

## INTERFACE DHT11 SENSOR WITH NODEMCU

### OBJECTIVES

- Interface the DHT11 digital humidity and temperature sensor with the NodeMCU
- Read the values of humidity and temperature of the surroundings.

### THINGS

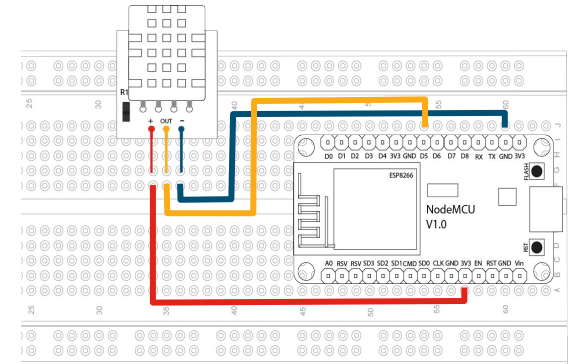
1. NodeMCU board (quantity: 1 no.)
2. Micro USB cable A to B (quantity: 1 no.)
3. Breadboard (quantity: 1 no.)
4. DHT11 temperature and humidity sensor (quantity: 1 no.)
5. DHT sensor library
6. Adafruit Unified Sensor library
7. Jumper wire – male to male (quantity: 4 no.)
8. Arduino IDE on your computer

### LET'S BEGIN!

The DHT11 is a digital humidity and temperature sensor. It has one digital output which can be connected to any digital input pin (D0,D1..)of the NodeMCU.

The DHT11 consists of a humidity sensing component, a NTC temperature sensor and an IC on the back side of the sensor. The Humidity sensing component contains a moisture holding substrate between two electrodes, as the humidity changes the resistance between the electrodes change. The change in resistance is measured and the necessary conversions are made and translated on our output screens. The temperature is detected by the NTC, The term “NTC” means “Negative Temperature Coefficient”, which means that the resistance decreases with increase of the temperature.

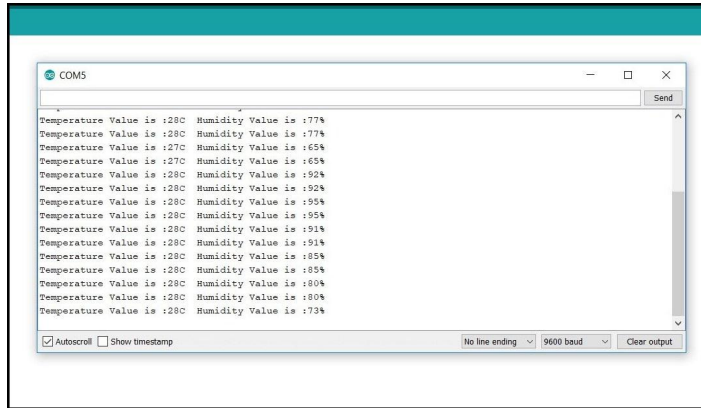
### Interfacing the DHT11 sensor with NodeMCU



DHT11	(+)	(-)	OUT
NodeMCU	3V3	GND	D5

# INTERFACE DHT11 SENSOR WITH NODEMCU

TA DA



The screenshot shows a serial terminal window titled "COM5" with a "Send" button. The terminal displays a series of sensor readings. The data is as follows:

Temperature Value	Humidity Value
:28C	:77%
:28C	:77%
:27C	:65%
:27C	:65%
:28C	:92%
:28C	:92%
:28C	:95%
:28C	:95%
:28C	:91%
:28C	:91%
:28C	:85%
:28C	:85%
:28C	:80%
:28C	:80%
:28C	:73%

At the bottom of the terminal window, there are control options:  Autocroll,  Show timestamp, a dropdown menu set to "No line ending", a dropdown menu set to "9600 baud", and a "Clear output" button.

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### FINAL CODE

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```
#include <DHT.h>
#define DHTPIN D5
#define DHTTYPE DHT11
DHT dht(DHTPIN, DHTTYPE);
uint8_t temperature, humidity;

void setup() {
    Serial.begin(115200);

    dht.begin();
    delay(10);
    Serial.println();
    Serial.println();

}

void loop() {
    temperature = dht.readTemperature();
    humidity = dht.readHumidity();
    delay(500);
    Serial.print("Temperature Value is :");
    Serial.print(temperature);
    Serial.print("C");
    Serial.print(" Humidity Value is :");
    Serial.print(humidity);
    Serial.println("%");
    delay(500);
}
```