SENSECAP

Professional Internet of Things Solution

Air Temperature and Humidity 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 LoRa wireless module, this wireless Air Temperature & Humidity Sensor transmits the collected data of air temperature and humidity to the base station and then to the server. Built on the high-precision temperature & humidity measurement chip from Switzerland, this sensor features stability and reliability, making it widely applicable in industrial environmental sensing. 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

Air Temperature

Range	-40 ℃ to +85 ℃
Accuracy	±0.2 ℃
Resolution	0.1 ℃
Data Drift	< 0.03 ℃ /year

Air Humidity

Range	0 to 100 %RH
Accuracy	±1.5 %RH
Resolution	1 %RH
Data Drift	< 0.25 %RH/year

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 (active mode)
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 ℃
Operating Humidity	0 to 100 %RH
Device Weight	238g

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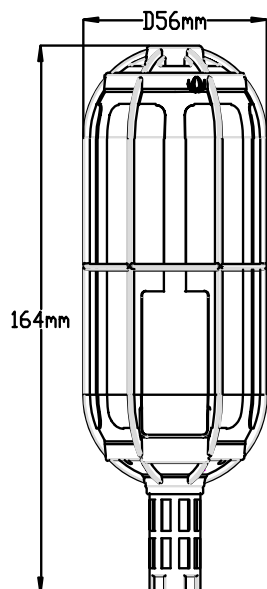
CN470	
Uplink	Channels:[80,81,82,83,84,85,86,87] Frequency(MHz): 486.3, 486.5, 486.7, 486.9, 487.1, 487.3, 487.5, 487.7 (SF7BW125 to SF12BW125)
Downlink	Frequency(MHz): 506.7, 506.9, 507.1, 507.3, 507.5, 507.7, 507.9, 508.1 (SF7BW125 to SF12BW125) 505.3 -SF12BW125 (RX2 downlink only)

Air Temperature and Humidity Sensor

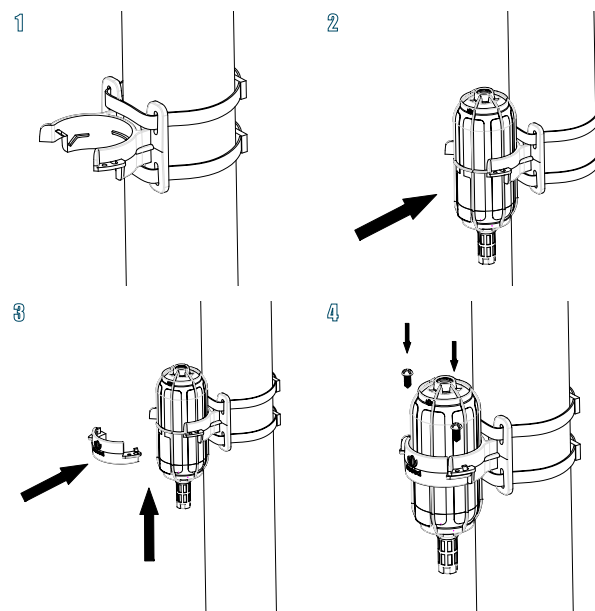| EU868	
Uplink	Channels: [0,1,2,3,4,5,6,7] Frequency(MHz): 868.1, 868.3, 868.5, 867.1, 867.3, 867.5, 867.7, 867.9 (SF7BW125 to SF12BW125)
Downlink	Multiplexing the frequency points of the 8 uplink channels. 869.525MHz -SF9BW125 (RX2 downlink only)

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:

Light   Carbon dioxide   Barometric   Soil Moisture   Soil Temperature   Wind Speed   Wind Direction   Air Temperature   Air Humidity   More ......

If you'd like to purchase or get more info about SenseCAP, please visit website:
• Website: solution.seeed.cc
• 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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