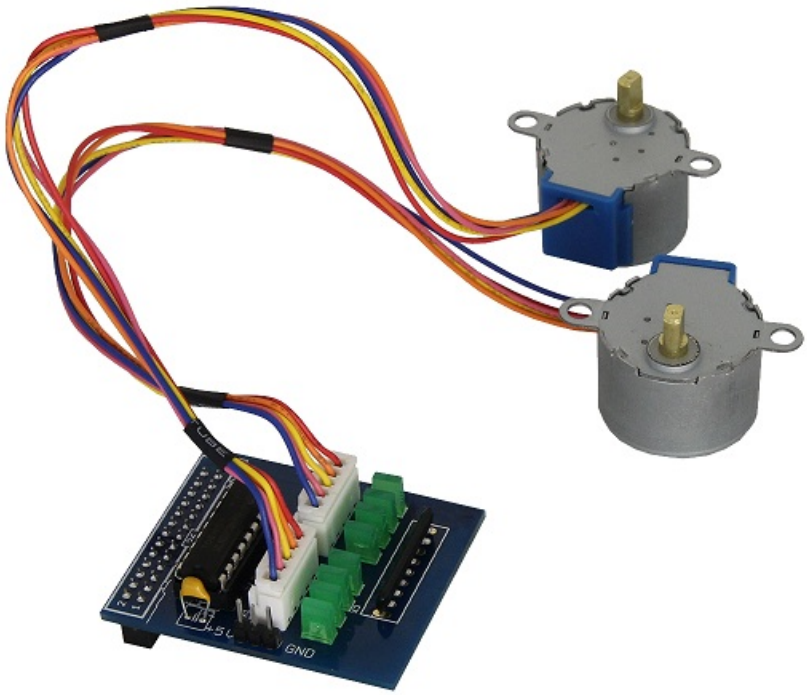
joy-it RB-MOTO2 Raspberry Pi Stepper Motor Control

joy-it RB-MOTO2 Raspberry Pi Stepper Motor Control Owner's Manual

Contents

joy-it RB-MOTO2 Raspberry Pi Stepper Motor Control



Product Information

Specifications

- **Product Name:** RB-MOTO2
- **Function:** Raspberry Pi stepper motor control
- **Manufacturer:** Joy-IT powered by SIMAC Electronics GmbH
- **Address:** Pascalstr. 8, 47506 Neukirchen-Vluyn
- **Website:** www.joy-it.net

Product Usage Instructions

- Connect both motors to the corresponding sockets. You can choose to power the motors from the Raspberry Pi or an external power source.
- Connect the two left-hand pins with the enclosed jumpers.
- Install it on the two right pins.
- Stepper motors are controlled by alternately supplying individual steps with power. Refer to the wiring overview for the required pins for motor steps.
- Download the sample code from the provided link and unzip it. Start the sample code using the given command or insert the code into your Python file.

FAQ

- **Q:** What operating systems and hardware is the product compatible with?
- **A:** The guide was written for Raspberry Pi OS Bookworm for Raspberry Pi 4 and 5. Compatibility with newer systems may vary.
- **Q:** How can I power the motors using an external power source?
- **A:** To power the motors from an external source, install jumpers on the two right pins as indicated in the

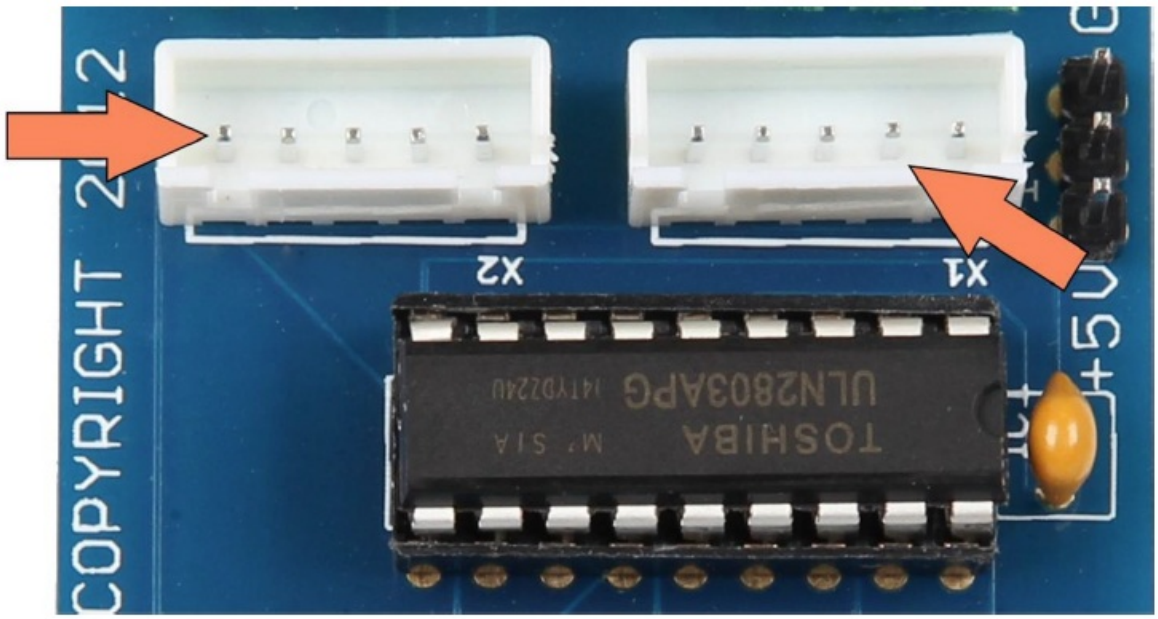
manual.

GENERAL INFORMATION

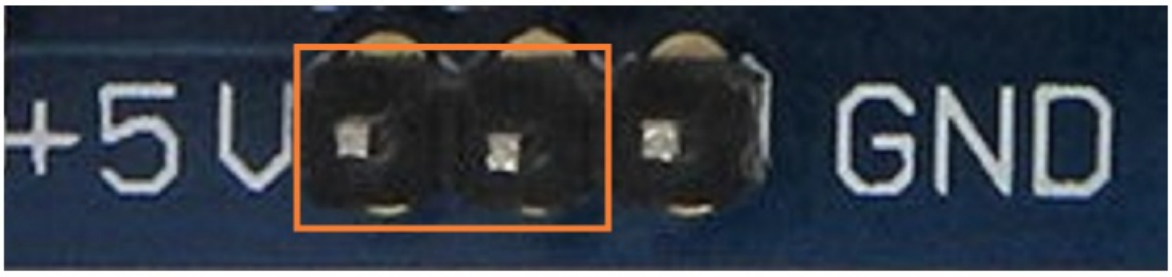
Dear customer,
Thank you for choosing our product. In the following, we will show you what you need to bear in mind during commissioning and use.
Should you encounter any unexpected problems during use, please do not hesitate to contact us.

ZUSAMMENBAU UND EINRICHTUNG

- Connect both motors to the corresponding sockets.

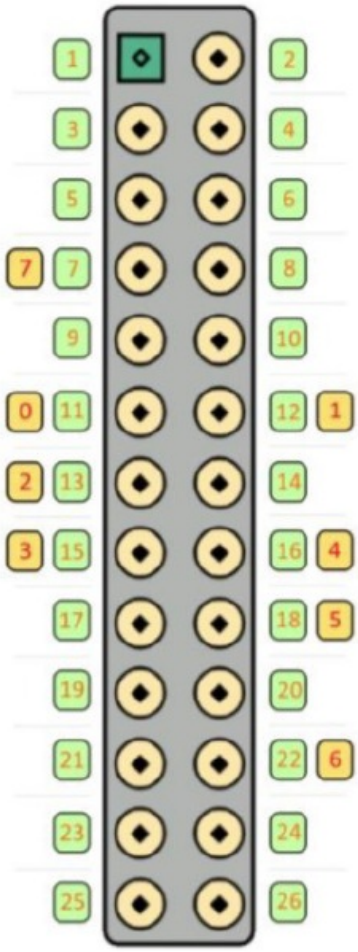


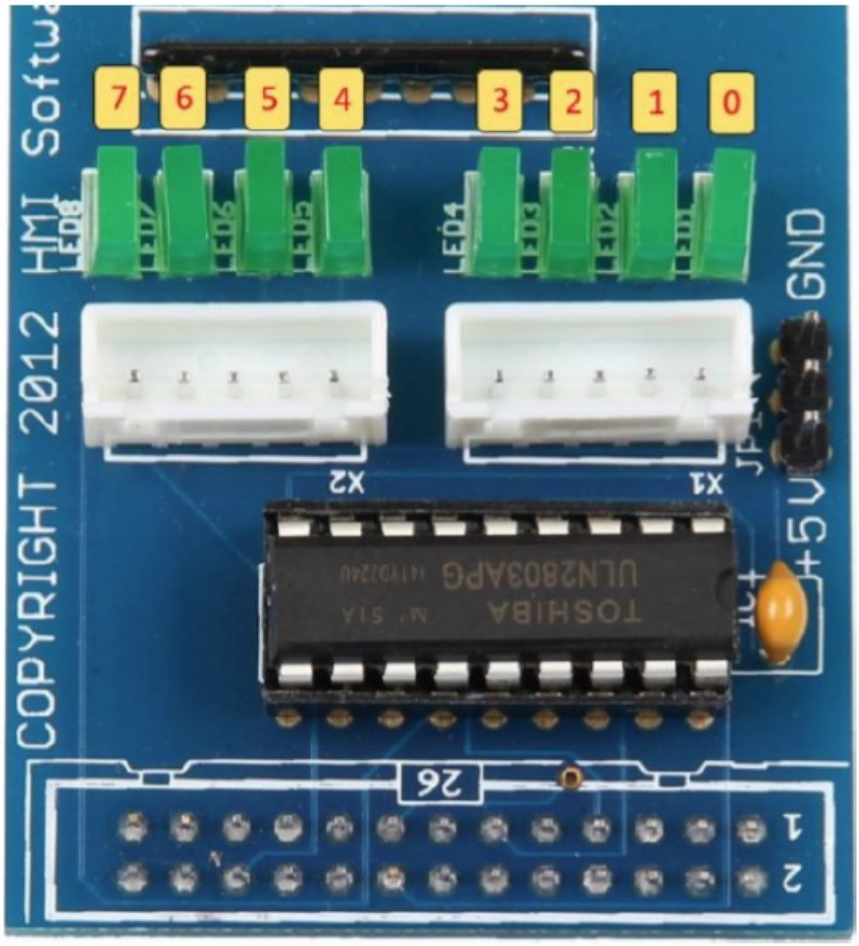
- You can influence the power supply with the pin header:
- If you want the motors to receive their power from the Raspberry Pi, connect the two left-hand pins, marked on the following picture, with the enclosed “jumpers”:



- However, if you want to supply an external power source, you can install it on the two right pins, marked in the following picture:

- Stepper motors are controlled by alternately supplying the individual steps of the motor with power.
- The required pins for the steps of the individual motors are shown in the following wiring overview:





CODE EXAMPLE

This guide was written under Raspberry Pi OS Bookworm for the Raspberry Pi 4 and 5. It has not been checked with newer operating systems or hardware.

- You can download our prepared sample code with the following command:

```
wget https://joy-it.net/files/files/Produkte/RB-Moto2/RB-Moto2.zip
```

- Now unzip the file with this command:

```
unzip RB-Moto2.zip && rm RB-Moto2.zip
```

- You can now start the sample code with the following command:

```
python3 RB-Moto2.py
```

Alternatively, you can simply insert the code on the next page into your Python file and execute it.

```
# -*- coding: utf-8 -*-
from gpiozero import OutputDevice
import time

# Defining the pins as OutputDevice instances
coil_A_1_pin = OutputDevice(24) # pink
coil_A_2_pin = OutputDevice(4)  # orange
coil_B_1_pin = OutputDevice(23) # blue
coil_B_2_pin = OutputDevice(25) # yellow
coil2_A_1_pin = OutputDevice(18) # pink
coil2_A_2_pin = OutputDevice(22) # orange
coil2_B_1_pin = OutputDevice(17) # blue
coil2_B_2_pin = OutputDevice(27) # yellow

StepCount = 8
Seq = list(range(0, StepCount))
Seq[0] = [0,1,0,0]
Seq[1] = [0,1,0,1]
Seq[2] = [0,0,0,1]
Seq[3] = [1,0,0,1]
Seq[4] = [1,0,0,0]
Seq[5] = [1,0,1,0]
Seq[6] = [0,0,1,0]
Seq[7] = [0,1,1,0]

def setStep(w1, w2, w3, w4):
    coil_A_1_pin.value = w1
    coil2_A_1_pin.value = w1
    coil_A_2_pin.value = w2
    coil2_A_2_pin.value = w2
    coil_B_1_pin.value = w3
    coil2_B_1_pin.value = w3
    coil_B_2_pin.value = w4
    coil2_B_2_pin.value = w4

def forward(delay, steps):
    for i in range(steps):
        for j in range(StepCount):
            setStep(Seq[j][0], Seq[j][1], Seq[j][2], Seq[j][3])
            time.sleep(delay)

def backwards(delay, steps):
    for i in range(steps):
        for j in reversed(range(StepCount)):
            setStep(Seq[j][0], Seq[j][1], Seq[j][2], Seq[j][3])
            time.sleep(delay)

# 20 slow steps forward
delay = 20
steps = 20
forward(delay / 1000.0, steps)
# 200 quick steps backwards
delay = 1
steps = 200
backwards(delay / 1000.0, steps)
```

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 crossed-over 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 fulfills 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 D-47506 Neukirchen 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.

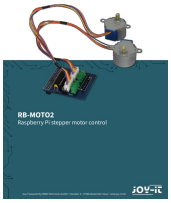
Information on packaging
If you do not have suitable packaging material or do not wish to use your own, please contact us and we will send you suitable packaging.

CONTACT

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 9360-50 (Mon – Thu: 09:00 – 17:00 CET, Fri: 09:00 – 14:30 CET) For further information please visit our website: **www.joy-it.net**
- **www.joy-it.net** SIMAC Electronics GmbH
- Pascalstr. 8, 47506 Neukirchen-Vluyn

Documents / Resources

	joy-it RB-MOTO2 Raspberry Pi Stepper Motor Control [pdf] Owner's Manual RB-MOTO2 Raspberry Pi Stepper Motor Control, RB-MOTO2, Raspberry Pi Stepper Motor Control, Pi Stepper Motor Control, Stepper Motor Control, Motor Control, Control

References

- ITnet | Servizi di Colocation e Cloud
- Joy-IT Helpdesk
- For Makers and Professionals | Joy-IT
- Joy-IT Helpdesk
- User Manual