

## Description:

This is a very popular, ultra-low cost digital temperature and humidity sensor. It uses a capacitive humidity sensor, and a thermistor to measure the surrounding air temperature. The result is available via a digital signal on the data pin (no analog input pins needed). It is fairly simple to use, but requires careful timing to grab data. The only real downside of this sensor is you can only get new data from it once every 2 seconds. But, for most applications this is not an issue at all.

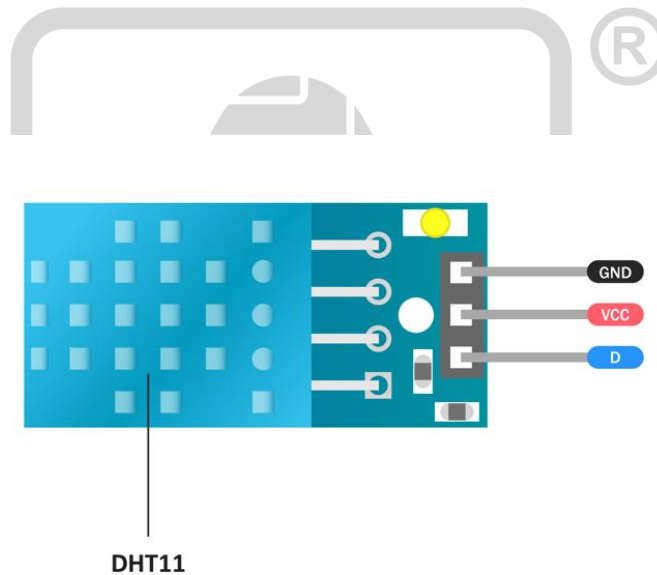
## Features:

1. Low power consumption
2. Relative humidity and temperature measurement
3. All calibration, digital output
4. Excellent long-term stability
5. No additional components
6. Long distance signal transmission
7. Ultra-low power
8. 3-pin package
9. Completely interchangeable

## Specifications:

- Operating Voltage: 3.5V to 5.5V
- Operating current: 0.3mA (measuring) 60uA (standby)
- Output: Serial data
- Temperature Range: 0°C to 50°C
- Humidity Range: 20% to 90%
- Resolution: Temperature and Humidity both are 16-bit
- Accuracy:  $\pm 1^\circ\text{C}$  and  $\pm 1\%$

## Pin Diagram:



**VCC:** Pin provides power to the sensor. Despite the fact that the supply voltage of the module ranges from 3.3V to 5.5V, a 5V supply is recommended. With a 5V power supply, the sensor can be placed up to 20 meters away. With 3.3V supply voltage, the sensor can be placed just 1 meter away; otherwise, the line voltage drop will cause measurement errors.

**D:** Data pin is used for communication between the sensor and the microcontroller.

**GND:** is the ground pin.

**Application:**

- HVAC Systems
- Weather Station
- Medical equipment of measuring humidity
- Home automation system
- Automation and other weather control applications

