

# 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

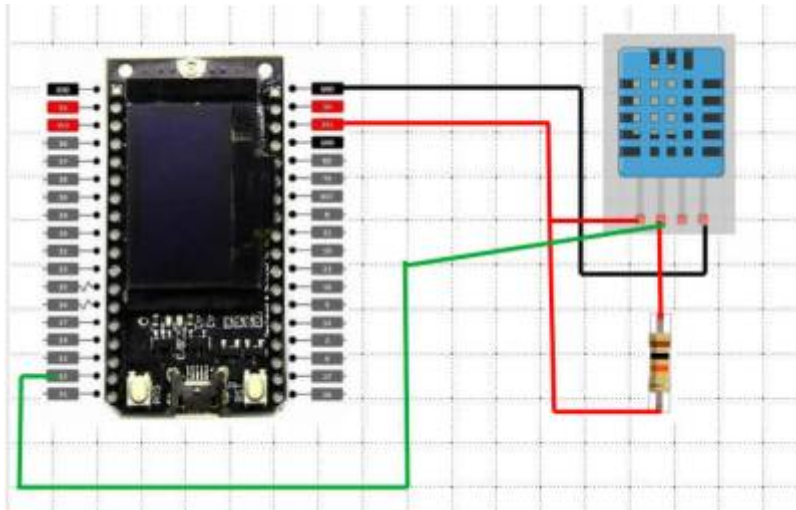
[Caractéristiques DHT22 PDF FR](#)



	<b>DHT11</b>	<b>DHT22</b>
		
<b>Écart de température</b>	0 à 50 °C +/- 2 °C	-40 à 80 °C +/- 0,5 °C
<b>Plage d'humidité</b>	20 à 90% +/- 5%	0 à 100% +/- 2%
<b>Résolution</b>	Humidité: 1% Température: 1°C	Humidité: 0,1% Température: 0,1 °C
<b>Tension de fonctionnement</b>	3 à 5,5 V CC	3 à 6 V CC
<b>Offre actuelle</b>	0,5 à 2,5 mA	1 à 1,5 mA
<b>Période d'échantillonnage</b>	1 seconde	2 secondes
<b>Prix</b>	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(){
}
```

## Ecran serveur web



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

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