SENSECAP LoRaWAN Series

Enable Wireless Sensing

SenseCAP is a series of industrial IoT products.
Its LoRaWAN version is based on LoRaWAN protocol tailored for IoT applications that need low-power, long-distance and long-term data collection, applicable in both indoor and outdoor remote sensing scenarios such as Smart Farming and Smart Building.

solution.seeedstudio.com/product/sensecap

FC   CE   RoHS   LoRaWAN

Why SenseCAP?

Industrial design with IP66 enclosure and supports extended temperature range

Battery-powered with low-power consumption design, easy to configure and deploy

10km

Ultra-wide-distance transmission, up to 10km

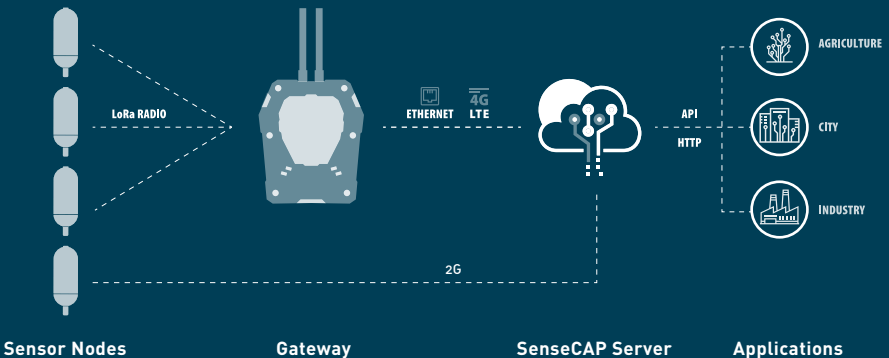**Applicable to worldwide market with multiple ISM bands**

Based on LoRaWAN protocol and certified by FCC, CE and RoHS

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

System Architecture

LoRa RADIO

ETHERNET 4G LTE

API
HTTP

AGRICULTURE

CITY

INDUSTRY

2G

Sensor Nodes   **Gateway**   **SenseCAP Server**   **Applications**

Note:
SenseCAP LoRaWAN Gateways can only be used with SenseCAP Sensors.
SenseCAP Sensors can be used with any standard LoRaWAN gateways. When using SenseCAP sensors with SenseCAP Gateways, there is no extra workload for configuration.

Product List

Devices	Functions	Measuring Range and Accuracy	
LoRaWAN Gateway	Collect data from Sensor Nodes and send to the cloud platform via 4G or Ethernet. With a high-performance processor and telecom-operator-level LoRa chip, this gateway ensures stable data transmission in large-scale network.	Processor: Cortex-A8 1GHz Communication Distance: 5~10km Working Temperature: -40 ~ 70℃	
Air TH Sensor	Measure air temperature & humidity and send the data to the gateway.	Measuring range: -40 ~ 85℃, 0 ~ 100%RH Measuring accuracy: ±0.20℃, ±1.5%RH Battery life ≥ 3 year (upload data once per hour)	
Barometric Pressure Sensor	Measure barometric pressure and send the data to the gateway.	Measuring range: 300 ~ 1100hPa Measuring accuracy: ±0.12hPa(700 ~ 900hPa) (25℃ ~ 40℃) Battery life ≥ 3 year (upload data once per hour)	
CO2 Sensor	Measure CO_2 in the air and send the data to the gateway.	Measuring range: 0 ~ 40000ppm Measuring accuracy: ± 30ppm + 3%MV	
Light Intensity Sensor	Measure light intensity and send the data to the gateway.	Measuring range: 0 ~ 188000Lux Resolution: 0.045Lux	
Soil Moisture and Temp Sensor	Measure soil temperature & moisture and send the data to the gateway.	Measuring range: -30 ~70℃, 0 ~ saturation Measuring accuracy: ±0.20℃, ±2%RH(0~50 %(m^3/m^3))	
PAR Sensor	Measure PAR (photosynthetically active radiation) and send the data to gateway.	Measuring range: 0 to 2000 µmol m^{-2} s^{-1} (410 to 655 nm) Resolution: 1 µmol m^{-2} s^{-1}	
Soil Temperature, VWC & EC Sensor	Measure soil temperature, volumetric water content, and electrical conductivity, send the data to the gateway.	Measuring range: VWC: 0.0 ~ 1.0 m3/m3 Temperature: -40 ~ +60℃ EC: 0 ~ 23 dS/m	Measuring Accuracy: VWC: ±3% m^3/m^3 Temperature: ± 1℃ EC: ±10% (0~7dS/m)
pH Sensor	Measure pH value in soil or water and send the data to the gateway.）	Measuring range: 0 ~ 14pH Measuring accuracy: ± 0.1pH	
Wind Direction Sensor	Measure wind direction in 8 directions and send the data to the gateway.	Measuring range: 0° to 360° (clockwise) Measuring accuracy: ±3°	
Wind Speed Sensor	Measure wind speed and send the data to the gateway.	Measuring range: 0 ~ 60m/s Measuring accuracy: ±0.3m/s	
Rain Gauge	Measure rainfall volumn and send the data to the gateway.	Measuring range: 0 ~ 240 mm/hour Measuring accuracy: ±2%	

Start contacting us for all your needs!

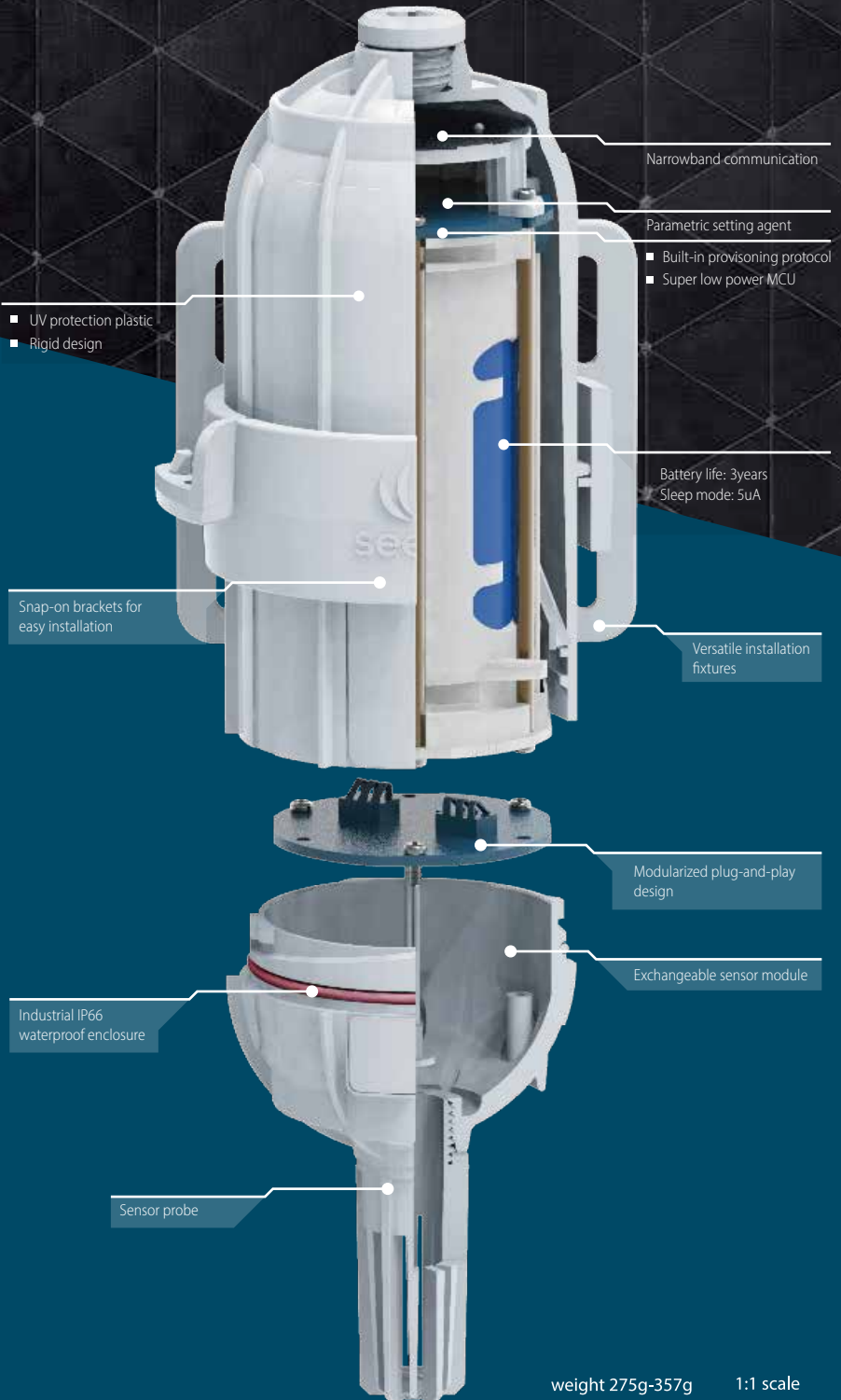solution.seeedstudio.com

iot@seeed.cc

+86 755 3653 4305

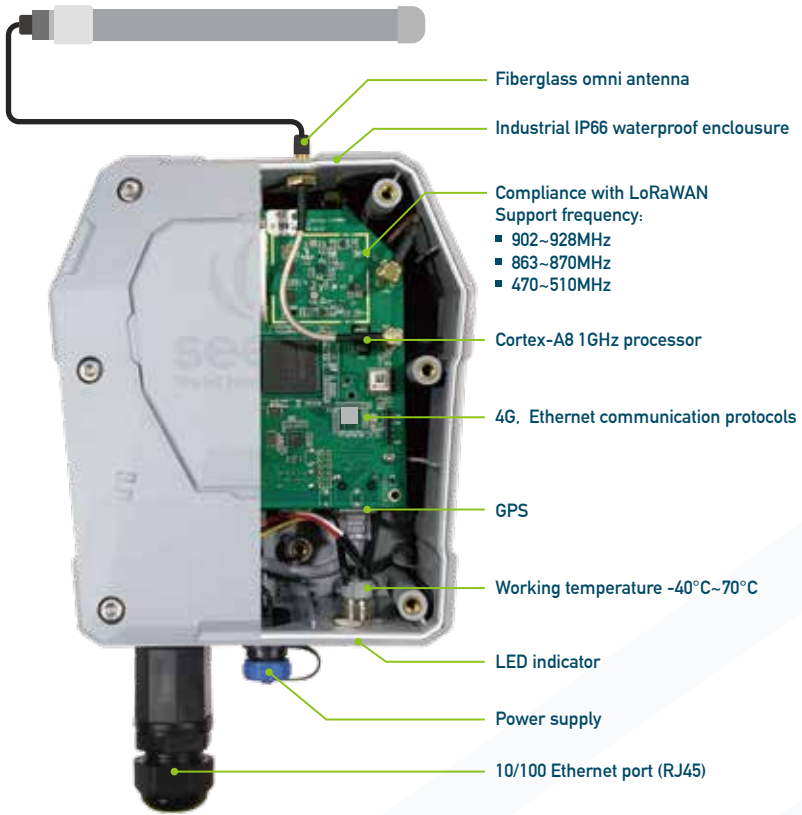F9 , Building G3, TCL International E city, Zhongshanyuan Road, Nanshan, Shenzhen, China

SenseCAP LoRaWAN Sensor

SenseCAP LoRaWAN Sensors are battery-powered wireless sensors that feature low-power consumption, long battery life and long-range transmission of environmental data in outdoor application scenarios.

Narrowband communication

Parametric setting agent

- Built-in provisoning protocol
- Super low power MCU

- UV protection plastic
- Rigid design

Battery life: 3years
Sleep mode: 5uA

Snap-on brackets for easy installation

Versatile installation fixtures

Modularized plug-and-play design

Exchangeable sensor module

Industrial IP66 waterproof enclosure

Sensor probe

weight 275g-357g   1:1 scale

Gateway Ready for the Edge

SenseCAP LoRaWAN Gateway collects and transmits data from different SenseCAP Sensors to the cloud platform via cellular LTE or Ethernet. It features robustness and high performance in large-scale networks.

Fiberglass omni antenna

Industrial IP66 waterproof enclousure

Compliance with LoRaWAN
Support frequency:
- 902~928MHz
- 863~870MHz
- 470~510MHz

Cortex-A8 1GHz processor

4G, Ethernet communication protocols

GPS

Working temperature -40°C~70°C

LED indicator

Power supply

10/100 Ethernet port (RJ45)

Softwares

APP for iOS and Android:
A mobile App for quick provisioning in seconds

SenseCAP Portal:
A web-based platform for you to manage devices and data

SenseCAP Open API:
To simplify the implementation and further development of your application

SenseCAP Open Dashboard:
A fully open source dashboard format based on Vue.

Applications

Agriculture

Livestock

Environment Monitoring

Media

Trusted By

About Seeed

Seeed is one of the most integrated platforms for global creative technologists to turn ideas into products, by providing open technology and agile manufacturing from Shenzhen, the hardware capital of the world. With years of accumulation in experience and resources in serving innovators worldwide, Seeed envisions to empower traditional industries with digital technologies by providing industrial IoT solutions to serve vertical industries such as smart agriculture and smart city.

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4
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Supported Projects

250+
Employees

100+
Countries Served

250k+
Developers Served

200+
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Seeed's Services as IoT Hardware Enabler