SENSECAP

Professional Internet of Things Solution

Barometric Pressure Sensor

Features

- Support LoRaWAN™(*) protocol Class A
- High reliability and stability
- Ultra-wide-distance transmission: 10km in line of sight scene, 2 km in urban scene
- Battery life ≥ 3 years
- Rapid installation and deployment
- IP66 enclosure, suitable for outdoor applications

Applications

- Smart Agricultural
- Smart Building and Industrial Control
- Environmental Monitoring
- Other Wireless Sensing Applications

Introduction

With a built-in wireless LoRa module, this Air Pressure Sensor transmits the collected air pressure data to the base station and then to the server. Based on the varistor sensor technology that features high-precision, linearity, stability, and high EMC robustness, this air pressure sensor is suitable for applications in industrial environmental air pressure measuring and monitoring. The built-in independent battery can last for 3 years in ultra-low-power-consumption working mode. The enclosure is made from PC + PBT materials, protecting the device from UV radiation, rain and sunlight exposure, etc.

Specifications

Barometric Pressure		
Parameters	Condition	Value
Range	-	300~1100 hPa
Resolution	-	1 Pa
Relative Accuracy	700 to 900 hPa 25 to 40 ℃	±0.12 hPa
Absolute Accuracy	300 to 1100 hPa -20 to 0 ℃	±1.7 hPa
Absolute Accuracy	300 to 1100 hPa 0 to 65 ℃	±1.0 hPa
Temperature coefficient offset	900 hPa 25 to 40 ℃	1.5 Pa/K
Data drift	-	±1.0 hPa/year

Communication Distance	2 to 10 km (depending on different antenna and environment)
Battery Life	≥ 3 year (upload data once per hour)
Battery Voltage	3.6V
Battery Capacity	19Ah (Non-rechargeable)
IP Rating	IP66
UV Resistance	anti-aging (from rain/sun exposure): UL746C F1
Enclosure Material	PC+PBT
Operating Temperature	-40 to +85 ℃ (full accuracy: 0 to 65℃)
Operating Humidity	0 to 100 %RH
Device Weight	240g

Parameters	
Product Model	LoRa-S-470/868/915-Baro-01
Microcontroller	Ultra-low-power MCU
Support protocol	Based on LoRaWAN™ v1.0.2 protocol
LoRa Channel Plan	CN470 / EU868 / US915
LoRa Power Output	16 dBm (EIRP)
Sensitivity	470MHz: -140dBm(SF12, BW125KHz) 868MHz: -137.5dBm(SF12, BW125KHz) 915MHz: -136.5dBm(SF12, BW125KHz)
Current Consumption	5 μA (sleep mode) 120 mA (active mode)

The device is designed with a fixed LoRa channel, which can not be modified by users. The supported channels are as the follows. Please refer to the user manual for how to connect this device with a LoRaWAN™ gateway.

CN470	
Uplink	Channels:[80,81,82,83,84,85,86,87] Frequency(MHz): 486.3, 486.5, 486.7, 486.9, 487.1, 487.3, 487.5, 487.7 (SF7BW125 to SF12BW125)
Downlink	Frequency(MHz): 506.7, 506.9, 507.1, 507.3, 507.5, 507.7, 507.9, 508.1 (SF7BW125 to SF12BW125) 505.3 -SF12BW125 (RX2 downlink only)

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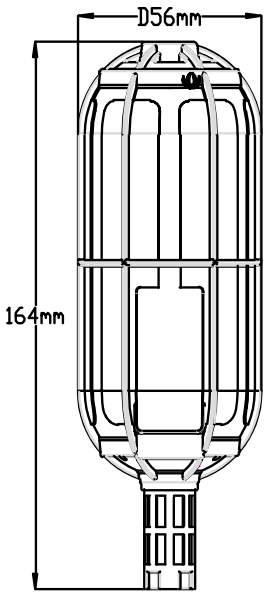
EU868	
Uplink	Channels: [0,1,2,3,4,5,6,7] Frequency(MHz): 868.1, 868.3, 868.5, 867.1, 867.3, 867.5, 867.7, 867.9 (SF7BW125 to SF12BW125)
Downlink	Multiplexing the frequency points of the 8 uplink channels. 869.525MHz -SF9BW125 (RX2 downlink only)

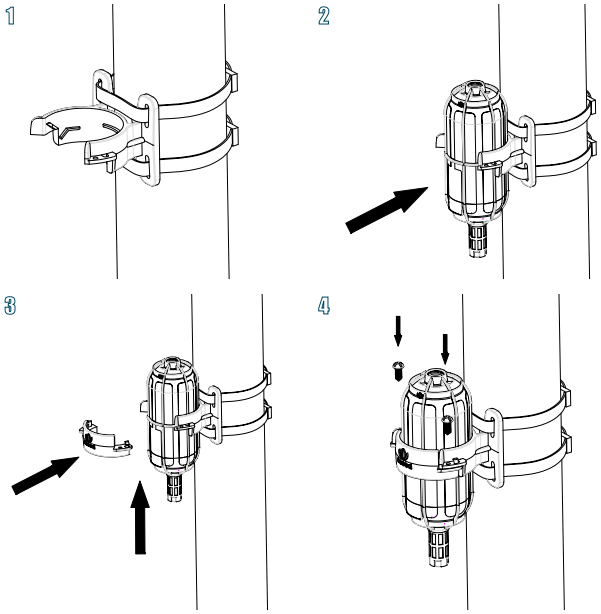
US915	
Uplink	Channels:[8,9,10,11,12,13,14,15] Frequency(MHz): 903.9, 904.1, 904.3, 904.5, 904.7, 904.9, 905.1, 905.3 (SF7BW125 to SF10BW125)
Downlink	Frequency(MHz): 923.3, 923.9, 924.5, 925.1, 925.7, 926.3, 926.9, 927.5 (SF7BW500 to SF12BW500)

Device Dimensions



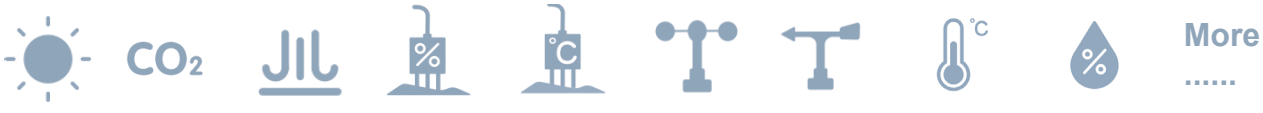
Installation

Please refer to the user manual for more details.



SenseCAP Series

SenseCAP is an industrial wireless sensor network that integrates easy-to-deploy hardware and data API services, enabling low-power, long-distance environmental data collection. Currently SenseCAP consists of two versions: LoRaWAN™ and NB-IoT. SenseCAP LoRaWAN™ version products include LoRaWAN™ Gateways and Sensor Nodes. NB-IoT version products include Sensor Nodes.They can collect various physical data:



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- Purchase: https://solution.seeed.cc/product/sensecap

You can also contact Seeed sales representatives in your local district. The following is the contact information:
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