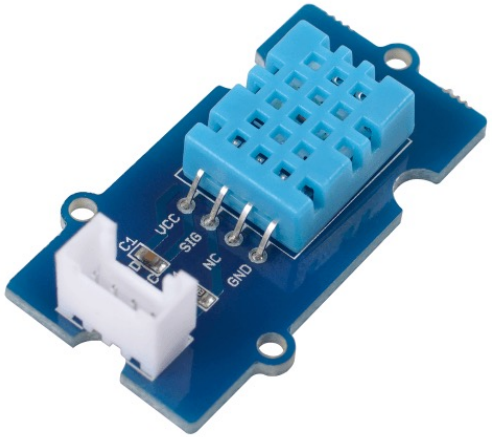
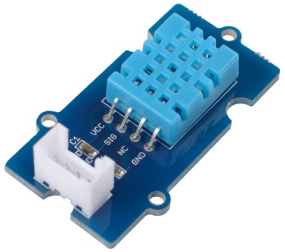
[老葉說技術-第27期] 一次搞懂：使用Arduino Uno連接高精度溫濕度感測器(通訊介面為I2C)

- AHT20為一具有I2C通訊介面的體積小、精度高、成本低的溫濕度感測器，可以輕鬆取代DHT11/DHT12/DHT22等溫濕度感測器。
- 具有4根引腳：VCC (接5V或3.3V)、GND (接板上GND) 、SCL (接Arduino UNO板的SCL腳位) 、SDA (接Arduino UNO板的SDA腳位)
- AHT20規格介紹：
  - VCC電壓範圍：2～5.5V
  - 溫度精度：±0.3 ℃；濕度精度：±2 %RH
  - Temperature Range: -40 ~ + 85 ℃
  - Output Signal：I²C
- Arduino 需安裝以下函式庫：
  - Adafruit AHTX0 / Adafruit BusIO
- 打開第三方範例程式：
  - 範例 → Adafruit AHTX0 → adafruit_aht_test



測器比較

om/blog/2019/08/22/8-types-of-temperature-sensors-you-should-know/

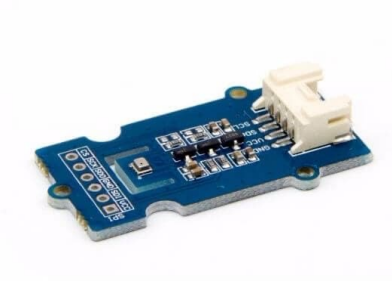


Price	$5.90
Humidity Range	5-95%RH
Dimensions	40mm x 20mm x 8mm
Humidity/Temperature accuracy	±5% / ±2℃

• DHT22/AM2302

Price	$9.90 / $4.99
Temperature Range	-40 – 80℃
Humidity Range	0 – 99.9%RH
Size	40mm x 20mm x 11mm
Humidity/Temperature accuracy	±2% / ±0.5℃

• BMP280

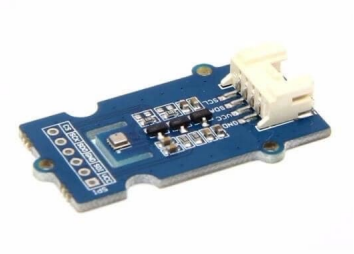


Price	$8.90
Temperature Range	-40 – 85℃
Air Pressure Range	300-1100 hPa
Size	20mm x 40mm
Air Pressure/Temperature accuracy	±1hPa / ±1℃

溫濕度感測器比較

引用資料：
https://www.seeedstudio.com/blog/2019/08/22/8-types-of-temperature-sensors-you-should-know/

- **BME280**

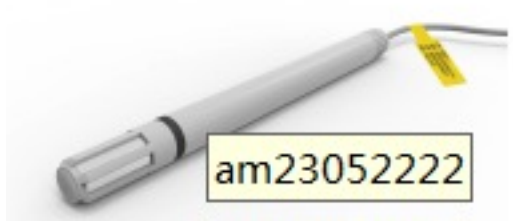


Price	$17
Temperature Range	-40 – 85℃
Air Pressure Range	300 – 1100 hPa
Humidity Range	0 – 100%
Size	20mm x 40mm
Air Pressure/Temperature / Humidity accuracy	±1hPa / ±1℃ / ±3%

- **DS18B20**

Price	$7.50
Temperature Range	-55 – 125℃
Dimensions	2m
Accuracy	±0.5℃
Price	$7.50

- **AF5485**



Price	$49.90
Temperature Range	-40 – 80℃
Humidity Range	0-99.9%RH
Size	198.5mm x 15.65mm
Air Pressure/Temperature accuracy	±0.1%RH / ±0.5℃

溫濕度感測器比較

引用資料：
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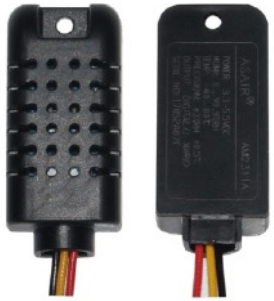
- **AM2311A**



Price	$4.99
Temperature Range	-40 – 80°C
Humidity Range	0-99.9%RH
Size	44mm x 20mm x 13mm
Air Pressure/Temperature accuracy	±3%RH / ±0.5°C
Price	$4.99

- **AHT20**

Price	$4.90
Temperature Range	-40 – 85°C
Humidity Range	± 2% RH (25 °C)
Temperature accuracy	± 0.3 °C