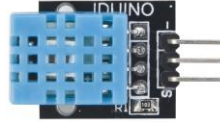


Temperature and Humidity Module(SE052)



1. Introduction

DHT11 digital temperature and humidity sensor is a composite Sensor contains a calibrated digital signal output of the temperature and humidity. Application of a dedicated digital modules collection technology and the temperature and humidity sensing technology, to ensure that the product has high reliability and excellent long-term stability. The sensor includes a resistive sense of wet components and an NTC temperature measurement devices, and connected with a high-performance 8-bit microcontroller.

The Module's feature as below:

Feature	Value
Model No.	DTH11
Voltage	5V DC
Temperature Range	0~50°C
Humidity Range	20~90%
Accuracy	+/- 0.2°C, +/- 5%

2.Pinout

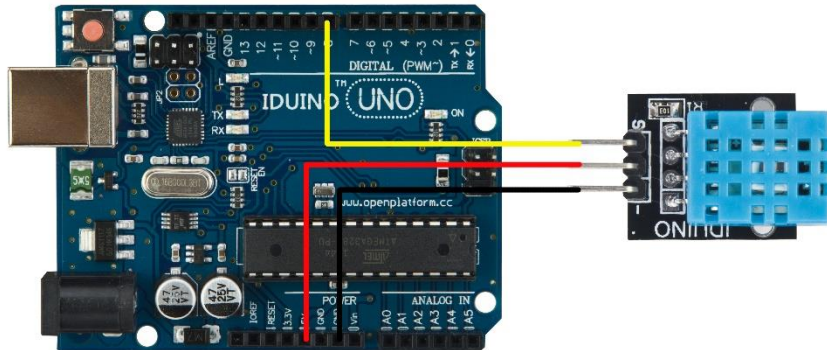
Pin	Description
"S"	Analog output pin, real-time output voltage signal
"_"	Gnd
"+"	Vcc(reference voltage:5V DC)

3.Example

Here is a example to show the real-time temperature and humidity of environment, if you have another LCD screen to be connected, that would be better fun.

The connection as below:

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*****Code begin*****

```
int DHpin = 8;
byte dat [5];
byte read_data () {
  byte data;
  for (int i = 0; i < 8; i ++ ) {
    if (digitalRead (DHpin) == LOW) {
      while (digitalRead (DHpin) == LOW); // wait for 50us
      delayMicroseconds (30); // determine the duration of the high level
      to determine the data is '0 'or '1'
      if (digitalRead (DHpin) == HIGH)
        data |= (1 << (7-i)); // high front and low in the post
      while (digitalRead (DHpin) == HIGH); // data '1 ', wait for the
      next one receiver
    }
  }
  return data;
}
```

```
void start_test () {
  digitalWrite (DHpin, LOW); // bus down, send start signal
  delay (30); // delay greater than 18ms, so DHT11 start signal can be
  detected
```

```
  digitalWrite (DHpin, HIGH);
```

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```
delayMicroseconds (40); // Wait for DHT11 response

pinMode (DHpin, INPUT);
while (digitalRead (DHpin) == HIGH);
delayMicroseconds (80); // DHT11 response, pulled the bus 80us
if (digitalRead (DHpin) == LOW);
delayMicroseconds (80); // DHT11 80us after the bus pulled to start
sending data

for (int i = 0; i < 4; i ++) // receive temperature and humidity data,
the parity bit is not considered
    dat[i] = read_data ();

pinMode (DHpin, OUTPUT);
digitalWrite (DHpin, HIGH); // send data once after releasing the bus,
wait for the host to open the next Start signal
}

void setup () {
    Serial.begin (9600);
    pinMode (DHpin, OUTPUT);
}

void loop () {
    start_test ();
    Serial.print ("Current humidity =");
    Serial.print (dat [0], DEC); // display the humidity-bit integer;
    Serial.print ('.');
    Serial.print (dat [1], DEC); // display the humidity decimal places;
    Serial.println ('%');
    Serial.print ("Current temperature =");
    Serial.print (dat [2], DEC); // display the temperature of integer bits;
    Serial.print ('.');
    Serial.print (dat [3], DEC); // display the temperature of decimal
places;
    Serial.println ('C');
    delay (700);
}
*****Code End*****
```