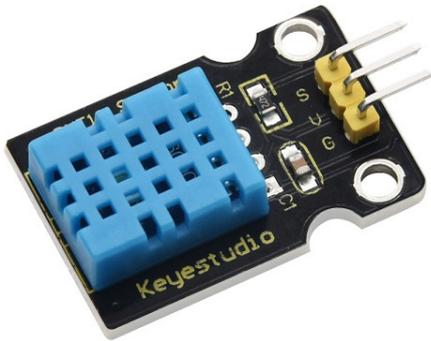# DHT11 Temperature & Humidity Sensor

## XC4520 Datasheet



This DHT11 Temperature and Humidity Sensor is a composite sensor which contains a calibrated digital signal output of the temperature and humidity.

Its technology ensures high reliability and excellent long-term stability. A high-performance 8-bit microcontroller is connected. This sensor includes a resistive element and a sense of wet NTC temperature measuring devices. It has excellent quality, fast response, anti-interference ability and high cost performance advantages.

Each DHT11 sensor features extremely accurate calibration data of humidity calibration chamber. The calibration coefficients stored in the OTP program memory, internal sensors detect signals in the process, and we should call these calibration coefficients.

The single-wire serial interface system is integrated to make it quick and easy. Qualities of small size, low power, and 20-meter signal transmission distance make it a wide applied application or even the most demanding one. Convenient connection, special packages can be provided according to users' need.

## Specification

| | |
|---|---|
| Supply Voltage: | +5 V |
| Temperature Range: | 0-50 °C error of ± 2 °C |
| Humidity: | 20-90% RH ± 5% RH error |
| Interface: | Digital |

## Connection Diagram
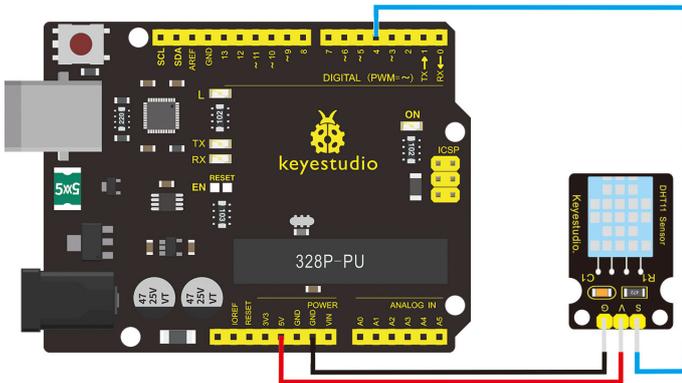


## Video



## Sample Code

Please download the DHT11Lib firstly.

Note: before compiling the code, do remember to place the library into libraries directory of Arduino IDE. Otherwise, compiling will fail.

```
#include <dht11.h>
dht11 DHT;
#define DHT11_PIN 4

void setup(){
  Serial.begin(9600);
  Serial.println("DHT TEST PROGRAM ");
  Serial.print("LIBRARY VERSION: ");
  Serial.println(DHT11LIB_VERSION);
  Serial.println();
  Serial.println("Type,\tstatus,\tHumidity (%),\tTemperature (C)");
}

void loop(){
  int chk;
  Serial.print("DHT11, \t");
  chk = DHT.read(DHT11_PIN);   // READ DATA
  switch (chk){
    case DHTLIB_OK:
        Serial.print("OK,\t");
        break;

case DHTLIB_ERROR_CHECKSUM:

        Serial.print("Checksum error,\t");
        break;
    case DHTLIB_ERROR_TIMEOUT:
        Serial.print("Time out error,\t");
        break;
    default:
        Serial.print("Unknown error,\t");
        break;
  }
// DISPLAT DATA
  Serial.print(DHT.humidity,1);
  Serial.print(",\t");
  Serial.println(DHT.temperature,1);

  delay(1000);
}
```