

# BME280

## Combined humidity and pressure sensor

Bosch Sensortec



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Invented for life

### **BME280: Shipment packaging details**

Document revision rev. 1.1

Document release date May 25<sup>th</sup>, 2018

Document number BST-BME280-SP000-02

Technical reference code(s) 0 273 141 185

Notes Data in this document are preliminary and subject to change without notice. Product photos and pictures are for illustration purposes only and may differ from the real product's appearance.

## 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 I<sup>2</sup>C (up to 3.4 MHz) and SPI (3 and 4 wire, up to 10 MHz)
- Supply voltage V<sub>DD</sub> main supply voltage range: 1.71 V to 3.6 V  
V<sub>DDIO</sub> 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 sensor

- Response time ( $\tau_{63\%}$ ) 1 s
- Accuracy tolerance  $\pm 3$  % relative humidity
- Hysteresis  $\leq 2$  % relative humidity

#### Key parameters for pressure sensor

- RMS Noise 0.2 Pa, equiv. to 1.7 cm
- Sensitivity error  $\pm 0.15$  %, equiv. to  $\pm 1$  m at 400 m height change
- Offset temperature coefficient  $\pm 1.5$  Pa/K, equiv. to  $\pm 12.6$  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)



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## 1. Inner box

### 1.1 Outer view reel box



- Box size is 346mm x 346mm x 40mm
- The inner box contains 1 reel of 10,000 parts
- Weight of inner box without reel 0.2 kg
- Weight of inner box with reel 0.85 kg

### 1.2 Inside view reel box with ESD-bag



### 1.3 Reel



### 2. Outer box





The size of the outer box depends on delivered quantity.

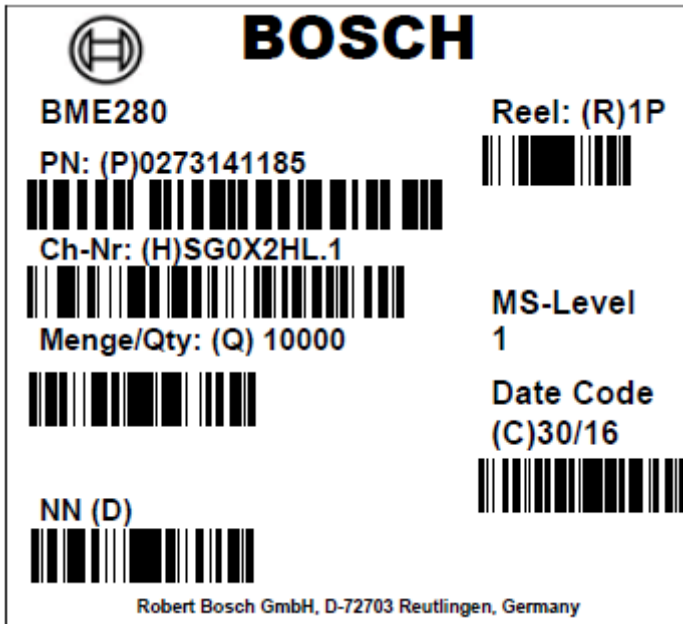
- Up to 5 reels:
  - Size Outer box: 400mm x 400mm x 240mm
  - Weight of outer box without reels 1.4 kg
  - Weight of outer box with:
    - 1 reel 2.3 kg
    - 2 reels 3.2 kg
    - 3 reels 4.1 kg
    - 4 reels 5.0 kg
    - 5 reels 5.9 kg
  
- Up to 8 reels:
  - Size Outer box: 400mm x 400mm x 350mm
  - Weight of outer box without reels 1.6 kg
  - Weight of outer box with:
    - 6 reels 7.0 kg
    - 7 reels 7.9 kg
    - 8 reels 8.8 kg
  
- Up to 15 reels
  - Size Outer box: 400mm x 400mm x 640mm
  - Weight of outer box without reels 2.2 kg
  - Weight of outer box with:
    - 9 reels 9.8 kg
    - 10 reels 10.7 kg
    - 11 reels 11.6 kg
    - 12 reels 12.5 kg
    - 13 reels 13.4 kg
    - 14 reels 14.3 kg
    - 15 reels 15.2 kg



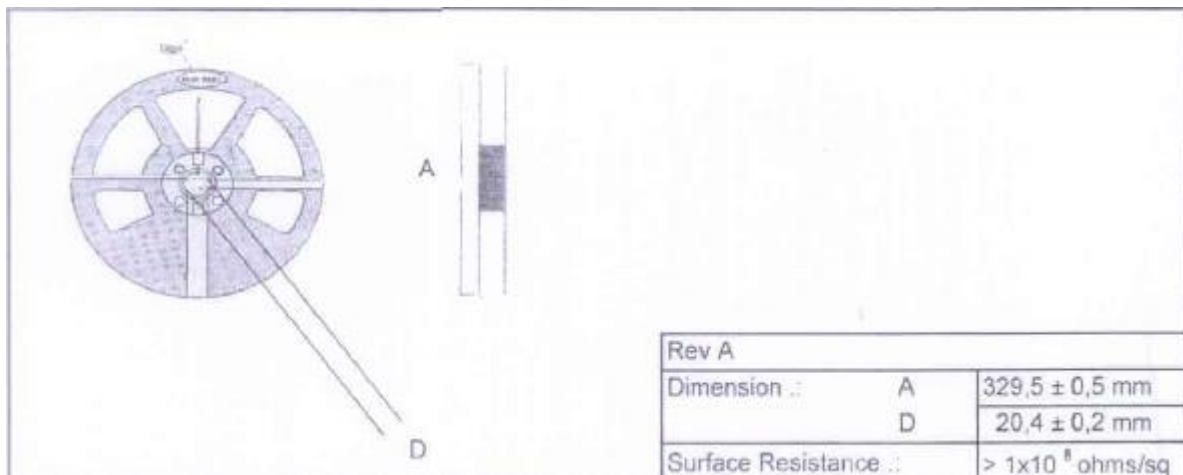
### 3. Bar code labelling

Notes:

- The ink on the label is lead-free.
- Heat-pressure method for label is used.
- Bar code label is on reel and the innerbox.



### 4. Reel dimensions



- Reel size is 13".
- 1 reel contains 10,000 parts

## 5. Legal disclaimer

### 5.1 Engineering samples

Engineering Samples are marked with an asterisk (\*) or (e). Samples may vary from the valid technical specifications of the product series contained in this data sheet. They are therefore not intended or fit for resale to third parties or for use in end products. Their sole purpose is internal client testing. The testing of an engineering sample may in no way replace the testing of a product series. Bosch Sensortec assumes no liability for the use of engineering samples. The Purchaser shall indemnify Bosch Sensortec from all claims arising from the use of engineering samples.

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### 5.3 Application examples and hints

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## 6. Document history and modification

Rev. No	Chapter	Description of modification/changes	Date
1.0		Document creation	14-March 2014
1.1		New template	25 May 2018

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Specifications subject to change without notice  
Document number: BST-BME280-SP000-02  
Version\_1.1\_052018