

Temperature and Humidity Sensor

Module: 3S

Datasheet: V1.0.0

Part #	Description
3S	3S is a high-precision digital temperature and humidity indicator based on Bluetooth Low Energy 5.0 Technology. It features waterproof and portable, equipped with a high precision and low-energy consumption sensor to transfer the temperature-humidity data to corresponding figure signal.

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1. INTRODUCTION

3S is a high-precision digital temperature and humidity indicator with BLE 5.0 technology. It is waterproof and portable. The industrial high-precision low-power sensor converts the temperature and humidity into digital signals, and uploads the data to the MQTT Server via XENTRACK Gateway XT-101D. 3S data can also be uploaded to the local servers via mobile APP. which brings remote monitoring, anomaly alerts, diversity usage linking etc. (APP is not provided, customer needs to develop)

3S uses an E-paper display for the current temperature and humidity values in real time with low energy consumption. With industrial grade batteries, better wide temperature performance and lower self-discharge rate, the long-term stability of the product is guaranteed.



Product Rendering



Product Structure

2. FEATURE

- ★ Based on BLE5.0, with Sensor cryptographic protocol
- ★ nRF52810 chip, and OTA available
- ★ 100-meter broadcasting range, 30-meter connected configuration range.
- ★ Switch on/off, humidity alarm setting function, accelerometer action alarm available
- ★ Temperature display can be switched between Celsius and Fahrenheit
- ★ Over 2,000 local storing data
- ★ The default parameters working for over 2 years
- ★ IP66 waterproof, dust proof

3. APPLICATION

3S realizes local and remote environmental monitoring and controlling in real-time collocated with the system for collecting environmental data and alarming. It triggers relevant controlling equipment to ensure that environmental data is within all-set proper range. It can be applied to humiture measurement in industry monitoring, civil monitoring, mechanical manufacture,environmental protection monitoring, etc. For instance, laboratory, cleansing workshop, supermarkets, collection gallery, households, agricultural greenhouses, meteorological stations, national defense scientific research centers, post and telecom departments, cigarettes and tobacco industries, chemical engineering sites, environmental protection areas, archival preservation centers, computer facility rooms, storage warehouses, pharmaceutical warehouses, health care centers, hotels, the food warehouses, grain departments and other relevant humiture monitoring and controlling field.



4. BASIC INFORMATION

MODULE	3S
SHELL MATERIAL	PC
SHELL COLOR	White
BODY SIZE (SHELL)	72. 2*45*22mm
POWER SUPPLY	Disposale Lithium Battery
POWER VOLTAGE	DC3. 6V
BATTERY MODEL	ER14250
BATTERY CAPACI TY	1200mAH
ANTENNA CATEGORY	PCB Ant enna

5. SUPPORTING DEVICES

Supporting device and system	Module of Supporting device
BLE	BLE 4.0 available, unable to get data records; BLE 4.2 available for normal use, long communication time to obtain data records; BLE 5.0 recommended to use, the fastest access to data records.
iOS8.0 and above ⁽¹⁾	i Phone 4S, i Phone 5/ 5C/ 5S, i Phone6/ 6PI us/ 6S/ 6SPI us, i Phone 7/ 7PI us, i Pad mi ni / mi ni 2/ 4/ Ai r / Pr o
Android7.0 and above ⁽¹⁾	LG Samsung Xiaomi MIUI8 and above Huawei EMUI5.0 and above, ZUK ZUI 2.5 and above OnePlus H2OS 3.0 and above Vivo FuntouchOS 4.0 and above OPPO ColorOS 3.1 and above

NOTICE:

(1) Only mobile phones with iOS8 and above, or Android7.0 and above can support BLE4.2

Only mobile phones with iOS11 and above, or Android7.0 and above can support BLE5.0, such as iPhone 8.

6. OPERATING INSTRUCTIONS AND PRECAUTIONS

On: Press and hold the back button for three seconds, the screen refreshing to display is on.

Off: Press and hold the back button for three seconds in the boot state, the screen refreshing to white screen is off.

Parameters Modification: Not currently open

Notice:

When exchanging the battery, the blue light will flash once. And the screen will refresh to white screen.

It will not affect the normal on/off state.

7. CERTIFICATION

MFi Certificate

8. PARAMETERS

		Parameter	Error Range
TEMPERATURE MEASUREMENT	Range	/	/
	Accuracy	± 0.4°C	± 0.4°C
	Resolution	0.05°C	/
HUMIDITY MEASUREMENT	Range	0%RH-100%RH	/
	Accuracy	0%RH-90%RH (@25°C)	± 3%RH
		≥ 90%RH (@25°C)	± 4%RH
Resolution	0.05%RH	/	
SAMPLE PERIOD		Collect every 5 seconds	/
TEMPERATURE DISPLAY	Refresh Judgement	≥ 0.5°C	/
HUMIDITY DISPLAY	Refresh Judgement	≥ 3%RH	/
FULL SCREEN	Refresh Interval	30min	/
BLE	Transmitted Power	0dBm	Support Setting Parameter List Import
	Transmission Interval	1000ms	Support Setting Parameter List Import ⁽¹⁾

(1)Referring to beacon setting regulations,the range of values is the integer multiples of 100ms within 100ms~10s. it is suggested the value is no more than 5,000ms, avoiding difficulty in connecting equipment after importing parameters and failing to get local data records.

9. Product Model

Epithet	Short Standard Model	Long Standard Model
Number	3S- A8006	3S-A9006
Diagram		
Peak Current	13mA	13mA
Average Current	41uA	41uA
Operating Temperature	- 25°C~+60°C	- 25°C~+60°C
Probe Length	/	1m
Service Life	About 2.5 years	About 2.5 years
Net Weight	61. 5g± 0. 5g	78. 5g± 0. 5g

Remarks :

(1) The range of the screen operating temperature is between 0°C to 50°C while that of the storage temperature is -25°C to +60°C. When you want to test the temperature that is not within 0°C to 50°C, the product can still normally work(Still Advertising Signal) without screen displaying. **The test temperature range of 3S temperature and humidity sensor probe is not applicable to the whole machine.**

(2) **Therefore, if you need to detect and display the temperature -25°C - 0 °C, please select the version 6009A of 3S with a 1-meter long external probe.** Put the probe into the tested environment, while the main body should be outside the tested environment (otherwise the 3S display screen will not work / not display).

(3) The average power consumption is based on routine indoor environmental testing. Exceeding the operating temperature range will cause product damage, and please avoid direct sunlight when using.