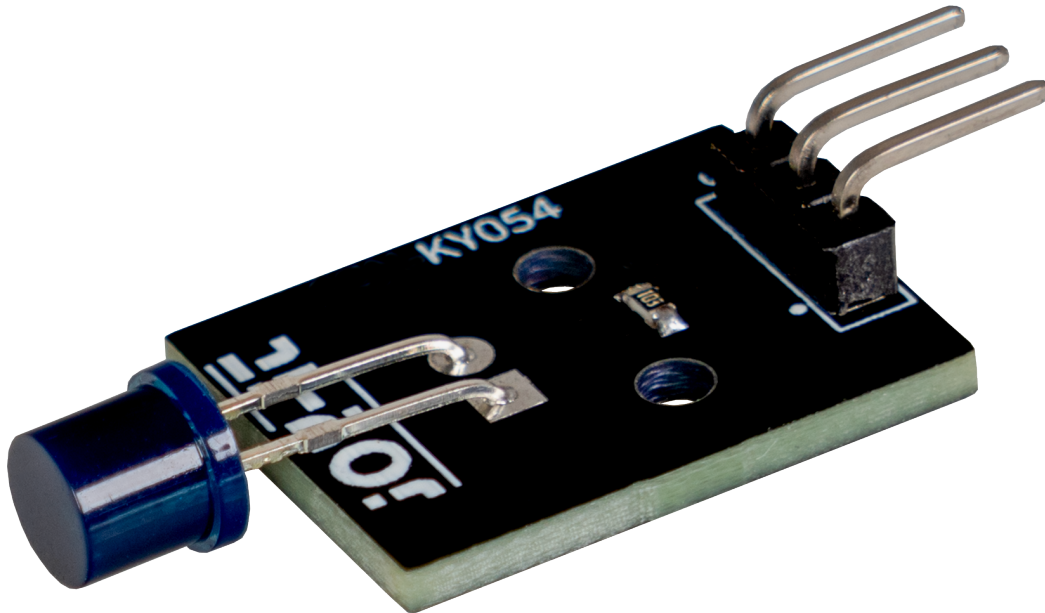


PHOTOTRANSISTOR

in a compact design



1. GENERAL INFORMATION

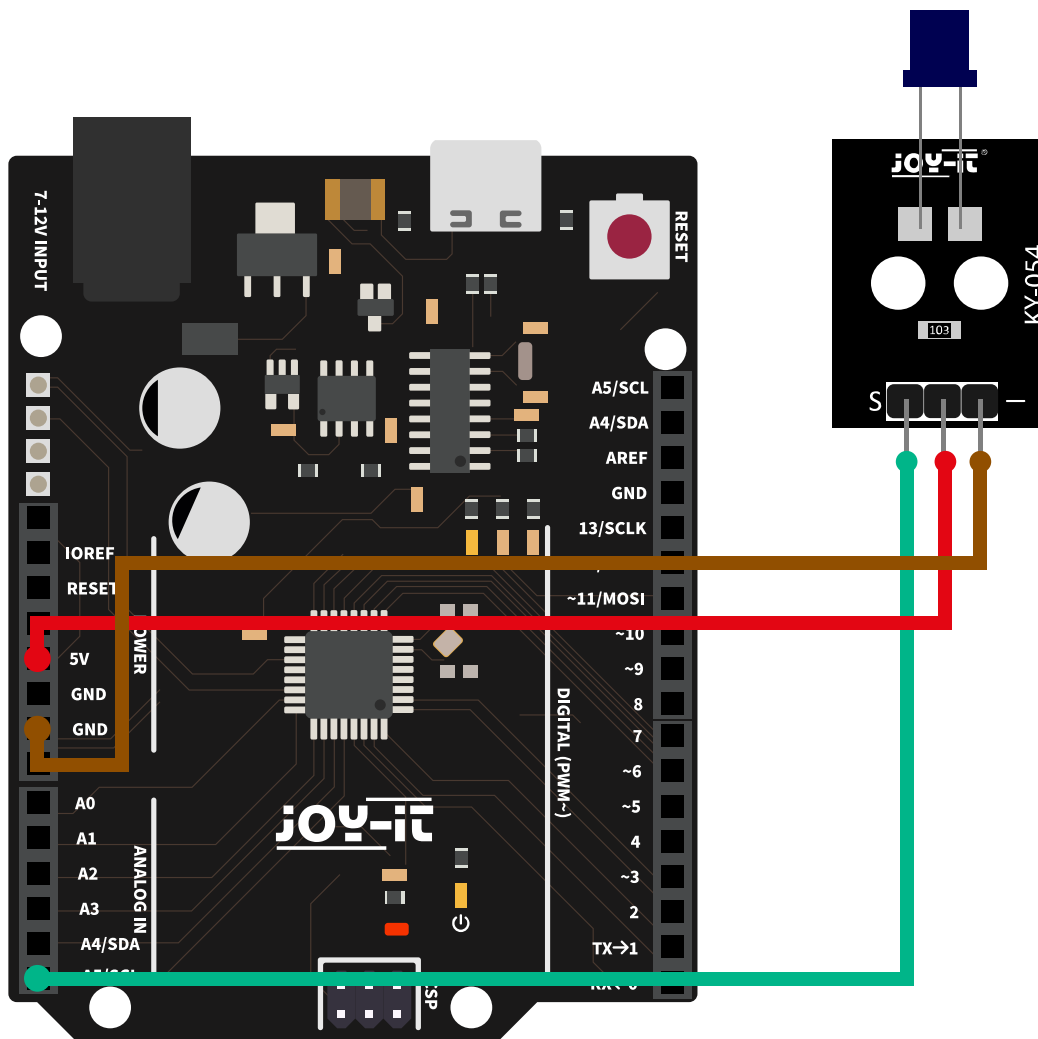
Dear customer,

Thank you for choosing our product. In the Following, we have listed what you need to bear in mind during commissioning.

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

2. USE WITH THE ARDUINO

2.1 Connection



ARDUINO UNO	SENSOR
GND	GND
5 V	+V
Pin A5	Signal

2.2 Code example

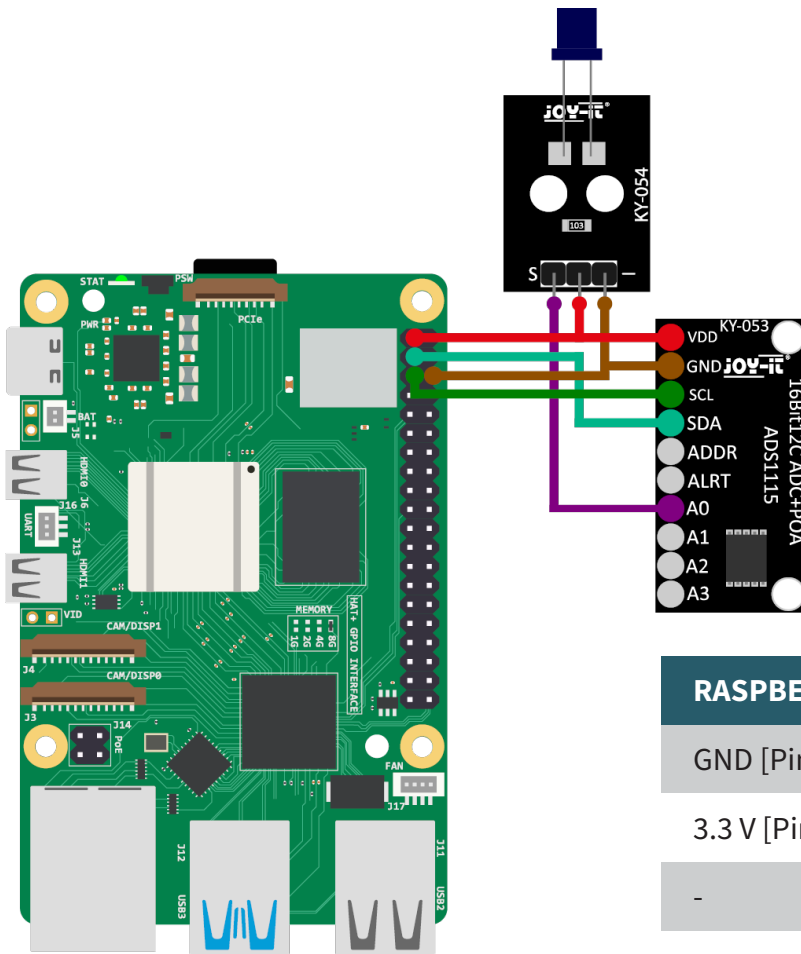
To use the phototransistor with the Arduino, we recommend using the [Arduino IDE](#). In the IDE, you must ensure that you select the correct **port** and the correct **board** (in this case Arduino Uno).

Download the code examples [here](#) and open the example in the *Arduino* subfolder in your IDE. You can upload the code to the Arduino by pressing on **Upload**. You can then use the serial monitor to see the measured brightness of the phototransistor.

3. USE WITH THE RASPBERRY PI

3.1 Connection

The SEN-KY054 is an analog sensor, which is why an analog-to-digital converter is required, as the Raspberry Pi does not have an internal one. We recommend the use of [SEN-KY053ADC](#).



RASPBERRY PI	SENSOR
GND [Pin 6]	GND
3.3 V [Pin 1]	+V
-	Signal

KY053	SENSOR
-	GND
-	+V
A0	Signal

RASPBERRY PI	KY053
3.3 V [Pin 1]	+V
GND [Pin 6]	GND
GPIO 3 [Pin 5]	SCL
GPIO 2 [Pin 3]	SDA

3.2 Code example

First activate I2C on the Raspberry Pi. To do this, open the configuration with the following command:

```
sudo raspi-config
```

Select **3 Interface Options** → **I5 I2C** and activate the I2C interface.

Now you install *pip* with the following command.

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

Now create a virtual environment with the following commands.

```
mkdir ky054
```

```
cd ky054
```

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

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

A separate library is required for the analog-digital converter. For this we use [Adafruit CircuitPython ADS1x1](#) which is licensed under the [MIT license](#). You can download the library with the following command.

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

You can now download and unzip the code example.

```
wget https://joy-it.net/public/SEN-KY054.zip
```

```
unzip SEN-KY054.zip
```

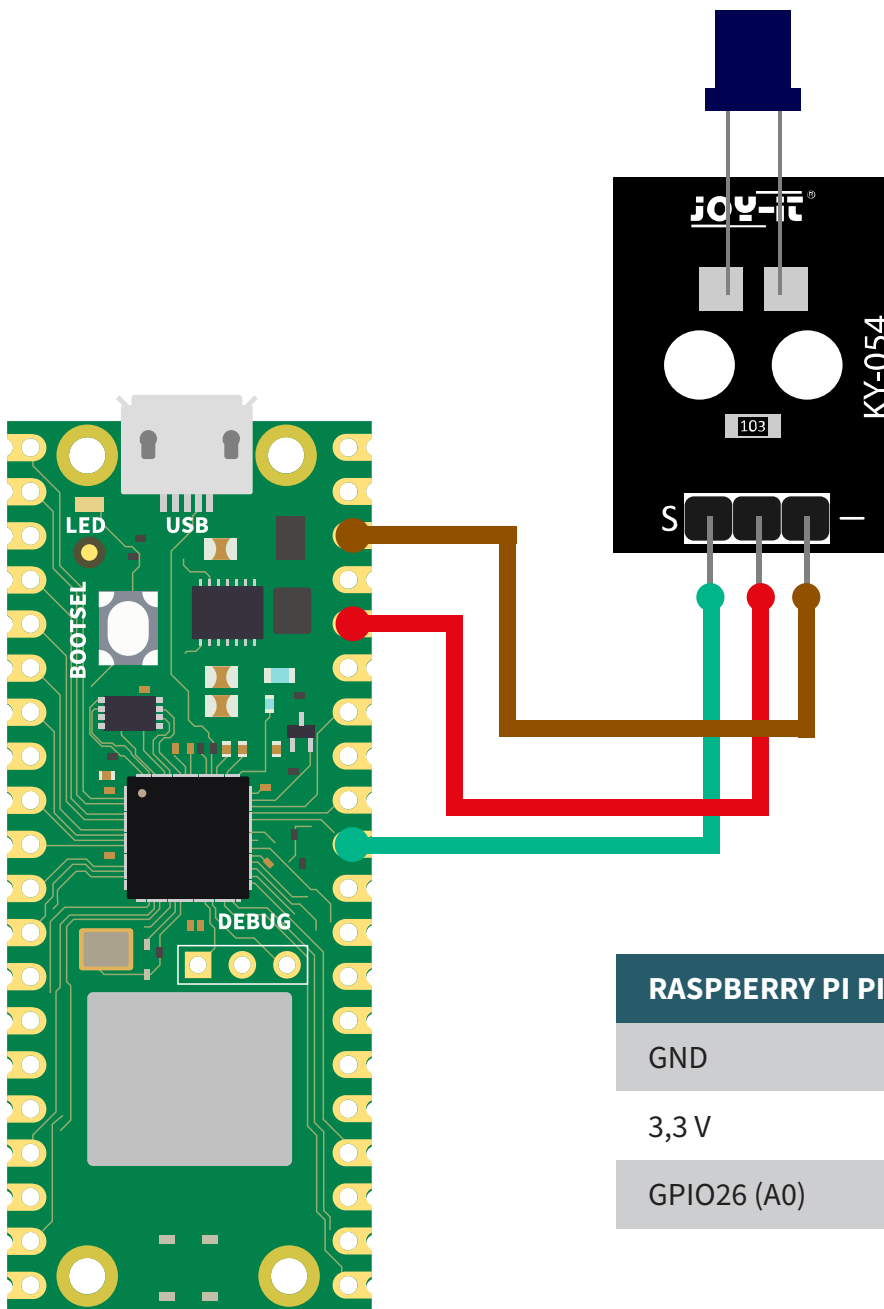
```
cd SEN-KY054/RaspberryPi
```

You can now execute the code example with the following command.

```
python3 SEN-KY054.py
```

4. USE WITH THE RASPBERRY PI PICO

4.1 Connection



RASPBERRY PI PICO	SENSOR
GND	GND
3,3 V	+V
GPIO26 (A0)	Signal

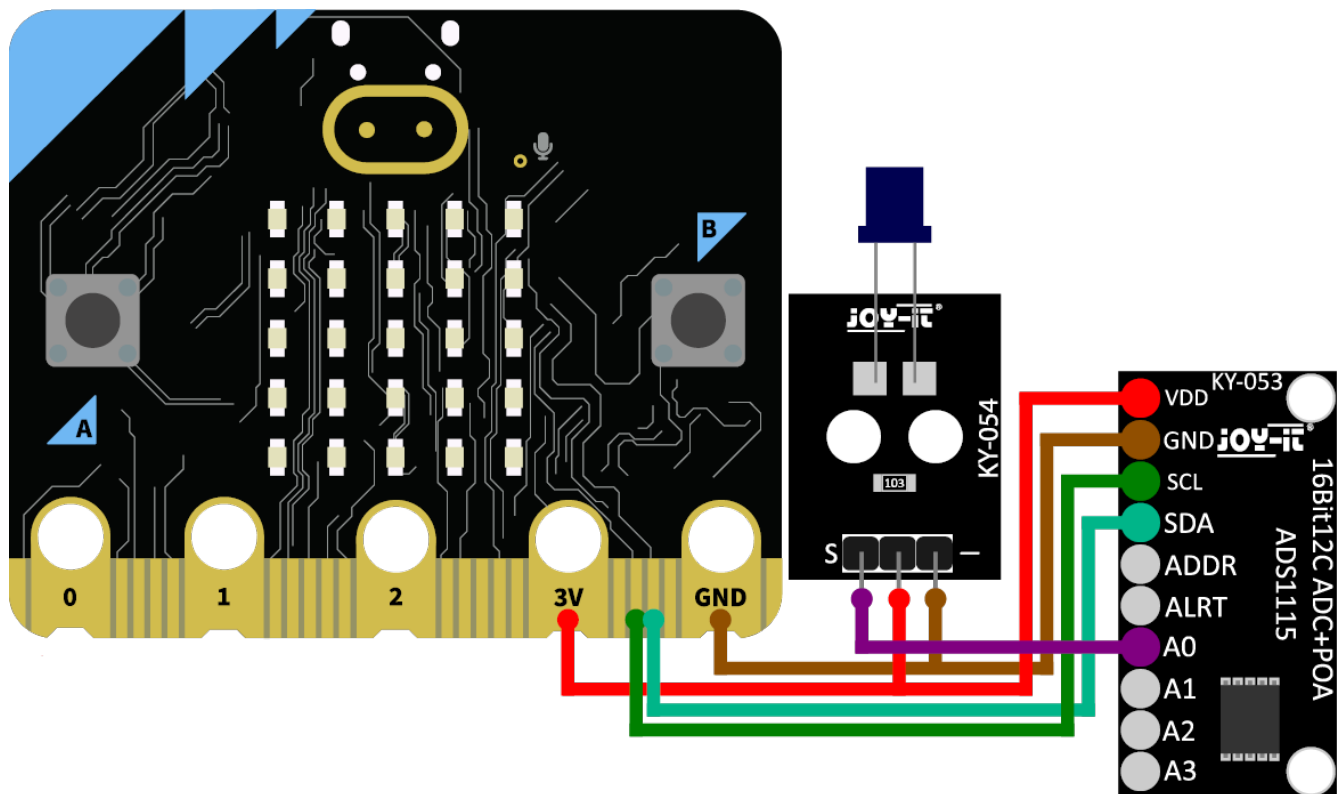
4.2 Code example

To use the phototransistor with the Raspberry Pi Pico, we recommend the [Thonny IDE](#). There you have to go to **Run** → **Configure interpreter ...** → **Which kind of interpreter should Thonny use for running your code?** and select **MicroPython (Raspberry Pi Pico)** to use the Pico.

Download the code examples [here](#) and open the example in the *RaspberryPico* subfolder in your IDE. You can load the code onto the Pico using **Run current script**. You can then use the shell to see the measured brightness of the phototransistor.

5. USE WITH THE MICRO:BIT

5.1 Connection



MICRO:BIT	SENSOR
GND	GND
3 V	+V
-	Signal

KY053	SENSOR
-	GND
-	+V
A0	Signal

MICRO:BIT	KY053
3 V	+V
GND	GND
Pin 19	SCL
Pin 20	SDA

5.2 Code example

To use the phototransistor with the micro:bit, we recommend the [MakeCode](#). You can download the code examples [here](#). In the IDE, you can use **Import** → **Import file ...** to load the code example from the *microbit* subfolder into your IDE.

You can now press on **Download** to load the sample code to your micro:bit. Click on **Show data** if you want to display the measured values of the phototransistor.

6. OTHER INFORMATION

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

Symbol on electrical and electronic equipment:

This crossed-out dustbin means that electrical and electronic equipment should not be disposed of with household waste. You must dispose of old appliances at a submit to the registration office.

Before handing in old batteries and accumulators that are not enclosed by the old appliance, you must separate them from the appliance.



Return options:

As an end user, when you purchase a new device, you can dispose the old device (which essentially performs the same function as the new) free of charge.

Small appliances with no external dimensions larger than 25 cm can be disposed of in normal household containers, regardless of whether a new appliance is purchased quantities can be delivered.

Possibility of return at our company location during the opening hours:

SIMAC Electronics GmbH, Pascalstr. 8, D-47506 Neukirchen-Vluyn

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. To do this, please send an e-mail to service@joy-it.net or by calling us.

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, contact us and we will arrange suitable packaging for you to come.



7. 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: <http://support.joy-it.net>

Phone: +49 (0)2845 9360-50

You can find our current opening hours at

www.joy-it.net/de/service

For further information, please visit our website:

www.joy-it.net