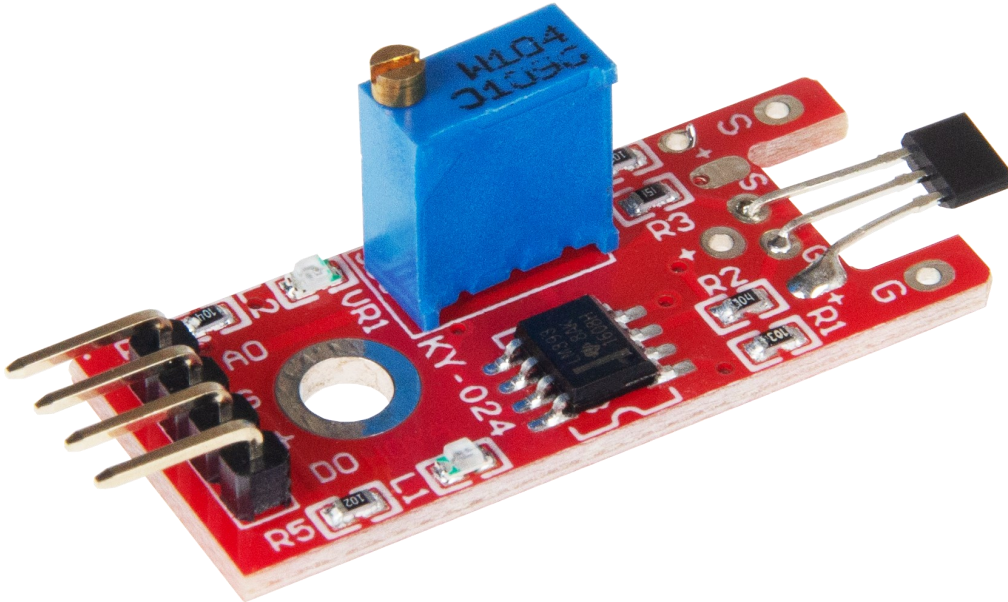


HALL MAGNETIC FIELD SENSOR

SEN-KY024LM



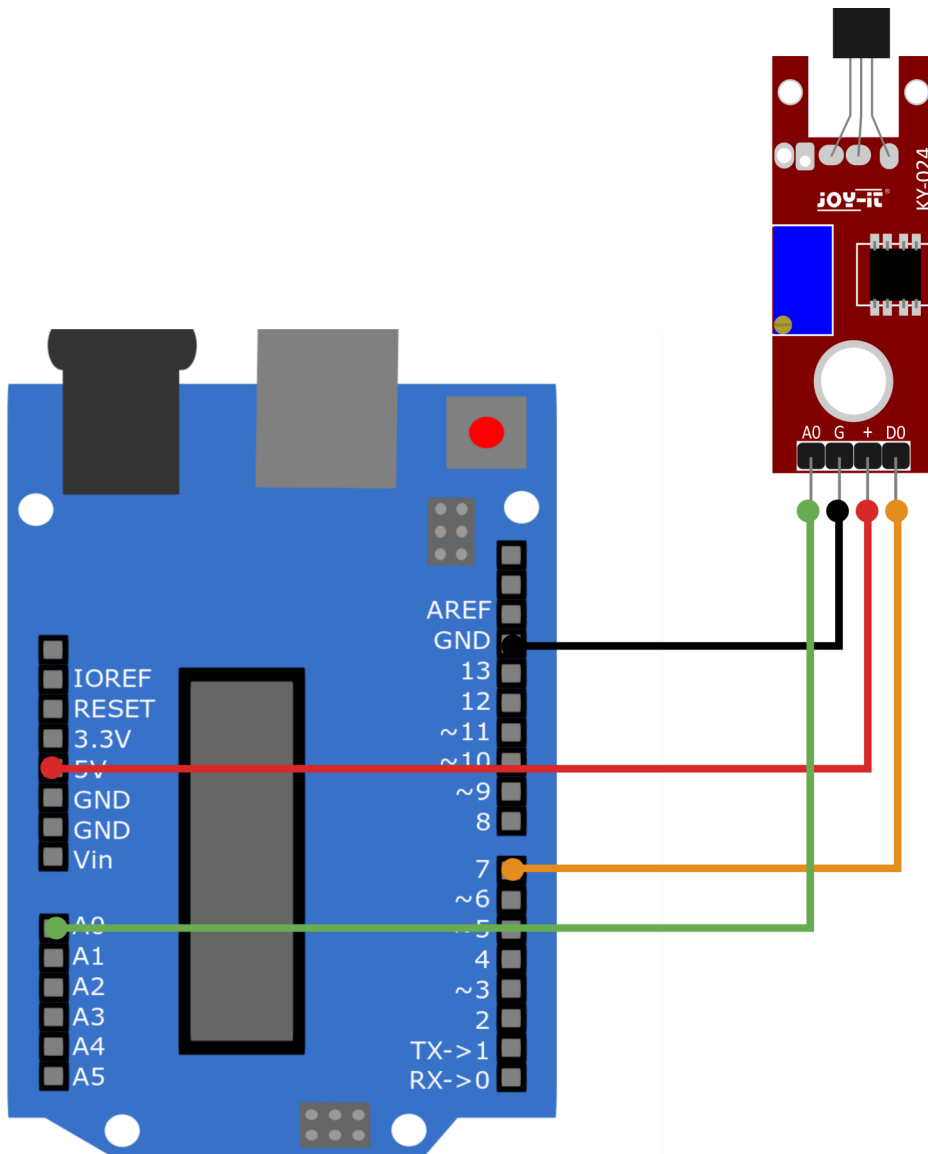
1. GENERAL INFORMATION

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. USAGE WITH THE ARDUINO

Wiring

Connect your sensor to your Arduino as shown in the diagram and table below.



Arduino	KY-024LM
Pin A0	A0
GND	G
5V	+
Pin 7	D0

Copy the following code example and upload it to your Arduino. Make sure that you have selected the correct board and the correct port in your Arduino IDE.

The programme will show you the current analog value of the sensor in the serial monitor and whether the limit has been reached.

```
// Declaration and initialisation of the input pins
int Analog_Eingang = A0; // Analog-Pin
int Digital_Eingang = 7; // Digital-Pin

void setup ()
{
  pinMode (Analog_Eingang, INPUT);
  pinMode (Digital_Eingang, INPUT);

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

void loop ()
{
  float Analog;
  int Digital;

  //Current values are read, converted to the voltage value...
  Analog = analogRead (Analog_Eingang) * (5.0 / 1023.0);
  Digital = digitalRead (Digital_Eingang);

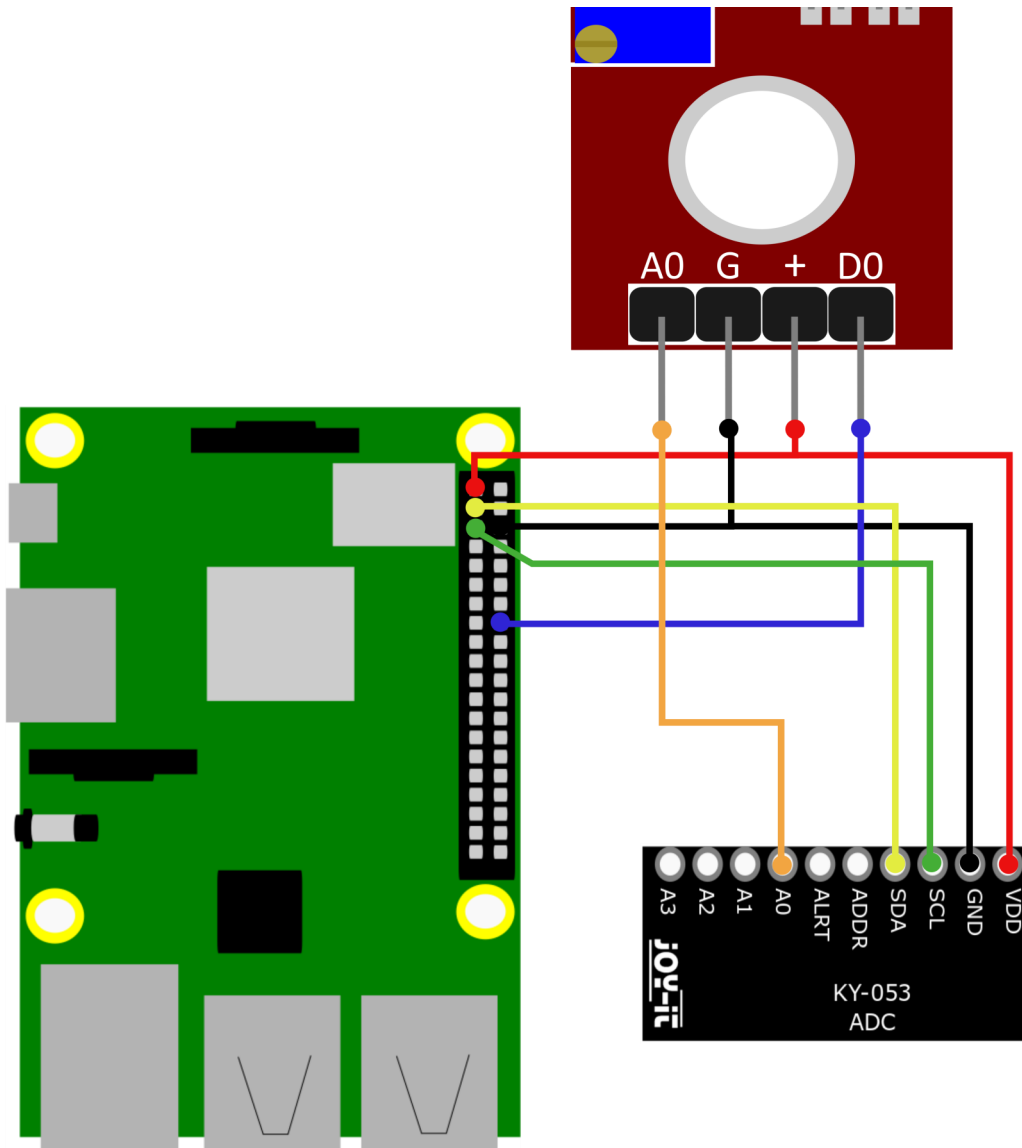
  //... and printed at this point
  Serial.print ("Analog Voltage:");
  Serial.print (Analog, 4);
  Serial.print ("V, ");
  Serial.print ("Limit:");

  if(Digital==1)
  {
    Serial.println (" reached");
  }
  else
  {
    Serial.println (" not reached");
  }
  Serial.println ("-----");
  delay (1000);
}
```

3. USAGE WITH THE RASPBERRY PI

Wiring

Since the Raspberry Pi has no analog inputs, we have to use an external analog / digital converter. In this example we use the Com-KY053ADC from Joy-it.
Connect your sensor to your Raspberry Pi as shown in the diagram and table below.



Raspberry Pi	KY-024LM	ADC
3,3 V	+	VDD
GND	G	GND
Pin 16	D0	
	A0	A0
SCL (Pin 5)		SCL
SDA (Pin 3)		SDA

To use the ADC with the Raspberry Pi, you must first enable I2C. To do this, enter the following command in the console:

```
sudo raspi-config
```

Now go to **3 Interface-Options** -> **P5 I2C** and enable the I2C interface.

Now you have to install the library for the ADC. To do this, enter the following commands in the console:

```
git clone https://github.com/adafruit/Adafruit_Python_ADS1x15.git
```

```
cd Adafruit_Python_ADS1x15/
```

```
sudo python3 setup.py install
```

```
cd ..
```

Create a new file with the following command:

```
sudo nano SEN-KY024LM.py
```

Copy the following code example to your Raspberry Pi. Save the file by pressing CTRL+O, confirm with enter and exit the file by pressing CTRL+X.

```
import time
import Adafruit_ADS1x15
import RPi.GPIO as GPIO
adc = Adafruit_ADS1x15.ADS1115()

GPIO.setmode(GPIO.BCM)
GPIO.setwarnings(False)
GAIN = 1

delayTime = 1 #Time between measurements
Digital_PIN = 23 #Digital-Pin (BCM)

GPIO.setup(Digital_PIN, GPIO.IN, pull_up_down = GPIO.PUD_OFF)

while True:
    value= adc.read_adc(0, gain=GAIN) # Read ADC
    voltage= ((value/32767)*4096)/1000 # Conversion to voltage
    # Output
    if GPIO.input(Digital_PIN) == False:
        print ("Voltage:", round(voltage,3),"V, ", "Limit: not reached")
    else:
        print ("Voltage:", round(voltage,3), "V, ", "Limit: reached")
    print ("-----")
    time.sleep(delayTime)
```

Now start the program with the following command:

```
sudo nano SEN-KY024LM.py
```

The programme shows you the current voltage value of the sensor in the console and whether the limit value has been reached.

4. 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 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.

5. 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

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