



### LoRaWAN Wind Direction Sensor



#### Features

- Support LoRaWAN<sup>TM</sup>(\*) protocol Class A
- High reliability and stability
- Ultra-wide-distance transmission: 10km in line of sight scene, 2 km in urban scene
- Battery life  $\geq 3$  years
- Rapid installation and deployment
- IP66 enclosure, suitable for outdoor applications
- High hardness, corrosion resistance, no rust

#### Applications

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

#### Introduction

With a built-in wireless LoRa module, this Wind Direction Sensor transmits the collected wind direction data to the base station and then to the server. The neat design elaborately distributes the sensor's structure and weight, leading to smaller rotation inertia and more sensitive response. The sensor can precisely capture values of 8 directions, making it suitable for industrial environmental scenarios, such as greenhouse and weather station. The built-in independent battery can last for 3 years in ultra-low-power-consumption working mode. Through special machining techniques, the aluminum-alloy-made sensor features high hardness, corrosion resistance, and non rusting, making it suitable for long-term outdoor environment applications.

#### Specifications

Wind Direction	
Range	0° to 360°
Accuracy	$\pm 3^\circ$
Resolution	1°

Enclosure Material	PC+PBT
Operating Temperature	-20 °C to +50 °C
Operating Humidity	0 to 100 %RH
Device Weight	518g

Parameters	
Product Model	LoRa-S-470/868/915-Wind Direction-01
Microcontroller	Ultra-low-power MCU
Support Protocol	Based on LoRaWAN <sup>TM</sup> 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 (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
Installation	Point the slot on the casing to the south



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<sup>TM</sup> 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)

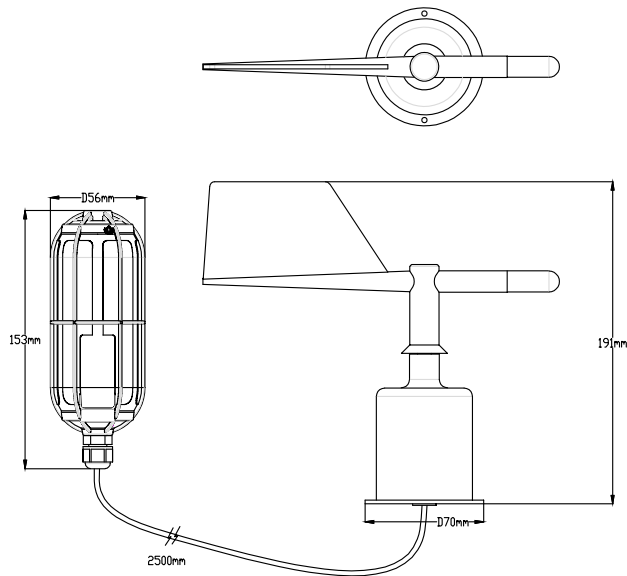
# LoRaWAN Wind Direction Sensor

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)

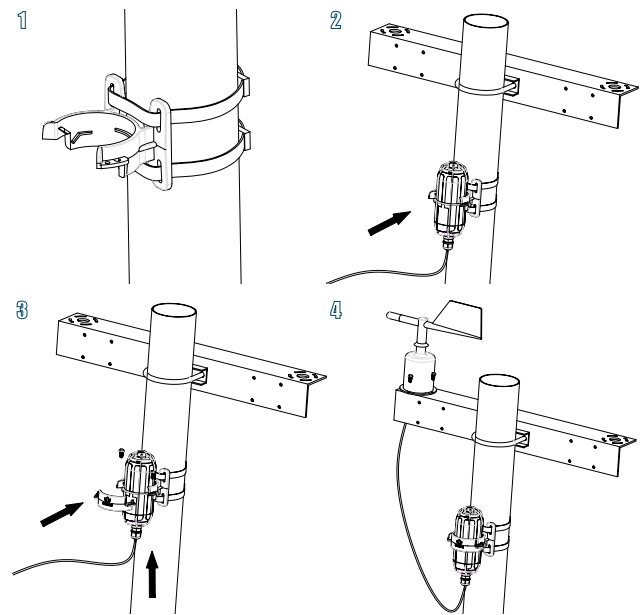
Downlink Frequency(MHz): 923.3, 923.9, 924.5, 925.1, 925.7,  
926.3, 926.9, 927.5 (SF7BW500 to SF12BW500)

## Device Dimensions



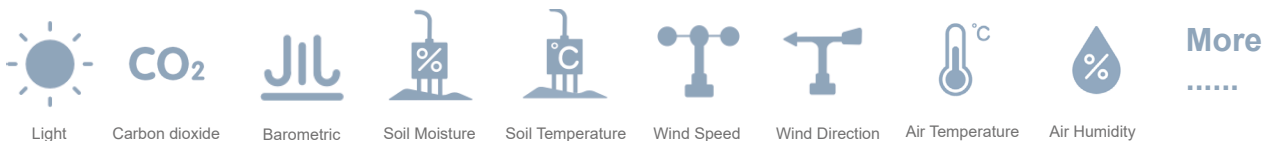
## Installation

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:



If you'd like to purchase or get more info about SenseCAP, please visit website:

- Website: [solution.seeed.cc](http://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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