**DHT11 Humidity and Temperature Sensor:**

DHT11 is a low-cost digital sensor for sensing temperature and humidity.  This sensor can be easily interfaced with any micro-controller to measure humidity and temperature instantaneously.

DHT11 sensor consists of a capacitive humidity sensing element and a thermistor for sensing temperature.  The humidity sensing [capacitor](https://www.elprocus.com/construction-of-capacitor-with-working/) has two electrodes with a moisture holding substrate as a dielectric between them. Change in the capacitance value occurs with the change in humidity levels

For measuring temperature this sensor uses a Negative Temperature coefficient thermistor, which causes a decrease in its resistance value with increase in temperature.

DHT11 sensor has four pins- VCC, GND, Data Pin and a not connected pin. A pull-up resistor of 5k to 10k ohms is provided for communication between sensor and micro-controller.

Here are the ranges and accuracy of the DHT11:

* Humidity Range: 20-90% RH
* Humidity Accuracy: ±5% RH
* Temperature Range: 0-50 °C
* Temperature Accuracy: ±2% °C
* Operating Voltage: 3V to 5.5V