

# LoRaWAN Temperature & Humidity Sensor

## S31-LB



## OVERVIEW:

The Dragino S31-LB is a LoRaWAN Temperature and Humidity Sensor for Internet of Things solution. It is used to measure the surrounding environment temperature and relative air humidity precisely, and then upload to IoT server via LoRaWAN wireless protocol.

The temperature & humidity sensor used in S31-LB is SHT31, which is fully calibrated, linearized, and temperature compensated digital output from Sensirion, it provides a strong reliability and long-term stability. The SHT31 is fixed in a [waterproof anti-condensation casing](#) for long term use.

The LoRa wireless technology used in S31-LB allows device to send data and reach extremely long ranges at low data-rates. It provides ultra-long range spread spectrum communication and high interference immunity whilst minimizing current consumption.

S31-LB supports Temperature & Humidity alarm feature, user can set temperature alarm for instant notice.

S31-LB supports Datalog feature, it can save the data when there is no LoRaWAN network and uplink when network recover.

S31-LB supports BLE configure and wireless OTA update which make user easy to use.

S31-LB is powered by 8500mAh Li-SOCl<sub>2</sub> battery, it is designed for long term use up to 5 years.

Each S31-LB is pre-load with a set of unique keys for LoRaWAN registrations, register these keys to local LoRaWAN server and it will auto connect after power on.

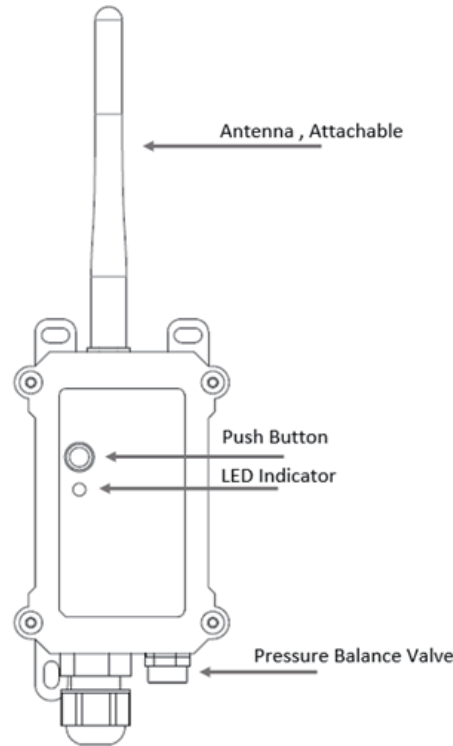
## Features:

- LoRaWAN v1.0.3 Class A
- Ultra-low power consumption
- Measure range: -40°C ~ 80°C
- Temperature & Humidity alarm
- Bands: CN470/EU433/KR920/US915/EU868/AS923/AU915/IN865
- Support Bluetooth v5.1 and LoRaWAN remote configure
- Support wireless OTA update firmware
- Uplink on periodically
- Downlink to change configure
- 8500mAh Battery for long term use
- IP66 Waterproof Enclosure

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## S31-LB

### Button & LEDs



## Specifications:

### Common DC Characteristics:

- Supply Voltage: 2.5v ~ 3.6v
- Operating Temperature: -40 ~ 85°C

### Temperature Sensor:

- Range: -40 ~ 80 °C
- Accuracy :  $\pm 0.2$  @ 0-90 °C
- Resolution: 0.1°C
- Long Term Shift: < 0.03 °C/yr

### Humidity Sensor:

- Range: 0 ~ 99.9 % RH
- Accuracy:  $\pm 2\%$  RH ( 0 ~ 100% RH)
- Resolution: 0.01% RH
- Long Term Shift: <0.25 % RH/yr

### LoRa Spec:

- Frequency Range, Band 1 (HF): 862 ~ 1020 Mhz
- Max +22 dBm constant RF output vs.
- RX sensitivity: down to -139 dBm.
- Excellent blocking immunity.

### Battery:

- Li/SOCI2 un-chargeable battery
- Capacity: 8500mAh
- Self-Discharge: <1% / Year @ 25°C
- Max continuously current: 130mA
- Max boost current: 2A, 1 second

### Power Consumption:

- Sleep Mode: 5uA @ 3.3v
- LoRa Transmit Mode: 125mA @ 20dBm, 82mA @ 14dBm

## Applications:

- Wireless Alarm and Security Systems
- Home and Building Automation
- Automated Meter Reading
- Industrial Monitoring and Control
- Long range Irrigation Systems,etc.

## Order Info: S31-LB-XXX

XXX: The default frequency band

- XXX: Frequency Bands, options:  
EU433,CN470,EU868,IN865,KR920  
AS923,AU915,US915