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Overview

This CHIP is a digital 4-in-1 sensor with gas, humidity, pressure and temperature measurement based on proven sensing principles.

Product Highlights

- I2C digital interface up to 3.4 MHz

Applications

- Indoor air quality
- Home automation
- Internet of things
- Weather forecast
- GPS enhancement (e.g. time-to-first-fix improvement, dead reckoning, slope detection)
- Indoor navigation (change of floor detection, elevator detection)
- Outdoor navigation, leisure and sports applications
- Vertical velocity indication (rise/sink speed)

Specifications

- Digital interface
 1. I2C (up to 3.4 MHz)
- Current consumption
 1. 2.1 μ A at 1 Hz humidity and temperature
 2. 3.1 μ A at 1 Hz pressure and temperature
 3. 3.7 μ A at 1 Hz humidity, pressure and temperature
 4. 0.09-12 mA for p/h/T/gas depending on operation mode
 5. 0.15 μ A in sleep mode
- Key parameters for gas sensor
 1. Response time: <1 s (for new sensors)
 2. Power consumption: <0.1 mA in ultra-low power mode
 3. Output data processing: direct indoor air quality (IAQ) index output
- Key parameters for humidity sensor
 1. Response time: ~8 s
 2. Accuracy tolerance: $\pm 3\%$ r.H
 3. Hysteresis: $\pm 1.5\%$ r.H
- Key parameters for pressure sensor
 1. RMS Noise: 0.12 pa, equiv. to 1.7 cm
 2. Offset temperature coefficient: ± 1.3 Pa/K, equiv. to ± 10.9 cm at 1 $^{\circ}$ C temperature change

External Links

Datasheets

- BME680 From Bosch Sensortech (https://ae-bst.resource.bosch.com/media/_tech/media/datasheets/BST-BME680-DS001-00.pdf)

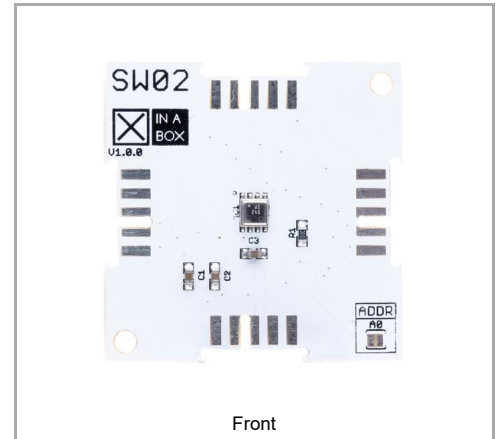
Shop


- Buy SW02 (<https://xinabox.cc/products/SW02>)

GitHub

- SW02 on GitHub (<https://github.com/xinabox/xSW02>)

SW02 - VOC and Weather Sensor (BME680)



 CHIP	
Main Category	Sensor
Sub Category	VOC and Weather
Introduced	1 January 2017
Current version	1.0.0
Current version date	1 January 2017
Dimensions	
Size	2x2U (32x32mm)
Weight	2.9 g
Height	2.6/0/0 mm
Main Chip Set	
Main Chip	BME680
I ² C Speed	3.4 MHz
I ² C Configuration	
Default Address	0x76
Alternative Addresses	0x77
Change Setting	Solder