



SENSECAP

LoRaWAN Gateway and Wireless Sensor Catalog

Version: V1.4



CO₂



pH

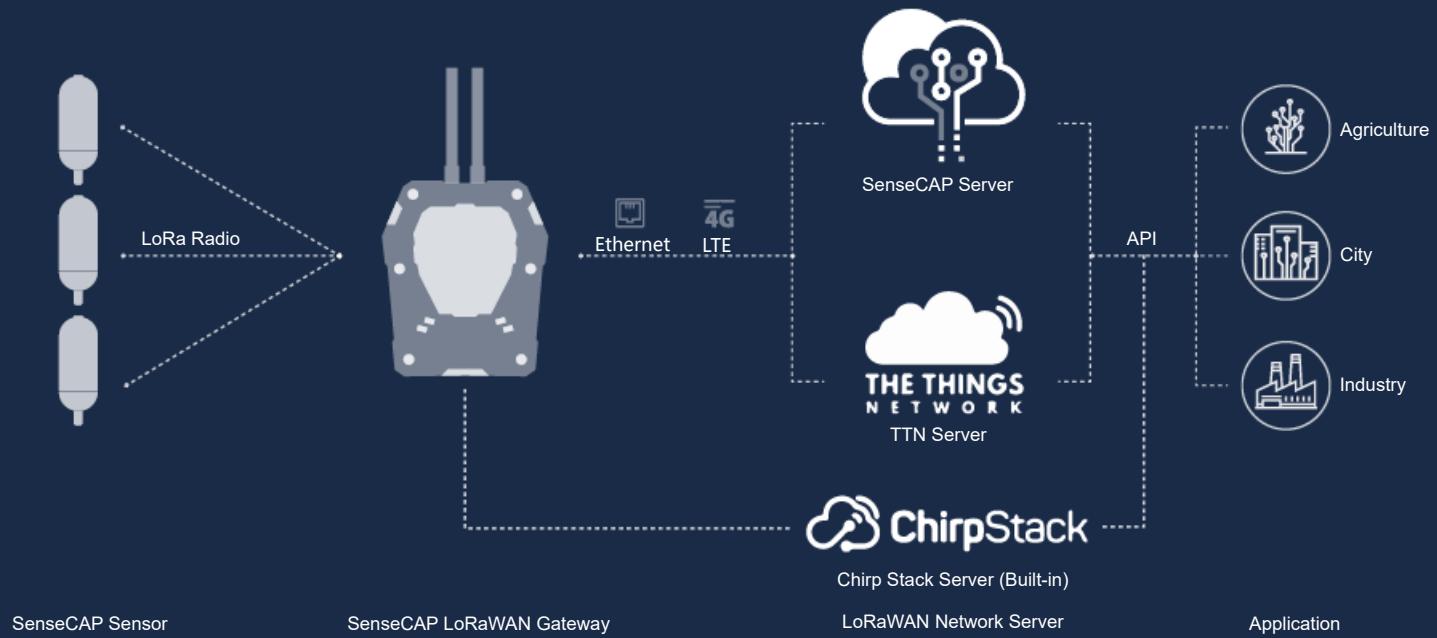


Contents

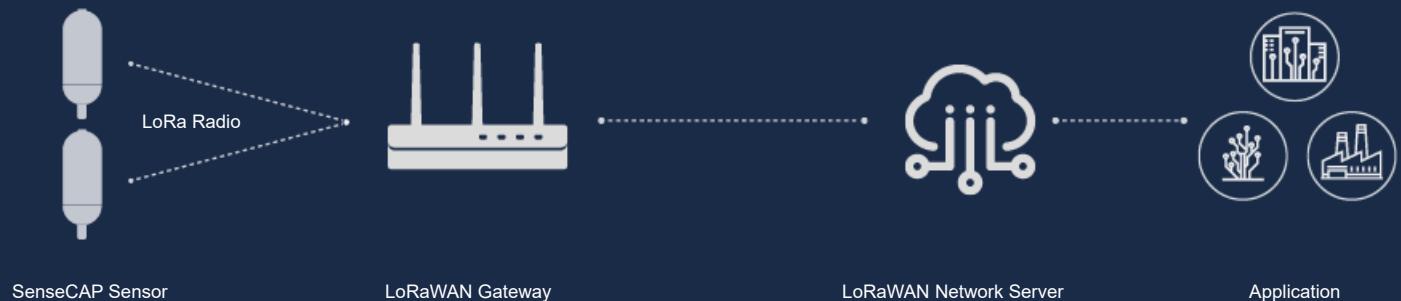
About SenseCAP.....	3
SenseCAP Gateway-LoRaWAN.....	4
SenseCAP Wireless Air Temperature and Humidity Sensor-LoRaWAN.....	5
SenseCAP Wireless Light Intensity Sensor-LoRaWAN.....	7
SenseCAP Wireless CO ₂ Sensor-LoRaWAN.....	8
SenseCAP Wireless Barometric Pressure Sensor-LoRaWAN.....	9
SenseCAP Wireless Wind Speed Sensor-LoRaWAN.....	10
SenseCAP Wireless Wind Direction Sensor-LoRaWAN.....	11
SenseCAP Wireless Rain Gauge Sensor-LoRaWAN.....	12
SenseCAP Wireless Soil Moisture and Temperature Sensor-LoRaWAN.....	13
SenseCAP Wireless Soil Temperature, VWC & EC Sensor-LoRaWAN.....	14
SenseCAP Wireless pH Sensor-LoRaWAN.....	15
SenseCAP Wireless PAR Sensor-LoRaWAN.....	16
SenseCAP Portal.....	17
API Instructions.....	18

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.

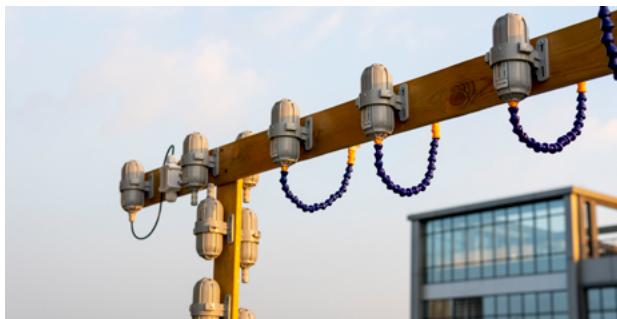
SenseCAP LoRaWAN version products include LoRaWAN Gateways and Sensor Nodes. Based on LoRaWAN protocol, it can realize one-to-many, long-distance networking, and bilateral communication. The LoRaWAN gateway supports Ethernet and 4G. The sensor node is powered by a high-capacity battery that lasts up 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°C to +70°C



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

An Industrial Wireless Sensor Network Solution

SenseCAP Gateway - LoRaWAN



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)



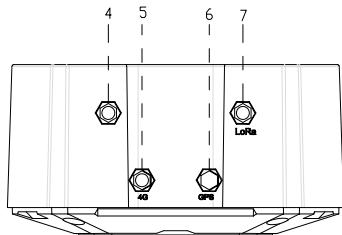
Introduction

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.

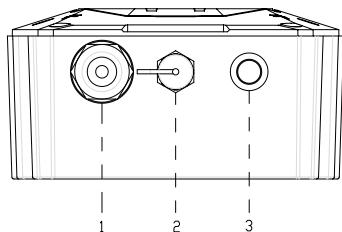
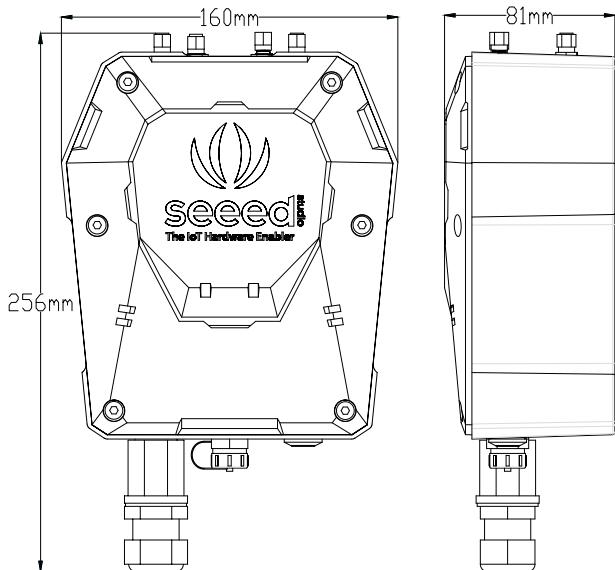
General Parameters	
UMTS Features	Support 3GPP R8 DC-HSDPA, HSPA+, HSDPA, HSUPA and WCDMA DC-HSDPA: Max 42Mbps (DL) HSUPA: Max 5.76Mbps (UL) WCDMA: Max 384Kbps (DL), Max 384Kbps (UL)
LoRa Antenna	CN470: 0.5dBi gain / Vertical polarization / Omni-directional / SMA-J connector EU868: 2.5dBi gain / Vertical 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

SenseCAP Gateway - LoRaWAN

Device Dimensions



Certification



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

** 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.

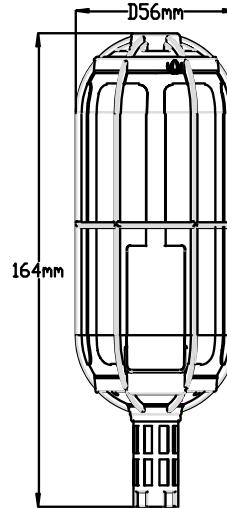
© 2008-2020 Seeed Technology Co., Ltd. All rights reserved.



SENSECAP

An Industrial Wireless Sensor Network Solution

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

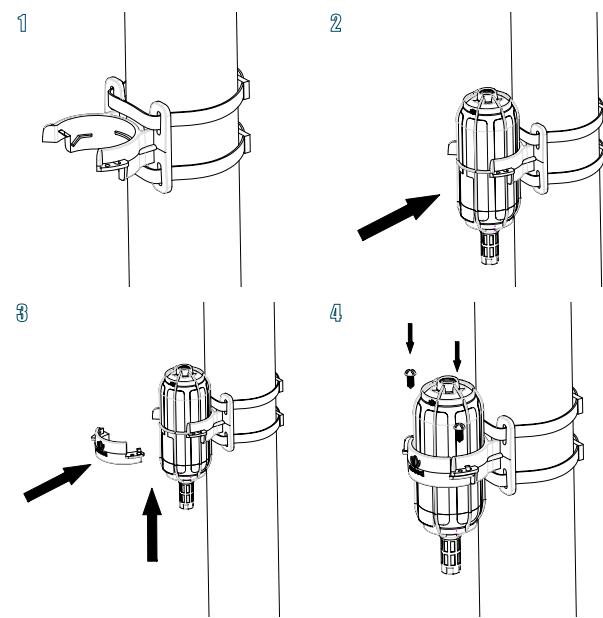
Range	0 to 100 %RH (non-condensing)
Accuracy	±1.5 %RH
Resolution	1 %RH
Drift	< 0.25 %RH/year

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

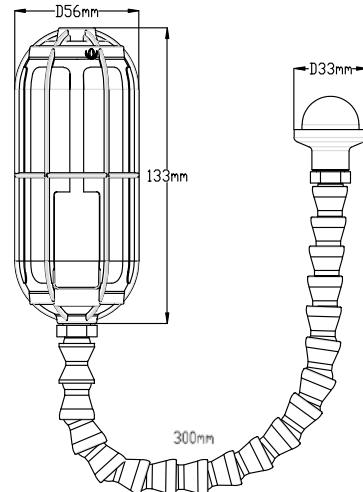




SENSECAP

An Industrial Wireless Sensor Network Solution

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 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

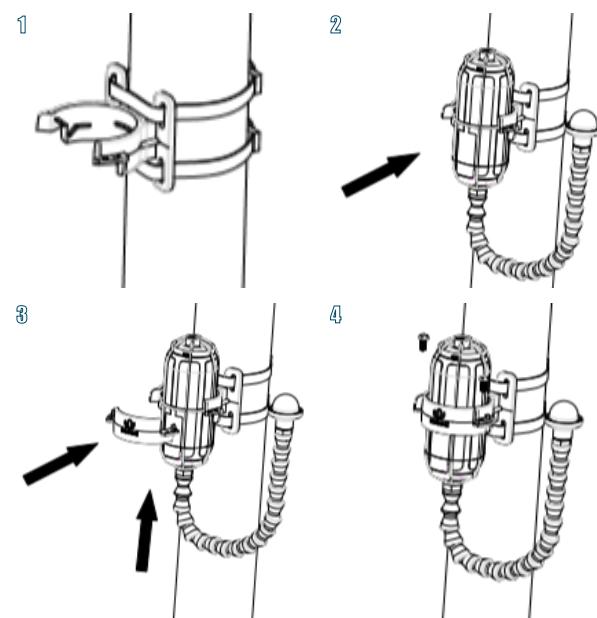
Operating Temperature -40 °C to +85 °C

Operating Humidity 0 to 100 %RH (non-condensing)

Device Weight 288g

Installation

Please refer to the user manual for more details.



Certification

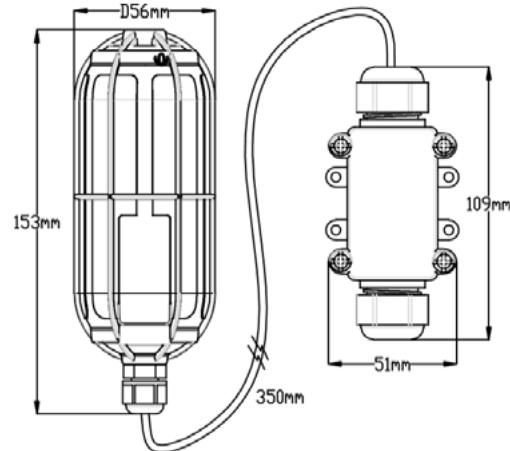




SENSECAP

An Industrial Wireless Sensor Network Solution

SenseCAP Wireless CO2 Sensor - LoRaWAN



Specifications

CO2

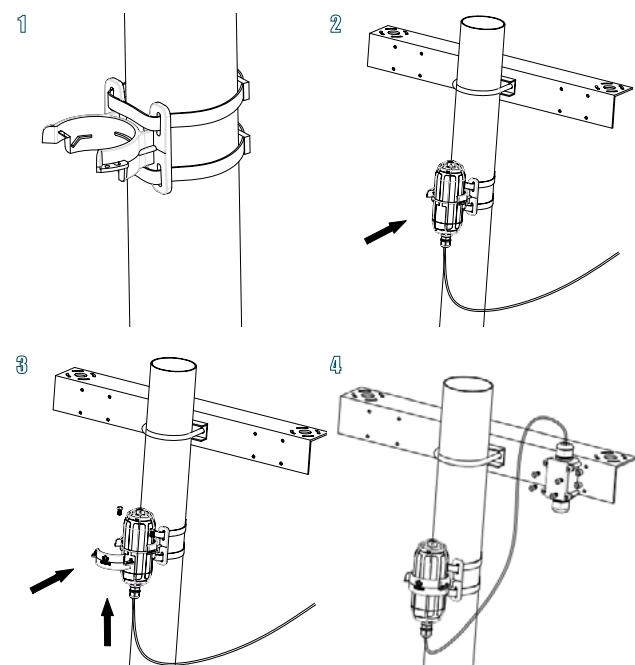
Parameters	Condition	Value
Range	-	0 to 40000 ppm
Accuracy	400 to 10000ppm	$\pm(30 \text{ ppm} + 3 \% \text{MV})$
Resolution	-	1 ppm
Temperature	$T = 0 \text{ to } 50^\circ\text{C}$	$\pm 2.5 \text{ ppm / } ^\circ\text{C}$
Stability	400 to 10000 ppm	$\pm 2.5 \text{ ppm / } ^\circ\text{C}$

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 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) Indoor (Sensor Probe) *
UV Resistance	anti-aging (from rain/sun exposure): UL746C F1
Enclosure Material	PC
Operating Temperature	0 $^\circ\text{C}$ to +50 $^\circ\text{C}$
Operating Humidity	0 to 95 %RH
Device Weight	319g

Installation

Please refer to the user manual for more details.



Certification

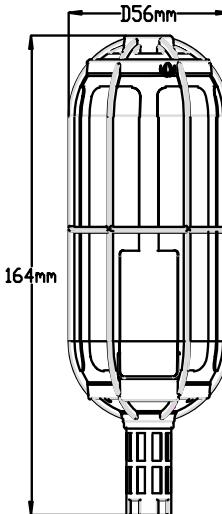




SENSECAP

An Industrial Wireless Sensor Network Solution

SenseCAP Wireless Barometric Pressure Sensor - LoRaWAN



Specifications

Barometric Pressure

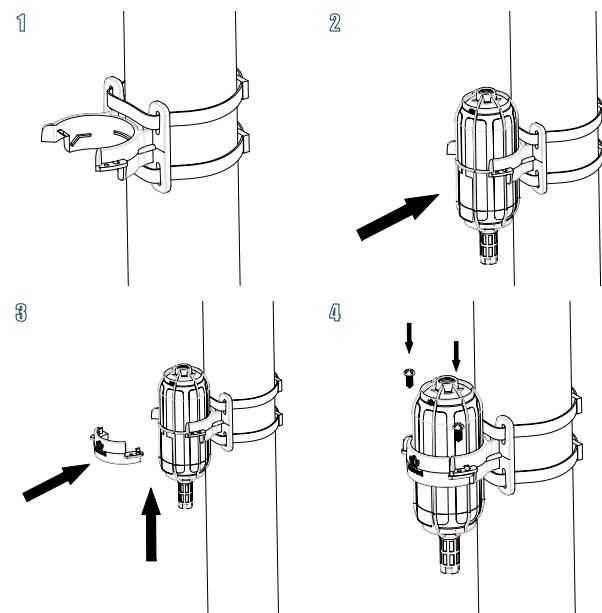
Parameters	Condition	Value
Range	-	300~1100 hPa
Resolution	-	1 Pa
Relative Accuracy	700 to 900 hPa 25 to 40 °C	±0.12 hPa
Absolute Accuracy	300 to 1100 hPa -20 to 0 °C	±1.7 hPa
Absolute Accuracy	300 to 1100 hPa 0 to 65 °C	±1.0 hPa
Temperature Coefficient Offset	900 hPa 25 to 40 °C	1.5 Pa/K
Drift	-	±1.0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

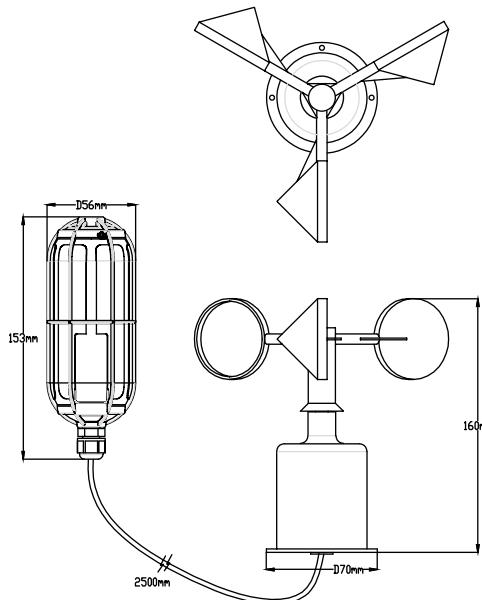




SENSECAP

An Industrial Wireless Sensor Network Solution

SenseCAP Wireless Wind Speed Sensor - LoRaWAN



Specifications

Wind Speed

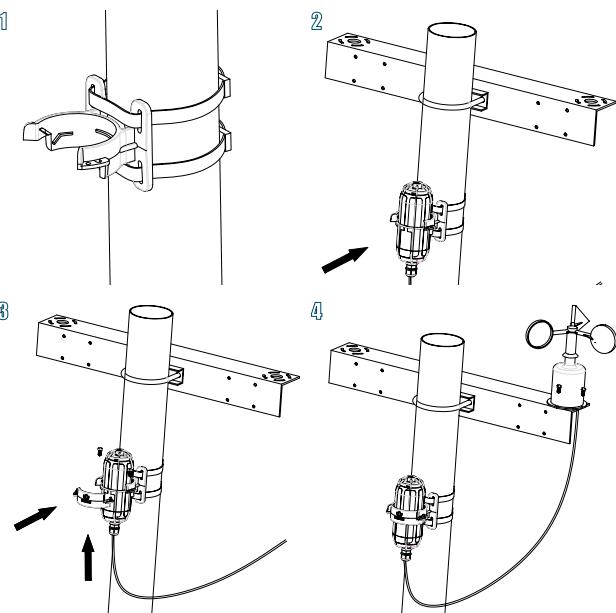
Range	0 to 60 m/s
Accuracy	±0.3 m/s
Resolution	0.1 m/s

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 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) 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

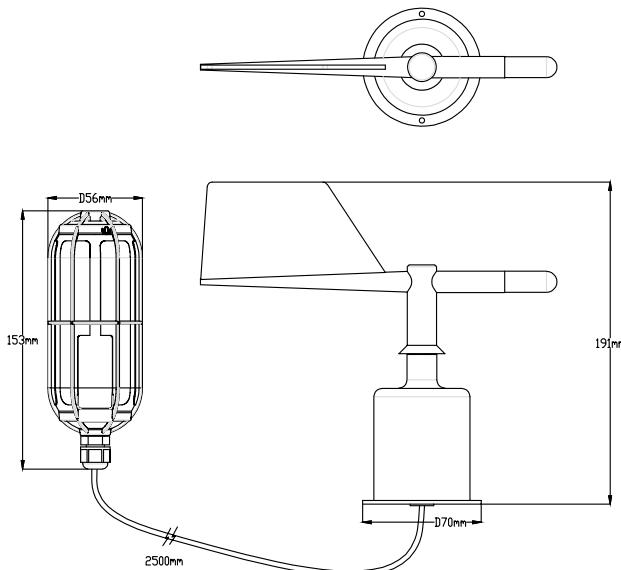




SENSECAP

An Industrial Wireless Sensor Network Solution

SenseCAP Wireless Wind Direction Sensor - LoRaWAN



Specifications

Wind Direction

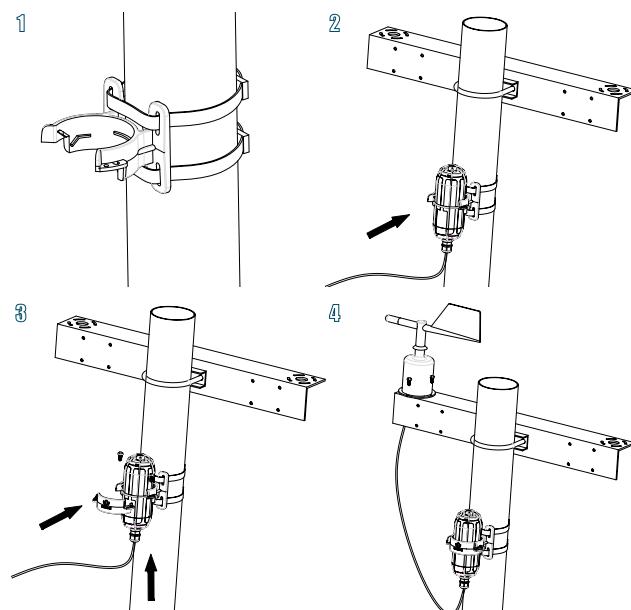
Range	0° to 360° (clockwise)
Accuracy	±3°
Resolution	1°

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) 470MHz: -140dBm(SF12, BW125KHz) 868MHz: -137.5dBm(SF12, BW125KHz) 915MHz: -136.5dBm(SF12, BW125KHz)
Sensitivity	5 µA (sleep mode) 120 mA max(active mode)
Current Consumption	2 to 10 km (depending on different antennas and environments)
Communication Distance	≥ 3 year (upload data once per hour)
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

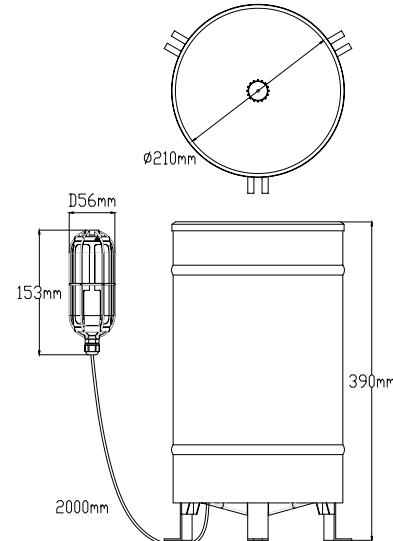




SENSECAP

An Industrial Wireless Sensor Network Solution

SenseCAP Wireless Rain Gauge - LoRaWAN



Specifications

Rainfall Volume

Range 0~240 mm/hour

Accuracy $\leq \pm 2\%$

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 μ 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

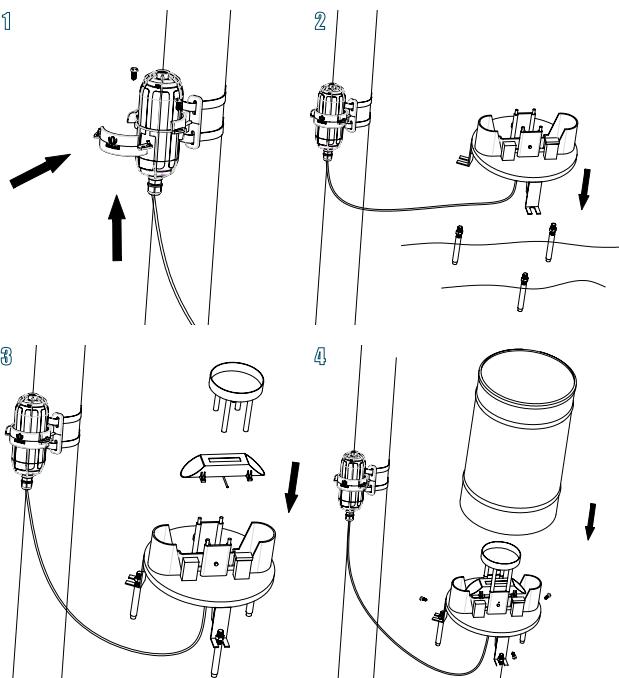
Operating Temperature 0 °C to +50 °C

Operating Humidity 0 to 95 %RH

Device Weight 2.3kg

Installation

Please refer to the user manual for more details.



Certification

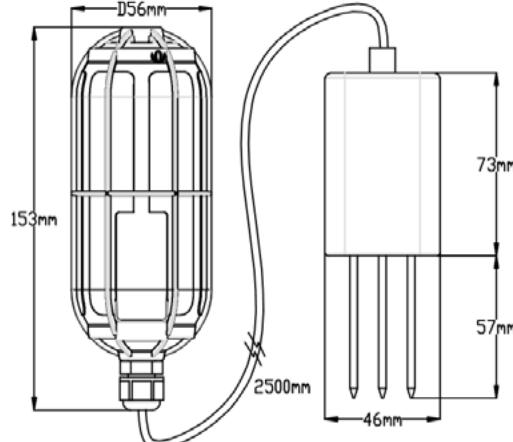




SENSECAP

An Industrial Wireless Sensor Network Solution

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

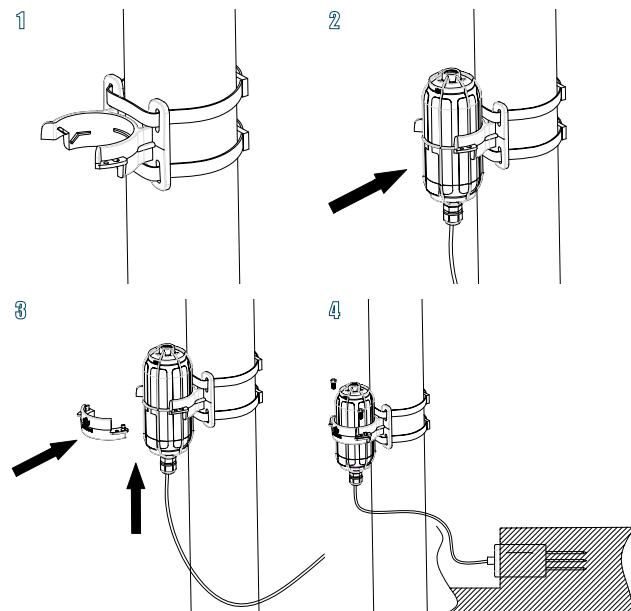
Range	From completely dry to fully saturated (from 0% to 100% of saturation)
Accuracy	±2% (0 to 50 %(m^3/m^3))
Resolution	0.01 %(m^3/m^3)

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

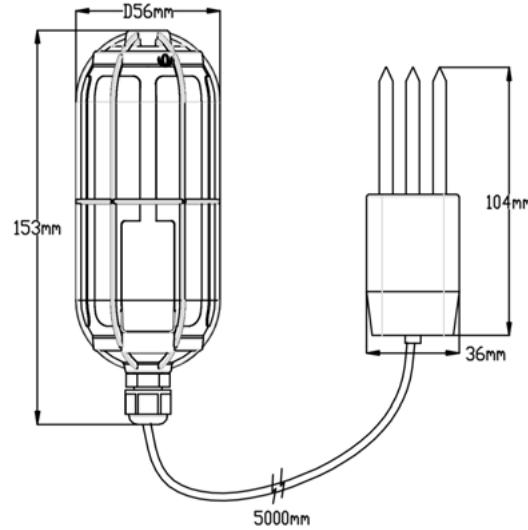




SENSECAP

An Industrial Wireless Sensor Network Solution

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)

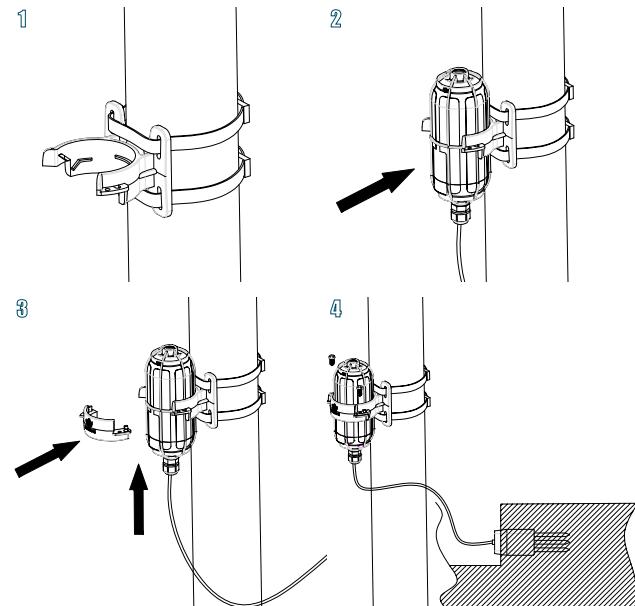
Battery Voltage 3.6V

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

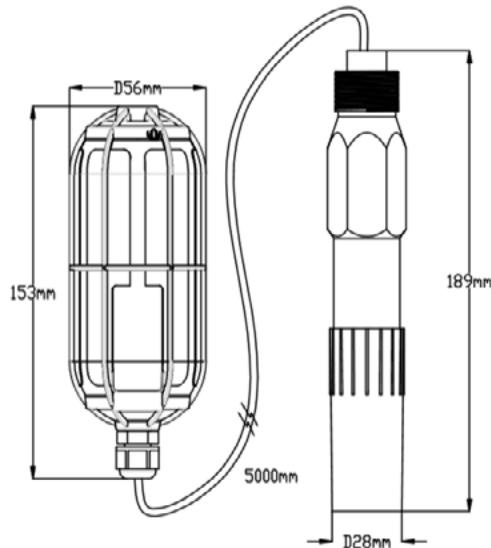




SENSECAP

An Industrial Wireless Sensor Network Solution

SenseCAP Wireless pH Sensor



Specifications

pH

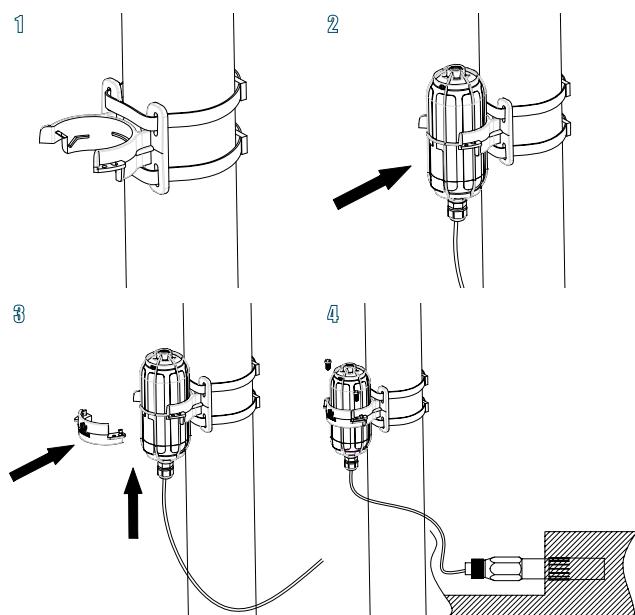
Range	0~14 pH
Accuracy	±0.1 pH
Resolution	0.1 pH

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 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	-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

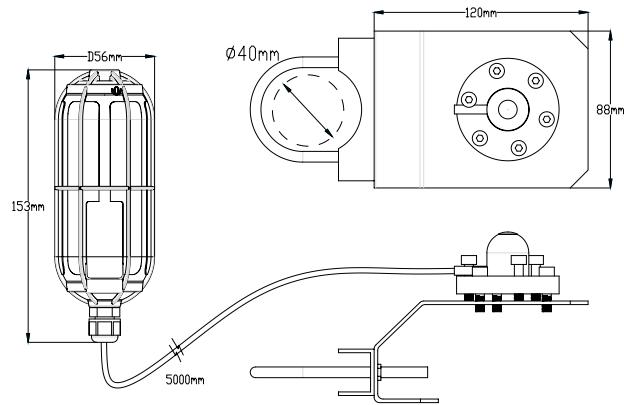




SENSECAP

An Industrial Wireless Sensor Network Solution

SenseCAP Wireless PAR Sensor - LoRaWAN



Specifications

Photosynthetically Active Radiation

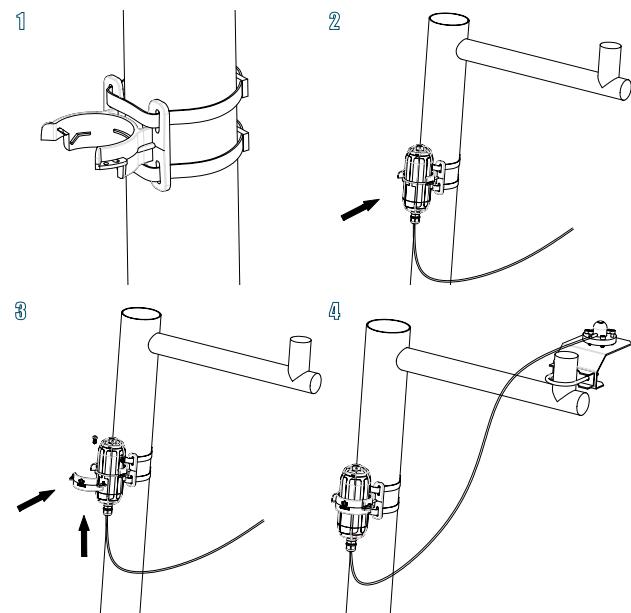
Range	0 to 2000 $\mu\text{mol m}^{-2} \text{s}^{-1}$ (410 to 655 nm)
Sensitivity	0.2 mV/ $\mu\text{mol m}^{-2} \text{s}^{-1}$
Resolution	1 $\mu\text{mol m}^{-2} \text{s}^{-1}$
Non-stability (Long-term Drift)	< 2% / year
Measurement Repeatability	< 1 %
Field of View	180°

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 μA (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

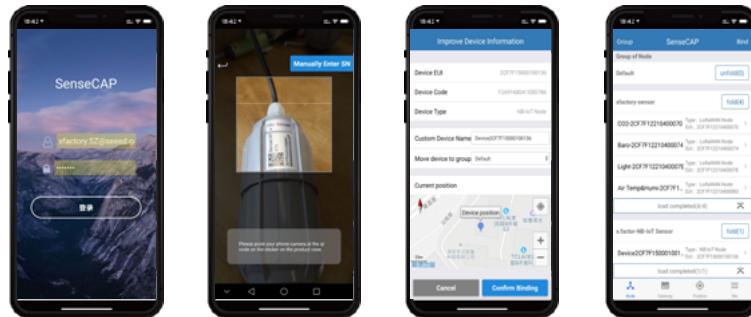
Please refer to the user manual for more details.



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.

Device Management

Manage SenseCAP devices

Data Management

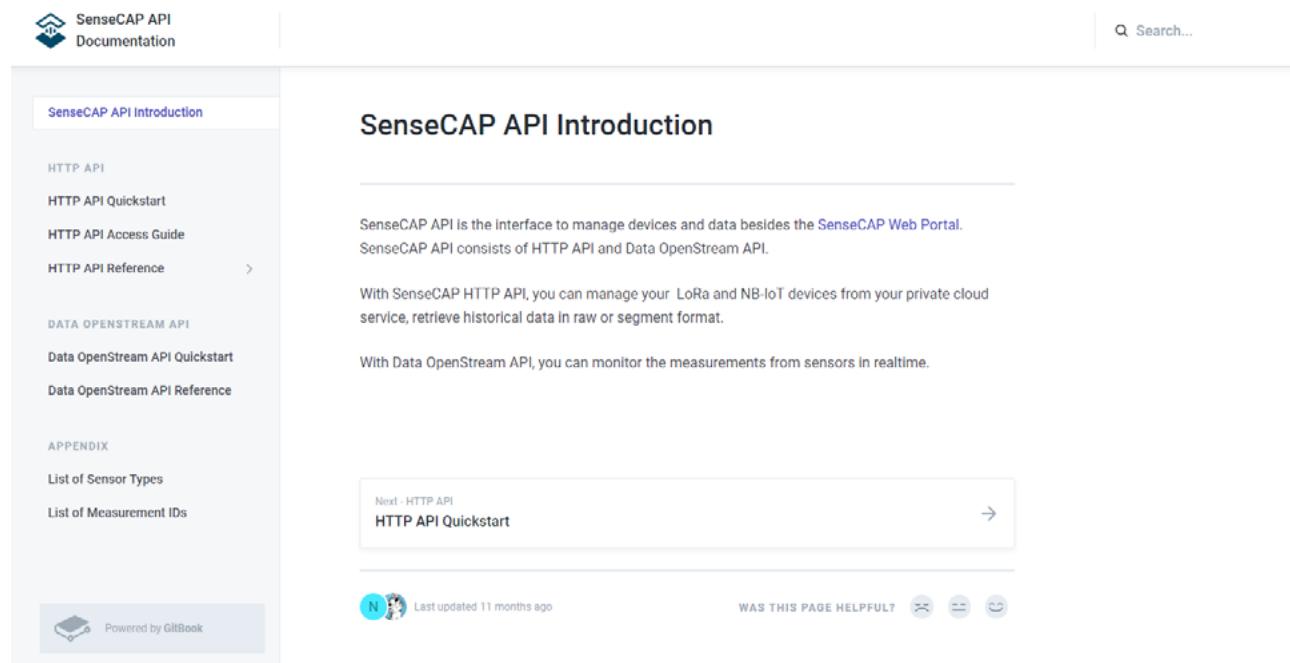
Manage data, including Data Table and Graph section, providing methods to search for data.

Access Key Management

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

Application Programming Interface (API) Instructions

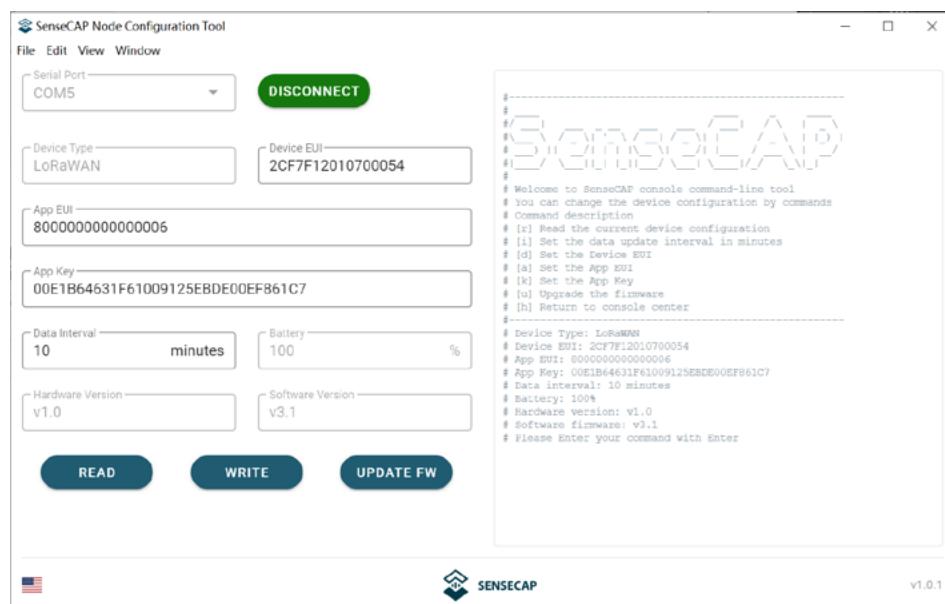
SenseCAP also provides API to support further development.
Please visit this link for more info: <https://sensecap-docs.seeed.cc>

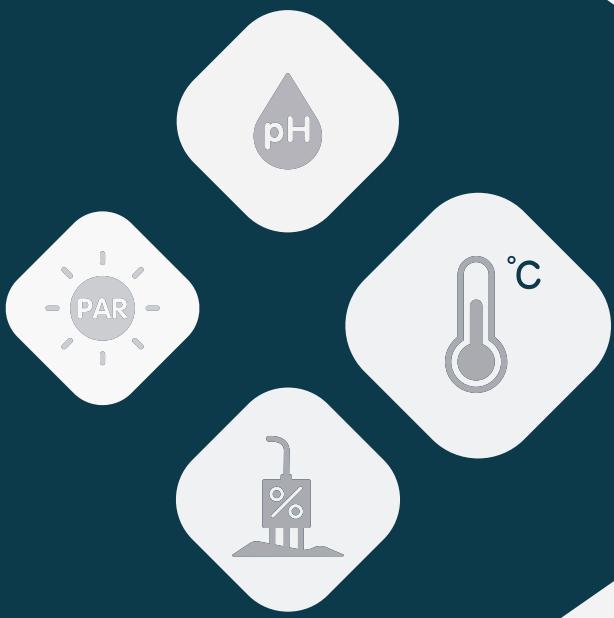


The screenshot shows the SenseCAP API Documentation page. The left sidebar contains navigation links for SenseCAP API Introduction, HTTP API, HTTP API Quickstart, HTTP API Access Guide, HTTP API Reference, DATA OPENSTREAM API, Data OpenStream API Quickstart, Data OpenStream API Reference, and APPENDIX (List of Sensor Types, List of Measurement IDs). The main content area is titled "SenseCAP API Introduction". It explains that SenseCAP API is the interface to manage devices and data besides the SenseCAP Web Portal. It consists of HTTP API and Data OpenStream API. It also mentions that with SenseCAP HTTP API, you can manage your LoRa and NB-IoT devices from your private cloud service, retrieve historical data in raw or segment format. With Data OpenStream API, you can monitor the measurements from sensors in realtime. A "Next - HTTP API" link leads to the "HTTP API Quickstart" page. At the bottom right, there is a "WAS THIS PAGE HELPFUL?" section with three icons.

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>





© 2008-2020 Seeed Technology Co., Ltd. All rights reserved.

CONTACT

Website: solution.seeedstudio.com
Sales: iot@seeed.cc
Support: sensecap@seeed.cc
Phone: +86 755 3653 4305