

# ESP32: Mesure de temperature

## Liens Web

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[DHT11/22](#)

[ARduino : DHT11/22](#)

## Test en réel sur carte ESP32

### Matériel

#### ESP32 TTGO LORA 32 V2.0



[Caracteristiques ESP32 TTGO LORA 32 V2.0](#)



### DHT 22

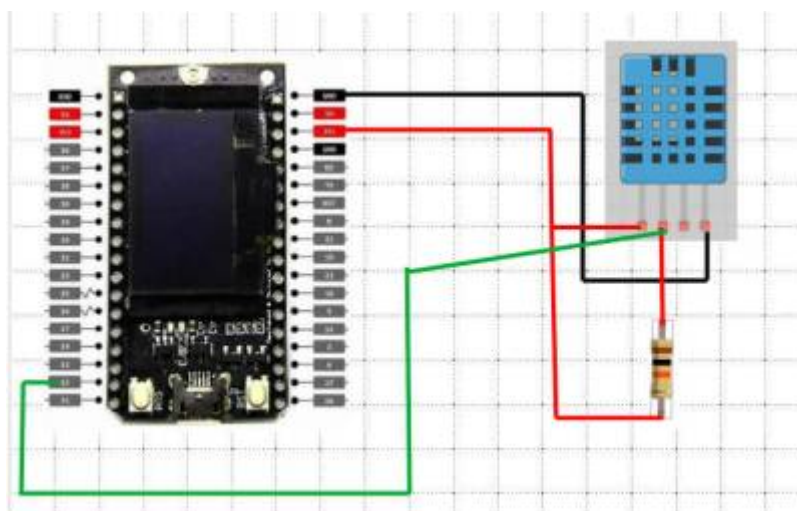
[Caractéristiques DHT22 PDF FR](#)



	DHT11	DHT22
		
Écart de température	0 à 50 °C +/- 2 °C	-40 à 80 °C +/- 0,5 °C
Plage d'humidité	20 à 90% +/- 5%	0 à 100% +/- 2%
Résolution	Humidité: 1% Température: 1°C	Humidité: 0,1% Température: 0,1 °C
Tension de fonctionnement	3 à 5,5 V CC	3 à 6 V CC
Offre actuelle	0,5 à 2,5 mA	1 à 1,5 mA
Période d'échantillonnage	1 seconde	2 secondes
Prix	1 \$ à 5 \$	4 \$ à 10 \$

## Branchement

### ESP32 Lora32 V2 + DHT22



## Programmes

### ESP32\_Temperature\_serveur\_Web.ino

```
/******  
  Rui Santos  
  Complete project details at https://randomnerdtutorials.com  
*****/  
  
// Import required libraries  
#include "WiFi.h"  
#include "ESPAsyncWebServer.h"  
#include <Adafruit_Sensor.h>  
#include <DHT.h>  
  
// Replace with your network credentials  
const char* ssid = "xxxxxxxxxxxx";  
const char* password = "xxxxxxxxxxxx";  
  
#define DHTPIN 13    // Digital pin connected to the DHT sensor  
  
// Uncomment the type of sensor in use:  
//#define DHTTYPE    DHT11    // DHT 11  
#define DHTTYPE    DHT22    // DHT 22 (AM2302)  
//#define DHTTYPE    DHT21    // DHT 21 (AM2301)  
  
DHT dht(DHTPIN, DHTTYPE);  
  
// Create AsyncWebServer object on port 80  
AsyncWebServer server(80);  
  
String readDHTTemperature() {  
  // Sensor readings may also be up to 2 seconds 'old' (its a very slow sensor)  
  // Read temperature as Celsius (the default)  
  float t = dht.readTemperature();  
  // Read temperature as Fahrenheit (isFahrenheit = true)  
  //float t = dht.readTemperature(true);  
  // Check if any reads failed and exit early (to try again).  
  if (isnan(t)) {  
    Serial.println("Failed to read from DHT sensor!");  
    return "--";  
  }  
  else {  
    Serial.println(t);  
    return String(t);  
  }  
}
```

```
String readDHTHumidity() {
    // Sensor readings may also be up to 2 seconds 'old' (its a very slow
    sensor)
    float h = dht.readHumidity();
    if (isnan(h)) {
        Serial.println("Failed to read from DHT sensor!");
        return "--";
    }
    else {
        Serial.println(h);
        return String(h);
    }
}

const char index_html[] PROGMEM = R"rawliteral(
<!DOCTYPE HTML><html>
<head>
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <link rel="stylesheet"
href="https://use.fontawesome.com/releases/v5.7.2/css/all.css"
integrity="sha384-
fnm0CqbTlWIlj8LyTjo7m0UStjsKC4p0pQbqyi7RrhN7udi9RwhKkMHpvLbHG9Sr"
crossorigin="anonymous">
    <style>
        html {
            font-family: Arial;
            display: inline-block;
            margin: 0px auto;
            text-align: center;
        }
        h2 { font-size: 3.0rem; }
        p { font-size: 3.0rem; }
        .units { font-size: 1.2rem; }
        .dht-labels{
            font-size: 1.5rem;
            vertical-align:middle;
            padding-bottom: 15px;
        }
    </style>
</head>
<body>
    <h2>ESP32 Serveur DHT 22</h2>
    <p>
        <i class="fas fa-thermometer-half" style="color:#059e8a;"></i>
        <span class="dht-labels">Temperature</span>
        <span id="temperature">%TEMPERATURE%</span>
        <sup class="units">&deg;C</sup>
    </p>
    <p>
        <i class="fas fa-tint" style="color:#00add6;"></i>

```

```

    <span class="dht-labels">Humidite</span>
    <span id="humidity">%HUMIDITY%</span>
    <sup class="units">&percnt;</sup>
  </p>
</body>
<script>
setInterval(function ( ) {
  var xhttp = new XMLHttpRequest();
  xhttp.onreadystatechange = function() {
    if (this.readyState == 4 && this.status == 200) {
      document.getElementById("temperature").innerHTML =
this.responseText;
    }
  };
  xhttp.open("GET", "/temperature", true);
  xhttp.send();
}, 10000 ) ;

setInterval(function ( ) {
  var xhttp = new XMLHttpRequest();
  xhttp.onreadystatechange = function() {
    if (this.readyState == 4 && this.status == 200) {
      document.getElementById("humidity").innerHTML =
this.responseText;
    }
  };
  xhttp.open("GET", "/humidity", true);
  xhttp.send();
}, 10000 ) ;
</script>
</html>rawliteral";

// Replaces placeholder with DHT values
String processor(const String& var){
  //Serial.println(var);
  if(var == "TEMPERATURE"){
    return readDHTTemperature();
  }
  else if(var == "HUMIDITY"){
    return readDHTHumidity();
  }
  return String();
}

void setup(){
  // Serial port for debugging purposes
  Serial.begin(115200);

  dht.begin();

  // Connect to Wi-Fi

```

```
WiFi.begin(ssid, password);
while (WiFi.status() != WL_CONNECTED) {
  delay(1000);
  Serial.println("Connecting to WiFi..");
}

// Print ESP32 Local IP Address
Serial.println(WiFi.localIP());

// Route for root / web page
server.on("/", HTTP_GET, [](AsyncWebServerRequest *request){
  request->send_P(200, "text/html", index_html, processor);
});
server.on("/temperature", HTTP_GET, [](AsyncWebServerRequest
*request){
  request->send_P(200, "text/plain", readDHTTemperature().c_str());
});
server.on("/humidity", HTTP_GET, [](AsyncWebServerRequest *request){
  request->send_P(200, "text/plain", readDHTHumidity().c_str());
});

// Start server
server.begin();
}

void loop(){

}
```

From:  
<https://www.magenealogie.chanterie37.fr/www/fablab37110/> - Castel'Lab le Fablab MJC de Château-Renault

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