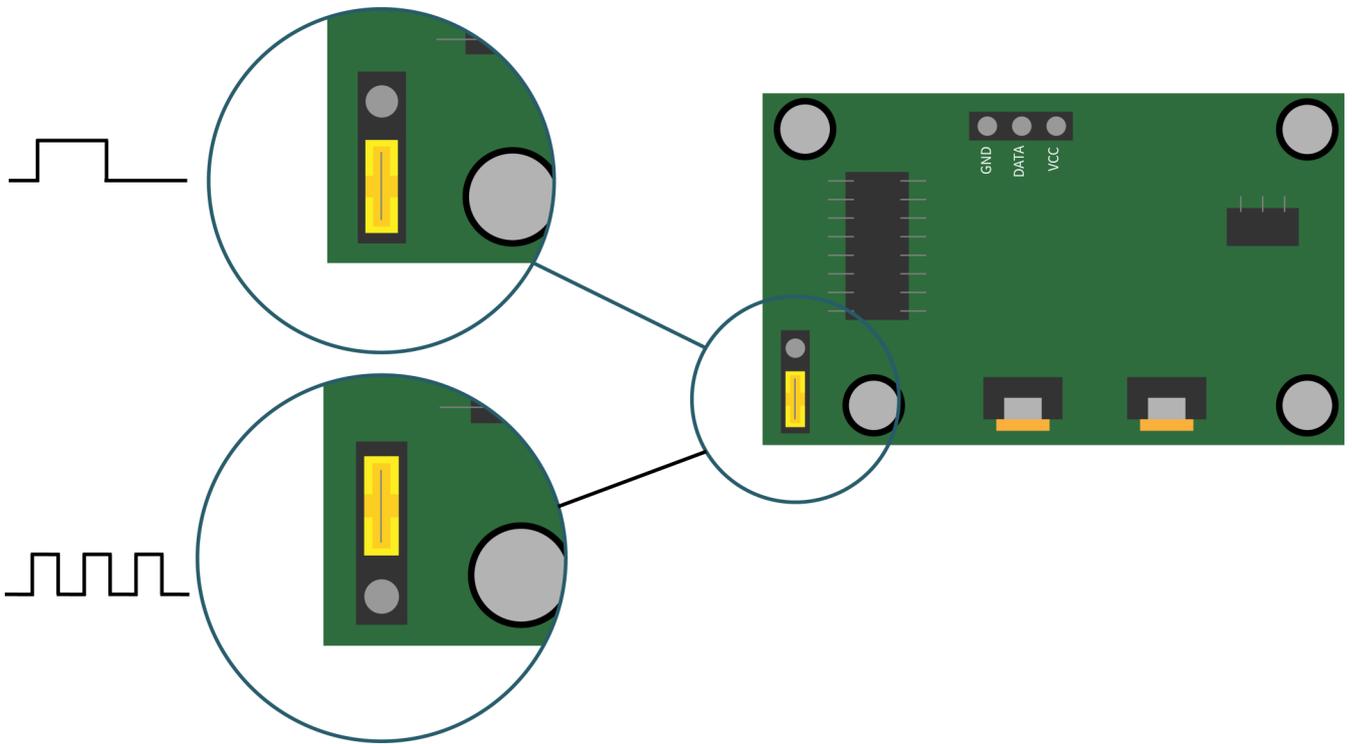
Code example

This code example shows you on the console of the Raspberry Pi when a movement is detected and when it sets the signal back to LOW. The status of the Raspberry Pis is not continuously displayed. You can download the code example **here** or create the file directly on the Raspberry Pi.

Therefore, enter the following command into the console of the Raspberry Pi and copy the following code into the now opened file. You can save with CTRL + O and leave the editor with CTRL + X.

```
nano detect-movement.py
```

```python
#!/usr/bin/python
from gpiozero import MotionSensor
import time

# Declaration of GPIO4 as an input for the PIR sensor
pir = MotionSensor(4)

# Intermediate variables
active = False

try:
    while True:
        # Monitoring changes from the PIR sensor
        if pir.motion_detected and not active:
            print("Motion detected")
            active = True
        elif not pir.motion_detected and active:
            print("No movement")
            active = False

        time.sleep(0.1)

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

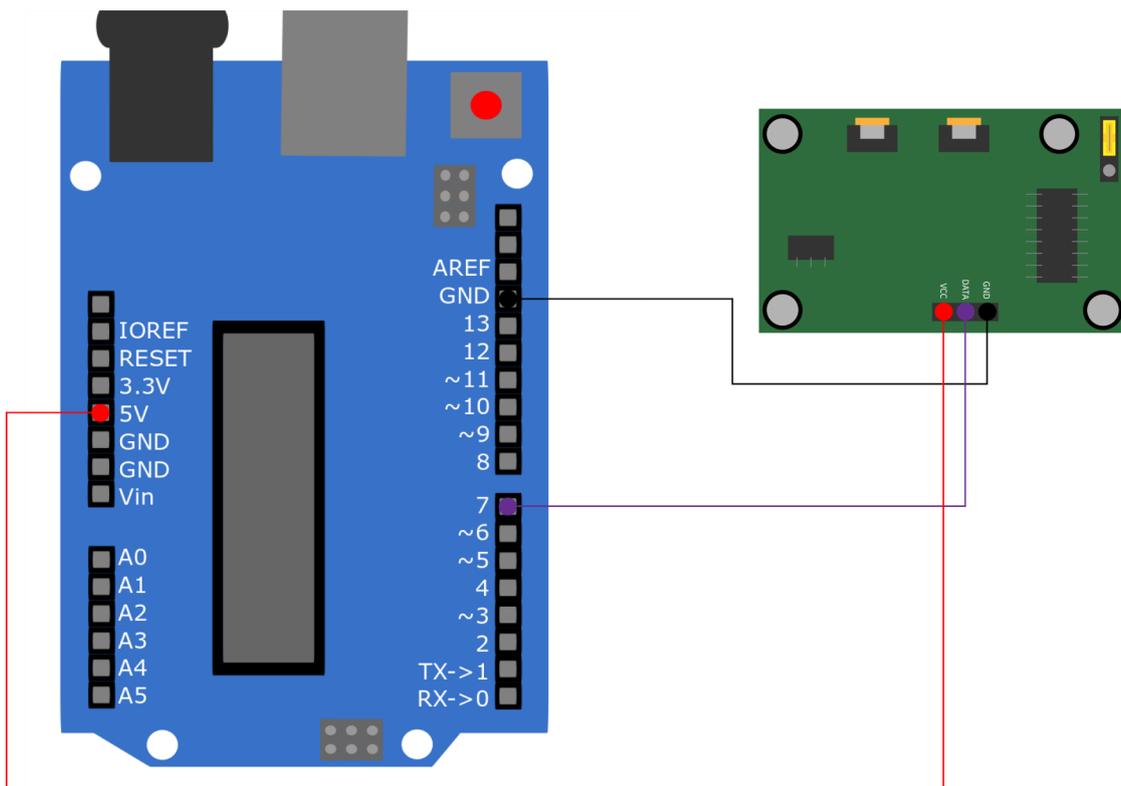You can run the program with the following command.

```
python3 detect-movement.py
```

i   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.

Connection

Arduino	SEN-HC-SR501
5V	VCC
Pin 7	DATA
GND	GND

Code example

This code example will be displayed on the serial monitor of the Arduino when the sensor has detected motion or when the data signal is set to LOW again. First you should check if the correct board is selected under **Tools → Board:** and the correct COM under **Tools → Port:**.

You can download the code sample **here** or you can copy the following code into your Arduino IDE and open the serial monitor at **Tools → Serial Monitor**. There you have to set the baudrate to **9600** to see the output.

```
boolean active = false; //Declare intermediate variable
int pin = 7; // Set data pin
int movement = 0;

void setup() {
  pinMode(pin, INPUT); // Set Pin7 as input
  Serial.begin(9600); // Serial monitor at a baud rate of 9600
}

void loop() {
  movement = digitalRead(pin); // Read Sensor

  // a new movement was detected
  if(movement == HIGH && active == false){
    active = true;
    Serial.println("Motion detected");
  }

  // no motion after motion is detected
  if(movement == LOW && active == true){
    active = false;
    Serial.println("No movement");
  }

  delay(100);
}
```

5. FURTHER INFORMATION

Our information and redemption obligation according to the Electrical and Electronic Equipment Act (ElektroG)

Symbol on electrial and electronic products :
This crossed-out bin means that electrical and electronic products do not belong into the household waste. You must hand over your old appliance to a registration office. Before you can hand over the old appliance, you must remove used batteries and accumulators which are not enclosed by the device.

Return options :
As the end user, you can hand over with the purchase of a new device y-our old appliance (which has essentially the same functions as the new one) free of charge for disposal. Small devices which do not have outer dimensions greater than 25 cm can be submitted independently of the purchase of a new product in normal household quantities.

Possibility of restitution at our company location during our opening hours:
Simac GmbH, Pascalstr. 8, D-47506 Neukirchen-Vluyn

Possibility of restitution nearby :
We send you a parcel stamp with which you can send us your old appli-ance free of charge. For this possibility, you must contact us via e-mail at service@joy-it.net or via telephone.

Information about packaging:
Please package your old appliance safe during transport. Should you not have a suitable packaging material or you do not want to use your own material, you can contact us and we will send you an appropriate packa-ge.

6. SUPPORT

If any questions remain open or problems arise after your purchase, we are available by email, telephone and ticket support system to answer these.

E-Mail: service@joy-it.net
Ticket-System: https://support.joy-it.net
Telephone: +49 (0)2845 9360 – 50 (Mo - Do: 09:00 - 17:00 o'clock CET,
                                                      Fr: 09:00 - 14:30 o'clock CET)

For more information visit our website:
www.joy-it.net