

Humidity and Temperature Sensor

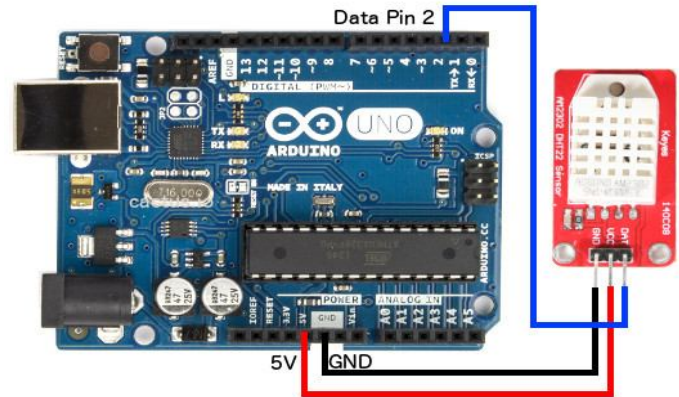
Module: KE0066

Introduction

The DHT-22 is a low cost device for measuring humidity and temperature. The DHT sensors are made of two parts, a capacitive humidity sensor and a thermistor. The device requires a 3 to 5V power supply. It uses a single data wire to communicate back to the Arduino. It has a fairly slow update rate and should only be sampled every 2 seconds.

Specification:

- Operating voltage : DC 3.3 -5.0 V
- Max Current : 2.5 mA
- Temperature Range : -40 - 125°C / ± 0.5°C
- Humidity Range : 0 - 100% / ± 2-5%
- Sample Rate : 0.5 Hz



```
// Example sketch for |
#include "cactus_io_DHT22.h"
#define DHT22_PIN 2 // pin for data line connected to
// Initialize DHT sensor for normal 16mhz Arduino.
DHT22 dht(DHT22_PIN);
// Note: If you are using a board with a faster processor than 16MHz then you need
// to declare an instance of the DHT22 using
// DHT22 dht(DHT22_DATA_PIN, 30);
// The additional parameter, in this case here is 30 is used to increase the number of
// cycles transitioning between bits on the data and clock lines. For the
// Arduino boards that run at 84MHz the value of 30 should be about right.
void setup() {
  Serial.begin(9600);
  Serial.println("DHT22 Humidity - Temperature Sensor");
  Serial.println("RH\t\tTemp (C)\tTemp (F)\tHeat Index (C)\t Heat Index (F)");
  dht.begin();
}

void loop() {
  // Reading temperature or humidity takes about 250 milliseconds!
  // Sensor readings may also be up to 2 seconds 'old' (its a very slow sensor)
  dht.readHumidity();
  dht.readTemperature();
  // Check if any reads failed and exit early (to try again).
  if (isnan(dht.humidity) || isnan(dht.temperature_C)) {
    Serial.println("DHT sensor read failure!");
    return;
  }
  Serial.print(dht.humidity); Serial.print(" %\t\t");
  Serial.print(dht.temperature_C); Serial.print(" *C\t");
  Serial.print(dht.temperature_F); Serial.print(" *F\t");
  Serial.print(dht.computeHeatIndex_C()); Serial.print(" *C\t");
  Serial.print(dht.computeHeatIndex_F()); Serial.println(" *F");
  // Wait a few seconds between measurements. The DHT22 should not be read at a higher frequency of
  // about once every 2 seconds. So we add a 3 second delay to cover this.
  delay(3000);
}
```

For datasheet on DHT22 sensor

<http://static.cactus.io/docs/sensors/temp-humidity/dht22/dht22-datasheet.pdf>