

# SEN-DHT22

Temperature and humidity sensor



## 1. GENERAL INFORMATION

Dear customer,

Thank you for purchasing our product. In the following, we will show you which things should be observed during the use.

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

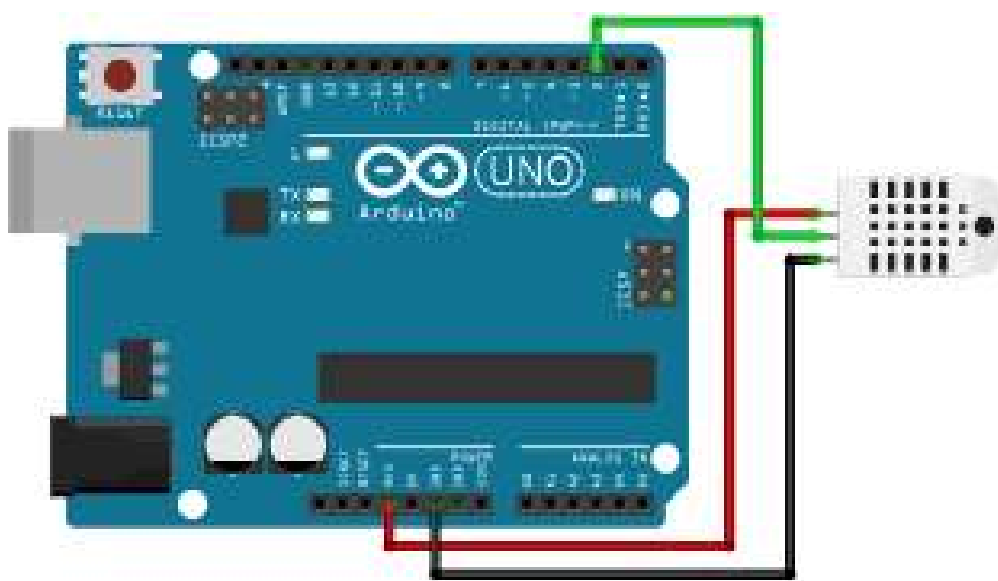
## 2. CONNECTION INFORMATION



PIN	Connection Arduino	Connection Raspberry Pi
+	3.3V	3.3V (Pin 1)
Out	Pin 2	GPIO4 (Pin 7)
-	GND	GND (Pin 6)

The DHT22 temperature and humidity sensor is versatile and especially flexible with its input voltage. So, it is not dependent to a voltage of exact 3.3 V but can be used with a voltage range from 3.3 to 6 V. For that reason, the sensor can be applied in many different systems. The output signal is issued digital via the 1-Wire-Protocol.

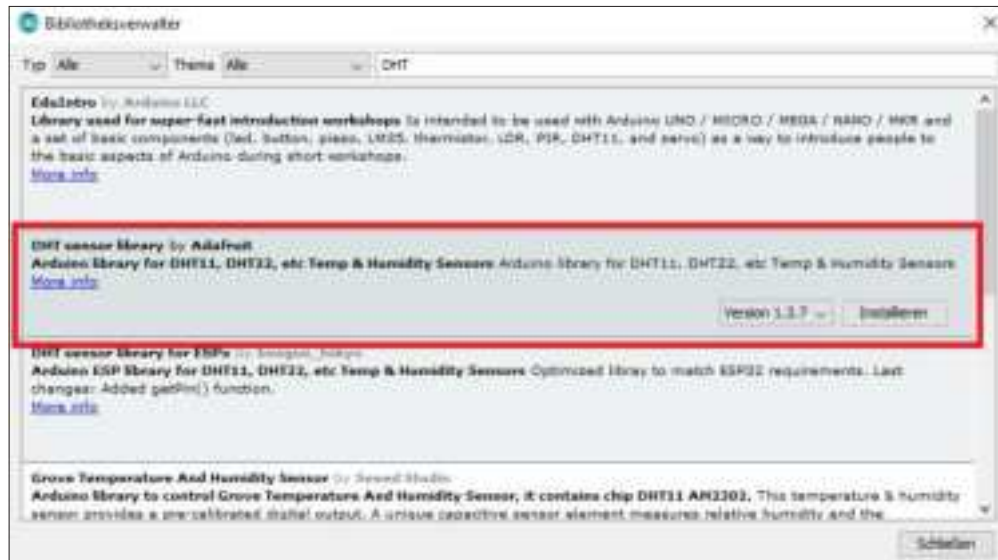
## 3. USAGE WITH ARDUINO



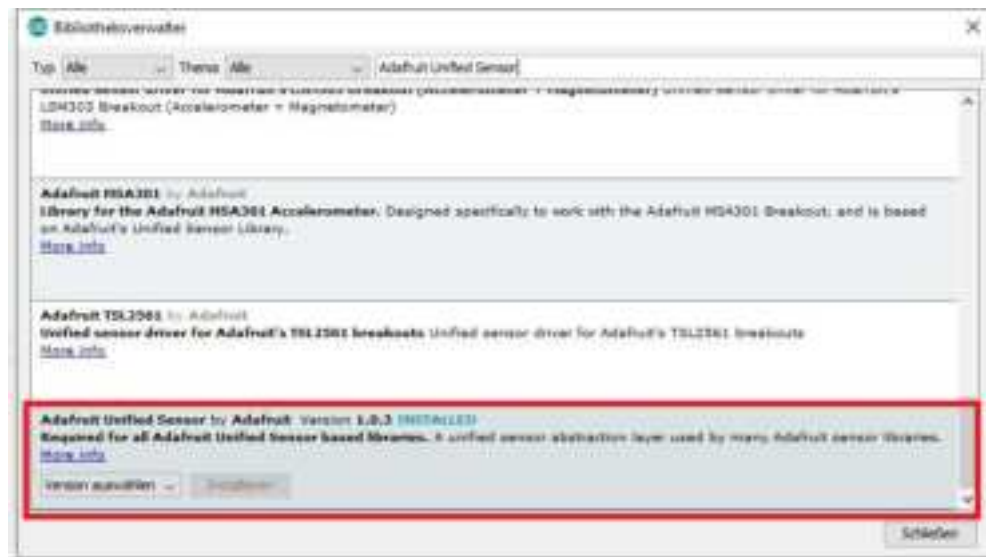
For the usage with an Arduino, you have to install the necessary libraries beforehand.

Therefore, open your Arduino IDE and choose **Manage libraries** in **Sketch -> Implement libraries -> Manage libraries**.

The Arduino library manager will now open. Here, you can enter the term **DHT** into the search bar. Install the **DHT sensor library** here.



Enter the next term **Adafruit Unified Sensor** and install the library **Adafruit Unified Sensor by Adafruit**.



After you have connected the sensor to your Arduino and have installed the libraries, you can test the functions of this sensor.

The installed DHT library includes already code examples which you can use for the first function test.

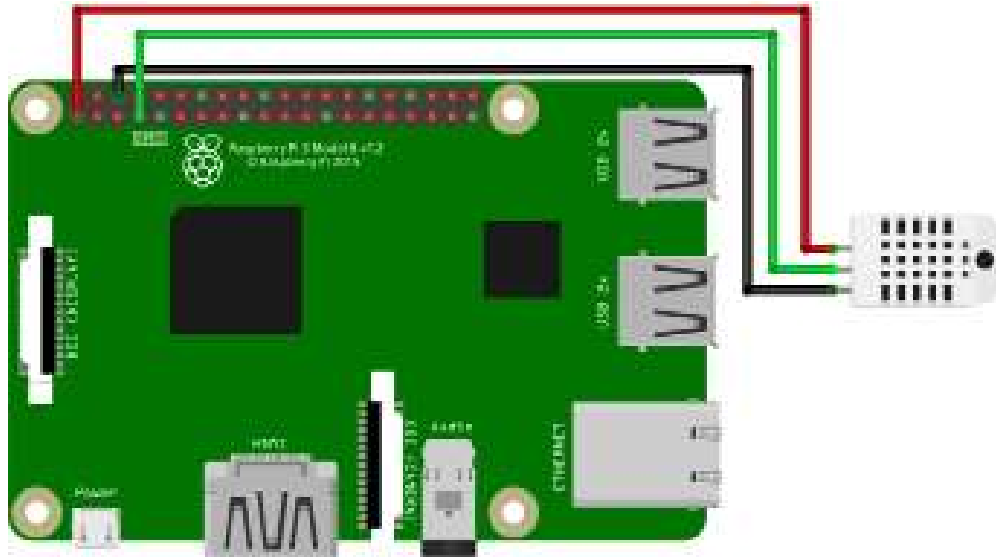
These can be performed in your Arduino IDE via **File -> Example -> DHT sensor library -> DHTtester**.

Transfer the code examples onto your Arduino and observe the output of the sensor on the serial display.

## 4. USE WITH A RASPBERRY PI



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.



First you have to install pip, enter the following command in your terminal:

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

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

```
mkdir dein_projekt && cd dein_projekt  
python -m venv --system-site-packages env  
source env/bin/activate
```

Now you have to install the [Adafruit\\_CircuitPython\\_DHT](#) library from [Adafruit](#) which was published under the [MIT license](#). To do this, enter the following command:

```
pip3 install adafruit-circuitpython-dht
```

After the installation, you can create a new Python file by entering the following command:

**nano dht22.py**

Now insert the following code.

```
import time
import board
import adafruit_dht
# Initialize the DHT with the data pin connected to pin 16
# (GPIO 23) of the Raspberry Pi:
dhtDevice = adafruit_dht.DHT22(board.D23)
while True:
    try:
        # Output of values via the serial interface
        temperature_c = dhtDevice.temperature
        temperature_f = temperature_c * (9 / 5) + 32
        humidity = dhtDevice.humidity
        print("Temp: {:.1f} F / {:.1f} C Luftfeuchtigkeit: {}%".
              format(temperature_f, temperature_c, humidity))
    except RuntimeError as error:
        # Mistakes happen quite often, DHT's are hard to
        # read, just keep going
        print(error.args[0])
        time.sleep(2.0)
        continue
    except Exception as error:
        dhtDevice.exit()
        raise error
    time.sleep(2.0)
```

Save the file with **CTRL + O** and **Enter** and close it again with **CTRL+X**.

Now you can execute the file with the following command:

**python3 dht22.py**

## 5. FURTHER INFORMATION

### Our Information and Take-back Obligations according to the German Electronic Law (ElektroG)



#### **Symbol on Electrical and Electronic Products:**

This crossed-out bin means that electrical and electronic products do not belong into the household waste. You must hand over your old appliance to a registration place. Before you can hand over the old appliance, you must remove used batteries and replacement batteries which are not enclosed by the device.

#### **Return Options:**

As the end user, you can hand over your old appliance (which has essentially the same functions as the new one bought with us) free of charge for disposal with the purchase of a new device. Small devices, which do not have outer dimensions bigger than 25 cm can be handed in for disposal independently of the purchase of a new product in normal household quantities.

#### **1. Possibility of return at our company location during our opening hours**

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

#### **2. Possibility of return nearby**

We will send you a parcel stamp with which you can send us your old appliance free of charge. For this possibility, please contact us via e-mail at [service@joy-it.net](mailto:service@joy-it.net) or via telephone.

#### **Information about Package:**

Please package your old appliance safe for transport. Should you not have suitable packaging material or you do not want to use your own material, you can contact us and we will send you an appropriate package.

## 6. SUPPORT

If any questions remained open or problems may arise after your purchase, we are available by e-mail, telephone and ticket support system to answer these.

E-Mail: [service@joy-it.net](mailto:service@joy-it.net)

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

Telephone: +49 (0)2845 9360 – 50 (Mo - Do: 09:00 - 17:00 o'clock,  
Fr: 09:00 - 14:30 o'clock)

For further information visit our website:

[www.joy-it.net](http://www.joy-it.net)