

# ESP32: Mesure de temperature

## Liens Web

[ESP32 : DHT11/22](#)

[ESP32 : ServeurWeb1 DHT11/22](#)

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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%<br>Température: 1°C   | Humidité: 0,1%<br>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



## Librairies à installer

**DHT** [DHT-sensor-Library](#)

**ESPAsyncWebServer** [ESPAsyncWebServer.zip](#)

**AsyncTCP** [AsyncTCP.zip](#)

**Adafruit\_Sensor** [Adafruit\\_Sensor.zip](#)

## 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



## ESP32 Serveur DHT 22

Temperature 22.90 °C

Humidite 40.00 %

From:

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