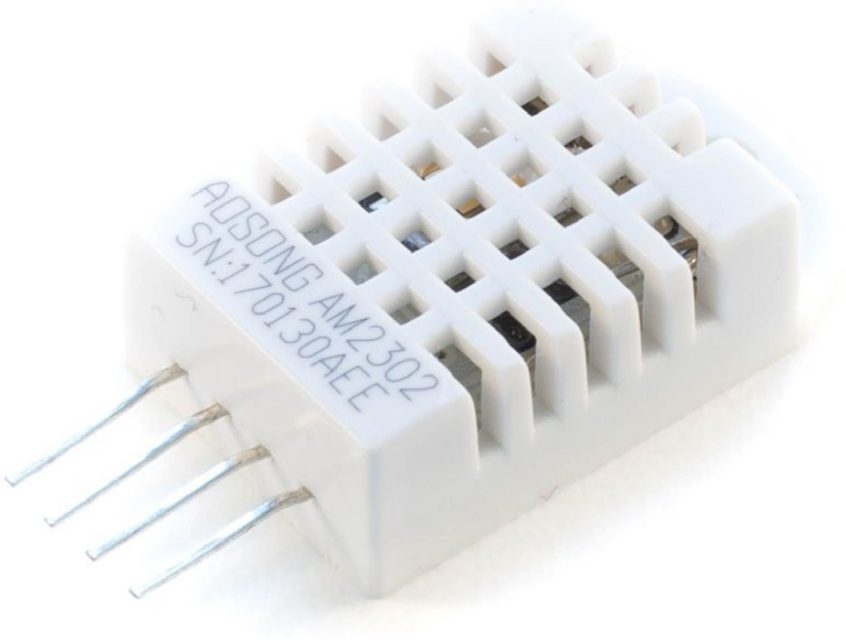
Welcome!

And thank you for purchasing our **AZ-Delivery DHT22 temperature- and humidity sensor**! On the following pages, we will take you through the first steps of the installation process to the output of the sensor values.
We wish you a lot of fun!



http://flyt.it/dht22

The **AZ-Delivery DHT22** is the improved successor to the DHT11. It is marginally bigger and more expensive; however, it possesses a greater measuring range and a more precise detection. The data transfer takes place via the **OneWire-protocol**.

Overview of the most important information

» **Dimensions:** 27x59x13,5mm

» **Connection:**
» 3-5 V, max. 2,5 mA
» Data (I/O-Pin), 0,5 Hz sampling rate
» GND

» **Temperature:** -40 – 80 °C ± 0,5 °C
» **Humidity:** 0 – 100% ± 2-5%
» Programming via OneWire-library

On the following pages, you will find information about
» ***Hardware setup***
And instructions for
» ***reading the sensor data***.

It is assumed, by this tutorial, that you are familiar with uploading sketches to an Arduino and that you can use the Serial Monitor!

Overview of all Links

DHT22:

» Data sheet: *http://www.electroschematics.com/wp-content/uploads/2015/02/DHT22-datasheet.pdf*

» Library: *https://github.com/adafruit/DHT-sensor-library*

Application programming interfaces:

» Arduino IDE: *https://www.arduino.cc/en/Main/Software*

» Web-Editor: *https://create.arduino.cc/editor*

» Arduino-extension for SublimeText: *https://github.com/Robot-Will/Stino*

» Arduino-extension "Visual Micro" for Atmel Studio or Microsoft Visual Studio: *http://www.visualmicro.com/page/Arduino-for-Atmel-Studio.aspx*

Arduino Tutorials, Examples, References, Community:

» *https://www.arduino.cc/en/Tutorial/HomePage*

» *https://www.arduino.cc/en/Reference/HomePage*

Interesting information from AZ-Delivery

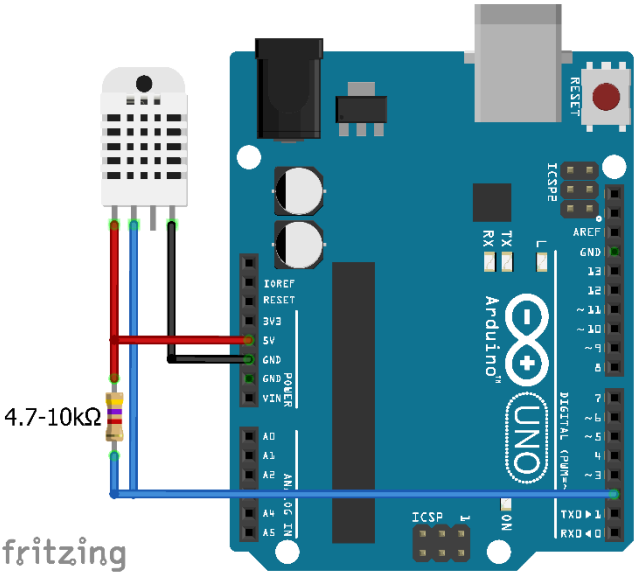
» Arduino accessories: *https://az-delivery.de/collections/arduino-zubehor*

» AZ-Delivery G+Community: *https://plus.google.com/communities/115110265322509467732*

» AZ-Delivery on Facebook: *https://www.facebook.com/AZDeliveryShop/*

Setting up the DHT22-circuit

The **DHT22** is very Controller-friendly, thanks to its 3-5 V voltage tolerance and, in addition, can be used with all Arduino-types. Although in this tutorial for testing purposes, it can be connected directly to **AZ-Delivery UNO R3**, a **4,7-10 kΩ-resistor** provides for a stable Logic-Level, and therefore, for an accurate data transfer. This is done via a single connection to any GPIO-pin of the UNO so that the **DHT22** incl. voltage source and mass would need only three connections.
Although the sensor has four ports, the third is not occupied and can be removed or simply ignored. Connect your **DHT22** with the **UNO** according to the circuit diagram (below). In case you do not want to solder, the sensor pins must be compatible to the Breadboard.

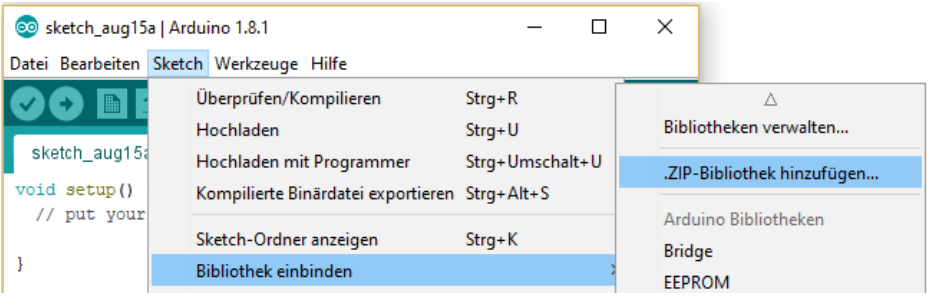


Installation of the DHT22-library

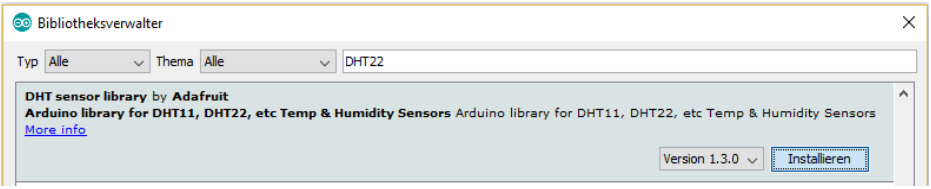
The DHT11- and DHT22-sensors are so popular that, in addition to the multiple available for download libraries, there is one within the library's manager of the Arduino-IDE. If you use a different programming environment, then you can download and install it manually from the following web address:

» *https://github.com/adafruit/DHT-sensor-library*

The **library manager** provides a more comfortable way. Open it from the Arduino-IDE under **"Sketch > integrate library > manage libraries..."**.



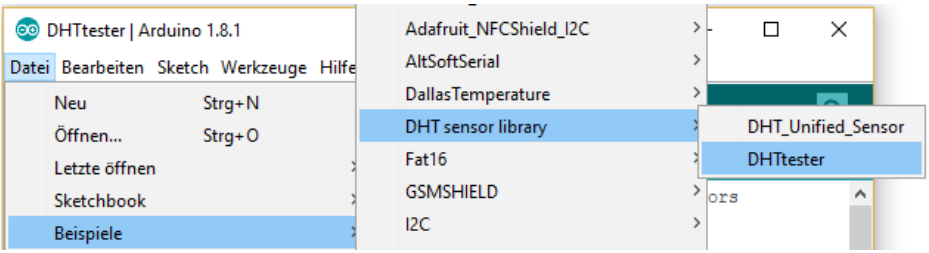
The search for **"DTH22"** and install the **"DHT sensor library by Adafruit"**.



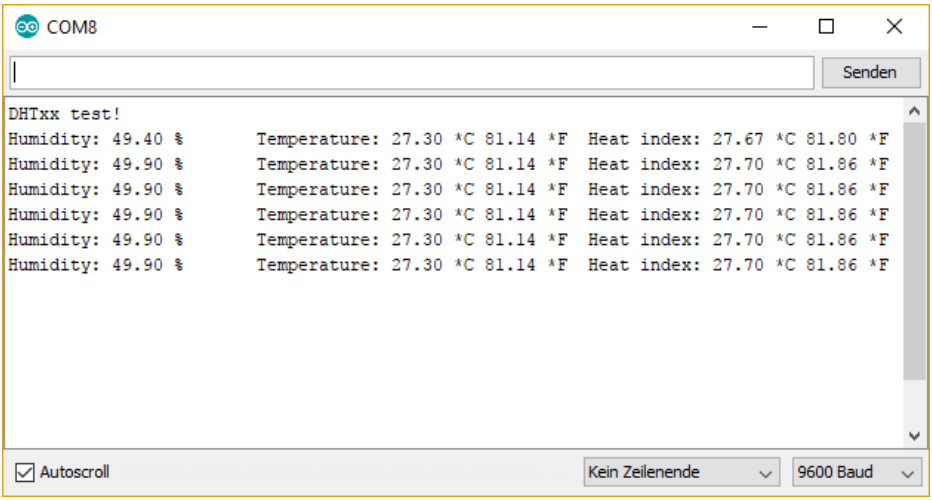
Now your hardware and IDE are ready for operation.

Reading the measured values

The **DHT22-library** has an example script, which contains all the codes needed to control DHT22 and to gather and view the measured values of its temperature and humidity. Open the sketch **"DHTtester" under "File > Examples > DHT sensor library"**:



Since the data connection to **Pin 2** was also created here, there is no need for us to change anything in the Code and we can load it directly to the **UNO**. Finally, open the **SerialMonitor** with **Baud-Rate of (9600)**, which was used in the sketch, and enjoy the results of your DIY thermo- and hygrometer!



You did it! Congratulations!

Now it is time to learn and to try it out. You know now how to read the temperature and humidity with the DHT22. You can try and make practical use of the values, for example, by turning on and off a fan for your hard-working Arduino? You can always find this and even more hardware in your online store at:

https://az-delivery.de

Enjoy!

Imprint

https://az-delivery.de/pages/about-us