



VT S13 Series Temperature / Temperature&Humidity Sensor User Manual



Please read carefully and keep this guide for future reference.

Thank you for choosing V-MARK products. This installation and user manual is specifically designed to guide you through the functional features and installation steps of V-MARK products. Please make sure to read all the terms in this manual before using the product.

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1. Product Overview

The VTS13 series wireless Temperature / Temperature&Humidity Sensor is the second - generation temperature and humidity sensor developed by V-MARK. The sensor periodically collects temperature or humidity data and automatically reports it. When used in conjunction with a wireless gateway and back-end management software or cloud services, it facilitates the remote monitoring of temperature or humidity, and is suitable for various industrial, commercial, and medical applications.



Figure 1-1 Product Appearance

1) The product features

- 2.4GHz network, stable and reliable connection, no external power supply or wiring required, easy to install.
- Periodic data collection, sampling interval, and reporting interval can be set.
- Real-time LCD display, showing temperature, collection time, temperature zone, device signal, battery voltage, monitoring point name, etc.
- Low power consumption, long lifespan, with 5-minute collection and reporting intervals, the device can last 3 to 5 years.
- Equipped with an installation base, easy to install and remove the device, with a disassembly alarm function.
- Base recognition function, seamless switching between devices after initial initialization.
- Offline storage (up to 100,000 records), automatic data transmission after re-connection.
- Various models with external probes, can be selected according to actual application scenarios.
- NFC automatic configuration to the gateway.
- Ultrasonic welding assembly, IP68 waterproof rating.
- Multiple working modes to adapt to different scenarios: AsyncMode, SyncMode, GapMode.

➤ AsyncMode: Asynchronous Mode

Suitable for pharmaceutical, cold chain transportation, warehouse, etc. When the temperature is normal, it reports as a low frequency; when the temperature exceeds the temperature zone, it reports the data as a short interval. The device uses *SampleInterval*

for data collection and display. When the temperature is within the temperature zone, it reports data every *NormalReportInterval*. When the temperature exceeds the zone, it reports data every *AbnormalReportInterval*.

➤ **SyncMode: Synchronous Mode**

All devices report at fixed time points, suitable for cold storage verification, validation, etc. For example:

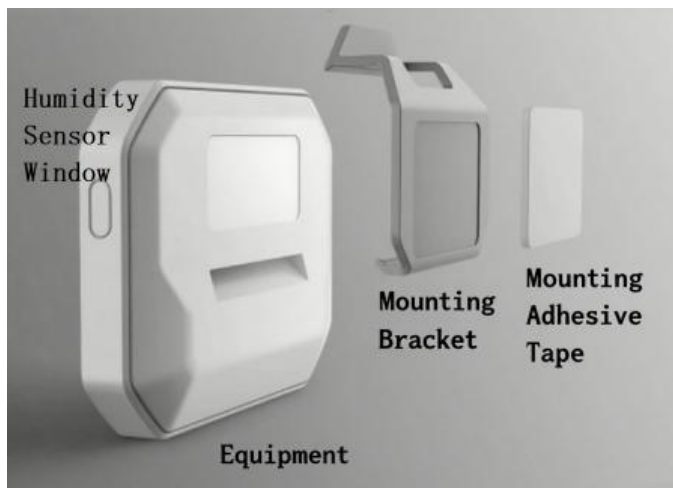
- *SyncInterval* = 300, then reports at 0, 5, 10, 15...55 minutes; other times only sample and display according to *SampleInterval*.
- *SyncInterval*=120, then reports at 0, 2, 4, 6...58 minutes; other times only sample and display according to *SampleInterval*.

➤ **GapMode: Fixed Interval Mode**

Report data as the setting interval for office spaces, cool storage and other ambient temperature monitoring scenarios. The sensor collects and reports data as *GapInterval*.

- Support Chinese and English display, set to UTC-8 time zone for Chinese display, other time zones for English display.

2. Functional Diagrams



3. Installation Steps

- 1) First, use screws or double-sided tape to fix the base plate to the desired installation location (e.g., wall).
- 2) Align the device body with the base plate and snap the device body onto the base plate.
- 3) Slide to lock the body onto the base plate, completing the installation.



Note: During installation, try to position the sensor with its screen facing toward the gateway to enhance the reliability of the wireless connection.

4. Thermometer Operation Instructions

1) Device left-side button operation instructions:

a. Short press:

- When the device is off: No operation.
- When the device is on: Collect and update the temperature display once, if the thermometer is online, it will immediately report a data point.

b. Long press:

- Light flashes once: Power on/off operation; press for 3 seconds.
- Light flashes twice: Switch to AsyncMode, screen will display; press for 6 seconds.
- Light flashes three times: Switch to SyncMode, screen will display; press for 9 seconds.
- Light flashes four times: Switch to GapMode, screen will display; press for 12 seconds.
- Light flashes five times: Restore factory settings (device will restart after restoration); press for 15 seconds.
- Light flashes six times: Switch the language between Chinese and English; press for 18 seconds.
- Light flashes seven times: Switch the unit of temperature between $^{\circ}\text{C}$ and $^{\circ}\text{F}$; press for 21 seconds.



Note: The screen will display corresponding text reminders for device power on/off, network connection, mode switching, etc.

2) Disassembly Alarm

The back of the thermometer has an anti-disassembly button. When installed on the base plate, the button is pressed. When the device is removed, the button is released, and the device will automatically report a message to the system.

3) Gateway NFC Configuration for Sensor

Please log in to the V-MARK temperature monitoring platform to view sensor data. For specific operations, refer to the software user manual.



4) Data Viewing and Parameter Settings

- Please login the V-MARK temperature monitoring platform to view sensor data. For specific operations, refer to the software user manual.
- The thermometer's collection interval, working mode, reporting interval, temperature zone, anti-disassembly button switch, monitoring point name, etc., can be remotely configured via the gateway/system. (The device defaults to *AsyncMode*, *SampleInterval*=300, *NormalReportInterval*=300, *AbnormalReportInterval*=120, default temperature zone is the minimum and maximum values of the device's measurement range).

Notes: This product needs to be used with a V-MARK gateway.

For more parameter descriptions/settings, please refer to the gateway-related product connection instructions and product model.

5. Product Specifications

Product name	Lora Temp sensor	Lora Temp sensor w/ PRB	Lora Temp sensor w/ PRB	Lora Temp/RH sensor	Lora Temp sensor w/ PRB	Lora Temp/RH sensor	Lora Temp sensor w/o PRB
Mode	VTS13W01	VTS13W02	VTS13W03	VTS13W04	VTS13W05	VTS13W06	VTS13P01
Temperature measurement range	-30 °C ~ 70°C	-40 °C ~ 105°C	-200 °C ~ 200°C	-30 °C ~ 70°C	-40 °C ~ 105°C	-40 °C ~ 105°C	Refer to the probe's parameters.
Humidity range	/	/	/	0 ~ 100%RH	/	0 ~ 100%RH	/
Resolution	0.01°C	0.01°C	0.01°C	0.01°C/0.04%RH	0.01°C	0.01°C/0.01%RH	/

Measurement accuracy	±0.5℃	±0.5℃	±0.5℃	±0.5℃/±3%RH	±0.1℃@ 0 ~ 105℃ ±0.5℃@ -40 ~ 105℃	±0.1℃@ 5 ~ 60℃ ±0.5℃@ -40 ~ 105℃ ±1.5%RH@ 0~20%RH ±1%RH@ 20~70%RH ±2%RH@ 70~100%RH	Refer to the probe's parameters.
Operating temperature	-30℃ ~ 70℃						
Communication distance	200m (Visual range)						
Radio Frequency	2.4GHz						
Service life	3 years (5-minute interval)						

6. Package Contents

Component	Quantity
Device Body	1
Installation Base Plate	1
Base Plate Adhesive	1
User Manual	1

7. Product Warranty Terms

Thank you very much for choosing V-MARK products. All products purchased from our company come with a three-year warranty period from the date of purchase. Users can enjoy warranty services by presenting the purchase contract or invoice during the warranty period.

1) Warranty Coverage

- If a fault occurs during normal use within 7 days of purchase, consumers can choose refund, replacement, or repair services.
- Consumers who purchase our products can enjoy free warranty services for non-human damage within three years.
- For consumers who do not qualify for free replacement or warranty services, our company still provides technical services at a certain cost.
- The purchase date is based on the invoice or contract date issued by our company.

2) Exclusions from Warranty Coverage

- Any damage caused by human factors or use in non-standard working environments, failure to follow the user manual or instructions.
- Unauthorized disassembly, repair, or modification of the product by the user.
- Damage caused by transportation after purchase.
- Damage caused by other force majeure (such as floods, fires, lightning, earthquakes, etc.).
- Normal wear and tear, aging, cracking, and staining.
- Products not belonging to our company (e.g., counterfeit products).
- Products without valid purchase proof.

3) After-Sales Service

- Provide remote technical support such as phone, internet, etc.
- Regular follow-up on usage during the warranty period.
- Other warranty matters are executed according to national three-guarantee regulations.

4) Product Warranty Card

Product Name: _____

Product Model: _____

Purchase Date: _____

Contact Phone: _____

Repair Record: _____

5) Contact Information

V-Mark Enterprises Ltd.

Address: 400-601 West Broadway Vancouver BC Canada V5Z 4C2

Phone: 604.588.6178

Email: info@v-mark.com

8. Authentication Information

FCC ID: 2BBTA-VTS13W0X

IC: 24756-VTS13W0X

9. FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE 1: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

—This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

NOTE 2: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

10.IC Warning

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

l'appareil ne doit pas produire de brouillage, et

l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.