MINEW MST01 Industrial Temperature and Humidity Sensor User Guide

MST01
INDUSTRIAL TEMPERATURE
AND HUMIDITY SENSOR
Datasheet

Contents

PRODUCT OVERVIEW

MST01 is an industrial temperature and humidity Bluetooth® sensor developed by Minew for professional use. It is designed for environmental monitoring in manufacturing, healthcare, warehousing, etc. Probes are dust and stain-proof and come in different styles. The body is designed to suit all weather conditions and all industrial scenarios. Multiple temperature and humidity thresholds can be set. When values are exceeded, alarms will be triggered, and the screen will be prompted, in order for administrators to react. MST01 can store substantial data locally to mitigate data loss.

KEY FEATURES

Temperature and humidity threshold alarms	Multiple probe options real-time data display	Large range high precision	200 meters of broadcast distance	20,480 local data storage	IP65 dust & water resistanc

APPLICATION SCENARIOS

Smart Healthcare

The storing environment of pharmaceuticals is controlled precisely. Drugs and vaccines should be monitored under strict temperature and humidity standards automatically 24 hours a day in transportation or in storage. MST01 can calculate the meankinetic temperature, MKT, while storing a large amount of data locally. It supportsthreshold alarm, strong anti-interference, and timely feedback.

Smart Warehousing

MST01 supports a variety of probes, with a large measurement range and high precision. It is suitable for warehouses, wine cellars, cold storage, and other warehouse scenarios that often require precise monitoring of ambient temperature and humidity to keep fresh produce under ideal conditions. MST01 data can be displayed in real time for easy viewing, simplifying inspection, and improving efficiency.

Note: Application cases above are only as a reference, more applications realized are based on users' software algorithm ability.

PRODUCT SPECIFICATIONS

BASIC SPECIFICATIONS

Model	MST01-01	MST01-02	MST01-03	MST01-04
Material	ABS + PC	ABS + PC	ABS + PC	ABS + PC
Color	White	White	White	White
Main body Size (L * W * H)	75 * 66.5 * 27 mm (without bracket) 82 * 66.5 * 31.3 mm (with bracket)			
Probe Size (D*H)	Φ15.5 * 48 mm	Φ15 * 30.5 mm	1 m (probe + cable length)	1 m (probe + cable length)
Weight	106.8 g	103.1 g	131.1 g	128.9 g
Protection	IP65	IP64	Main body IP65 Probe IP67	Main body IP65 Probe IP67

Battery	1 lithium battery
Battery capacity	2700 mAh
Battery life	3 years (default configuration, normal temperature environment)
Sensor	Temperature and humidity sensor
Button	2
LED	1 red light, 1 blue light
NFC	None
Buzzer	Supported
OTA	Supported
Configure APP	[1] Msensor

* [1] Bluetooth-related SDK is available, please contact our sales team for details.

TECHNICAL SPECIFICATIONS

Chip	nRF52 Series
Bluetooth version	Bluetooth® LE 5.0
Broadcast power	-40 dBm ~ +4 dBm
Broadcast distance	Up to 200 meters (open environment)
Security	Supports changing passwords, anti-malicious connection

ACCURACY PARAMETER

Model	MST01-01	MST01-02	MST01-03	MST01-04
Measure temperature	-30℃ ~ 70℃	-30℃ ~ 70℃	-30 ~ 80℃	-40 ~ 125℃
Measure humidity	0 ~ 100% RH	0 ~ 100% RH	0 ~ 100% RH	0 ~ 100% RH
Temperature accuracy	±0.3℃ (-10~30℃) ±0.5 ℃ (other ranges)	±0.3℃ (-10~30 ℃) ±0.5 ℃ (other ranges)	±0.3℃ (-10~30℃) ±0.5℃ (other ranges)	±0.5℃ (-30 ~ 80℃) ±1℃ (other ranges)

Humidity accuracy	±3% RH 10% ~ 95% RH 20℃
Temperature resolution	0.01℃
Humidity resolution	0.01% RH
Operating temperature	-30 ~ 60℃
Working humidity	0 ~ 95% RH, no condensation

Features	Fast response speed	PE cotton protective cover, dustproof and anti-condensation, good stability	PE cotton protective cover, dustproof and anti-condensation	High sensitivity, fast response,high temperature resistance

COMPATIBILITIES

SUPPORTED SYSTEMS	SUPPORTED MODELS
iOS 10.0 and above	iPhone6 /6 Plus /6S/ 6S Plus /7 /7 Plus /8 /8 Plus / x /xr /xs /xs max / SE /SE2 /11 /11 pro /11 pro max
Android 4.3 and above	Samsung, Xiaomi, Huawei, Honor, OnePlus, Google pixel, etc.

BASIC OPERATION

Power on: The product is turned off by default when shipped. Hold the power button ⏻ for 3 seconds, when the blue light stays on for 3 seconds, it means that it has been powered on and the display screen displays the detection data.

Power off: When on, turn it off on MSensor App, and no data is displayed on the display.

Toggle: Pressing the function button [88] the screen will display in rotation: current temperature, current humidity, average temperature, average humidity, MKT temperature, upper temperature U1, upper temperature U2, lower temperature L1, lower temperature L2, upper humidity U1 and lower humidity L1.

Mark: Hold the function button [88] in the current temperature and humidity interface for 3 s, you can mark the current temperature and humidity, and the screen will show a "MARK" label.

Battery: When the battery is low, the red light flashes every 10 s.

Threshold alarm: the red-light flashes 2 times per second, the buzzer rings 2 times per second, and the alarm stops after 30 seconds of alarm or when the temperature and humidity return to the warning value; click the switch button to stop the alarm when it alarms.

APP connection and disconnection: When the product is successfully connected or disconnected from the App, the blue light flashes 2 times.

OTA upgrade: The blue light is always on during the OTA upgrade, and the blue light goes out after the upgrade.

INSTALLATIONS

Double-sided tapes

Surfaces: Ceramic, glass/epoxy, acrylic, PBT, ABS, PC, rigid PVC, and others. It is not recommended to use the default double-sided tape on walls (such as cement, gypsum board, etc.) with gray texture, incomplete drying, aging, moisture, etc., or there is a risk of peeling off. You can choose 3M double-sided foam tape or nail free glue as alternatives.

Requirements: No dust on the material surface and clean it before installation. Before pasting, increase the viscosity of the double-sided paste with a hairdryer firstly, and then press for seconds sequentially and stick over half-hours; or leave the device over 72 hours after pasting for better stability.

Bracket screw installation

The product can be shipped with a bracket, which supports the wall, ceiling, and corner, and can be secured with screws.

Surfaces: The screw should be installed on a solid surface, such as a wall, where it is not easy to loosen.

Steps:

1. Drill screw holes on the surface to be installed.

2. Insert the green expansion plug into the surface hole.

3. Put the MST01 into the mounting bracket.

4. Twist screws onto the expansion plug so that the product can be installed firmly.

Please contact our sales team if you have any questions about the installation environment.

PRECAUTIONS

- This product should be installed in a place where the temperature is relatively stable and can best represent the measured ambient temperature and humidity.

- Please avoid installation in areas with drastic changes in temperature, strong airflow, or almost no airflow. Do not use in a salt spray environment or corrosive gas environment.

- When using the product, it is recommended to use a low-grade broadcast power and a longer broadcast period to extend the service life of the product.

- The product is only splash-proof and does not support underwater work.

- Do not use the product beyond the designed working temperature of the product to avoid damage. It is recommended to store the product under house temperature (0°C ~ 40°C) when not in use.

- Avoid being exposed to direct sunlight for a long time to avoid the aging of the shell.

- Please do not disassemble the main shell without permission, our company will not be responsible for any

damage caused.

- If you have any other questions, please contact our sales team or technical support team.

CERTIFICATIONS

CE FC RoHS

Note: CE, FCC, RoHS numbers are available ,
If you need other certifications, please contact our business team .

PACKAGING INFORMATION

Packaging	Inner carton				Outer box			
Information								
	MST01-01	MST01-02	MST01-03	MST01-04	MST01-01	MST01-02	MST01-03	MST01-04
Sizes	30.6 x 11 x 9.5 cm				32 x 23.5 x 40 mm			
Quantity	4	4	2	2	32	32	16	16
Gross weight [1]	538 g	525 g	370 g	360 g	4.73 kg	4.66 kg	3.39 kg	3.34 kg

[1] The weight information is only for the product itself and does not include brackets. If you need brackets, please contact our sales team.

FCC WARNING

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
* **Note:** 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 complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. 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. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

QUALITY ASSURANCE

The factory has already obtained the certification of ISO9001 Quality System. Each product has been strictly tested (tests include transmission power, sensitivity, power consumption, stability, aging, etc.).
Warranty Period: 12 months from the date of shipping (Battery and other accessories excluded).

DECLARATION

Statement of Rights:
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Documents / Resources

MINEW MST01 Industrial Temperature and Humidity Sensor [pdf] User Guide
MST01 Industrial Temperature and Humidity Sensor, MST01, Industrial Temperature and Humidity Sensor, Temperature and Humidity Sensor, Humidity Sensor, Sensor

References

- **User Manual**