Grove - Temperature and Humidity Sensor Pro
User Manual

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Version： 1.0

Wiki:http://www.seeedstudio.com/wiki/Grove_-_Temperature_and_Humidity_Sensor_Pro

Bazaar:http://www.seeedstudio.com/depot/grove-temperaturehumidity-sensor-pro-p-838.html?cPath=144_147

Document Revision History

Revision	Date	Author	Description
1.0	Sep 22, 2015	jiankai.li	Create file

Contents

Disclaimer

For physical injuries and possessions loss caused by those reasons which are not related to product quality, such as operating without following manual guide, natural disasters or force majeure, we take no responsibility for that.

Under the supervision of Seeed Technology Inc., this manual has been compiled and published which covered the latest product description and specification. The content of this manual is subject to change without notice.

Copyright

The design of this product (including software) and its accessories is under tutelage of laws. Any action to violate relevant right of our product will be penalized through law. Please consciously observe relevant local laws in the use of this product.

1. Introduction

Go pro in temperature and relative humidity measurement applications with this Grove gadget. This is a powerful sister version of our Grove - Temperature and Humidity Sensor. It has more complete and accurate performance than the basic version. The detecting range of this sensor is 5% RH - 99% RH, and -40°C - 80°C. And its accuracy satisfyingly reaches up to 2% RH and 0.5°C. A professional choice for applications that have relatively strict requirements.

NOTE: The warnings and wrong operations possible cause dangerous.
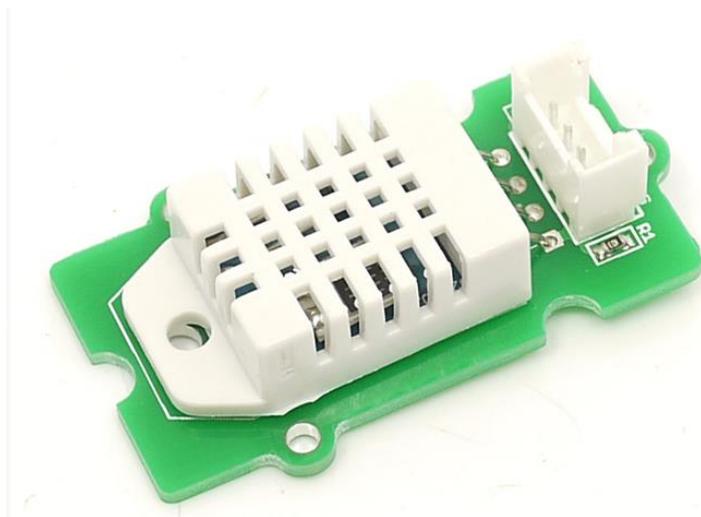
2. Specification

| Items	Conditions	Min	Norm	Max	Unit
VCC	-	3.3	-	6	Volts
Measuring Current Supply	-	1	-	1.5	mA
Standby Current Supply	-	40	-	50	uA
Measuring Range	Humidity	5%	-	99%	RH
	Temperature	-40	-	80	℃
Accuracy	Humidity	-	-	±2%	RH
	Temperature	-	-	±0.5	℃
Resolution	Humidity	-	-	0.1%	RH
	Temperature	-	-	0.1	℃
Repeatability	Humidity	-	-	±0.3%	RH
	Temperature	-	-	±0.2	℃
Long-term Stability	-	-	-	±0.5%	RH/year
Signal Collecting Period	-	-	2	-	S
Respond Time	1/e(63%)	6	-	20	S

3. Usage

3.1 With Arduino

1. Connect the Temperature and Humidity Sensor Pro to A0 of Grove – Base Shield. Then plug Grove - Base Shield into Arduino and connect Arduino to PC using a USB cable.
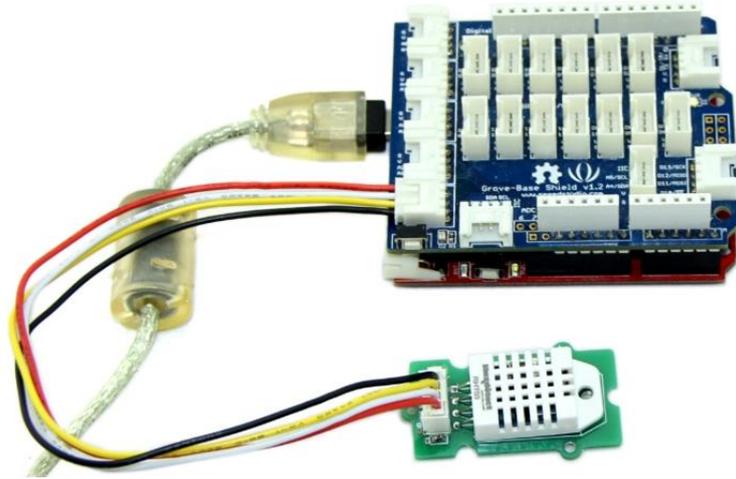
2. Download Seeed DHT library for arduino boards with 16MHz XTAL; Unzip and put it in the libraries file of Arduino IDE by the path: ..\arduino-1.0\libraries; Another library - DHTlib is also available instead of Seeed DHT library. This library supports both 16MHz and 8MHz Arduino (eg. Seeeduino Stalker)

3. Restart the Arduino IDE. Open " DHTtester" example via the path: File --> Examples --> Humidity_Temperature_Sensor --> DHTtester. Through this demo, we can read the temperature and relative humidity information of the environment.
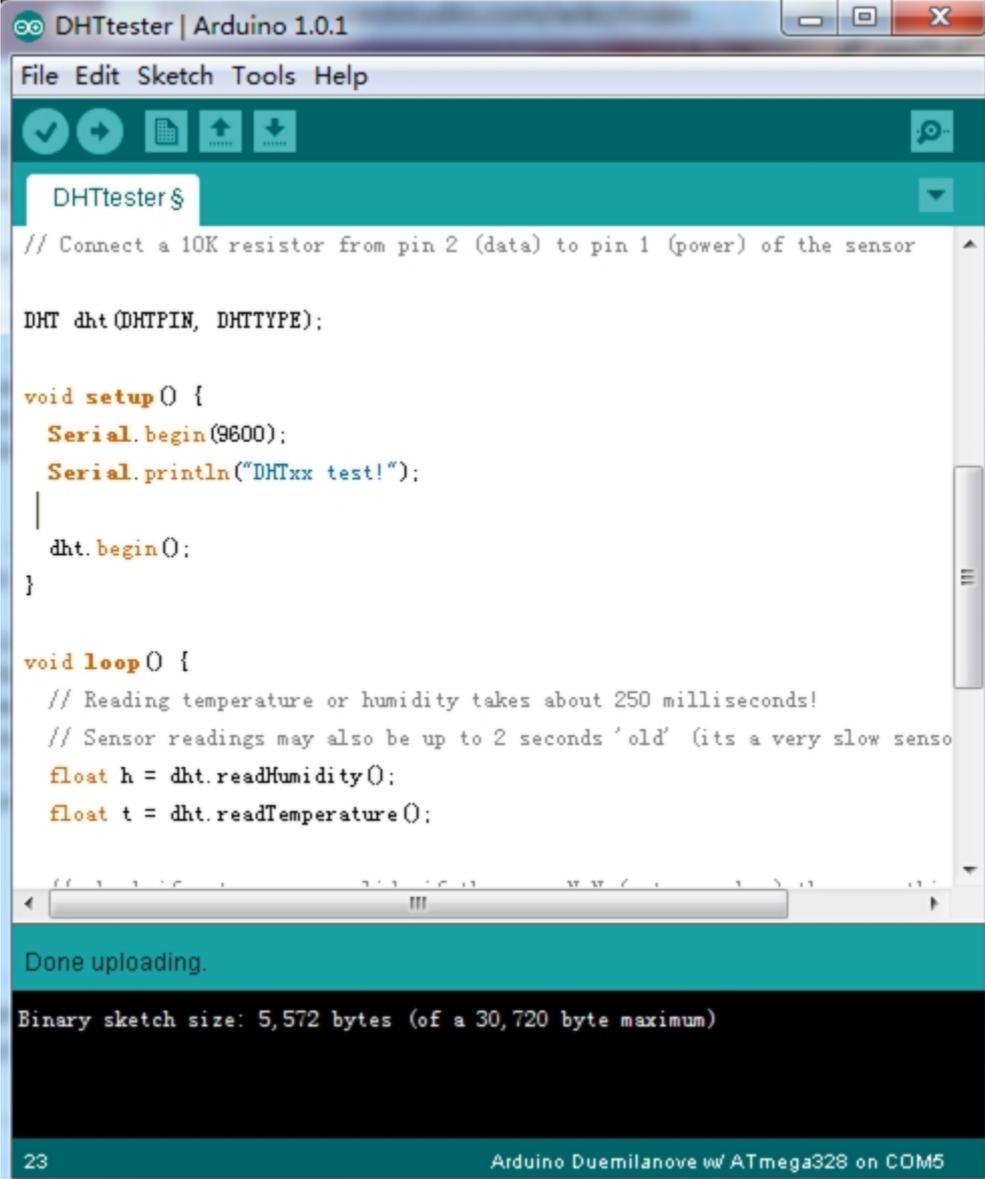
Note:

This Grove - Temperature and Humidity Sensor Pro and our another product Grove-Temperature and Humidity Sensor are sharing this library. No matter which product you are using, make sure that you have made the definition line of the sensor of your board into effect and commented out the definition lines of other specs. For example, the sensor we used on Grove - Temperature and Humidity Sensor Pro is DHT 22. So the definition part of the sensor spec should be:

```
//#define DHTTYPE DHT11   // DHT 11 #define DHTTYPE DHT22   // DHT 22  (AM2302) //#define DHTTYPE DHT21 // DHT 21 (AM2301)or
```

4. Upload it into your Arduino board.
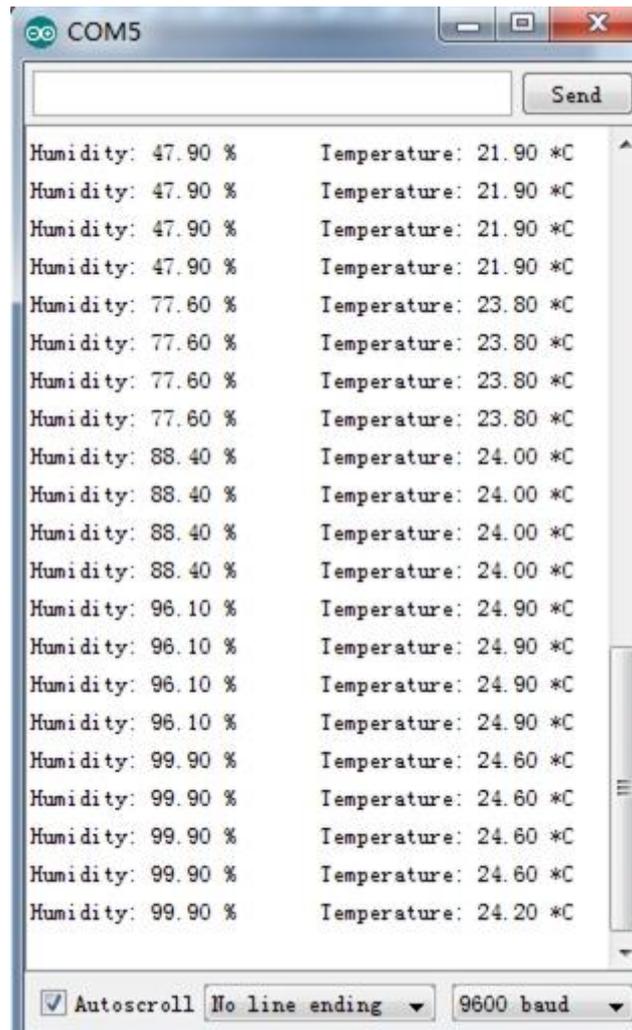
3.2 With Raspberry Pi

1. You should have got a raspberry pi and a grovepi or grovepi+.

2. You should have completed configuring the development enviroment, otherwise follow here.

3. Connection

● Plug grove DHT pro to the socket D4 of grovepi.

4.Navigate to the demos' directory:

```
cd yourpath/GrovePi/Software/Python/
```
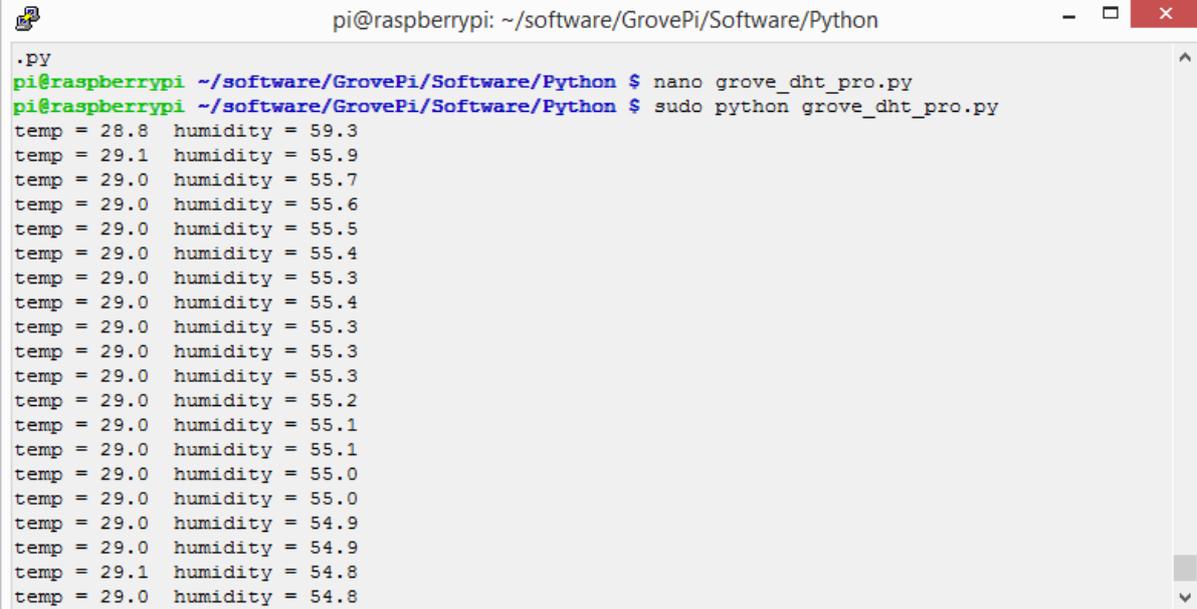
To see the code

```
nano grove_dht_pro.py   # "Ctrl+x" to exit #
```

```
import grovepi   # Connect the Grove Temperature & Humidity Sensor Pro to digital port D4 # SIG, NC, VCC, GND
sensor = 4   while True:      try:          [temp, humidity] = grovepi.dht(sensor, 1)          print "temp
=", temp, " humidity =", humidity      except IOError:          print "Error"
```

5. Run the demo.

```
sudo python grove_dht_pro.py
```

6. Result

pi@raspberrypi: ~/software/GrovePi/Software/Python

```
.py
pi@raspberrypi ~/software/GrovePi/Software/Python $ nano grove_dht_pro.py
pi@raspberrypi ~/software/GrovePi/Software/Python $ sudo python grove_dht_pro.py
temp = 28.8   humidity = 59.3
temp = 29.1   humidity = 55.9
temp = 29.0   humidity = 55.7
temp = 29.0   humidity = 55.6
temp = 29.0   humidity = 55.5
temp = 29.0   humidity = 55.4
temp = 29.0   humidity = 55.3
temp = 29.0   humidity = 55.4
temp = 29.0   humidity = 55.3
temp = 29.0   humidity = 55.3
temp = 29.0   humidity = 55.3
temp = 29.0   humidity = 55.2
temp = 29.0   humidity = 55.1
temp = 29.0   humidity = 55.1
temp = 29.0   humidity = 55.0
temp = 29.0   humidity = 55.0
temp = 29.0   humidity = 54.9
temp = 29.0   humidity = 54.9
temp = 29.1   humidity = 54.8
temp = 29.0   humidity = 54.8
```

4. Resources

- [File:Temp Humi Pro eagle files.zip](#)

- [File:Humidity Temperature Sensor pro.zip](#)

- [File:AM2302.pdf](#)

5. Related Projects

It's a pity that we don't have any demo about Grove - Temperature and Humidity Sensor in the Recipe yet.

Post your awesome project about Grove - Temperature and Humidity Sensor to win $100 Coupon! Please feel free to contact us: recipe@seeed.cc

Here we introduce some projects about Temperature and humidity data acquisition.
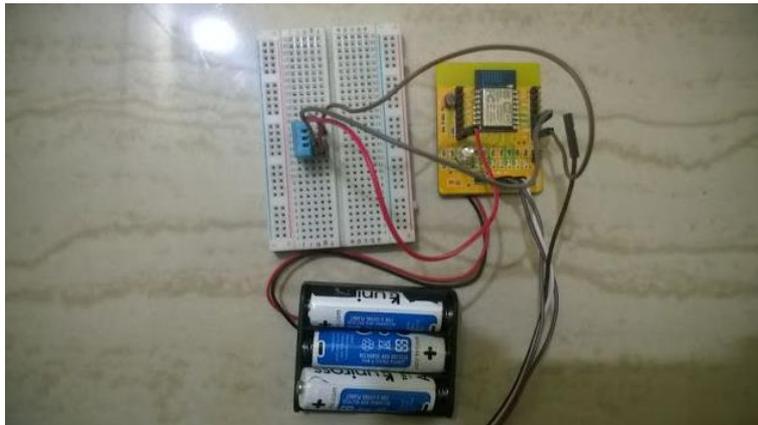
This is a recipe a about transfer temperature and humidity data to a website and stores your real time data for monitoring.

I want to make it.

5.1 Share Your Awesome Projects with Us

Born with the spirit of making and sharing, that is what we believe makes a maker.

And only because of this, the open source community can be as prosperous as it is today.

It does not matter what you are and what you have made, hacker, maker, artist or engineers.

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product performance and user experience. And in most cases when our Core Users have some

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Get more information about Core User please email to: recipe@seeed.cc

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- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
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