

DHT11 / DHT22

Sensors / Climate

Temperature and humidity wiring, sampling intervals and valid readings.

01 Bare sensor pinout

Front grille facing you

Pins left to right: 1 VCC, 2 DATA, 3 NC, 4 GND. Modules can reorder these.

Pull-up

Typically 4.7-10 kohm from DATA to a compatible supply; often included on breakout boards.

Wiring

Common ground; short data cable; use the supply specified for your sensor revision.

02 Read reliably

DHT11

Basic, lower-resolution sensor; wait at least 1 second between readings.

DHT22 / AM2302

Higher resolution and wider range; wait at least 2 seconds between readings.

Protocol

Timing-sensitive single data wire; use a DHT library, not I2C or Dallas OneWire.

Validation

Check failed/NaN readings; retain last valid reading and retry after the sampling interval.

03 MicroPython pattern

Setup

```
import dht; sensor = dht.DHT22(Pin(4))
```

Sample

```
sensor.measure(); sensor.temperature(); sensor.humidity()
```

Units

Temperature in deg C; relative humidity in %. Catch OSError on failed reads.

Before you power on

For 3.3 V MCUs, keep DATA pull-ups at a compatible logic voltage. Do not assume every DHT11 revision works at 3.3 V.

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Datasheets & further reading

Aosong AM2302

<https://www.aosong.com/en/Products/info.aspx?itemid=2294&lcid=139>

MicroPython DHT driver

<https://docs.micropython.org/en/latest/esp8266/tutorial/dht.html>