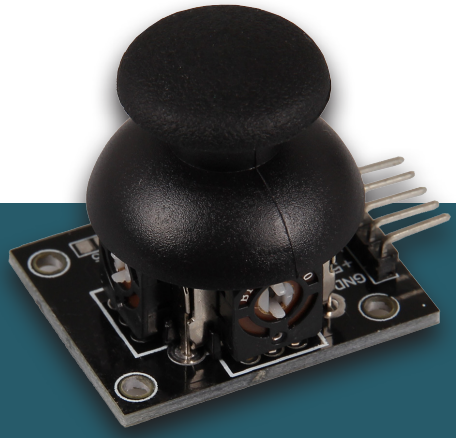


JOYSTICK MODULE

COM-KY023JM

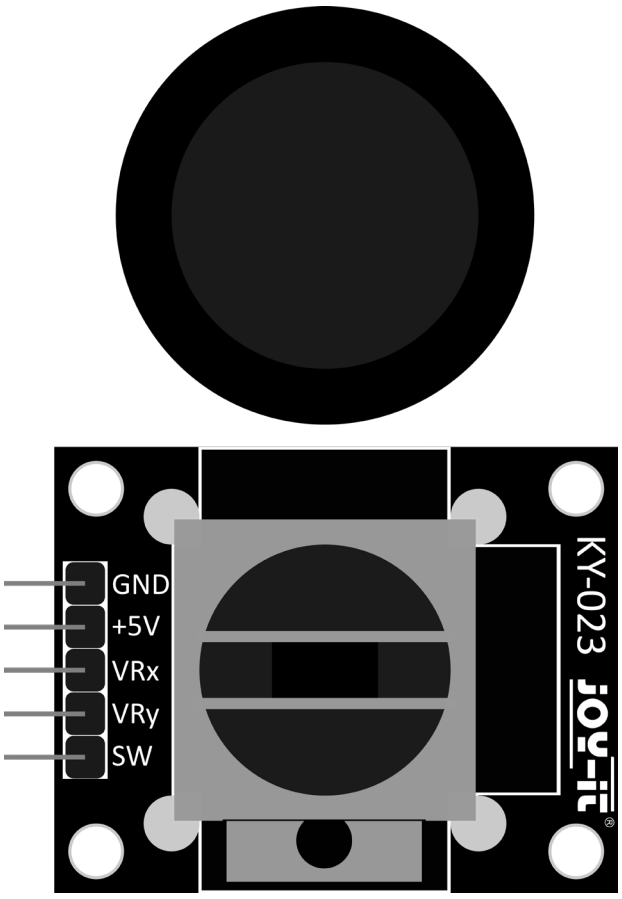
1. GENERAL INFORMATION

Dear customer,
thank you for choosing our product. Below we will show you what you need to bear in mind during commissioning and use.

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

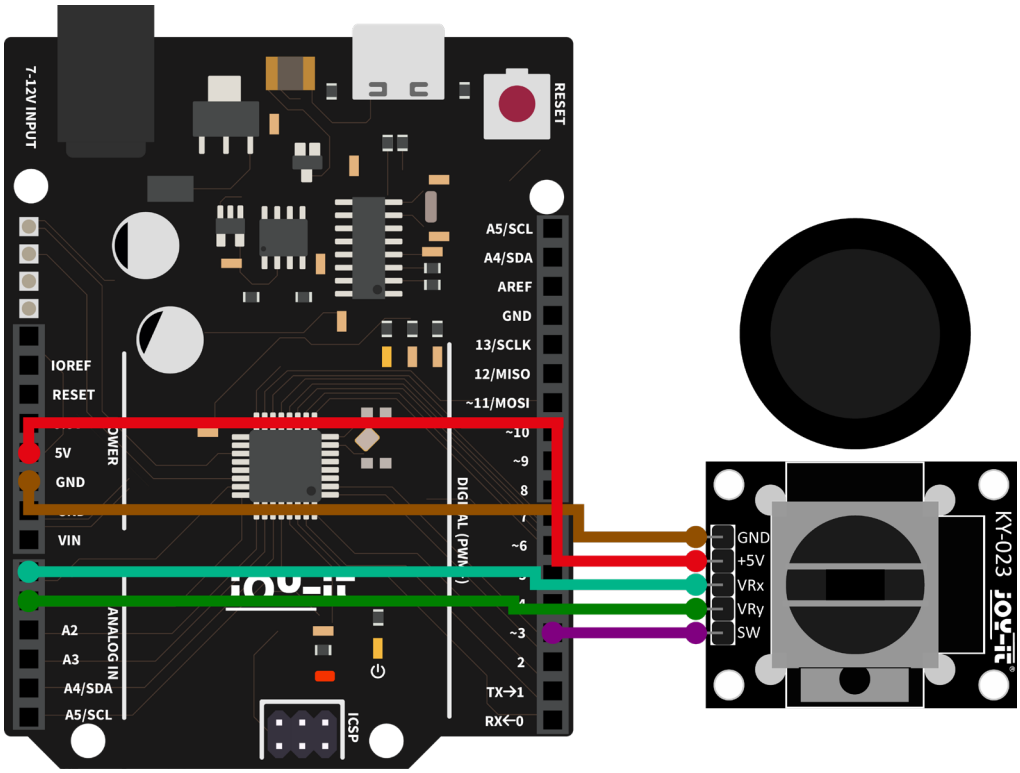
2. EQUIPMENT OVERVIEW

This joystick module outputs the current positions of the X and Y axes as an analog signal via the VRx and VRy pins. The joystick can also be pressed down, which changes the status at pin SW from LOW to HIGH.



3. ARDUINO APPLICATION EXAMPLE

First connect the module to your Arduino:



JOYSTICK-MODUL	ARDUINO
GND	GND
+5V	5V
VRx	A0
VRy	A1
SW	D3

Now transfer the following code example to your Arduino.

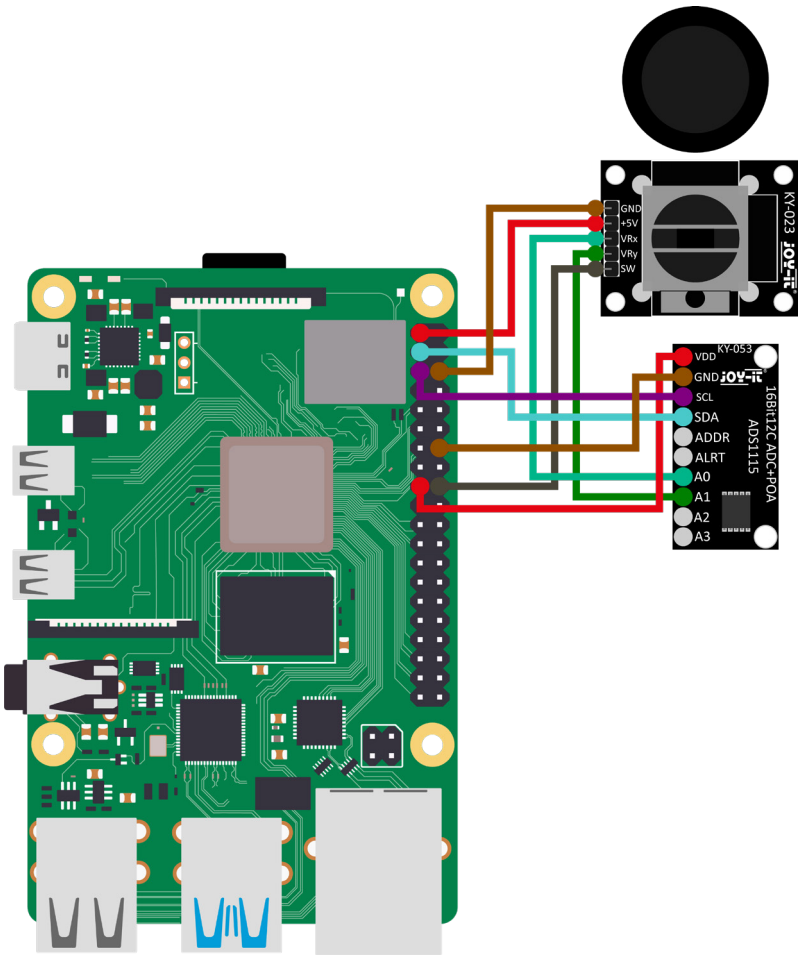
```
// Declaration and initialization of the input pins
int JoyStick_X = A0; // X-axis signal
int JoyStick_Y = A1; // Y-axis signal
int Button =  3; // Button

void setup ()
{
  pinMode (JoyStick_X, INPUT);
  pinMode (JoyStick_Y, INPUT);
  pinMode (Button, INPUT);

  // Since the button pulls the signal to ground when pressed,
  // we hereby switch on the pull-up resistor
  digitalWrite(Button, HIGH);

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

// The program reads the current values of the input pins
// and outputs it to the serial output
void loop ()
{
 float x, y;
 int button;

  //Current values are read out, converted to the voltage value...
  x = analogRead(JoyStick_X) *(5.0 / 1023.0);
  y = analogRead(JoyStick_Y) *(5.0 / 1023.0);
  Button = digitalRead (Button);

  //... and issued at this point
  Serial.print ("X-Axis:"); Serial.print (x, 4);  Serial.print ("V, ");
  Serial.print ("Y-Axis:"); Serial.print (y, 4);  Serial.print ("V, ");
  Serial.print ("Button:");

 if(button==1)
  {
      Serial.println (" not pressed");
  }
  else
  {
      Serial.println (" pressed");
  }
  delay(200);
}
```

4. APPLICATION EXAMPLE 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.

Since the joystick module outputs analog values, an analog-to-digital converter is required for use with the Raspberry Pi. In this example we use the COM-KY053ADC from Joy-IT.

First connect the module to your Raspberry Pi.



JOYSTICK-MODUL	ADC	RASPBERRY PI
GND	GND	GND
+5V	VDD	3V3
VRx	A0	/
VRy	A1	/
SW	/	GPIO24
/	SDA	GPIO2
/	SCL	GPIO3

To use the ADC, some settings must first be made and dependencies installed.

First you need to enable I2C on your Raspberry Pi. To open the configuration, enter the following command:

```
sudo raspi-config
```

There, select **3 Interface Options** → **I4 I2C** and activate the I2C interface.

Now install pip3 with the following command:

```
sudo apt-get install python3-pip
```

The next step is to set up the virtual environment. Enter
To do this, enter the following commands:

```
mkdir project-name && cd project-name
```

```
python -m venv --system-site-packages env
```

```
source env/bin/activate
```

For our code example we use the Adafruit_CircuitPython_ADS1x15 library which is licensed under the MIT license license. Use the following commands to download and install this library.

```
pip3 install adafruit-circuitpython-ads1x15
```

You can download the code example that we have made available to you here or you can execute the following command in your console.

```
wget https://www.joy-it.net/files/files/Produkte/COM-KY023JM/COM-KY023JM-RPi.zip
```

Now unpack the file with the following command:

```
unzip COM-KY023JM-RPi.zip
```

You can now execute the script with the following command. Pay attention
Please note that your file path may differ.

```
python3 COM-KY023JM-RPi.py
```

Alternatively, you can copy the code example here and paste it into Insert your Python file.

```
# -*- coding: utf-8 -*-
import time
import board
import busio
import adafruit_ads1x15.ads1115 as ADS
from adafruit_ads1x15.analog_in import AnalogIn
from gpiozero import Button

# Create the I2C bus
i2c = busio.I2C(board.SCL, board.SDA)

# Create the ADC object using the I2C bus
ads = ADS.ADS1115(i2c)

# Create single-ended input on channel0
chan0 = AnalogIn(ads, ADS.P0)
chan1 = AnalogIn(ads, ADS.P1)

# Pin 24 for the switch
BUTTON_PIN = 24
button = Button(BUTTON_PIN)

while True:

   print("X: ","{:>5}\t{:>5.3f}".format(chan0.value, chan0.voltage))
   print("Y: ","{:>5}\t{:>5.3f}".format(chan1.value, chan1.voltage))
   if button.is_pressed:
           print("Button has been pressed")

    time.sleep(1)
```

5. INFORMATION & TAKE-BACK OBLIGATIONS

Our information and take-back obligations under the German Electrical and Electronic Equipment Act (ElektroG)

Symbol on electrical and electronic equipment:
This crossed-out garbage can means that electrical and electronic appliances **do not** belong in household waste. You must hand in the old appliances at a collection point. Before handing them in, you must separate used batteries and accumulators that are not enclosed by the old appliance.

Return options:
As an end user, you can hand in your old appliance (which essentially fulfills the same function as the new appliance purchased from us) for disposal free of charge when purchasing a new appliance. Small appliances with no external dimensions greater than 25 cm can be disposed of in normal household quantities regardless of whether you have purchased a new appliance.

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

Return option in your area:
We will send you a parcel stamp with which you can return the device to us free of charge. To do so, please contact us by e-mail at Service@joy-it.net or by telephone.

Packaging information:
Please pack your old appliance securely for transportation. 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.

6. SUPPORT

We are also there for you after your purchase. If you still have any questions or problems arise, we are also available by e-mail, telephone and ticket support system.

E-Mail: service@joy-it.net
Ticket-System: https://support.joy-it.net
Phone: +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

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