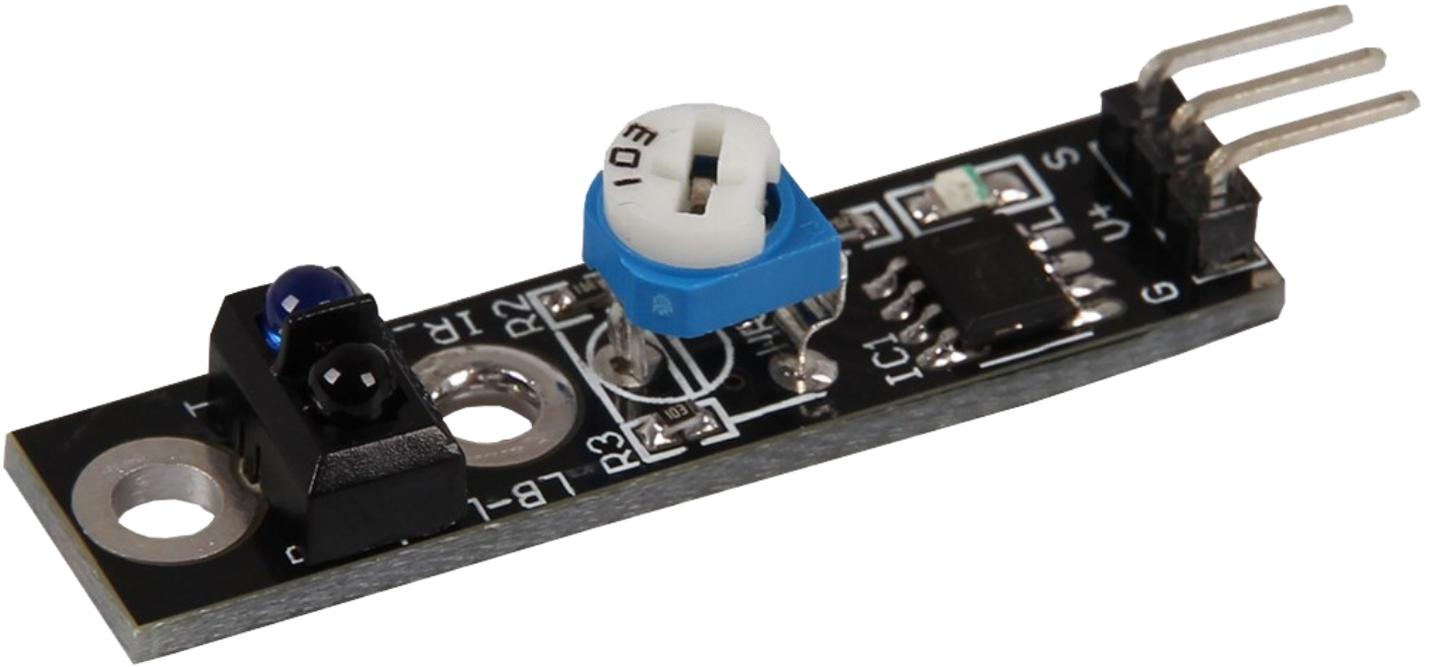


LINE TRACKER

SEN-KY033LT



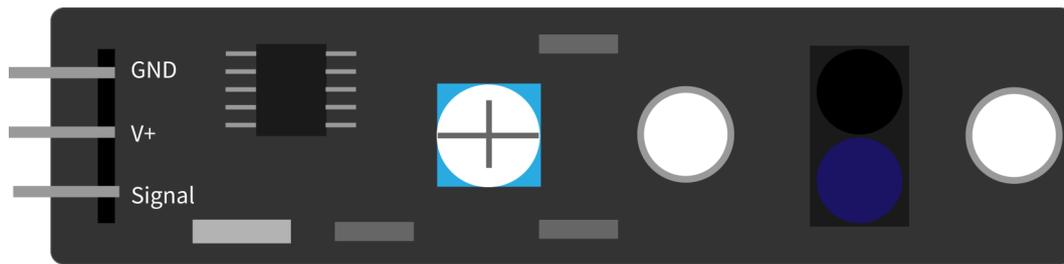
1. GENERAL INFORMATION

Dear customer,

thank you very much for choosing our product.
In following, we will introduce you to what to observe while starting up
and using this product.

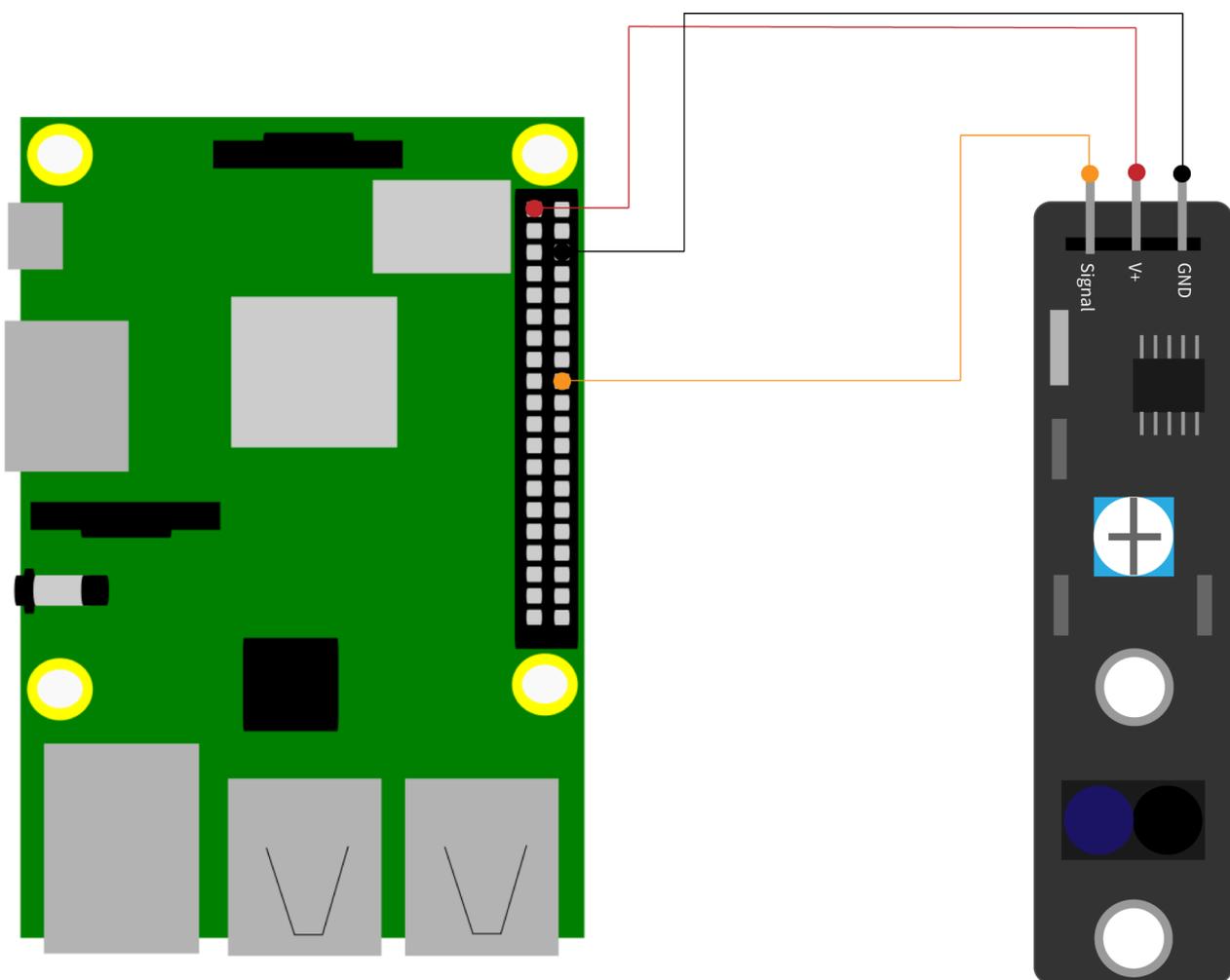
Should you encounter any unexpected problems during use, please do
not hesitate to contact us

2. PIN ASSIGNMENT



3. USAGE WITH A RASPBERRY PI

1. Connection



| KY033 | Raspberry Pi |
|--------|-----------------|
| GND | Ground (Pin 6) |
| V+ | 3,3 V (Pin 1) |
| Signal | GPIO24 (Pin 18) |

2. Code example

This sample code shows in the console whether the sensor is above a line or not. This is done by infrared, because if the sensor is on the line, the transmitted infrared signal does not reach the receiver.

```
# Required modules are imported and set up
import RPi.GPIO as GPIO
import time

GPIO.setmode(GPIO.BCM)

# The input pin to which the sensor is connected, is declared here.
GPIO_PIN = 24
GPIO.setup(GPIO_PIN, GPIO.IN, pull_up_down = GPIO.PUD_UP)

# Pause between the output of the result is defined (in seconds)
delayTime = 0.5
print ("Sensor-Test [druecken Sie STRG+C, um den Test zu beenden]")

# Main loop of the program
try:
    while True:
        if GPIO.input(GPIO_PIN) == True:
            print ("LineTracker is above the line")
        else:
            print ("LineTracker is out of a line")
            print ("-----")

        # Reset + Delay
        time.sleep(delayTime)

# Clean up after the program has finished
except KeyboardInterrupt:
    GPIO.cleanup()
```

You can also download this sample code [here](#).

Furthermore, the sensor has a potentiometer with which the sensitivity can be adjusted. A LED also lights up when the sensor receives an infrared signal, i.e. leaves the line.

But first you have to install this package:

```
sudo apt install python3-rpi.gpio
```

Now, you can either use the following commands to download and unzip the file:

```
wget http://sensorkit.joy-it.net/images/c/cf/KY-033_RPi_Trackingsensor.zip
unzip KY-033_RPi_Trackingsensor.zip
```

Or you can create a new file with the following command and copy the example code described into it:

```
sudo nano KY-033_RPi_Trackingsensor.py
```

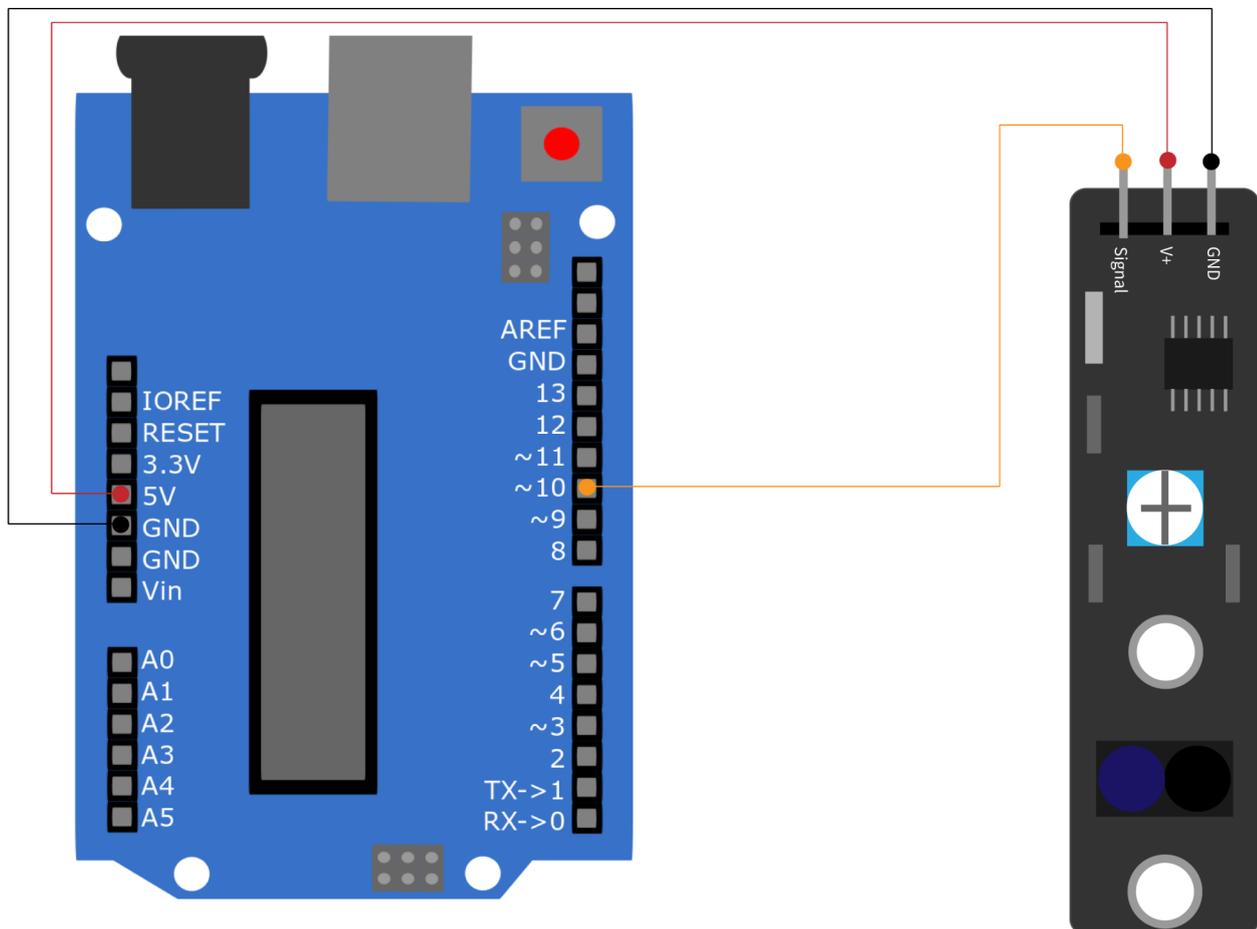
Now, you have to save the file with **CTRL + O** and press **Enter** to confirm. Press **CTRL + X** to exit the editor again.

With both variants, the program will be performed as follows:

```
sudo python3 KY-033_RPi_Trackingsensor.py
```

4. USGAE WITH AN ARDUINO

1. Connection



| KY033 | Arduino |
|--------|---------|
| GND | GND |
| V+ | 5 V |
| Signal | Pin 10 |

2.Code example

This sample code shows in the serial monitor whether the sensor is above a line or not. This is done by infrared, because if the sensor is on the line, the transmitted infrared signal does not reach the receiver.

```
int Sensor = 10; // Declaration of the sensor input pin

void setup (){
  Serial.begin(9600); // Initialization serial output
  pinMode (Sensor, INPUT) ; // Initialization of sensor pin
}

// The program reads the current status of the sensor pin and
// displays in the serial console whether an obstacle is currently detected
// or if there is no obstacle in front of the sensor
void loop (){
  // The current signal at the sensor is read out
  bool val = digitalRead (Sensor);

  // If a signal could be detected, the LED is switched on.
  if (val == HIGH){
    Serial.println("LineTracker ist ueber der Linie");
  }

  else{
    Serial.println("Linetracker ist ausserhalb der Linie");
  }

  Serial.println("-----");
  delay(500); // Pause between the measurement of 500ms
}
```

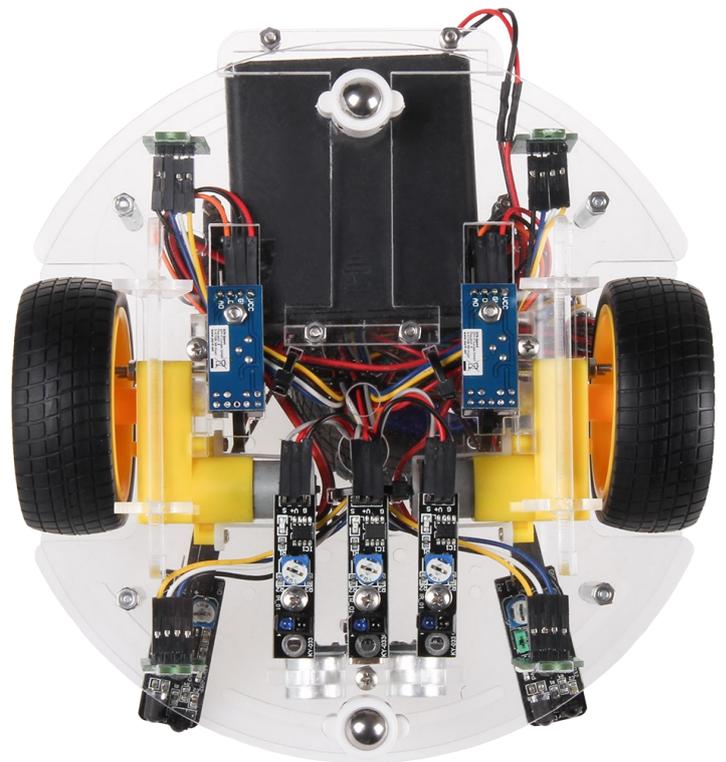
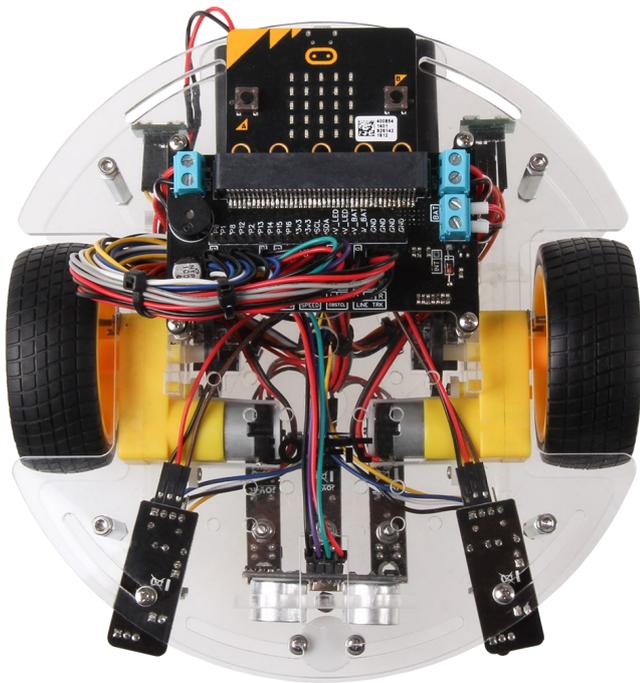
In this code example, the received data is issued on the serial Monitor. Make sure that the baud rate is set correctly (9600). Also make sure that you have set the right board and port in your Arduino IDE before uploading. You can also download the code example [hier](#).

Furthermore, the sensor has a potentiometer with which the sensitivity can be adjusted. A LED also lights up when the sensor receives an infrared signal, i.e. leaves the line.

5. AUTOMATED LINE TRACKER FUNCTION

These sensors can also be used with robots. But you must note that three of these sensors are necessary for the robot to hold the line. These sensors are used, for example, in the Joy-Car. This enables the robot to follow a line on its own without any human influence.

The Joy-Car can be found under the article no. **MB-Joy-Car** and is a robot kit for self assembly. It works with the help of a Micro:Bit and offers many more functions.



6. OTHER 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 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 e-mail at 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.

7. 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.

E-Mail: service@joy-it.net

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

Telephone: +49 (0)2845 98469-66 (10-17 o'clock)

For further information please visit our website:

www.joy-it.net