

FT007TH Thermo-Hygrometer Sensor User Manual

1 Introduction

Thank you for your purchase of the FT007TH Thermo-Hygrometer Sensor. The following user guide provides step by step instructions for installation, operation and troubleshooting.

2. Thermo-Hygrometer Sensor.

1. Remove the battery door on the back of the sensor by removing the set screw, as shown in

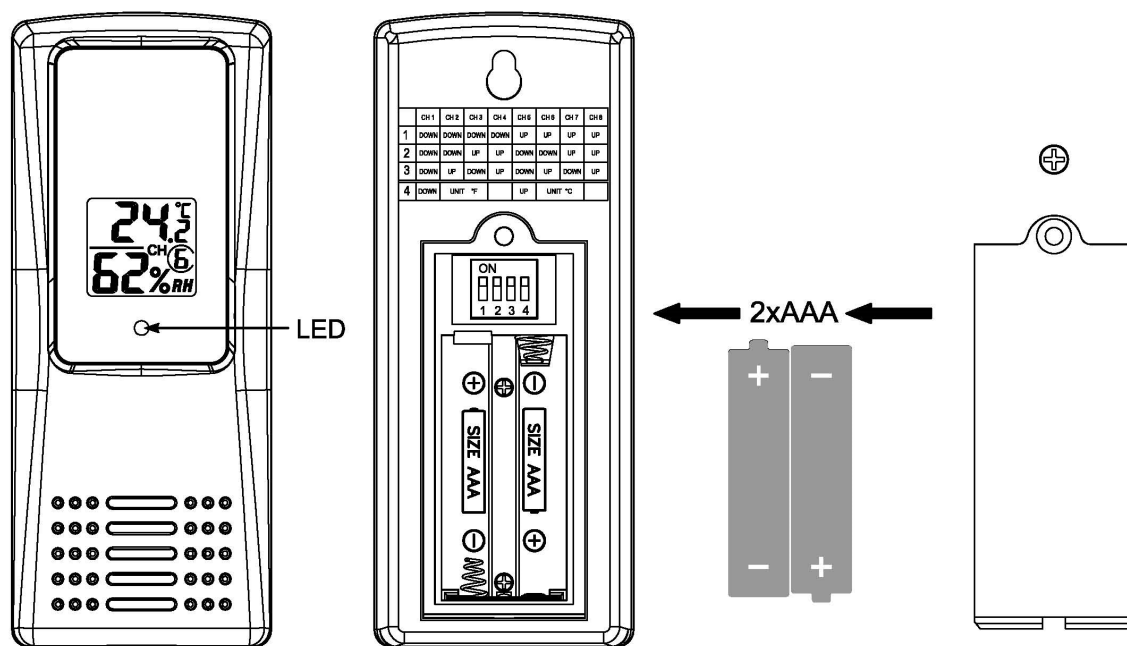


Figure 1 .

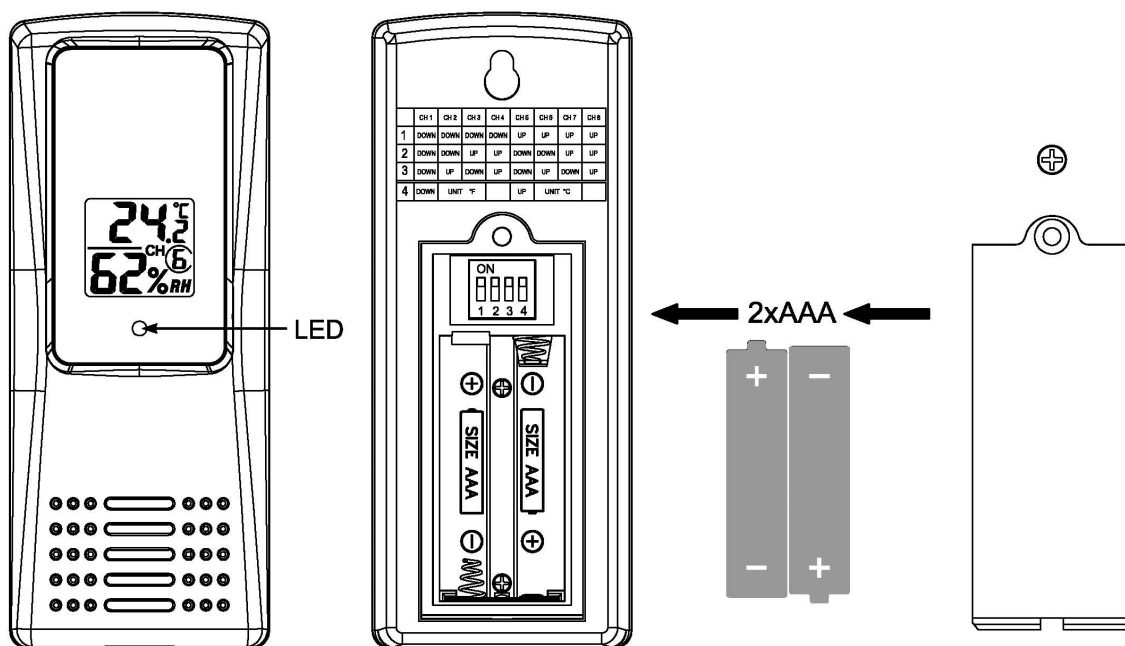


Figure 1

2. **BEFORE** inserting the batteries, locate the dip switches on the inside cover of the lid of the transmitter.
Figure 2 displays all four switches in the OFF position (factory default setting).



Figure 2

3. **Channel Number:** The FT007TH supports up to eight Channels. To set each channel number (the default is Channel 1), change Dip Switches 1, 2 and 3, as referenced in Table 1.
4. **Temperature Units of Measure:** To change the transmitter display units of measure (°F vs. °C), change Dip Switch 4, as referenced in Table 1.

DIP SWITCH				FUNCTION
1	2	3	4	
DOWN	DOWN	DOWN	---	Channel 1
DOWN	DOWN	UP	---	Channel 2
DOWN	UP	DOWN	---	Channel 3
DOWN	UP	UP	---	Channel 4
UP	DOWN	DOWN	---	Channel 5
UP	DOWN	UP	---	Channel 6
UP	UP	DOWN	---	Channel 7
UP	UP	UP	---	Channel 8
---	---	---	DOWN	°F
---	---	---	UP	°C

Table 1

5. Insert two AAA batteries.
6. After inserting the batteries, the remote sensor LED indicator will light for 4 seconds, and then flash once per 60 seconds thereafter. Each time it flashes, the sensor is transmitting data.
7. Verify the correct channel number (CH) and temperature units of measure (°F vs. °C) are on the display, as shown in Figure 3.

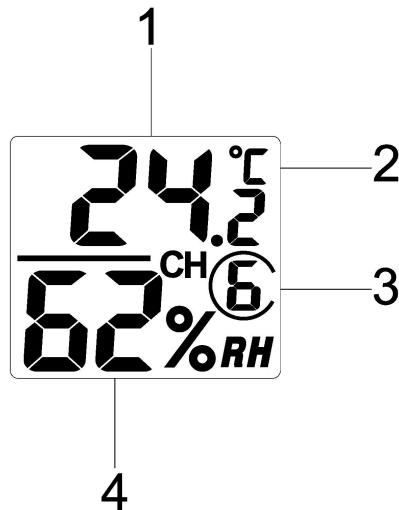


Figure 3

- (1) temperature
- (2) temperature units (°F vs. °C)
- (3) channel number

(4) relative humidity

8. Close the battery door. Make sure the gasket (around the battery compartment) is properly seated in its trace prior to closing the door. Tighten the set screw.

3. Sensor Operation Verification

Verify the indoor and outdoor humidity match closely with the console and sensor array in the same location (about 1.5 to 3m apart). The sensors should be within 10% (the accuracy is $\pm 5\%$). Allow about 30 minutes for both sensors to stabilize. The humidity can be adjusted or calibrated later to match each other a known source.

Verify the indoor and outdoor temperature match closely with the console and sensor array in the same location (about 1.5m to 3m apart). The sensors should be within 2°C (the accuracy is $\pm 1^\circ\text{C}$). Allow about 30 minutes for both sensors to stabilize. The temperature can be adjusted or calibrated later to match each other or a known source.

4. Remote Sensor Installation

It is recommended you mount the remote sensor on a north facing wall, in a shaded area. Direct sunlight and radiant heat sources will result in inaccurate temperature readings. Although the sensor is water resistant, it is best to mount in a well protected area, such as under an eave. Use a screw or nail (not included) to affix the remote sensor to the wall, as shown in Figure .

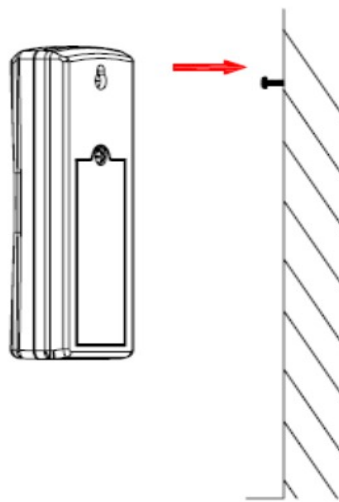


Figure 4

5. Best Practices for Wireless Communication

Wireless communication is susceptible to interference, distance, walls and metal barriers. We recommend the following best practices for trouble free wireless communication.

1. **Electro-Magnetic Interference (EMI).** Keep the console several feet away from computer monitors and TVs.
2. **Radio Frequency Interference (RFI).** If you have other 433 MHz devices and communication is intermittent, try turning off these other devices for troubleshooting purposes. You may need to relocate the transmitters or receivers to avoid intermittent communication.
3. **Line of Sight Rating.** This device is rated at 300 feet line of sight (no interference, barriers or walls) but typically you will get 100 feet maximum under most real-world installations, which include passing through barriers or walls.

4. **Metal Barriers.** Radio frequency will not pass through metal barriers such as aluminum siding. If you have metal siding, align the remote and console through a window to get a clear line of sight.

6. Glossary of Terms

Term	Definition
Accuracy	Accuracy is defined as the ability of a measurement to match the actual value of the quantity being measured.
Hygrometer	A hygrometer is a device that measures relative humidity. Relative humidity is a term used to describe the amount or percentage of water vapor that exists in air.
Range	Range is defined as the amount or extent a value can be measured.

7. Specifications

7.1 Wireless Specifications

- Line of sight wireless transmission (in open air): 100 meters, 30 meters under most conditions.
- Frequency: 433 MHz
- Update Rate: 60 seconds

7.2 Measurement Specifications

The following table provides specifications for the measured parameters.

Measurement	Range	Accuracy	Resolution
Outdoor Temperature	-40 to 60 °C	± 1 °C	0.1 °C
Outdoor Humidity	10 to 99%	± 5% (only guaranteed between 20 to 90%)	1 %

7.3 Power Consumption

- Remote sensor : 2 x AAA 1.5V Alkaline or Lithium batteries (not included)
- Battery life: Minimum 12 months for thermometer-hygrometer sensor (use lithium batteries in cold weather climates less than -20 °C)

8. Troubleshooting Guide

Problem	Solution
Wireless remote (thermo-hygrometer) not reporting in to console. There are dashes (--.-) on the display console.	If any of the sensor communication is lost, dashes (--.-) will be displayed on the screen. To reacquire the signal, press and hold the CHANNEL/+ button for 3 seconds, and the remote search icon  will be constantly displayed. Once the signal is reacquired, the remote search icon  will turn off, and the current values will be displayed. The maximum line of sight communication range is 100 meters and 30 meters under most conditions. Move the

Problem	Solution
	sensor assembly closer to the display console. If the sensor assembly is too close (less than 1 meter), move the sensor assembly away from the display console. Make sure the remote sensor LCD display is working and the transmitter light is flashing once per 60 seconds. Install a fresh set of batteries in the remote thermo-hygrometer. For cold weather environments, install lithium batteries. Make sure the remote sensors are not transmitting through solid metal (acts as an RF shield), or earth barrier (down a hill). Move the display console around electrical noise generating devices, such as computers, TVs and other wireless transmitters or receivers. Move the remote sensor to a higher location. Move the remote sensor to a closer location.
Temperature sensor reads too high in the day time.	Make sure the thermo-hygrometer is mounted in a shaded area on the north facing wall.
Indoor and Outdoor Temperature do not agree	Allow up to one hour for the sensors to stabilize due to signal filtering. The indoor and outdoor temperature sensors should agree within 2 °C (the sensor accuracy is ± 1 °C). Use the calibration feature to match the indoor and outdoor temperature to a known source.
Indoor and Outdoor Humidity do not agree	Allow up to one hour for the sensors to stabilize due to signal filtering. The indoor and outdoor humidity sensors should agree within 10 % (the sensor accuracy is ± 5 %). Use the calibration feature to match the indoor and outdoor humidity to a known source.
Display console contrast is weak	Replace console batteries with a fresh set of batteries.