DHT11 temperature and humidity sensor

First,
The

introduction of the product
In our daily lives , temperature and humidity have a great impact on our lives, especially for factory production , if we can not grasp well and take relevant measures , then it will be a great loss brought but now, there is a sensor that can measure not only temperature but also humidity measurements , it really can solve our problems yet. Well, following up to learn how to use it , it brings convenience to your life . . . . .

Second, the module related presentations
DHT11 digital temperature and humidity sensor is a calibrated digital signal output of the temperature and humidity combined sensor, which application-specific modules capture technology and digital temperature and humidity sensor technology to ensure that products with high reliability and excellent long-term stability . The product has excellent quality, fast response , anti-interference ability , high cost and other advantages. Single-wire serial interface , the system integration becomes simpler and quicker . Ultra- small size , low power consumption , signal transmission distance up to 20 meters, making even the most demanding applications for the class of applications the best choice. Products for the 4-pin single row pin package , easy connection .

Third, the product parameters
Size : 30 * 21mm
Weight : 4g
Voltage : 3.3V, 5V
Port : digital two-way single bus

Temperature range :0-50 ℃ ± 2 ℃

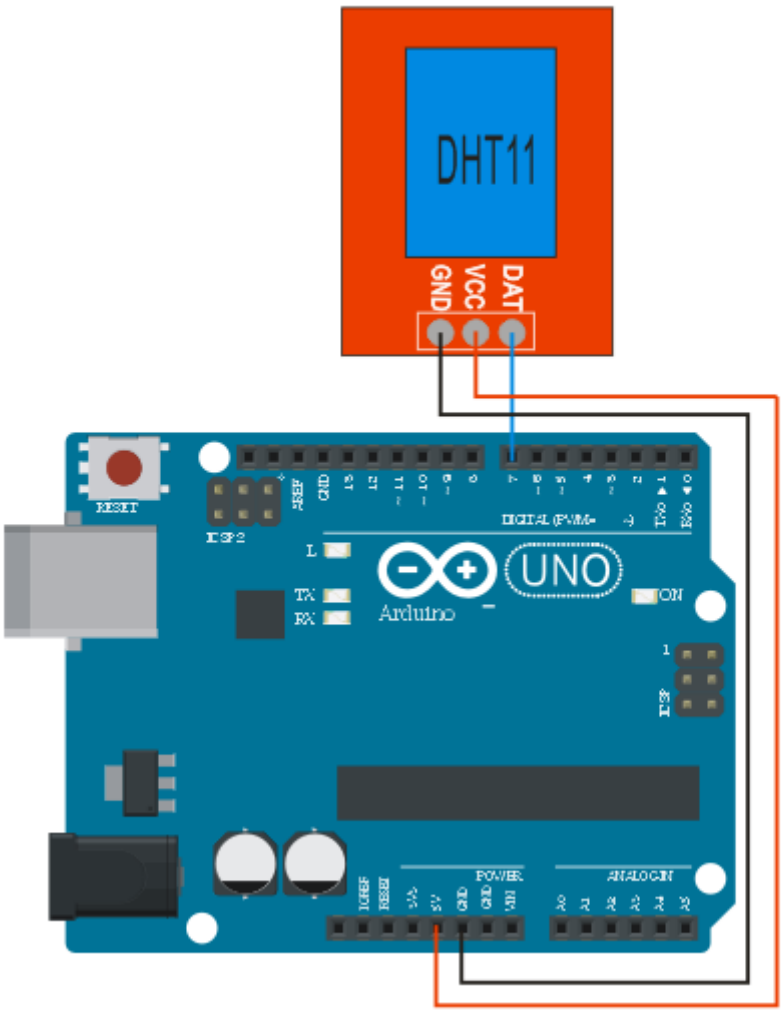
Humidity :20-90% RH ± 5% RH
Platform : Arduino, MCU , ARM, raspberry pie

IV Notes
1, to avoid condensation in the case of the use of

2 , long-term storage temperature 10-40 ℃, humidity below 60%

3 , the use of power and ground connection to the right to avoid damaging the sensor

Fifth, use
DHT11 specific questions about the timing we can refer to its datasheet, Here we see how the company's modules connected Arduino board : Module "VCC" termination +5 V output , "GND" termination GND, "DAT" Termination digital port on the 7th pin (Of course, this can define your own digital pins) ;As shown in FIG.



Here we only test phase. . . . . .

Six, module function test
Hardware Requirements
Arduino controller × 1
USB data cable × 1
DHT 11 module × 1
In order to facilitate testing, we have written a short The test code, for reference, the code is as follows:

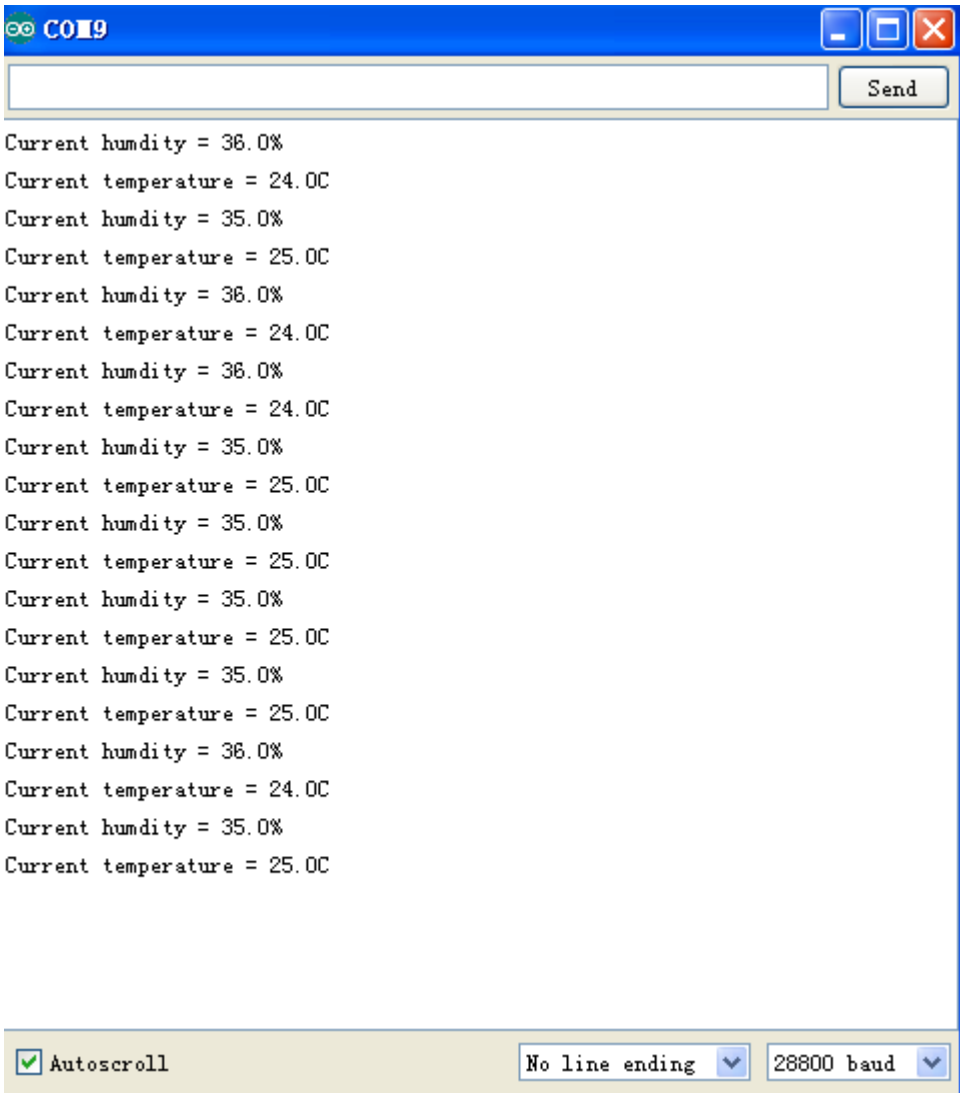
```
int DHpin = 7;
byte dat[5];
byte read_data()
{
byte data;
```

```
for(int i=0; i<8; i++)
{
if(digitalRead(DHpin) == LOW)
{
while(digitalRead(DHpin) == LOW);
delayMicroseconds(30);
if(digitalRead(DHpin) == HIGH)
data |= (1<<(7-i));
while(digitalRead(DHpin) == HIGH);
}
}
return data;
}
void start_test()
{
digitalWrite(DHpin,LOW);
delay(30);
digitalWrite(DHpin,HIGH);
delayMicroseconds(40);
pinMode(DHpin,INPUT);
while(digitalRead(DHpin) == HIGH);
delayMicroseconds(80); //DHT11
if(digitalRead(DHpin) == LOW);
delayMicroseconds(80);
for(int i=0;i<4;i++)
dat[i] = read_data();
pinMode(DHpin,OUTPUT);
digitalWrite(DHpin,HIGH);
}
void setup()
{
Serial.begin(9600);
pinMode(DHpin,OUTPUT);
}
void loop()
{
start_test();
Serial.print("Current humdity = ");
Serial.print(dat[0], DEC);
Serial.print('.');
Serial.print(dat[1],DEC);
Serial.println('%');
Serial.print("Current temperature = ");
Serial.print(dat[2], DEC);
```

```
Serial.print(dat[3],DEC);
Serial.println('C');
delay(700);
}
```

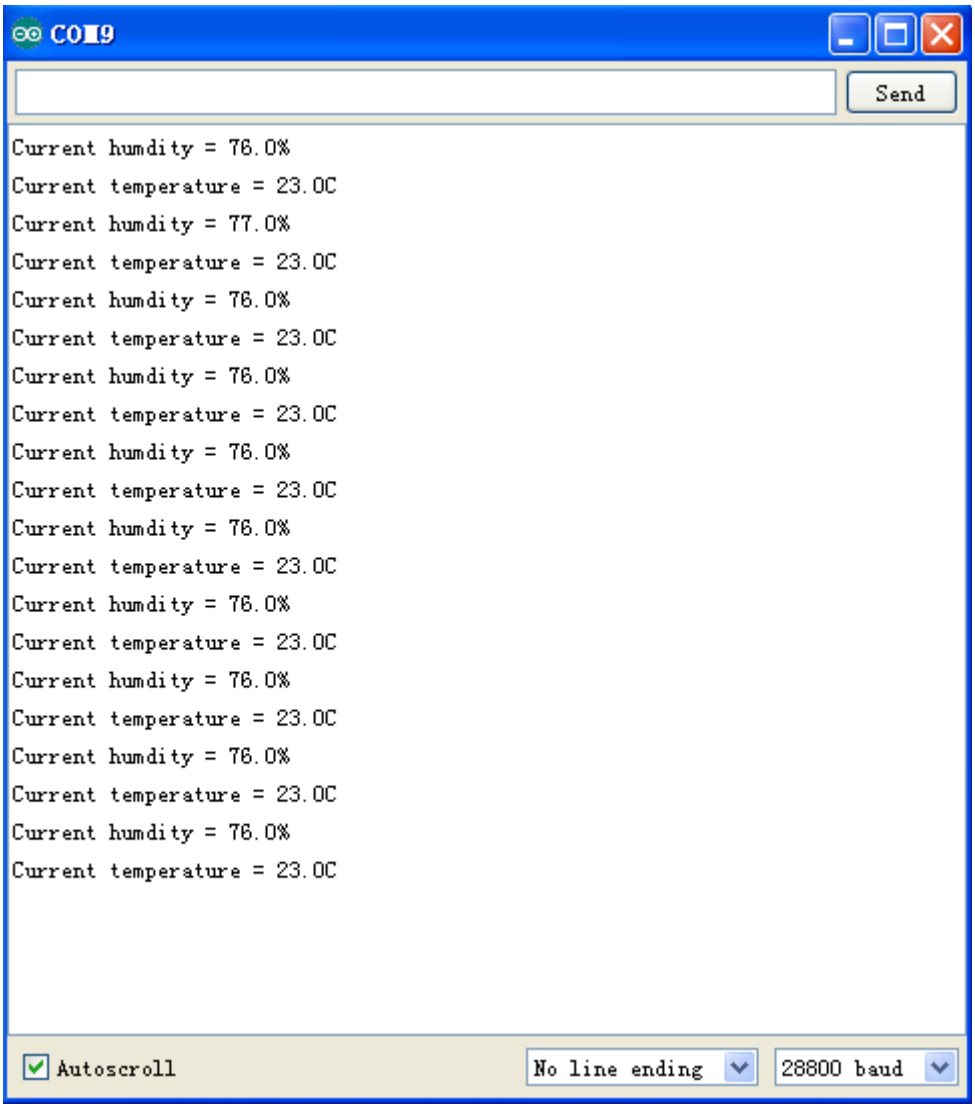
Well, we look at the The test code to compile, compile, we can see the results, and really want to see now live in an environment of temperature and humidity in the end is how much they are invisible, really curious ** anthracene, we the program burned into the Arduino board, and can not wait to open the Serial Monitor window, watching the results came out, wow, is not it a little excited!

Let our



mouth blowing it, after a while. . . . . What happens to look at the screen?

As



expected, the temperature and humidity is bigger, ha, this thing really is good.... Are interested, you can also do it yourself on you will spend a lot of time,

VII Conclusion

Modules introduced here must come to an end, and if you are interested in it, then you can buy your own at home, and slowly studies, the fight to spend it to make a very creative things out for you later in life add to the fun. . . ^ - ^