

BME280

DIGITAL HUMIDITY, PRESSURE AND TEMPERATURE SENSOR

Key features

- Package 2.5 mm x 2.5 mm x 0.93 mm metal lid LGA
- Digital interface I²C (up to 3.4 MHz) and SPI (3 and 4 wire, up to 10 MHz)
- Supply voltage V_{DD} main supply voltage range: 1.71 V to 3.6 V
V_{DDIO} interface voltage range: 1.2 V to 3.6 V
- Current consumption 1.8 µA @ 1 Hz humidity and temperature
2.8 µA @ 1 Hz pressure and temperature
3.6 µA @ 1 Hz humidity, pressure and temperature
0.1 µA in sleep mode
- Operating range -40...+85 °C, 0...100 % rel. humidity, 300...1100 hPa
- Humidity sensor and pressure sensor can be independently enabled / disabled
- Register and performance compatible to Bosch Sensortec BMP280 digital pressure sensor
- RoHS compliant, halogen-free, MSL1

Key parameters for humidity sensor¹

- Response time ($\tau_{63\%}$) 1 s
- Accuracy tolerance ± 3 % relative humidity
- Hysteresis ± 1 % relative humidity

Key parameters for pressure sensor

- RMS Noise 0.2 Pa, equiv. to 1.7 cm
- Offset temperature coefficient ± 1.5 Pa/K, equiv. to ± 12.6 cm at 1 °C temperature change

Typical application

- Context awareness, e.g. skin detection, room change detection
- Health monitoring / well-being
 - Warning regarding dehydration or heat stroke
 - Spirometry (measurement of lung volume and air flow)
- Home automation control
 - control heating, venting, air conditioning (HVAC)
- Internet of things
- 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
- Weather forecast
- Vertical velocity indication (rise/sink speed)

Target devices

- Handsets such as mobile phones, tablet PCs, GPS devices
- Navigation systems

¹ Target values