Ambient Weather WS-40 Wireless Indoor / Outdoor Thermometer

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1. Introduction

Thank you for your purchase of the Ambient Weather WS-40 wireless indoor / outdoor thermometer. The following user guide provides step by step instructions for installation, operation and troubleshooting. To download the latest manual and additional troubleshooting tips, please visit:

http://ambientweather.wikispaces.com/ws40

2. Getting Started

The WS-40 wireless indoor / outdoor thermometer consists of a display console (receiver), and a wireless thermometer (remote transmitter).

2.1 Parts List

QTY	Item
1	Display Console Frame Dimensions (LxWxH): 3.5 x 2.5 x 0.75 in LCD Dimensions (LxW): 1.5 x 1.25”
1	Thermometer/Transmitter (F007T) Dimensions (LxHxW): 4.5” x 2.0” x 0.75”

2.2 Thermometer Sensor Set Up

Note: Do not use rechargeable batteries. We recommend fresh alkaline batteries for temperature

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ranges between -4 °F and 140 °F and fresh lithium batteries for temperature ranges between -40 °F and 140 °F.

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

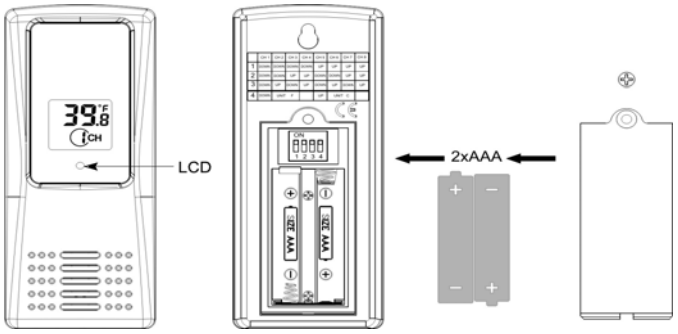

Figure 1

2. **BEFORE** inserting the batteries, locate the dip switches on the inside cover of the lid of the transmitter. Make sure all of the dip switches are in the down position (the WS-40 only supports one wireless transmitter).

Figure 2

3. **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 (WS40)
---	---	---	DOWN	°F
---	---	---	UP	°C

Table 1

4. Insert two AAA batteries.
5. 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.
6. Verify the correct channel number (CH 1) and temperature units of measure (°F vs. °C) are on the display, as shown in Figure 3.

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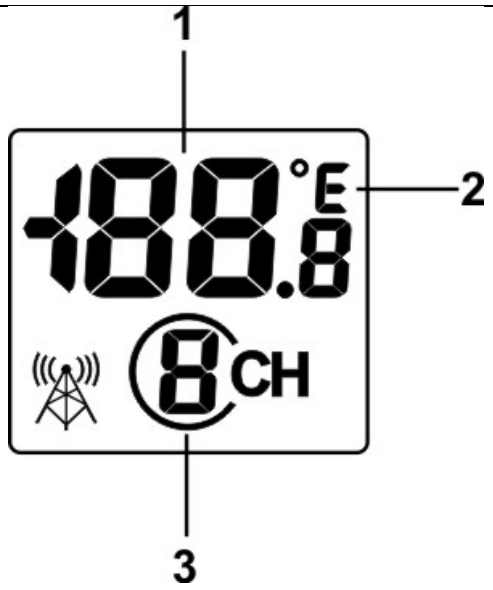

Figure 3

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

7. 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.

2.3 Display Console Set Up

Note: To avoid permanent damage, please take note of the battery polarity before inserting the batteries.

Move the remote thermometer at least 5' away from the display console (if the sensor is too close, it may not be received by the display console). Remove the battery door on the back of the display. Insert two AA (alkaline or lithium) batteries in the back of the display console, as shown in Figure 4.

All of the LCD segments will light up for a few seconds to verify all segments are operating properly. The IN status bar will continuously flash once per second to confirm proper operation.

Replace the battery door, and fold out the desk stand and place the console in the upright position.

The console will instantly display indoor temperature. The outdoor temperature will display dashes or --.-, then update on the display within a few minutes.

If the remote sensor does not update, please reference the troubleshooting guide in Section 6.

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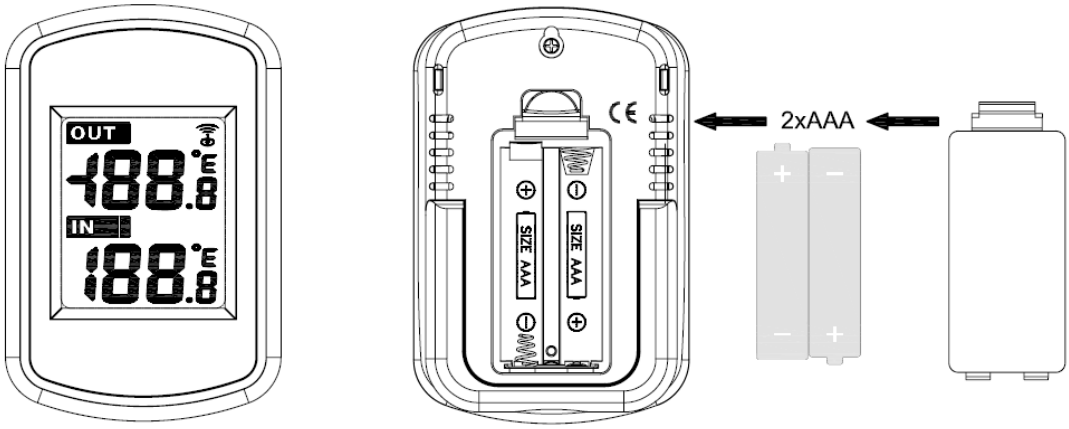

Figure 4

2.4 Sensor Operation Verification

Verify the indoor and outdoor temperature match closely with the console and the remote thermometer in the same location (about 5' apart). The sensors should be within 4°F (the accuracy is ± 2°F). Allow about 30 minutes for both sensors to stabilize.

3. 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 an eve.

Use a screw or nail (not included) to affix the remote sensor to the wall, as shown in Figure 5.

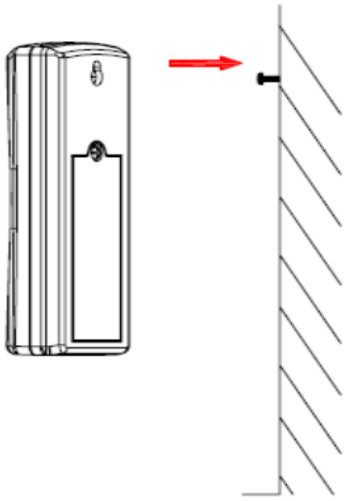

Figure 5

4. Glossary of Terms

Term	Definition
Accuracy	Accuracy is defined as the ability of a measurement to match the actual

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Term	Definition
	value of the quantity being measured.
Range	Range is defined as the amount or extent a value can be measured.

5. Specifications

5.1 Wireless Specifications

- Line of sight wireless transmission (in open air): 120 feet
- Frequency: 433.92 MHz
- Update Rate: 60 seconds

5.2 Measurement Specifications

The following table provides specifications for the measured parameters.

Measurement	Range	Accuracy	Resolution
Indoor Temperature	32 to 140 °F	± 2 °F	0.1 °F
Outdoor Temperature	-40 to 149 °F	± 2 °F	0.1 °F

5.3 Power Consumption

- Base station : 2 x AAA 1.5V Alkaline batteries
- Remote sensor : 2 x AAA 1.5V Alkaline or Lithium batteries
- Battery life: Minimum 24 months for base station
  Minimum 24 months for remote thermometer sensor

6. Troubleshooting Guide

If your question is not answered here, you can contact us as follows:

1. Email Support: support@ambientweather.com
2. Live Chat Support: www.ambientweather.com/chat.html (M-F 8am to 4pm Arizona Time)
3. Technical Support: 480-283-1644 (M-F 8am to 4pm Arizona Time)

Problem	Solution
Wireless remote thermometer not reporting in to console. There are dashes on the display console.	The maximum line of sight communication range is 120’. Move the sensor assembly closer to the display console. If the sensor assembly is too close (less than 10’), move the sensor assembly away from the display console. Cycle power on the console. The console may have exited the search mode. Install a fresh set of batteries in the remote thermometer. For cold weather environments, install lithium batteries. Make sure the remote sensors are not transmitting

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Problem	Solution
	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. Radio Frequency (RF) Sensors cannot transmit through metal barriers (example, aluminum siding) or multiple, thick walls.
Temperature sensor reads too high in the day time.	Make sure the thermometer is mounted in a shaded area on the north facing wall. Consider the following radiation shield if this is not possible: http://www.ambientweather.com/amwesrpatean.html
Indoor and Outdoor Temperature do not agree	Allow up to 30 minutes for the sensors to stabilize due to signal filtering. The indoor and outdoor temperature sensors should agree within 4 °F (the sensor accuracy is ± 2 °F)
Display console contrast is weak	Replace console batteries with a fresh set of batteries.

7. Liability Disclaimer

Please help in the preservation of the environment and return used batteries to an authorized depot. The electrical and electronic wastes contain hazardous substances. Disposal of electronic waste in wild country and/or in unauthorized grounds strongly damages the environment.

Reading the “User manual” is highly recommended. The manufacturer and supplier cannot accept any responsibility for any incorrect readings and any consequences that occur should an inaccurate reading take place.

This product is designed for use in the home only as indication of weather conditions. This product is not to be used for medical purposes or for public information.

The specifications of this product may change without prior notice.

This product is not a toy. Keep out of the reach of children.

No part of this manual may be reproduced without written authorization of the manufacturer.

Ambient, LLC WILL NOT ASSUME LIABILITY FOR INCIDENTAL, CONSEQUENTIAL, PUNITIVE, OR OTHER SIMILAR DAMAGES ASSOCIATED WITH THE OPERATION OR MALFUNCTION OF THIS PRODUCT.

8. FCC Statement

Statement according to FCC part 15.19:
This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

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1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Statement according to FCC part 15.21:
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Statement according to FCC part 15.105:
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.

9. Warranty Information

Ambient, LLC provides a 1-year limited warranty on this product against manufacturing defects in materials and workmanship.

This limited warranty begins on the original date of purchase, is valid only on products purchased and only to the original purchaser of this product. To receive warranty service, the purchaser must contact Ambient, LLC for problem determination and service procedures.

Warranty service can only be performed by a Ambient, LLC. The original dated bill of sale must be presented upon request as proof of purchase to Ambient, LLC.

Your Ambient, LLC warranty covers all defects in material and workmanship with the following specified exceptions: (1) damage caused by accident, unreasonable use or neglect (lack of reasonable and necessary maintenance); (2) damage resulting from failure to follow instructions contained in your owner’s manual; (3) damage resulting from the performance of repairs or alterations by someone other than an authorized Ambient, LLC authorized service center; (4) units used for other than home use (5) applications and uses that this product was not intended (6) the products inability to receive a signal due to any source of interference or metal obstructions and (7) extreme acts of nature, such as lightning strikes or floods.

This warranty covers only actual defects within the product itself, and does not cover the cost of installation or removal from a fixed installation, normal set-up or adjustments, claims based on misrepresentation by the seller or performance variations resulting from installation-related circumstances.

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