



SENSECAP

# LoRaWAN Gateway and Wireless Sensor Catalog

Version: V1.4



CO<sub>2</sub>



pH

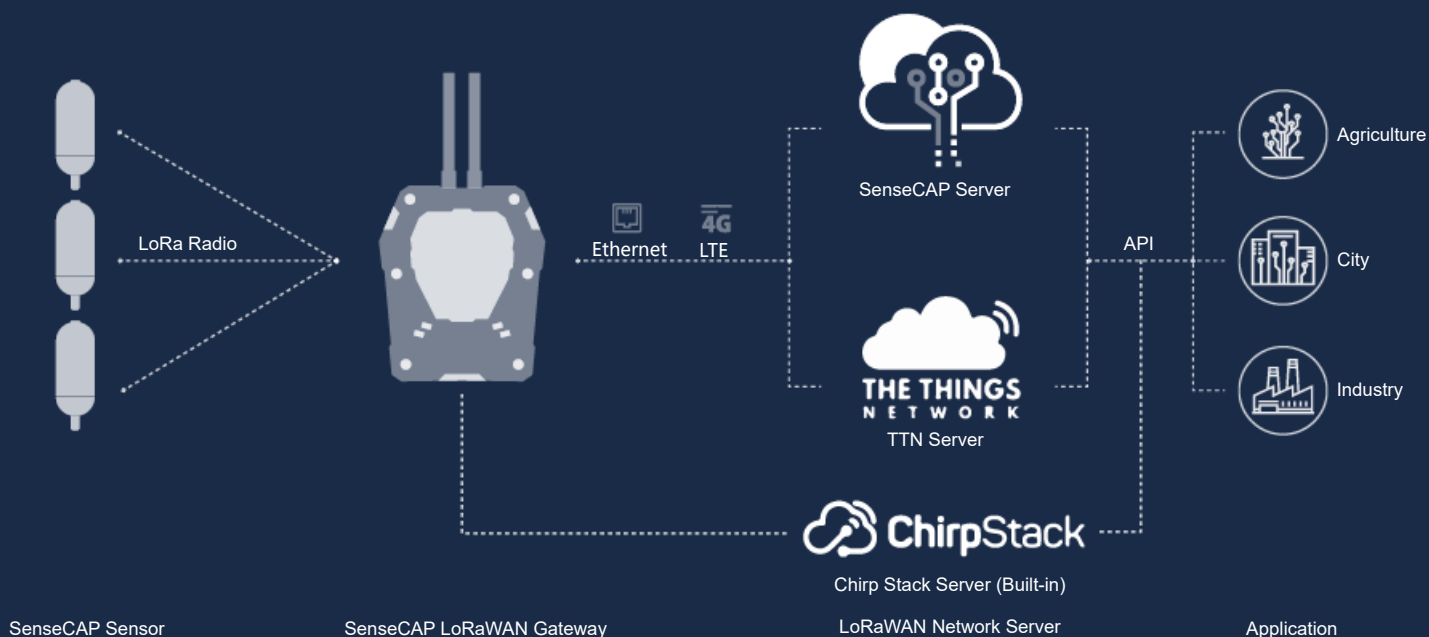


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## System Architecture

### SenseCAP Architecture



### SenseCAP Sensor + Other LoRaWAN Gateway Architecture



# About SenseCAP

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. SenseCAP includes several versions, such as LoRaWAN, SensorHub-2G, etc.

SenseCAP LoRaWAN version products include LoRaWAN Gateways and Sensor Nodes. Based on LoRaWAN protocol, it can realize one-to-many, long-distance networking, and bilateral communication. The LoRaWAN gateway supports Ethernet and 4G. The sensor node is powered by a high-capacity battery that lasts up to 3 years (uploading data once per hour). It also supports hot-swap, making it easy for maintenance and upgrading.

SenseCAP provides an easy-to-use portal. Users can scan the QR code with the App to bind the device with its respective account, manage the devices, and check sensor data on the portal. SenseCAP Portal provides API for users to develop based on the data on the portal further.

## Features of SenseCAP LoRaWAN Gateway

- Support LoRaWAN protocol Class A
- Cortex A8 processor, Linux system, stable and reliable
- Ultra-wide-distance transmission: 10km in line of sight scene, 2 km in the urban scene
- Support multiple ISM bands: CN470, EU868, US915
- Support remote modification of Node collection frequency
- 4G and Ethernet connectivity, suitable for multiple scenes.
- Provides a variety of cloud services and data API interfaces
- Industrial grade protection: IP66 enclosure, suitable for outdoor applications
- Operating temperature -40℃ to +70℃



## Features of SenseCAP LoRaWAN Sensors

- Support LoRaWAN protocol Class A
- High reliability and stability
- Ultra-wide-distance transmission: 10km in line of sight scene, 2 km in the urban scene
- Battery life ≥ 3 years
- Support remote modification of Node collection frequency
- Support the local modification of EUI, AppKey, AppEui
- Rapid installation and deployment
- IP66 enclosure, suitable for outdoor applications



## Application

- Smart Agriculture
- Smart Cities
- Smart Buildings
- Smart Industry
- Environmental Monitoring
- Other Wireless Sensing Applications



SenseCAP LoRaWAN Gateway can access SenseCAP Server, The Thing Network Server and The ChirpStack open-source LoRaWAN Network Server. However, it can only be used with SenseCAP Sensor.

SenseCAP Sensor can be used not only with the SenseCAP LoRaWAN Gateway but also with other standard LoRaWAN gateways. The Sensor is designed with a fixed LoRa channel, which can not be modified by users. The supported channels are as 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)

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)

## SenseCAP Gateway - LoRaWAN



### Introduction

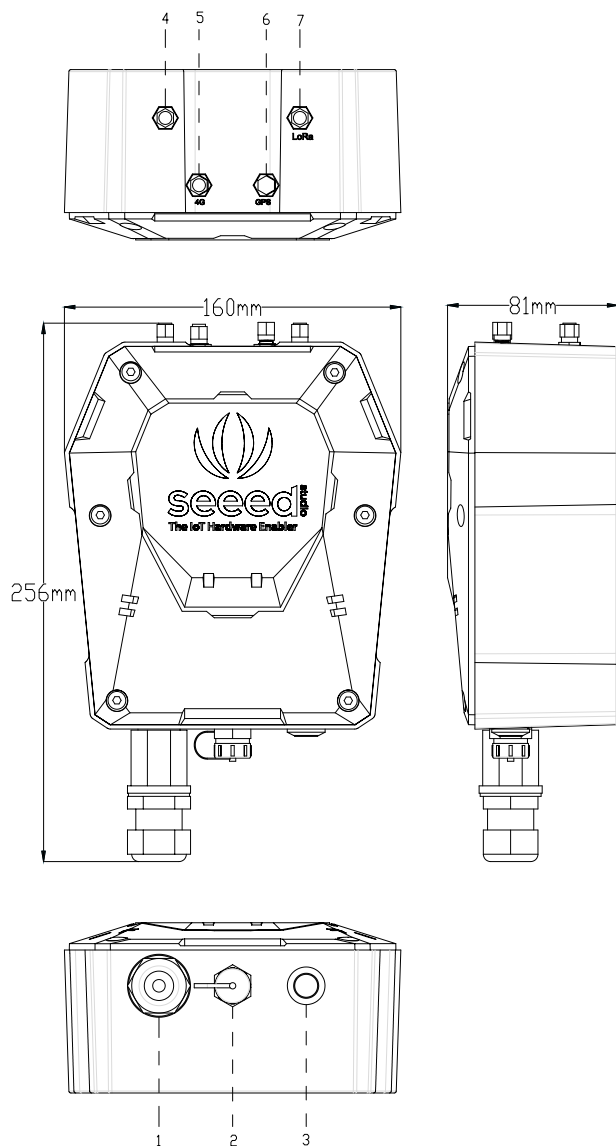
SenseCAP LoRaWAN Gateway(\*) is based on LoRaWAN®(\*\*) protocol, applicable for low-power, long-distance environmental data collection and monitoring in scenarios such as smart agriculture and smart city, etc. As the central device of the LoRa network, the gateway is used for collecting data from different Sensor Nodes and transmit the data to the SenseCAP Portal via 4G or Ethernet cable. Equipped with a high-performance processor and telecom-operator-level LoRa chip, this gateway ensures stable and high performance in a large-scale network. The gateway is designed with an IP66-protection-level enclosure, making it suitable for industrial applications in severe outdoor environments.

### Specifications

Product Model			
Model	Region		
LoRa-G-470-E/4G	Asia (China)		
LoRa-G-868-E/4G	European, Africa, Asia (India etc.)		
LoRa-G-915-E/4G	North America, South America, Oceania, Asia (Japan, Korea, Thailand, etc.)		
LoRa Parameters			
Protocol	Based on LoRaWAN v1.0.2 protocol		
Channel Plan	470~510MHz	863~870MHz	902~928MHz
Power Output	24dBm	25dBm	25dBm
Sensitivity	-140dBm (SF12BW125)	-139dBm (SF12BW125)	-139dBm (SF12BW125)
General Parameters			
CPU	TI AM3358 Cortex-A8 1GHz		
System	Linux Debian		
RAM	DDR3 512MB		
Memory	8GB eMMC		
Ethernet	100Mbps FE (RJ-45)		
4G Band	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28 LTE-TDD: B38/B39/B40/B41 WCDMA: B1/B2/B4/B5/B6/B8/B19 GSM: 850/900/1800/1900MHz		
4G Features	Support non-CA Cat 4 FDD and TDD LTE-FDD: Max 150Mbps (DL), Max 50Mbps (UL) LTE-TDD: Max 130Mbps (DL), Max 30Mbps (UL)		

General Parameters	
UMTS Features	Support 3GPP R8 DC-HSDPA, HSPA+, HSDPA, HSUPA and WCDMA DC-HSDPA: Max 42Mbps (DL) HSUPA: Max 5.76Mbps (UL) WCDMA: Max 384Kbps (DL), Max 384Kbps (UL)
LoRa Antenna	CN470: 0.5dBi gain / Vertical polarization / Omni-directional / SMA-J connector EU868: 2.5dBi gain / Vertical polarization / Omni-directional / SMA-J connector US915: 2.5dBi gain / Vertical polarization / Omni-directional / SMA-J connector
4G Antenna	0-4 dBi gain / Linear polarization / Omni-directional / SMA-J connector
LED Indicator	Indicating network condition (online/offline)
Grounding	Reserved 1 screw hole for GND
Power Consumption	3.6W
Power Supply	DC 12V/2A
IP Rating	IP66
UV Resistance	anti-aging (from rain/sun exposure): UL746C F1
Enclosure Material	PC
Operating Temperature	-40 °C to +70 °C
Operating Humidity	0 to 100 %RH (non-condensing)
Installation Method	Wall or pole mounting
Device Weight	777g

## Device Dimensions



1. Ethernet Port
2. Power Connector
3. LED
4. Reserved
5. 4G Antenna Connector
6. Reserved
7. LoRa Antenna Connector

## Certification



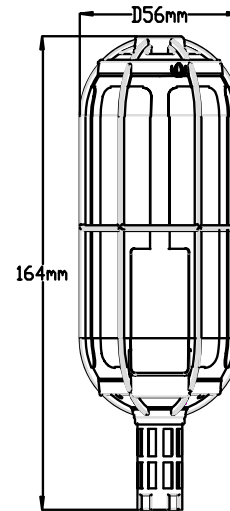
\*\* The LoRaWAN® name and the associated logo are licensed by the LoRa Alliance.

\* SenseCAP LoRaWAN Gateway can access SenseCAP Server, The Thing Network Server and The ChirpStack open-source LoRaWAN Network Server. However, it can only be used with SenseCAP Sensor.





### SenseCAP Wireless Air Temperature and Humidity Sensor - LoRaWAN

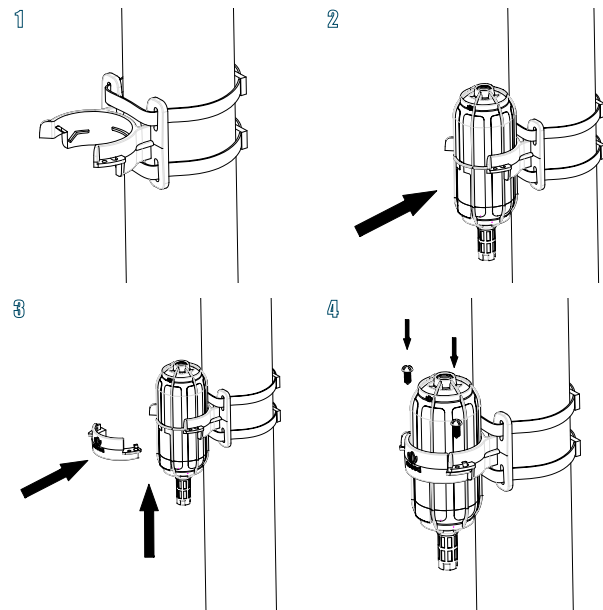


#### Specifications

Air Temperature	
Range	-40 °C to +85 °C
Accuracy	±0.2 °C
Resolution	0.1 °C
Drift	< 0.03 °C /year
Air Humidity	
Range	0 to 100 %RH (non-condensing)
Accuracy	±1.5 %RH
Resolution	1 %RH
Drift	< 0.25 %RH/year
General Parameters	
Product Model	LoRa-S-470/868/915-TH-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 max(active mode)
Communication Distance	2 to 10 km (depending on different antennas and environments)
Battery Life	≥ 3 year (upload data once per hour)
Battery Voltage	3.6V
Battery Capacity	19Ah (Non-rechargeable)
IP Rating	IP66 (Sensor Node) IP65 (Sensor Probe)
UV Resistance	anti-aging (from rain/sun exposure): UL746C F1
Enclosure Material	PC
Operating Temperature	-40 °C to +85 °C
Operating Humidity	0 to 100 %RH (non-condensing)
Device Weight	236g

#### Installation

Please refer to the user manual for more details.

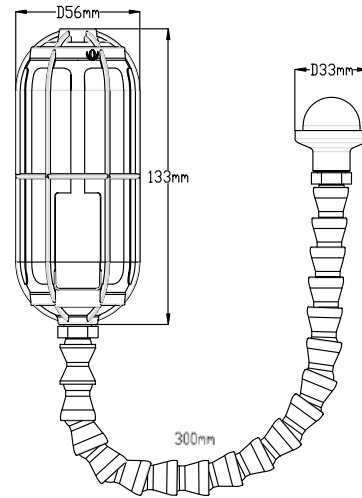


#### Certification





### SenseCAP Wireless Light Intensity Sensor - LoRaWAN

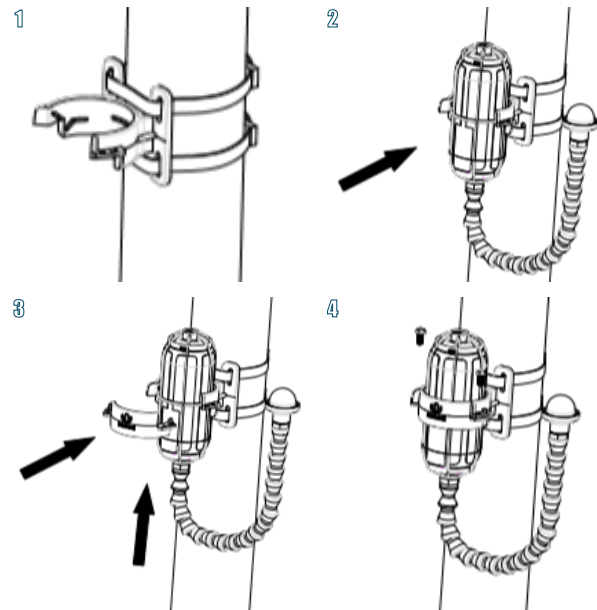


#### Specifications

Light Intensity	
Range	0 to 188000 Lux
Sensitivity	0.045 Lux/LSB
Resolution	0.045 Lux
General Parameters	
Product Model	LoRa-S-470/868/915-Light Intensity-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 $\mu$ A (sleep mode)
	120 mA max(active mode)
Communication Distance	2 to 10 km (depending on different antennas and environments)
Battery Life	$\geq 3$ 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
Operating Temperature	-40 $^{\circ}$ C to +85 $^{\circ}$ C
Operating Humidity	0 to 100 %RH (non-condensing)
Device Weight	288g

#### Installation

Please refer to the user manual for more details.

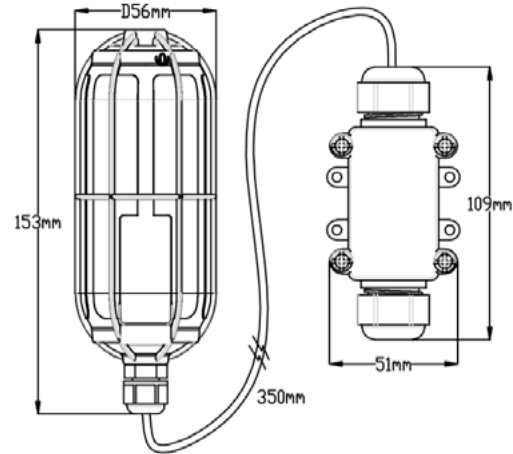


#### Certification





### SenseCAP Wireless CO2 Sensor - LoRaWAN



### Specifications

#### CO2

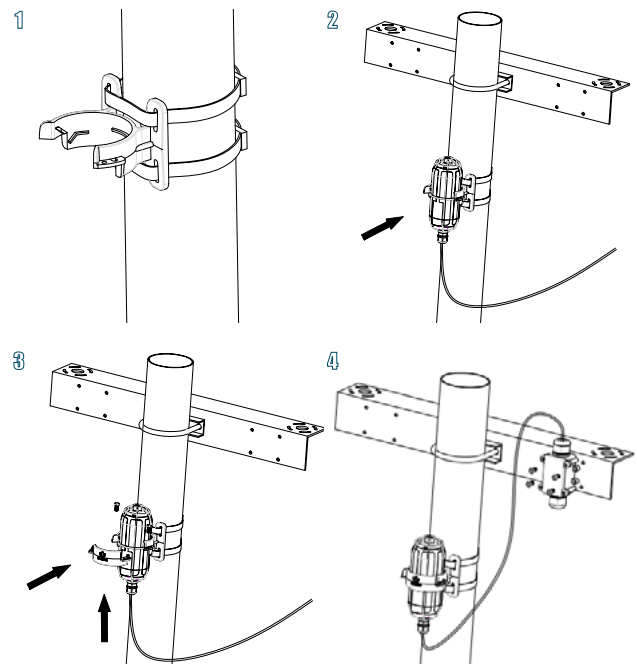
Parameters	Condition	Value
Range	-	0 to 40000 ppm
Accuracy	400 to 10000ppm	$\pm(30 \text{ ppm} + 3 \% \text{MV})$
Resolution	-	1 ppm
Temperature Stability	T = 0 to 50 °C 400 to 10000 ppm	$\pm 2.5 \text{ ppm} / ^\circ \text{C}$

#### General Parameters

Product Model	LoRa-S-470/868/915-CO2-01
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 $\mu\text{A}$ (sleep mode) 120 mA max(active mode)
Communication Distance	2 to 10 km (depending on different antennas and environments)
Battery Life	$\geq 3$ year (upload data once per hour)
Battery Voltage	3.6V
Battery Capacity	19Ah (Non-rechargeable)
IP Rating	IP66 (Sensor Node) Indoor (Sensor Probe) *
UV Resistance	anti-aging (from rain/sun exposure): UL746C F1
Enclosure Material	PC
Operating Temperature	0 °C to +50 °C
Operating Humidity	0 to 95 %RH
Device Weight	319g

### Installation

Please refer to the user manual for more details.



### Certification

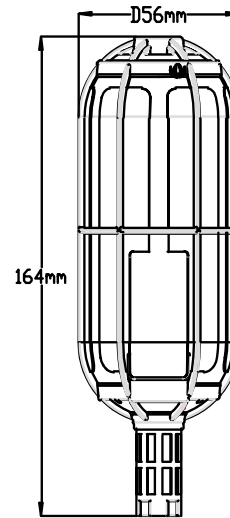


\* The Sensor Probe's membrane is not waterproof !





### SenseCAP Wireless Barometric Pressure Sensor - LoRaWAN

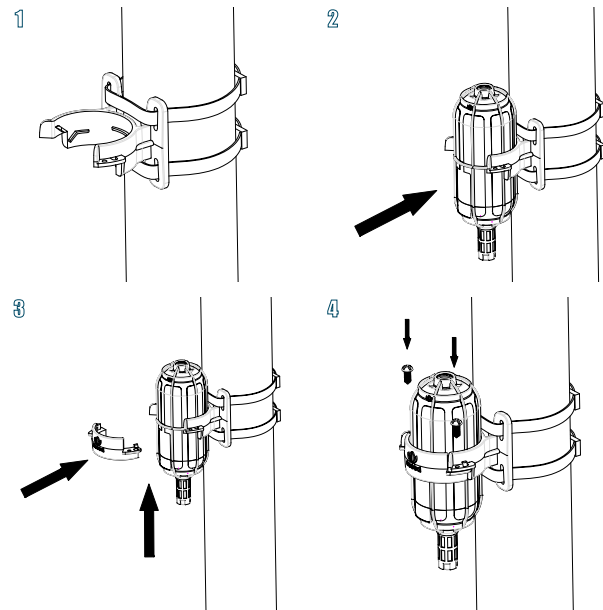


### Specifications

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-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 max(active mode)	
Communication Distance	2 to 10 km (depending on different antennas and environments)	
Battery Life	≥ 3 year (upload data once per hour)	
Battery Voltage	3.6V	
Battery Capacity	19Ah (Non-rechargeable)	
IP Rating	IP66 (Sensor Node) IP65 (Sensor Probe)	
UV Resistance	anti-aging (from rain/sun exposure): UL746C F1	

### Installation

Please refer to the user manual for more details.



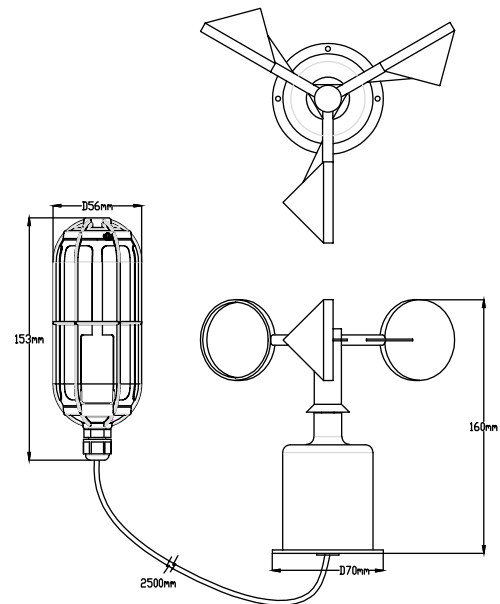
General Parameters	
Enclosure Material	PC
Operating Temperature	-40 to +85 °C (full accuracy: 0 to 65°C )
Operating Humidity	0 to 100 %RH (non-condensing)
Device Weight	237g

### Certification





### SenseCAP Wireless Wind Speed Sensor - LoRaWAN

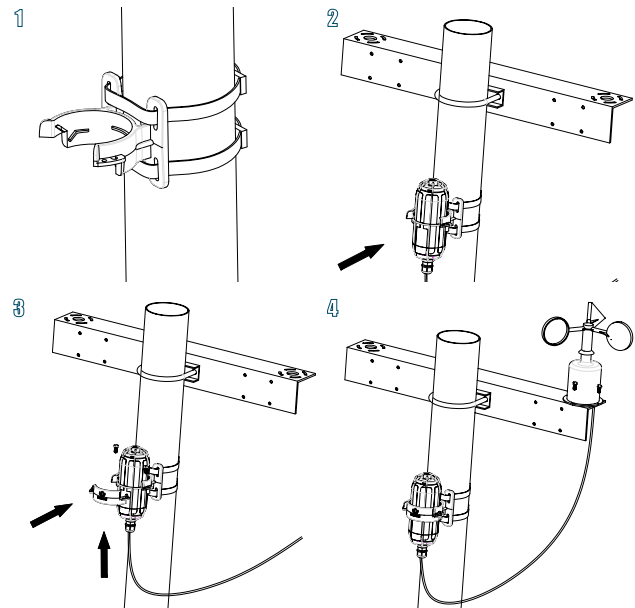


### Specifications

Wind Speed	
Range	0 to 60 m/s
Accuracy	±0.3 m/s
Resolution	0.1 m/s
General Parameters	
Product Model	LoRa-S-470/868/915-Wind Speed-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 $\mu$ A (sleep mode) 120 mA max(active mode)
Communication Distance	2 to 10 km (depending on different antennas and environments)
Battery Life	≥ 3 year (upload data once per hour)
Battery Voltage	3.6V
Battery Capacity	19Ah (Non-rechargeable)
IP Rating	IP66 (Sensor Node) IP45 (Sensor Probe)
UV Resistance	anti-aging (from rain/sun exposure): UL746C F1
Enclosure Material	PC
Operating Temperature	-40 °C to +50 °C
Operating Humidity	0 to 100 %RH (non-condensing)
Device Weight	490g

### Installation

Please refer to the user manual for more details.



### Certification

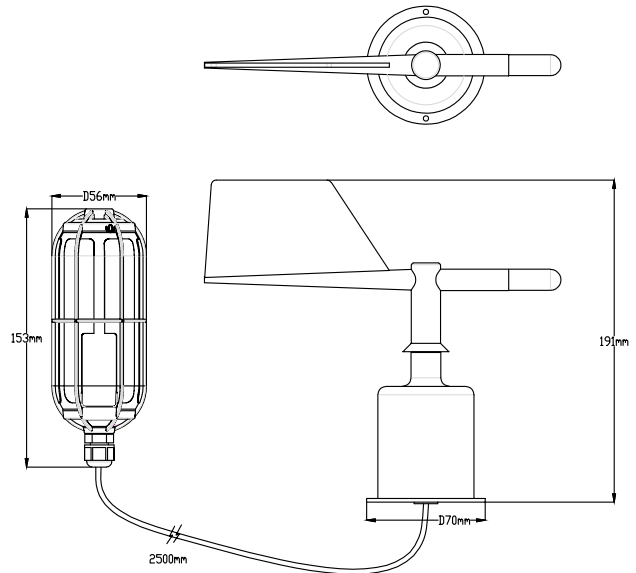




# SENSECAP

## An Industrial Wireless Sensor Network Solution

### SenseCAP Wireless Wind Direction Sensor - LoRaWAN

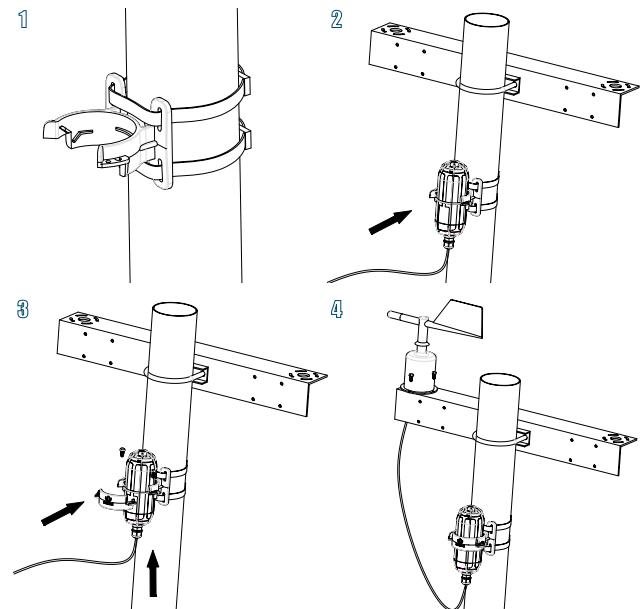


### Specifications

Wind Direction	
Range	0° to 360° (clockwise)
Accuracy	±3°
Resolution	1°
General Parameters	
Product Model	LoRa-S-470/868/915-Wind Direction-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 $\mu$ A (sleep mode) 120 mA max(active mode)
Communication Distance	2 to 10 km (depending on different antennas and environments)
Battery Life	≥ 3 year (upload data once per hour)
Battery Voltage	3.6V
Battery Capacity	19Ah (Non-rechargeable)
IP Rating	IP66 (Sensor Node) IP45 (Sensor Probe)
UV Resistance	anti-aging (from rain/sun exposure): UL746C F1
Installation	Point the slot on the casing to the south
Enclosure Material	PC
Operating Temperature	-40 °C to +50 °C
Operating Humidity	0 to 100 %RH (non-condensing)
Device Weight	518g

### Installation

Please refer to the user manual for more details.

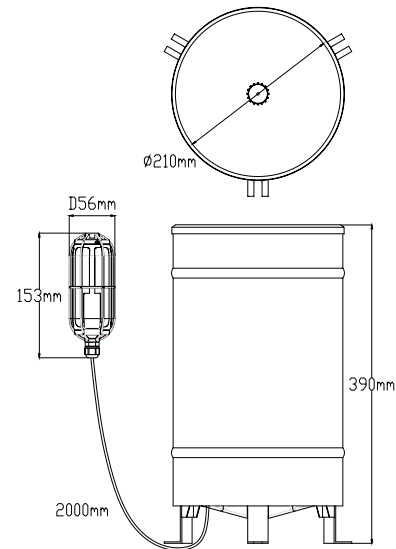


### Certification





### SenseCAP Wireless Rain Gauge - LoRaWAN

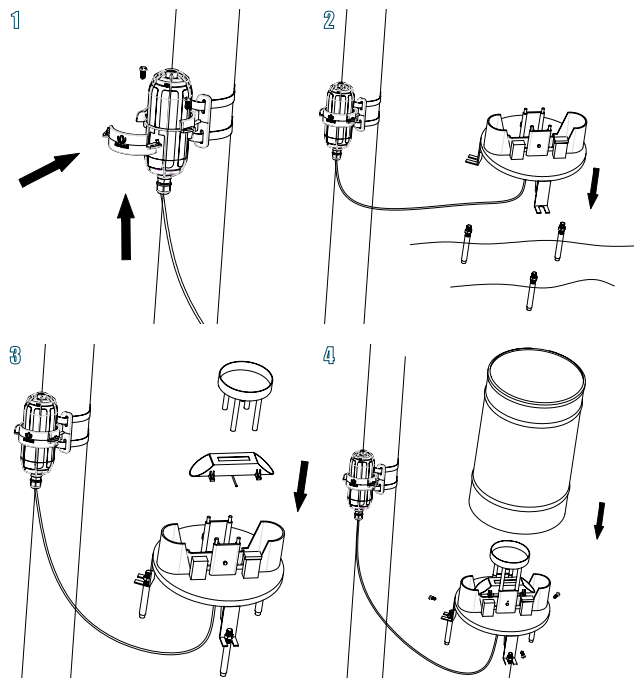


### Specifications

Rainfall Volume	
Range	0~240 mm/hour
Accuracy	≤ ±2%
Resolution	0.5 mm/hour
General Parameters	
Product Model	LoRa-S-470/868/915-Rain-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 max(active mode)
Communication Distance	2 to 10 km (depending on different antennas and environments)
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
Operating Temperature	0 °C to +50 °C
Operating Humidity	0 to 95 %RH
Device Weight	2.3kg

### Installation

Please refer to the user manual for more details.

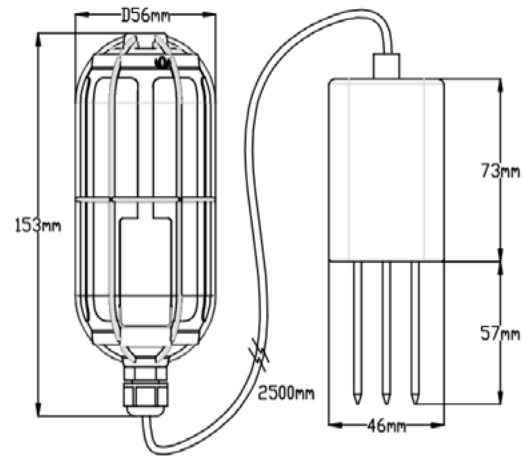


### Certification





### SenseCAP Wireless Soil Moisture and Temperature Sensor - LoRaWAN

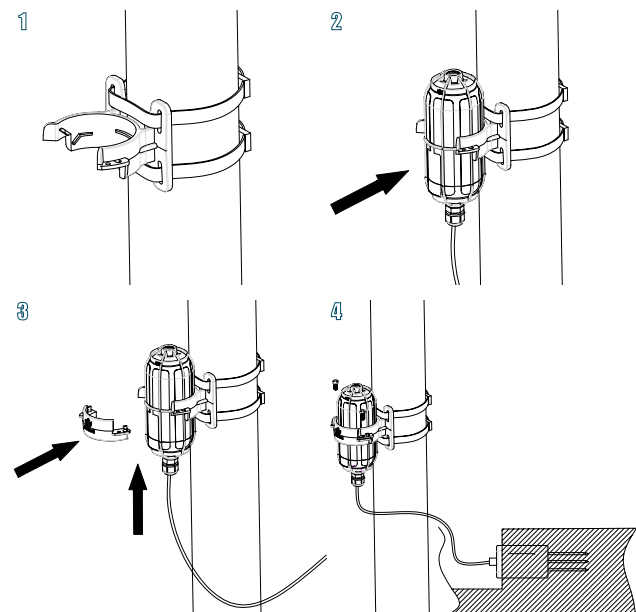


#### Specifications

Soil Temperature	
Range	-30 °C to +70 °C
Accuracy	±0.2 °C
Resolution	0.01 °C
Soil Moisture	
Range	From completely dry to fully saturated (from 0% to 100% of saturation)
Accuracy	±2% ( 0 to 50 %(m³/m³) )
Resolution	0.01 %(m³/m³)
General Parameters	
Product Model	LoRa-S-470/868/915-Soil MT-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 max(active mode)
Communication Distance	2 to 10 km (depending on different antennas and environments)
Measuring Area	A cylinder area (with the probe as the center, diameter: 7cm, height: 7cm)
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
Operating Temperature	-30 °C to +70 °C
Operating Humidity	0 to 100 %RH (non-condensing)
Device Weight	415g

#### Installation

Please refer to the user manual for more details.



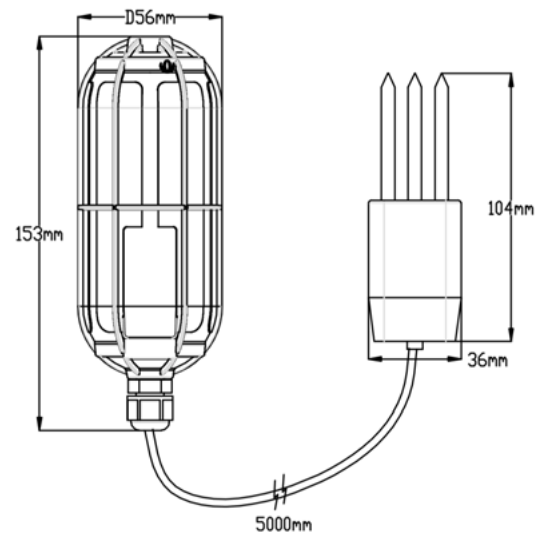
#### Certification







### SenseCAP Wireless Soil Temperature, VWC & EC Sensor - LoRaWAN

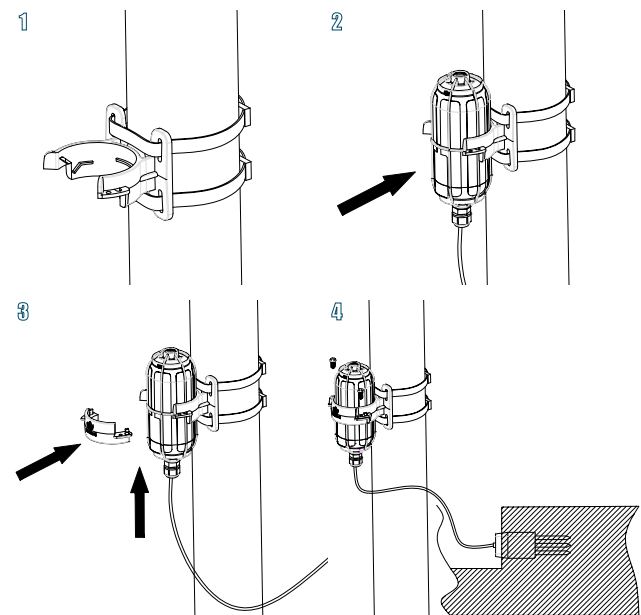


#### Specifications

Soil Temperature	
Range	-40 °C to +60 °C
Accuracy	±1 °C
Resolution	0.1 °C
Soil Volumetric Water Content	
Range	From completely dry to fully saturated (from 0% to 100% of saturation)
Accuracy	±3 %(m³/m³) typical
Resolution	0.08 %(m³/m³)
Soil Electrical Conductivity	
Range	0 to 23 dS/m (bulk)
Accuracy	±10% (0~7dS/m), user calibration required from 7~23 dS/m
Resolution	0.01 dS/m (0~7dS/m) 0.05 dS/m (7~23dS/m)
General Parameters	
Product Model	LoRa-S-470/868/915-Soil Temp&VWC&EC-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 max(active mode)
Communication Distance	2 to 10 km (depending on different antennas and environments)
Battery Life	≥ 3 year (upload data once per hour)
Battery Voltage	3.6V
Battery Capacity	19Ah (Non-rechargeable)
IP Rating	IP66

#### Installation

Please refer to the user manual for more details.



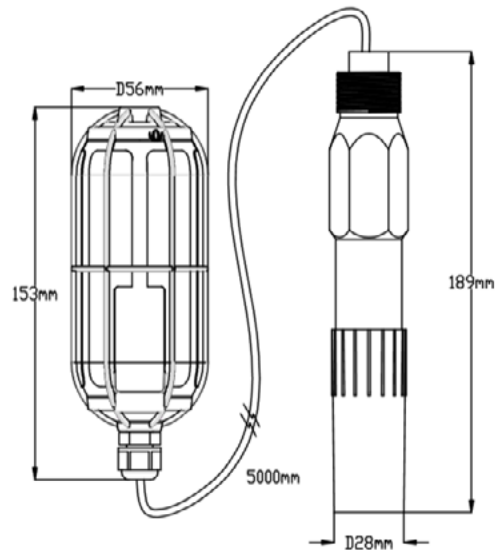
General Parameters	
UV Resistance	anti-aging (from rain/sun exposure): UL746C F1
Enclosure Material	PC
Operating Temperature	-40 °C to +60 °C
Operating Humidity	0 to 100 %RH (non-condensing)
Device Weight	385g

#### Certification





### SenseCAP Wireless pH Sensor

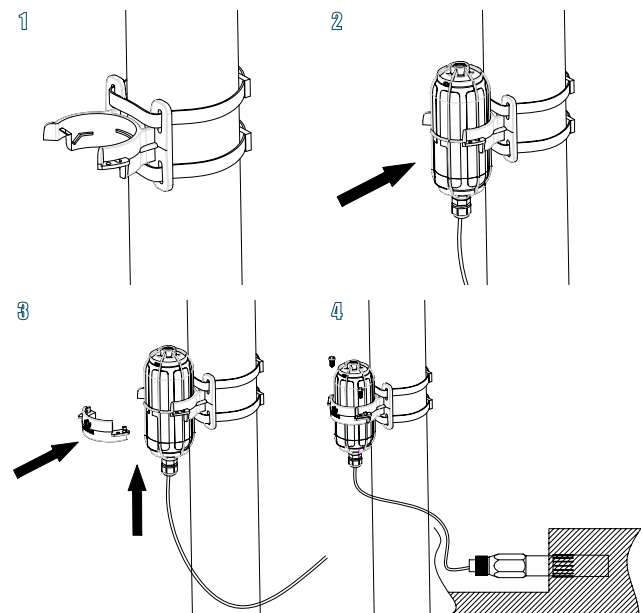


### Specifications

pH	
Range	0~14 pH
Accuracy	±0.1 pH
Resolution	0.1 pH
General Parameters	
Product Model	LoRa-S-470/868/915-pH-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 $\mu$ A (sleep mode) 120 mA max(active mode)
Communication Distance	2 to 10 km (depending on different antennas and environments)
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
Operating Temperature	-20 °C to +50 °C
Operating Humidity	0 to 100 %RH (non-condensing)
Device Weight	594g

### Installation

Please refer to the user manual for more details.

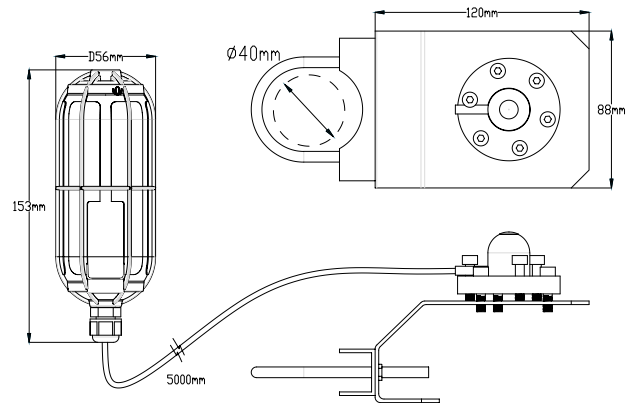


### Certification





### SenseCAP Wireless PAR Sensor - LoRaWAN



### Specifications

#### Photosynthetically Active Radiation

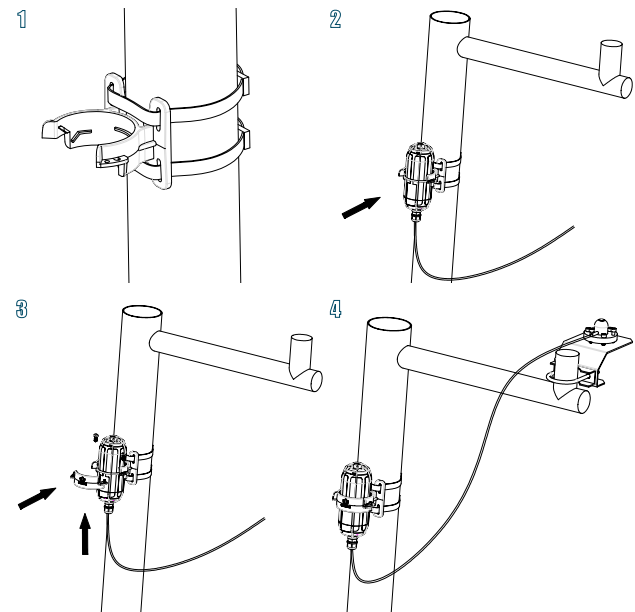
Range	0 to 2000 $\mu\text{mol m}^{-2} \text{s}^{-1}$ (410 to 655 nm)
Sensitivity	0.2 mV/ $\mu\text{mol m}^{-2} \text{s}^{-1}$
Resolution	1 $\mu\text{mol m}^{-2} \text{s}^{-1}$
Non-stability (Long-term Drift)	< 2% / year
Measurement Repeatability	< 1 %
Field of View	180°

#### General Parameters

Product Model	LoRa-S-470/868/915-PAR-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 $\mu\text{A}$ (sleep mode) 120 mA max(active mode)
Communication Distance	2 to 10 km (depending on different antennas and environments)
Battery Life	$\geq 3$ 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
Operating Temperature	-40 °C to +70 °C
Operating Humidity	0 to 100 %RH (non-condensing)
Device Weight	326g

### Installation

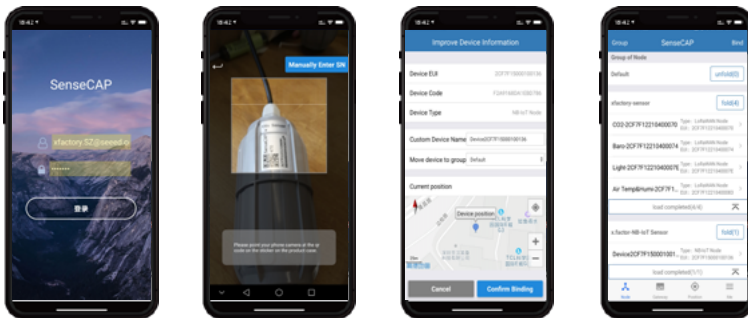
Please refer to the user manual for more details.



### Certification



## SenseCAP Application



SenseCAP App is used to bind devices to your account and check device information.

Download Application:

For iOS, please search for "SenseCAP" in the App Store and download.

For Android, please download SenseCAP Application from:

<http://sensecap-app-download.seeed.cn>



iOS



Android

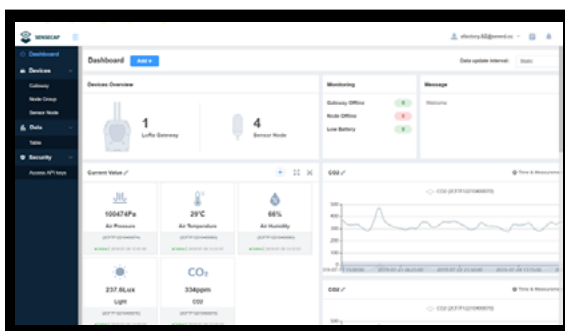
## SenseCAP Portal

SenseCAP Portal is a web-based platform which enables

- Device management
- Data management
- API Access Key management

Visit SenseCAP Portal: <https://sensecap.seeed.cc>

For more info, please visit: <https://solution.seeedstudio.com/product/sensecap>



**Dashboard**

Including Device Overview, Data Upload Interval, Announcement, Scene Data, and Data Chart, etc.

No.	ID#	Device Name	Sensor Model	Sensor Group	Programming	Online Status	Message
1	2027712215400010	2027712215400010	2027712215400010	2027712215400010	2027712215400010	Online	15478
2	2027712215400010	2027712215400010	2027712215400010	2027712215400010	2027712215400010	Online	15478
3	2027712215400010	2027712215400010	2027712215400010	2027712215400010	2027712215400010	Online	15478
4	2027712215400010	2027712215400010	2027712215400010	2027712215400010	2027712215400010	Online	15478

**Device Management**

Manage SenseCAP devices

No.	ID#	Device Name	Measurement	Value	Channel	Device Group	Error Code
1	2027712215400010	2027712215400010	Air Temperature	29.00	1	2027712215400010	2027712215400010
2	2027712215400010	2027712215400010	Air Temperature	29.00	1	2027712215400010	2027712215400010
3	2027712215400010	2027712215400010	Air Temperature	29.00	1	2027712215400010	2027712215400010
4	2027712215400010	2027712215400010	Air Temperature	29.00	1	2027712215400010	2027712215400010
5	2027712215400010	2027712215400010	Air Temperature	29.00	1	2027712215400010	2027712215400010
6	2027712215400010	2027712215400010	Air Temperature	29.00	1	2027712215400010	2027712215400010
7	2027712215400010	2027712215400010	Air Temperature	29.00	1	2027712215400010	2027712215400010
8	2027712215400010	2027712215400010	Air Temperature	29.00	1	2027712215400010	2027712215400010
9	2027712215400010	2027712215400010	Air Temperature	29.00	1	2027712215400010	2027712215400010
10	2027712215400010	2027712215400010	Air Temperature	29.00	1	2027712215400010	2027712215400010

**Data Management**

Manage data, including Data Table and Graph section, providing methods to search for data.

Label	API ID	Access Level	API Status	Creation Time
2027712215400010	2027712215400010	Full Access	Active	2027712215400010
2027712215400010	2027712215400010	Full Access	Active	2027712215400010
2027712215400010	2027712215400010	Full Access	Active	2027712215400010
2027712215400010	2027712215400010	Full Access	Active	2027712215400010

**Access Key Management**

Manage Access Key (to access API service), including: Key Create, Key Update, and Key Check.

## Application Programming Interface (API) Instructions

SenseCAP also provides API to support further development.  
Please visit this link for more info: <https://sensecap-docs.seeed.cc>

The screenshot shows the SenseCAP API Documentation website. The header includes the SenseCAP API Documentation logo and a search bar. The left sidebar contains a navigation menu with sections: SenseCAP API Introduction, HTTP API (with sub-items: HTTP API Quickstart, HTTP API Access Guide, HTTP API Reference), DATA OPENSTREAM API (with sub-items: Data OpenStream API Quickstart, Data OpenStream API Reference), and APPENDIX (with sub-items: List of Sensor Types, List of Measurement IDs). The main content area is titled 'SenseCAP API Introduction' and contains text explaining the API's purpose and usage. A 'Next - HTTP API' button is visible, along with a 'WAS THIS PAGE HELPFUL?' feedback section.

## SenseCAP Tools

SenseCAP provides a config tool to modify Sensor parameters like Device EUI, AppKey, data upload interval etc. For more details, please visit <https://github.com/Seeed-Solution/SenseCAP-Node-Configuration-Tool/releases>

The screenshot shows the SenseCAP Node Configuration Tool interface. It features a menu bar (File, Edit, View, Window) and a toolbar with a 'DISCONNECT' button. The main area contains input fields for Serial Port (COM5), Device Type (LoRaWAN), Device EUI (2CF7F12010700054), App EUI (8000000000000006), App Key (00E1B64631F61009125EBDE00EF861C7), Data Interval (10 minutes), Battery (100%), Hardware Version (v1.0), and Software Version (v3.1). There are buttons for 'READ', 'WRITE', and 'UPDATE FW'. A console window on the right displays the SenseCAP logo and a list of commands and their descriptions. The bottom status bar shows the SenseCAP logo and version v1.0.1.



## FCC Warning

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

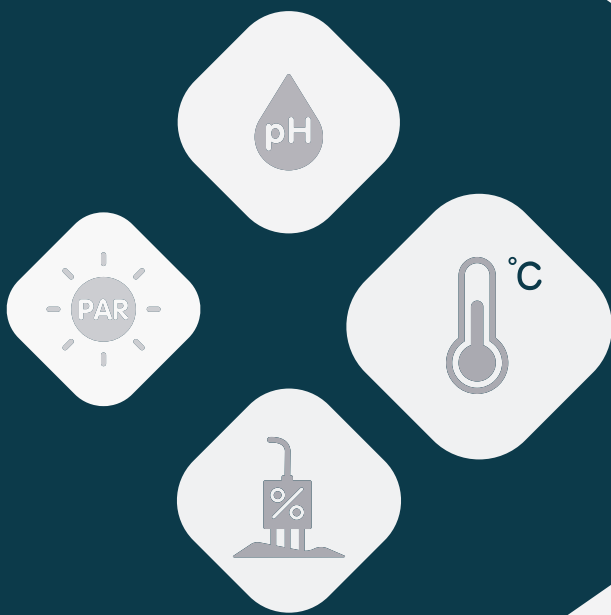
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.



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#### CONTACT

Website: [solution.seeedstudio.com](http://solution.seeedstudio.com)

Sales: [iot@seeed.cc](mailto:iot@seeed.cc)

Support: [sensecap@seeed.cc](mailto:sensecap@seeed.cc)

Phone: +86 755 3653 4305