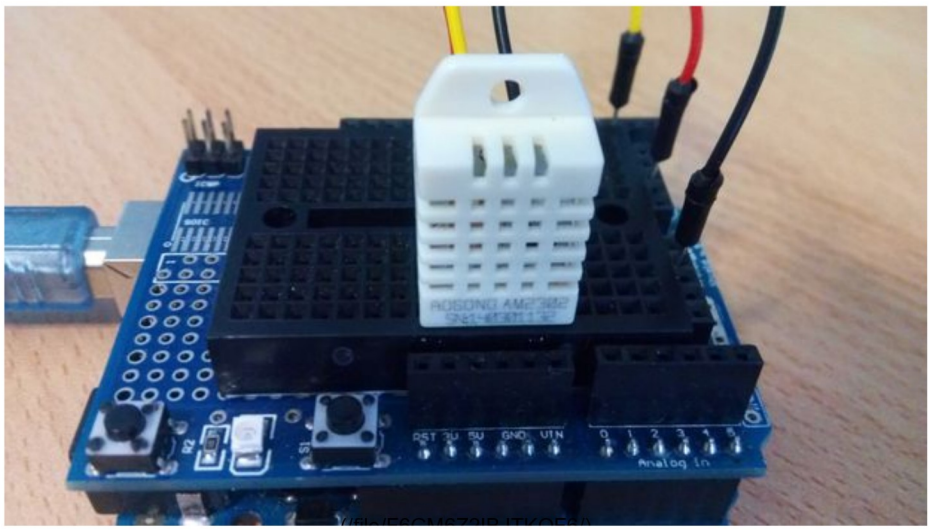
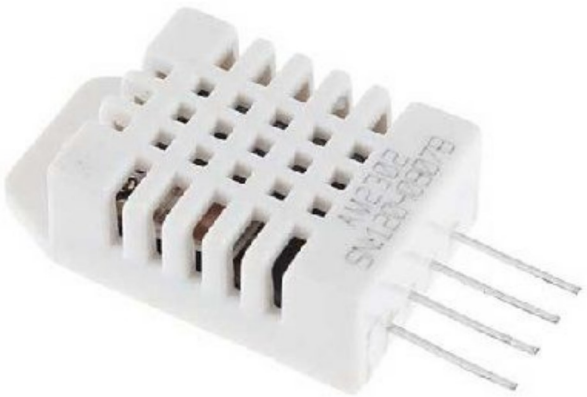
How to Use DHT-22 Sensor - Arduino Tutorial by

codebender_cc (/member/codebender_cc/) in arduino (/explore/category/technology/keyword/arduino/)

Download (/id/How-to-use-DHT-22-sensor-Arduino-Tutorial/) 5 Steps

+ Collection I Made it! Favorite Share





About This Instructable

139,997 views

65 favorites

License: (cc) BY-NC-SA

codebender_cc (/member /codebender_cc/)
(http://www.codebender.cc)

Follow 676

Bio: Arduino Tutorials by Codebender.cc Team

More by codebender_cc:

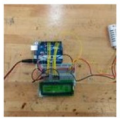

(/id/How-to-Use-a-Magnetic-Door-Switch-Sensor-With-Ardu/)


(/id/How-to-Measure-LUX-With-Arduino/)


(/id/How-to-Control-an-RGB-LED-Strip-Arduino-Tutorial/)

Related


DHT11 Humidity Sensor Module Interface With Arduino (/id/DHT11-Humidity-Sensor-Module-Interface-


Arduino Greenhouse Control - Humidity and Temperature (/id/Arduino-Greenhouse-Control-Humidity-and-

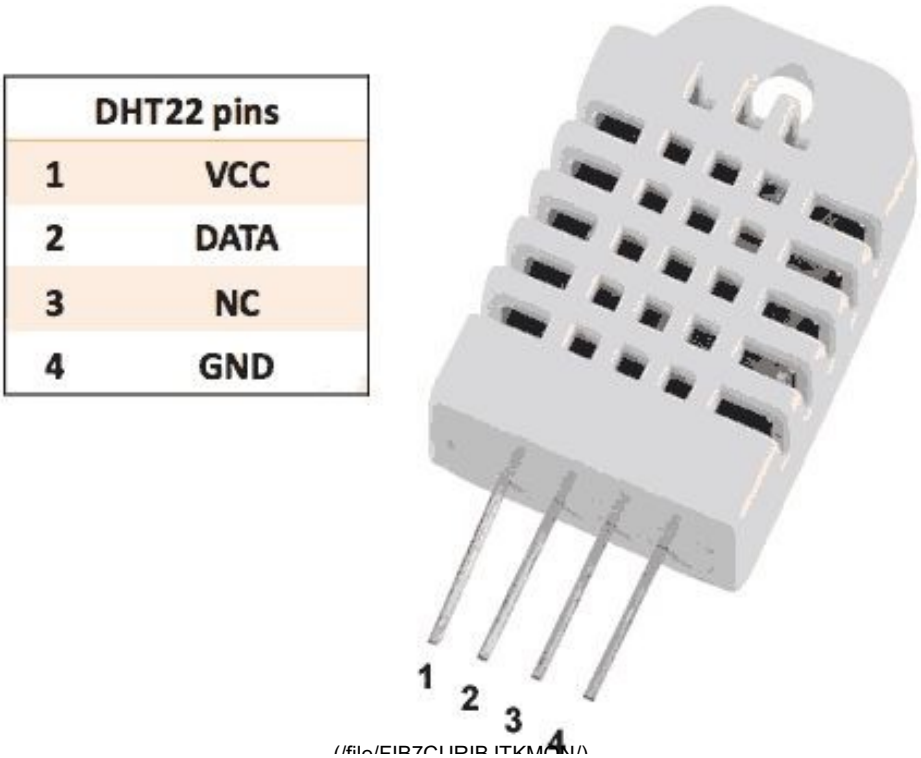
How to use the DHT-11 sensor- Arduino Tutorial

The DHT-22 (also named as AM2302) is a digital-output relative humidity and temperature sensor. It uses a capacitive humidity sensor and a thermistor to measure the surrounding air, and spits out a digital signal on the data pin.

In this tutorial you will learn how to use this sensor with Arduino uno. The room temperature & humidity will be printed to serial monitor.

So, let's get started!

Step 1: About the DHT-22 Sensor



The DHT22 is a basic, low-cost digital temperature and humidity sensor. It uses a capacitive humidity sensor and a thermistor to measure the surrounding air, and spits out a digital signal on the data pin (no analog input pins needed).

Connections are simple, the first pin on the left to 3-5V power, the second pin to your data input pin and the right most pin to ground.

Technical details:

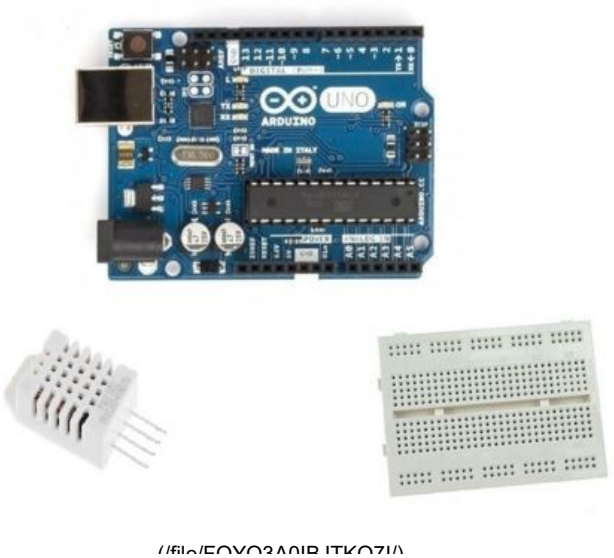
- Power: 3-5V
- Max Current: 2.5mA
- Humidity: 0-100%, 2-5% accuracy
- Temperature: -40 to 80°C, ±0.5°C accuracy


(/id/How-to-use-the-DHT-11-sensor-Arduino-Tutorial/)


Arduino and DHT22 (AM2302) Temperature Measurement (/id/Arduino-and-DHT22-AM2302-Temperature-


Arduino and DHT11 Temperature Measurement (/id/Arduino-and-DHT11-Temperature-Measurement/)

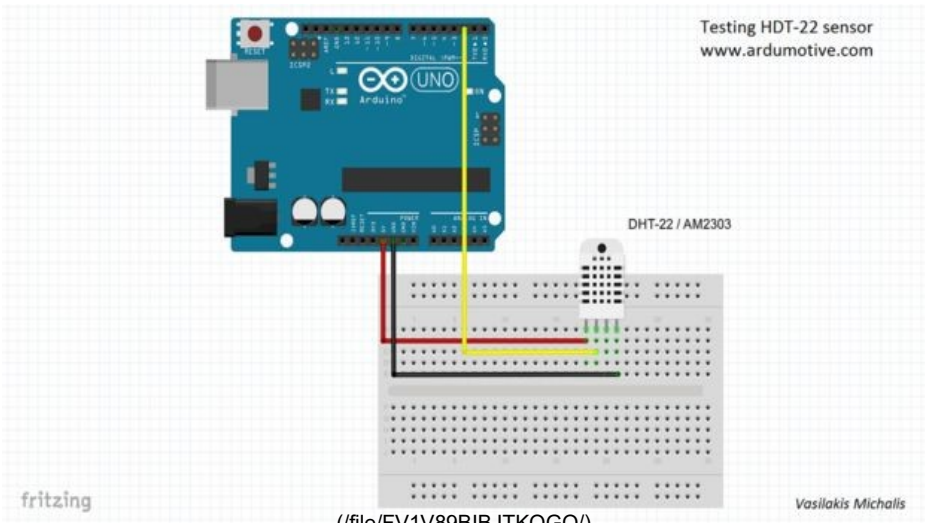
Step 2: What You Will Need



For this tutorial you will need:

- Arduino uno
- Breadboard
- DHT-22

Step 3: The Circuit



The connections are pretty easy, see the image above with the breadboard circuit schematic.

Step 4: The Code

Here's the code, embedded using codebender!

Try downloading the codebender plugin and clicking on the "Run on Arduino" button to program your Arduino board with this sketch. Below you will also find codebender serial monitor, press connect button to start receiving data from sensor.

[arduino-tutorial] DHT-22 Temp and Humidity Sensor by mi.vasilakis (https://codebender.cc/sketch:129686?referrer=mi.vasilakis) by mi.vasilakis (https://codebender.cc/user/mi.vasilakis?referrer=mi.vasilakis)

Edit (/?referrer=mi.vasilakis) Clone & Edit (https://codebender.cc/utilities/download/129686?referrer=mi.vasilakis) Download

```
1  // How to use the DHT-22 sensor with Arduino uno
2  //Temperature and Humidity sensor
3      More info: http://www.ardumotive.com/how-to-use-dht-22-sensor-en.html
4      Dev: Michalis Vasilakis // Date: 1/7/2015 // www.ardumotive.com
5
6  //Libraries
7  #include <DHT.h>;
8
9  //Constants
10 #define DHTPIN 2     // what pin we're connected to
11 #define DHTTYPE DHT22   // DHT 22  (AM2302)
12 DHT dht(DHTPIN, DHTTYPE); //// Initialize DHT sensor for normal 16mhz Arduino
13
14
15 //Variables
16 int chk;
17 float hum;  //Stores humidity value
18 float temp; //Stores temperature value
19
20 void setup()
21 {
22     Serial.begin(9600);
23     dht.begin();
24
25 }
26
27 void loop()
28 {
29     //Read data and store it to variables hum and temp
30     hum = dht.readHumidity();
```

Firefox support is discontinued. Please use Google Chrome or Chromium.

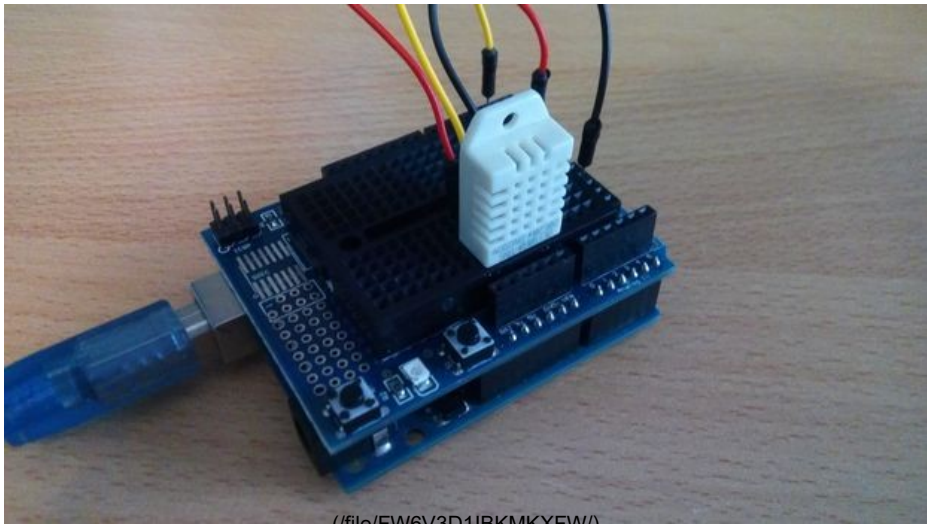
Arduino BT w/ ATmega168 → Run on Arduino

Serial Monitor:

Port: Speed: 9600 Connect

Firefox support is discontinued. Please use Google Chrome or Chromium.

Step 5: Well Done!



You have successfully completed one more Arduino "How to" tutorial and you learned how to use the DHT-22 sensor.

I hope you liked this, let me know in the comments.

There will be more of them, so make sure to click Follow button!

Comments

We have a be nice comment policy.
Please be positive and constructive.

I Made it! Add Images Post Comment

ChandruS6 (/member/ChandruS6/) 2017-07-28 Reply

But Great Project I already made it!

ChandruS6 (/member/ChandruS6/) 2017-07-28 Reply

Where I should get the DHT22.h Library?

? ? ? ? ? ? ?

banjabi1 (/member/banjabi1/) 2017-07-23 Reply

probably need to add these lines:
#include <DHT.h>
#include <DHT_U.h>
#include <Adafruit_Sensor.h>

and first install Adafruit Dht22 and somekind of Unified Sensor library from the library manager

banjabi1 (/member/banjabi1/) ▸ banjabi1 (/member/banjabi1/) 2017-07-23 Reply

and the other weird thing that i noticed, lol...:
you cant have any backup copies of the same sketch file in the same folder, otherwise you get a redefinition error?:o

soardr (/member/soardr/) 2017-03-11 Reply

Can we use an analog pin to connect the data pin of the sensor ?

charliescarface (/member/charliescarface/) 2017-01-12 Reply

Can this project be used in conjunction with a WeMo switch to turn on/off a furnace based on the humidity of that space?

GeeksTipsDotCom (/member/GeeksTipsDotCom/) 2016-12-11 Reply

Very thorough! Just want to mention that the DC is actually between 3.3v - 6v considering the datasheet provided by Sparkfun. If you don't know what sensor to use in your project you can see here a comparison between DHT22 and DS18B20 (http://www.geekstips.com/arduino/arduino-temperature-sensor-tutorial-dht22-vs-ds18b20)

bonsaiclub (/member/bonsaiclub/) 2016-11-17 Reply

Μπόμπα! Thanks!

jurgen.geldhof.1 (/member/jurgen.geldhof.1/) 2016-11-11 Reply

The 10k resistor seems to be missing here!

sridharj2 (/member/sridharj2/) 2016-11-07 Reply

NICE

Nygreekkid93 (/member/Nygreekkid93/) 2016-09-22 Reply

Μπόμπα!

Orion96 (/member/Orion96/) 2016-05-09 Reply

Thanks for this, real help for the beginners.

One prob though, my humidity shows around 8% and i know that is deffinitely not right, it's winter here, any ideas??

thanks in advance.

Orion96 (/member/Orion96/) 2016-05-09 Reply

Thanks for this, real help for the beginners.

One prob though, my humidity shows around 8% and i know that is deffinitely not right, it's winter here, any ideas??

thanks in advance.

WynneC (/member/WynneC/) 2016-03-22 Reply

For those having problems with the DHT library...

Download the library from https://github.com/adafruit/DHT-sensor-library (https://github.com/adafruit/DHT-sensor-library) (download zip).

In the Arduino development environment, use the menus: Sketch -> Import Library -> Add Library

Find the zip you downloaded and open it.

Compile your program.

JayM83 (/member/JayM83/) 2016-03-02 Reply

Hi!, I am Jay and want to ask about the problem which i faced. I connected everything perfectly, codes were also perfect but then i uploaded the code onto the Intel Galileo Gen2 board and found out that no humidity and temperature is measured perfectly through serial monitor. it says " Humidity = 0% Temperature = 0.00C". Please help me out.

chrish56 (/member/chrish56/) 2016-02-15 Reply

Thanks! This helped!

Shankar AnanthA (/member/Shankar+AnanthA/) made it! 2016-01-23 Reply

Very nice and easy tutorial!

(https://cdn.instructables.com/FCO/6K6Z/IJRFI23P

/FCO6K6ZIJRFI23P.LARGE.jpg)

Shankar AnanthA (/member/Shankar+AnanthA/) made it! 2016-01-23 Reply

Very nice and easy tutorial!

(https://cdn.instructables.com/FCO/6K6Z/IJRFI23P

/FCO6K6ZIJRFI23P.LARGE.jpg)

hornerj99 (/member/hornerj99/) 2015-12-03 Reply

Don't you need a 10k resistor in there?

specialk802 (/member/specialk802/) 2015-11-27 Reply

Downloaded the Codebender and followed all of the steps however when I click on "Run on Arduino" all I get is error in compiling...not sure what to do. Tried uploading through the IDE but that failed do to the following errors.

sketch_nov27a:10: error: 'dht' does not name a type

sketch_nov27a.ino: In function 'void loop()':

sketch_nov27a:25: error: 'DHT' was not declared in this scope

If you could help me resolve either it would be much appreciated.

John-ArvidK (/member/John-ArvidK/) 2015-07-08 Reply

Good and easy instructable. I just have a question about the dht library, what did you use? I found one but it gives me errors on the variables.

codebender_cc (/member/codebender_cc/) ▸ John-ArvidK (/member/John-ArvidK/)

2015-07-13 Reply

Hi! Thank you for your comment. Just connect the Arduino with pc and click on "Run on Arduino" button to program your Arduino board with this sketch.

No need to run Arduino IDE or install additional library ;)

Try it!

Saiyam (/member/Saiyam/) 2015-07-01 Reply

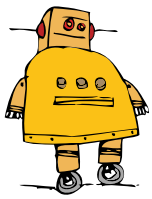
Your series of arduino tutorials are really helpful!

codebender_cc (/member/codebender_cc/) ▸ Saiyam (/member/Saiyam/) Reply

2015-07-02

I'm glad that they're helpful. Thank you

More Comments



Newsletter

Let your inbox help you discover our best projects, classes, and contests. Instructables will help you learn how to make anything!

enter email I'm in!

About Us

Who We Are (/about/)
Advertise (/advertise/)
Contact (/about/contact.jsp)
Jobs (/community/Positions-available-at-Instructables/)
Help (/id/how-to-write-a-great-instructable/)

Find Us

Facebook (http://www.facebook.com/instructables)
Youtube (http://www.youtube.com/user/instructablestv)
Twitter (http://www.twitter.com/instructables)
Pinterest (http://www.pinterest.com/instructables)
Google+ (https://plus.google.com/+instructables)

Resources

For Teachers (/teachers/)
Residency Program (/pier9residency)
Gift Premium Account (/account/give?sourcea=footer)
Forums (/community/?categoryGroup=all&category=all)
Answers (/tag/type-question/?sort=RECENT)
Sitemap (/sitemap/)
