Temperature & Humidity Sensor

OVERVIEW:

The Dragino S31/S31B series is 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 , NB-IoT or CAT-M1 network.

The temperature & humidity sensor used in S31/S31B 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 temperature & humidity sensor supports temperature and humidity alarm feature, user can get alarm for instant notice.

It supports BLE configure and wireless OTA update which make user easy to use.

The Temperature & humidity Sensor is powered by 8500mAh Li-SOCI2 battery or solar panel with Li-ion battery, it is designed for long-term use up to several years.

S31   S31B

Application:

Green House

Smart Barn
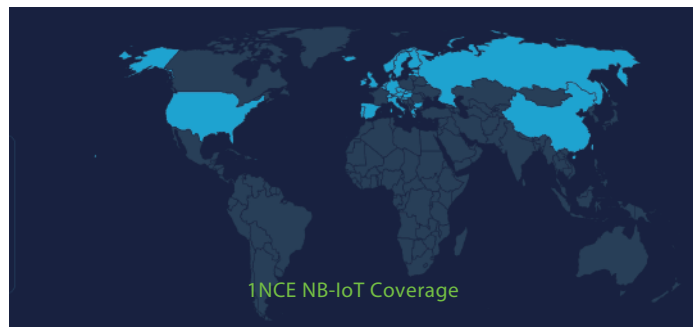

Outdoor Snow Monitoring

Laboratory

Dragino Technology Co., Limited

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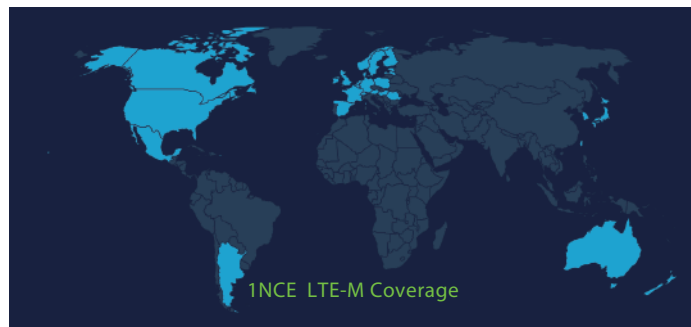Direct: +86 755 86610829 |Fax: +86 755 86647123

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Model Variants

Variants	S31-LB/S31B-LB	S31-LS/S31B-LS	S31-NB/S31B-NB	S31-NS/S31B-NS	S31-CB/S31B-CB	S31-CS/S31B-CS
Connectivity	LoRaWAN	LoRaWAN	NB-IoT	NB-IoT	NB-IoT / LTE-M / GNSS	NB-IoT / LTE-M / GNSS
Configure Method	TTL, BLE, LoRaWAN	TTL, BLE, LoRaWAN	TTL, BLE, NB-IoT	TTL, BLE, NB-IoT	TTL, BLE, NB-IoT, LTE-M	TTL, BLE, NB-IoT, LTE-M
Upgrade Method	TTL, BLE, LoRa	TTL, BLE, LoRa	TTL, BLE	TTL, BLE	TTL, BLE	TTL, BLE
Features			**Sensor /Probe:** * External 3 meters SHT31 probe (For S31 series) * Temperature Sensor Range: -40 ~ 80°C * Temperature Sensor Accuracy: ±0.2 @ 0-90 °C * Humidity Sensor Range: 0 ~ 99.9% RH * Humidity Sensor Accuracy: ± 2%RH (0 ~ 100%RH) * Temperature & Humidity alarm **General Features:** * Ultra-low power consumption * Support Bluetooth v5.1 remote configure and OTA update firmware * Uplink on periodically * GNSS for Location Report (for -CB & -CS models only) * Downlink to change configure			
Battery & Power	* 8500 mAh Li/SOCI2 Battery	* Solar + 3000 mAh Li-ion Battery	* 8500 mAh Li/SOCI2 Battery	* Solar + 3000 mAh Li-ion Battery	* 8500 mAh Li/SOCI2 Battery	* Solar + 3000 mAh Li-ion Battery

Power Consumption	* Sleep Mode: 5uA @ 3.3v
	* LoRa Transmit Mode:
	  125mA @ 20dBm,
	  82mA @ 14dBm
		* Sleep mode: 74uA@3.8V
		* LoRa Transmit Mode:
		  206mA@14dBm,
		  236mA@20dBm
			* Sleep mode: 14uA@3.3V
			* Max Transmit power:
			  350mA@3.3V
				* Sleep mode: 74uA@3.4V
				* Max Transmit power:
				  350mA@3.4V
					* Sleep mode: 14uA@3.3V
					* Max Transmit power:
					  350mA@3.3V
						* Sleep mode: 74uA@3.4V
						* Max Transmit power:
						  350mA@3.4V

Supply Voltage	2.5v ~ 3.6v	3.7v ~ 4.2v	2.5v ~ 3.6v	3.7v ~ 4.2v	2.6v ~ 3.6v	3.7v ~ 4.2v
Operating Temperature	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C

Battery & Enclosure Option:

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

Solar Version & Enclosure:
- 3000mAh Re-chargeable battery
- 0.9W on board solar pannel Suitable to used in the place where sun is sufficient

- This icon means support location feature by: GPS/ GLONASS/BDS/Galileo/ QZSS

Wireless Option:

LoRaWAN
- LoRaWAN 1.0.3 Class A
- Bands: CN470/EU433/KR920/US915/ EU868/AS923/AU915/IN865
- OTAA or ABP Mode.
- World Wide Unique LoRaWAN Key
- RX sensitivity: down to -139 dBm.
- Max +22 dBm - 100 mW RF output

NB-IoT
- CAT NB2 Bands:
  - For -NB & -NS: B1/B2/B3/B4/B5/B8/B12/B13/ B17/B18/B19/B20/B25/B28/B66/B70/B85
  - For -CB & -CS: B1/B2/B3/B4/B5/B8/B12/B13/ /B18/B19/B20/B25/B28/B66/B71/B85
- Uplink via MQTT, MQTTs, TCP, UDP or CoAP
- Multiply Sampling and one uplink

LTE-M
- CAT-M1 / LTE-M Bands: B1/B2/B3/B4/B5/ B8/B12/B13/B18/B19/B20/B25/B26/B27/ B28/B66/B85
- Uplink via MQTT, MQTTs, TCP, UDP or CoAP
- Multiply Sampling and one uplink

What is 1T version for NB-IoT version?

The 1T version of NB-IoT Temperature & Humidity Sensor is with a) 1NCE SIM Card & 2) ThingsEye Pre-configured.
1NCE SIM Card (10 Years Cellular service with 500MB Data Traffic,Enough for devices to uplink 10 years at 1hour interval).

1NCE NB-IoT Coverage

1NCE LTE-M Coverage

NB-IoT Network : Austria, Belgium, Bulgaria, China, Croatia, Czech Republic, Denmark, Estonia, Finland, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Latvia, Malta, Netherlands, Norway, Portugal, Puerto Rico, Russia, Slovak, Republic, Slovenia, Spain, Sweden, Switzerland, Taiwan, USA, US Virgin Islands.

LTE-M Network : Argentina, Austria, Australia, Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Great Britain, Hungary, Ireland, Japan, Jersey, Korea, Repiblic of, Latvia, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Puerto Rico, Romania, Spain, Sweden, Switzerland, Taiwan, USA, US Virgin Islands.

ThingsEye.io platform:
1T version with ThingsEye IoT service pre-installed. This save a lot of work from user side to confgure IoT server.

Below is Dash Board is the demo in ThingsEye.io.

Order Info:

Part Number: S31/S31B-LB-XX

XX: The default frequency band

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

Part Number: S31/S31B-LS-XX

XX: The default frequency band

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

Part Number: S31/S31B-NB-XX

XX:

- **GE:** General version (Exclude SIM card)
- **1T:** with 1NCE* 10 years 500MB SIM card Pre-configure to ThingsEye server

Part Number: S31/S31B-NS-XX

XX:

- **GE:** General version (Exclude SIM card)
- **1T:** with 1NCE* 10 years 500MB SIM card Pre-configure to ThingsEye server

Part Number: S31/S31B-CB-XX

XX:

- **GE:** General version (Exclude SIM card)
- **1T:** with 1NCE* 10 years 500MB SIM card Pre-configure to ThingsEye server

Part Number: S31/S31B-CS-XX

XX:

- **GE:** General version (Exclude SIM card)
- **1T:** with 1NCE* 10 years 500MB SIM card Pre-configure to ThingsEye server