

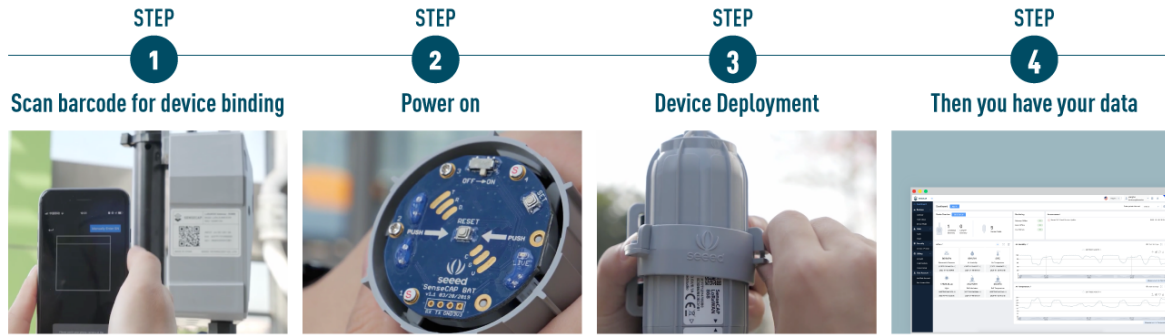
SenseCAP Wireless Barometric Pressure Sensor - LoRaWAN US915



About SenseCAP

Among the first launch of Seeed industrial IoT (IIoT) product series, **SenseCAP** is focusing on wireless environmental sensing applications: smart agriculture, precision farming, and smart city, to name a few. It consists of hardware products (sensors, data-loggers & gateways, etc.), software services (SenseCAP portal, mobile App, open dashboard), and API for device & data management.

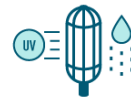
Easy deployment and quick provisioning



Industrial design supports extended operating temperature range



Ultra-wide-distance data transmission and low-power consumption



Suitable for outdoor and harsh environment like with UV, rain, dust



Provides a variety of flexible cloud services with Open API for further development



Certified by CE, FCC, RoHS



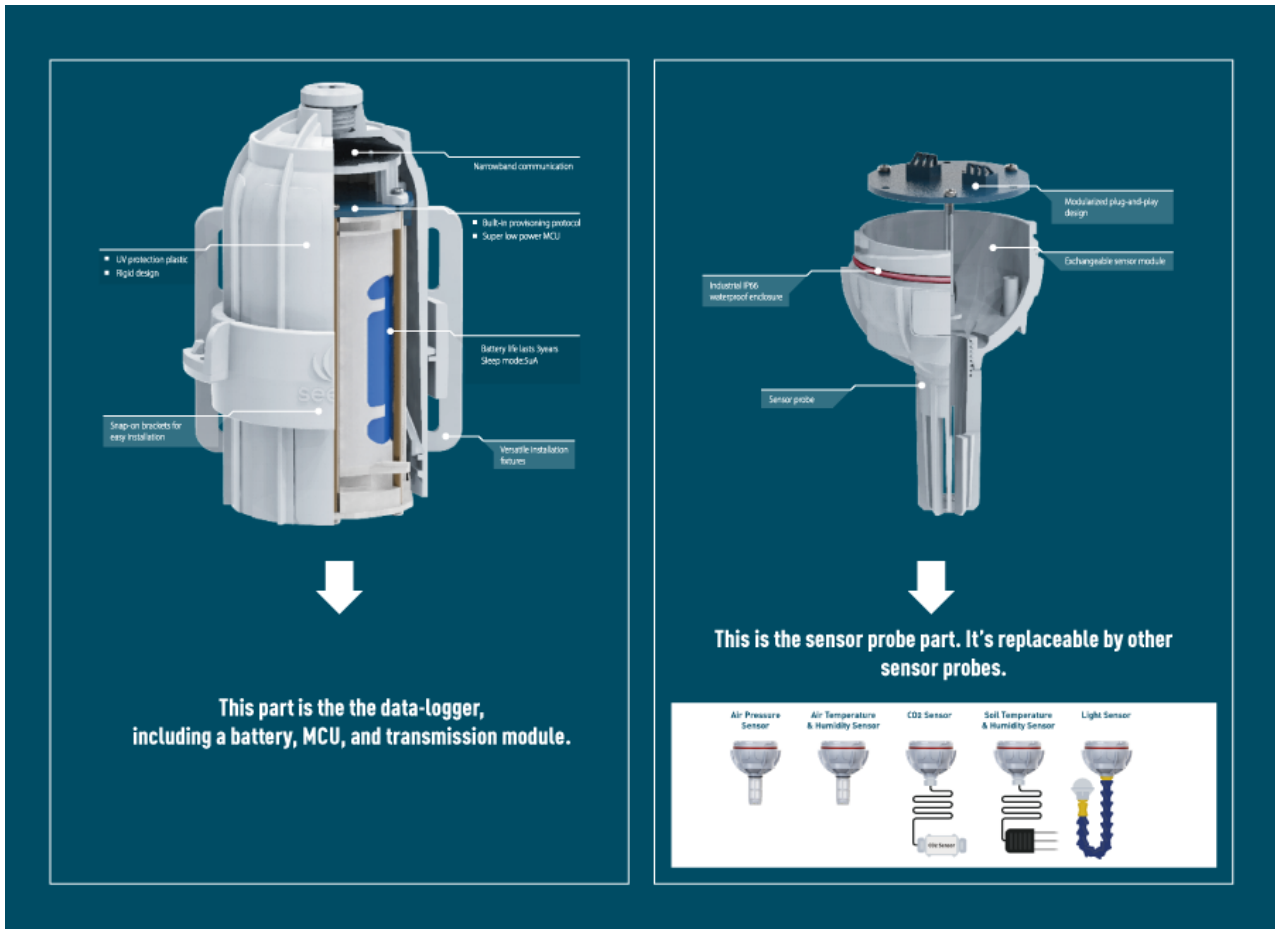
Applicable to world-wide market

SenseCAP Wireless Barometric Pressure Sensor measures atmospheric pressure in the range of 300~1100 hPa. Featuring high-precision, stability, and high EMC robustness, this sensor is suitable for industrial applications such as weather stations, outdoor farms, tea plantations, greenhouses, and more.

This device incorporates a built-in LoRa transmitter based on SX1276 for long-range transmission, a barometric sensor, and a custom battery. It is specifically designed and optimized for use cases powering end devices by batteries for years. To minimize the power consumption, the device wakes up, transmits the collected air pressure data to the gateway, and then goes back to sleep.

Under the best of circumstances, the battery is expected to last for more than 8 years, depending on the environmental factors and data transmission intervals. Please kindly note that the default interval is once per hour. If you'd like to change the data upload interval, please refer to [this document](#).

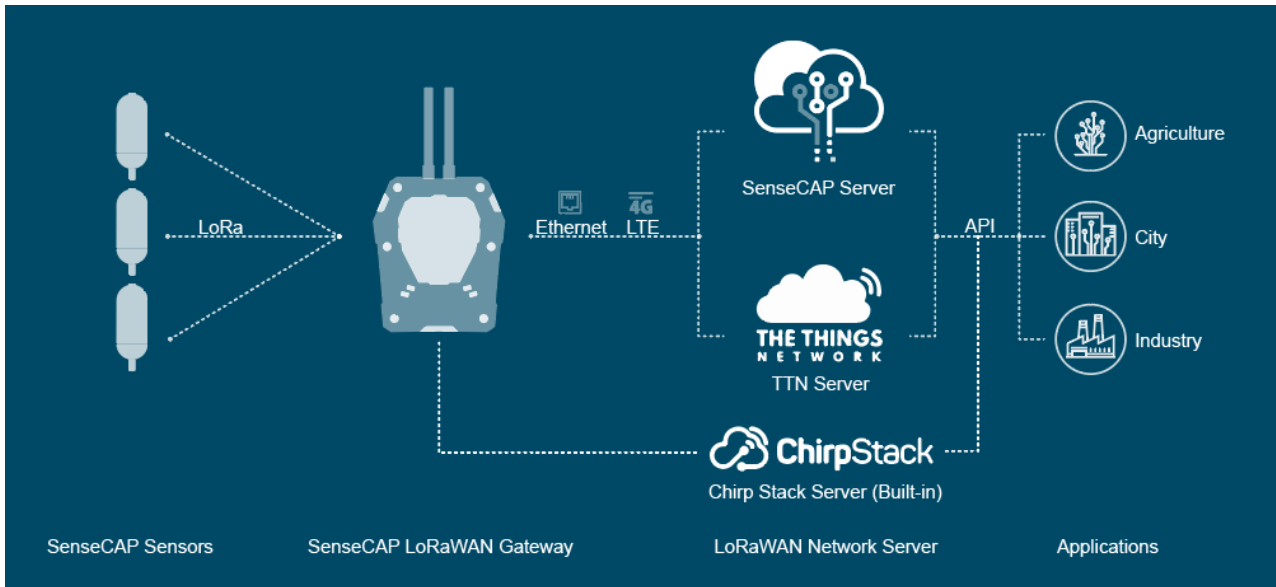
SenseCAP Sensor adopts a modular design, integrating the data-logger with the sensor probe, which can be replaced by other SenseCAP sensor probes. This sensor's data logger is rated IP66, and the sensor probe is rated IP65.



SenseCAP Sensor is fully compliant with LoRaWAN specifications and can be used with standard LoRaWAN gateways. Please choose the corresponding gateway according to the sensor frequency. Seeed also provides [SenseCAP LoRaWAN Gateway](#) for you to use with SenseCAP Sensors seamlessly without extra huge workload for provisioning.

System Architecture

SenseCAP Architecture



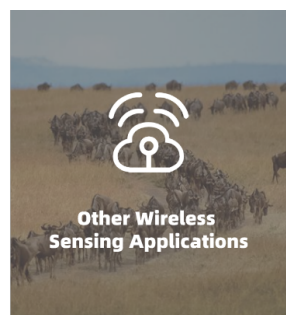
SenseCAP Sensor + Other LoRaWAN Gateway Architecture



Features

- Support LoRaWAN protocol Class A
- High reliability and stability
- Ultra-wide-distance transmission: 10km in line of sight scene, 2 km in urban scenes
- Battery life ≥ 8 years
- Rapid installation and deployment (see the video below)

Applications



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

Specifications

Barometric Pressure

Parameters	Condition	Value
Range	-	300~1100 hPa
Resolution	-	1 Pa
Relative Accuracy	700 to 900 hPa 25 to 40 °C	±0.12 hPa
Absolute Accuracy	300 to 1100 hPa -20 to 0 °C	±1.7 hPa
Absolute Accuracy	300 to 1100 hPa 0 to 65 °C	±1.0 hPa
Temperature Coefficient Offset	900 hPa 25 to 40 °C	1.5 Pa/K
Drift	-	±1.0 hPa/year

General Parameters

Product Model	LoRa-S-915-Baro-01
Microcontroller	Ultra-low-power MCU
Support Protocol	Based on LoRaWAN v1.0.2 protocol
LoRa Channel Plan	US915
LoRa Power Output	16 dBm (EIRP)
Sensitivity	-136.5dBm(SF12, BW125KHz)
Current Consumption	5 µA (sleep mode) 120 mA max(active mode)
Communication Distance	2 to 10 km (depending on different antennas and environments)
IP Rating	IP66 (Sensor Node); IP65 (Sensor Probe)

UV Resistance	anti-aging (from rain/sun exposure): UL746C F1
Enclosure Material	PC
Operating Temperature	-40 to +85 °C(full accuracy: 0 to 65°C)
Operating Humidity	0 to 100 %RH (non-condensing)
Device Weight	237g
Certification	CE, FCC, RoHS
Battery (Contained in equipment)	
Battery Life	≥ 3 year (upload data once per hour)
Battery Voltage	3.6V
Battery Capacity	19Ah (non-rechargeable)

LoRa Frequency

The device is designed with a fixed LoRa channel, which can not be modified by users. The supported channels are as follows. Please refer to [this document](#) for how to connect this device with a LoRaWAN gateway.

LoRa Channel Plan

Uplink (MHz)	903.9 - SF7BW125 to SF10BW125 904.1 - SF7BW125 to SF10BW125 904.3 - SF7BW125 to SF10BW125 904.5 - SF7BW125 to SF10BW125 904.7 - SF7BW125 to SF10BW125 904.9 - SF7BW125 to SF10BW125 905.1 - SF7BW125 to SF10BW125 905.3 - SF7BW125 to SF10BW125
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Downlink (MHz)	923.3 - SF7BW500 to SF12BW500 923.9 - SF7BW500 to SF12BW500 924.5 - SF7BW500 to SF12BW500 925.1 - SF7BW500 to SF12BW500 925.7 - SF7BW500 to SF12BW500 926.3 - SF7BW500 to SF12BW500 926.9 - SF7BW500 to SF12BW500 927.5 - SF7BW500 to SF12BW500
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Part List



① Sensor



② Bracket



③ M4 Self-drilling Screw



④ M3 Self-drilling Screw

Part List

1	Sensor	x1
2	Bracket	x1
3	M4 Self-drilling Screw	x4
4	M3 Self-drilling Screw	x2