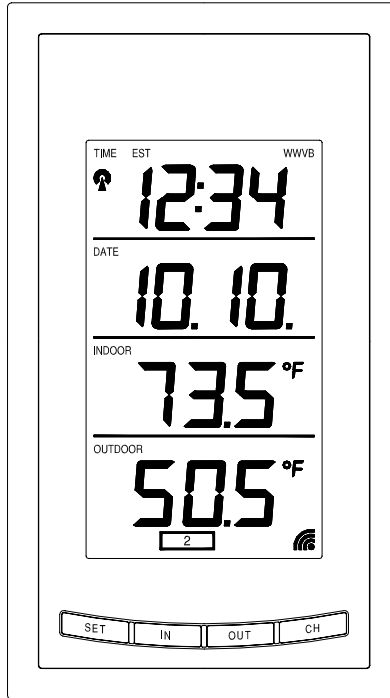


WS-9013U
Wireless 433 MHz
Radio-controlled Weather Station

Instruction Manual



LA CROSSE[®]
TECHNOLOGY

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INVENTORY OF CONTENTS

1. The weather station (Figure 1).
2. One TX6U remote temperature sensor with mounting bracket (Figure 2).
3. Three each, 1/2" Philips screws.
4. One strip double-sided adhesive tape.
5. Instruction Manual and Warranty Card.

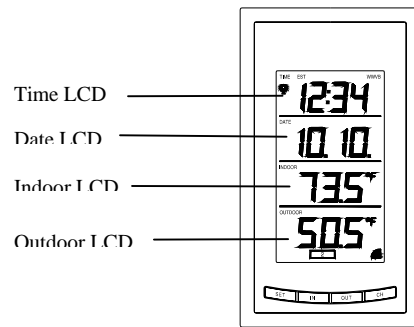
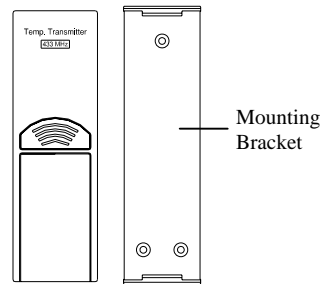


Figure 1

Figure 2



ADDITIONAL EQUIPMENT (not included)

1. Two, fresh AA 1.5V batteries for indoor weather station.
2. Two, fresh AA 1.5V batteries for remoter temperature sensor.
3. One, Philips screwdriver for mounting.

ABOUT WWVB (Radio Controlled Time)

The NIST (National Institute of Standards and Technology—Time and Frequency Division) WWVB radio station is located in Ft. Collins, Colorado and transmits the exact time signal continuously throughout the United States at 60 kHz. The signal can be received up to 2,000 miles away through the internal antenna in the weather station. However, due to the nature of the earth's ionosphere, reception is very limited during daylight hours. The weather station will search for a signal every night when reception is best. The WWVB radio station derives its signal from the NIST Atomic clock in Boulder, Colorado. A team of atomic physicists is continually measuring every second, of every day, to an accuracy of ten billionths of a second per day. These physicists have created an international standard measuring a second as 9,192,631,770 vibrations of a Cesium-133 atom in a vacuum. For more information on WWVB and the atomic clock please see the NIST website at <http://www.boulder.nist.gov/timefreq/stations/wwvb.htm>.

QUICK SET-UP GUIDE

Hint: Use good quality Alkaline Batteries and avoid rechargeable batteries.

1. Have the indoor weather station and remote temperature sensor 3 to 5 feet apart.
2. Batteries should be out of both units.
3. Place the batteries into the **remote temperature sensor** first then into the indoor weather station.
(All remote temperature sensors must be started before the indoor weather station)
4. **DO NOT PRESS ANY BUTTONS FOR 15 MINUTES.**

In this time the indoor weather station and remote temperature sensor will start to talk to each other and the indoor weather station will show both the indoor temperature and an outdoor temperature. If the indoor weather station does not display both temperatures after the 15 minutes please retry the set up as stated above. After both indoor and outdoor temperatures are displayed for 15 minutes you can place your remote temperature sensor outdoors and set your time.

The remote temperature sensor should be placed in a dry, shaded area. The remote temperature sensor has a range of 80 feet. Any walls that the signal will have to pass through will reduce distance. An outdoor wall or window can have up to 30 feet of resistance and an interior wall can have up to 20 feet of resistance depending upon the type of construction. Your distance plus resistance should not exceed 80 ft. in a straight line.

NOTE: Fog and mist will not harm your remote temperature sensor but direct rain must be avoided.

To complete the set up of your indoor weather station after the 10 minutes have passed please follow the steps on pages 8 and 9.

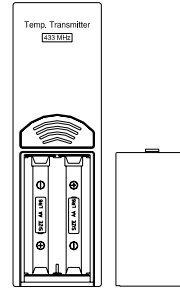
***Note:** The remote temperature sensor transmits a signal every 3 minutes; after the batteries have been installed, the indoor weather station will search for the signal for a duration of 5 minutes. If there is no temperature reading in the OUTDOOR LCD after 5 minutes, make sure the units are within range of each other or repeat the battery installation procedure.*

DETAILED SET-UP GUIDE

I. BATTERY INSTALLATION

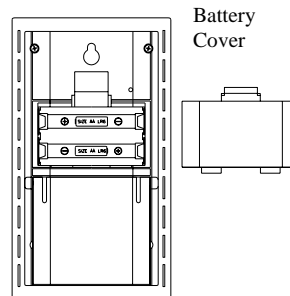
A. REMOTE TEMPERATURE SENSOR

1. Remove the mounting bracket. The bracket snaps on and off easily.
2. Remove the battery cover, by sliding the cover down.
3. Observing the correct polarity install 2 AA batteries. The batteries will fit tightly (to avoid start-up problems make sure they do not spring free).
4. Replace the battery cover by sliding upwards. Be sure battery cover is on securely.



B. INDOOR WEATHER STATION

1. Remove the battery cover. To do this, insert a solid object in the space provided at the lower-central position of the battery cover, then push up and pull out on the battery cover.
2. Observe the correct polarity, and install 2 AA batteries.
3. Replace the battery cover.



Note: Immediately after the batteries have been installed, each LCD (Liquid Crystal Display) will flash. Within a few seconds the indoor temperature will be displayed. If not, then remove the batteries for 10 seconds and reinstall. If the outdoor temperature is not displayed within four minutes, remove batteries from both units, wait 10 seconds, and reinstall. The time will show --:-- and start searching for the WWVB signal. If it successfully receives the time signal (usually at night), it will display the correct time (default is Eastern).

PROGRAM MODE

Programming Note: *If 30 seconds are allowed to pass or either the IN or the OUT button is pressed during programming modes, the unit will set the last information entered—the display will stop flashing and return to normal time-date readings. If you don't leave the program mode during the programming of sections III through VIII, you can advance to step 3 of the next program setting. If you do leave the program setting (or want to program a specific setting) follow each instructional step to program that setting.*

I. PROGRAMMING SEQUENCE

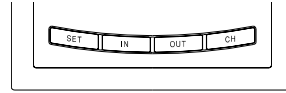
The sequence for programming the indoor weather station and the default (factory) settings are:

- | | | |
|-----|---------------------------------------|-----------------|
| 1. | 12/24 hour time setting | 12 hour |
| 2. | Time Zone | Zo -5 (eastern) |
| 3. | Daylight Saving Time | 1 (on) |
| 4. | Time – hour | 12 |
| 5. | Time – minute | 00 |
| 6. | Date – day of the week | mo (Monday) |
| 7. | Date – month | 1 (January) |
| 8. | Date – day of the month | 1 |
| 9. | Date – Year | 1999 |
| 10. | Temperature | °F |
| 11. | LCD (liquid crystal display) contrast | 5 |
| 12. | End of sequence | |

The programming instructions are given in a manner so that each setting is done separately. On initial set-up and after inserting new batteries to program all functions simply disregard the first two steps of each section starting with the Time Zone Setting.

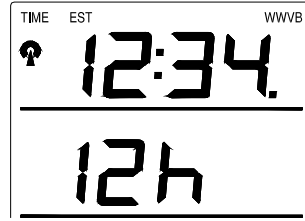
II. FUNCTION KEYS

The function keys are operated by pressing the key corresponding to the operation that you want to perform.



II. 12 OR 24 HOUR TIME SETTING

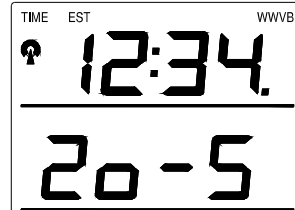
1. Press and hold the “*SET*” button for 3 seconds or until “12 h” flashes in the DATE LCD.
2. Press and release the “*CH*” button to toggle between 12 and 24-hour time.
3. Press and release the “*SET*” button to confirm the 12/24-hour setting and to advance to Time Zone Setting.



III. TIME ZONE SETTING

The default time zone is EST, “Zo -5” (Eastern Standard Time), to change this setting:

1. Press and hold the “*SET*” button for 3 seconds or until “12 h” OR “24 h” flashes in the DATE LCD.
2. Press and release the “*SET*” button 1 more time to enter the Time Zone setting mode.
3. The default Time Zone “Zo-5” will flash in the DATE LCD.



- Select your appropriate time zone using the “CH” button. During selection of the Time Zone, the 3 letter abbreviations for the time zones found in North America will flash across the top of the TIME LCD. Observe the chart below, showing the corresponding abbreviations, time zones, and codes.

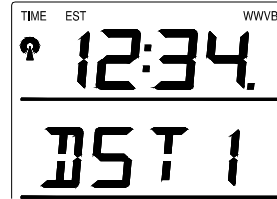
Time Zones		
	GMT	0
	Atlantic	-4
EST;	Eastern	-5
CST;	Central	-6
MST;	Mountain	-7
PST;	Pacific	-8
ALA;	Alaska	-9
HAW;	Hawaii	-10

Note: There are more time zones represented by numbers than there are represented by 3 letter abbreviations. If you live in North America you need only be concerned with the ones in the chart above.

- Press and release the “SET” button to confirm and advance to the Daylight Saving Time setting.

IV. DAYLIGHT SAVING TIME (DST) SETTING

- Press and hold the “SET” button for 3 seconds or until “12 h” or “24 h” flashes in the DATE LCD.
- Press and release the “SET” button 2 more times to reach the DST selection mode.
- “DST 1” is the default setting and will be flashing in the DATE LCD.
- Press and release the “CH” button to select “DST 0” or “DST 1.”
- “DST 0” indicates that the feature is off and the WWVB will not change times automatically. “DST 1” indicates that the feature is on and the WWVB will change times automatically.



Note: Some locations (Arizona and parts of Indiana) do not follow Daylight Saving Time and should select “DST 0.”

6. Press and release the “*SET*” button to confirm and advance to the Time setting mode.

V. TIME

There are two methods by which the time can be set:

- A) Automatically via WWVB reception or
- B) Manually.

A. WWVB (Remote Control Time)

This method requires you to do nothing except wait for the signal to be received and to select a time zone. Reception usually takes approximately 6-10 minutes during optimal conditions. The best conditions for reception is at night, between midnight and 6:00 AM—when there is less atmospheric interference. To keep your time as accurate as possible, the weather station conducts a WWVB search every night between these hours and overrides any manually set time. The WWVB tower icon (appearing in the TIME LCD) will flash when a signal-search is in progress, will remain steady when the signal has been received and nothing will be displayed in all other situations. If the WWVB time has not been received after 10 minutes of battery installation, you may manually set the time or leave the time function alone (once reception has occurred the WWVB time will over ride the manual time and set automatically).

B. MANUAL TIME SETTING

1. Press and hold the “*SET*” button for 3 seconds or until “12h” flashes in the DATE LCD.
2. Press and release the “*SET*” button 3 more times.
3. The hour digit (default of “12” should be flashing in the TIME LCD).
4. Press and release the “*CH*” button to change the hour. Press the “*CH*” button once and the hour will increase by one, twice and the hour will increase by two, etc.

5. Press and release the “SET” button to confirm the hour setting and to advance to the minute setting mode.
6. The minute digits should be flashing. Press and release the “CH” button to change the minutes—increasing the minutes by increments of 1 with each press of the “CH” button.
7. Press and release the “SET” button to confirm the minutes and to advance to the Day, Date, and Year setting mode.

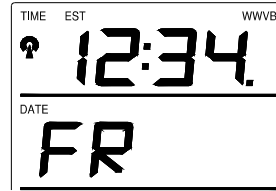
Note: In 12h mode, “PM” will appear to the left of the time during PM hours. If the time is not within the PM hours, nothing will be displayed. Be sure to set the time to the correct AM/PM time to ensure automatic reception at optimal times.

VI. SETTING THE DAY, DATE, AND YEAR

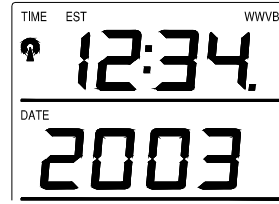
1. Press and hold the “SET” button for 3 seconds, or until “12 h” or “24 h” flashes in the DATE LCD.
2. Press and release the “SET” button 5 more times to reach the Weekday setting mode.

Note: “MO” (representing Monday) is the default setting for the weekday, “1.1” is the default setting for the numeric month and day, and “1999” is the default setting for the year. The day, date, and year will be automatically set once the WWVB signal is received. However, the day, date, and year can be manually set and will flash respectively in the DATE LCD during manual programming.

3. The weekday will be flashing in the DATE LCD, press and release the “CH” button to change the weekday.
4. Press and release the “SET” button to confirm, and to enter the numeric-month setting mode.

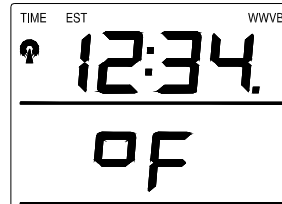


5. The numeric-month will be flashing in the DATE LCD. Press and release the “CH” button to select to the current month.
6. Press and release the “SET” button to confirm the numeric-month, and to enter the numeric-day setting mode.
7. The numeric-day will be flashing, press and release the “CH” button to select the current day.
8. Press and release the “SET” button to confirm and to enter the year setting mode.
9. The default-year will be flashing, press and release the “CH” to select the appropriate year.
10. Press and release the “SET” button to confirm and to advance to the °F or °C setting mode.



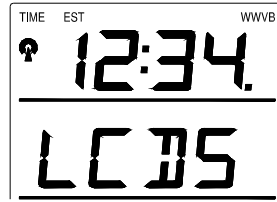
VII. SELECTING °F OR °C

1. Press and hold the “SET” button for 3 seconds, or until “12h” or “24h” flashes in the DATE LCD.
2. Press and release the “SET” button 9 times to reach the °F or °C setting mode.
3. “°F” is the default setting, and should be flashing in the DATE LCD.
4. Press and release the “CH” button to shift °F to °C and back.
7. Press and release the “SET” button to confirm your selection and to advance to the LCD contrast setting.

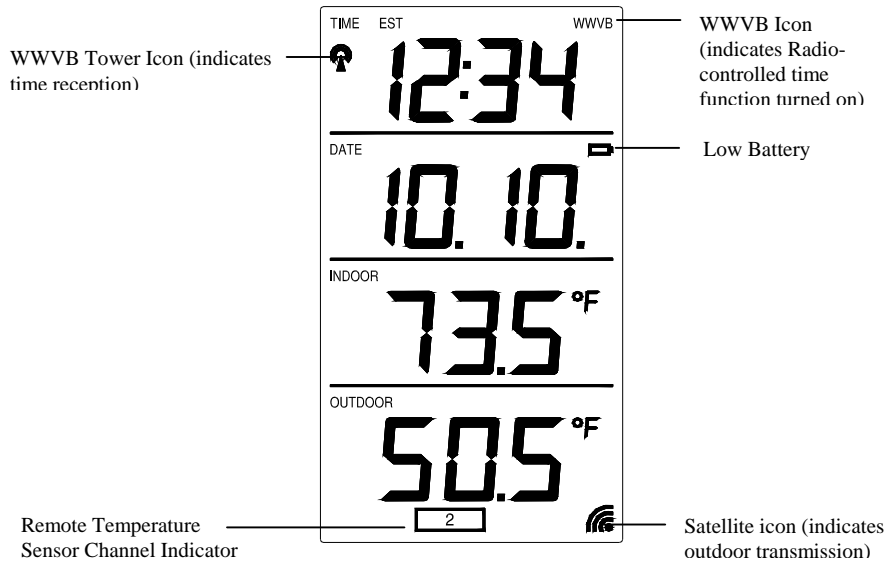


VIII. SETTING THE LCD CONTRAST

1. Press and hold the “*SET*” button for 3 seconds or until “12h” or “24h” flashes in the DATE LCD.
2. Press and release the “*SET*” button 10 more times to reach the LCD contrast setting mode.
3. The default setting—“Lcd 5” will flash in the DATE LCD.
4. There are 8 LCD contrast levels to choose from—“Lcd 0” is the lightest and “Lcd 7” is the darkest.
5. Press and release the “*CH*” button to toggle through the settings.
6. Press and release either the “*IN*” or “*OUT*” buttons to confirm all the settings and to exit the manual-programming mode (or wait 15 seconds for the unit to automatically return to the normal display mode).



FEATURES OF THE WS-9013U



I. INDOOR TEMPERATURE

The current indoor is displayed in the INDOOR LCD and is updated every 10 seconds.

II. OUTDOOR TEMPERATURE

The outdoor temperature is viewed in the OUTDOOR LCD. The outdoor temperature is updated every five minutes. When there is more than one remote temperature sensor unit in operation, a “boxed” number will appear under the temperature. This indicates which remote temperature sensor unit (1, 2, or 3) is currently displaying its data in the OUTDOOR LCD. (This feature is explained in further detail in section VI—*Adding Remote Temperature Sensors*).

III. MINIMUM AND MAXIMUM TEMPERATURE RECORDS

The WS-9013U keeps a record of the MINIMUM and MAXIMUM temperature and the time and date of their occurrence—for both the indoor and outdoor modes.

A. VIEWING THE INDOOR TEMPERATURE RECORDS

1. Press the “*IN*” button once. “MIN” appears in the upper portion of the flashing INDOOR LCD indicating that the minimum temperature and the time and date of occurrence are displayed. The minimum records will display for 20 seconds.
2. Press the “*IN*” button again (once while “MIN” is still displayed, twice otherwise). “MAX” appears in the upper portion of the flashing INDOOR LCD indicating that the maximum temperature and the time and date of occurrence are displayed.
3. While “MAX” is still displayed press the “*IN*” button again to return to the current data display. By waiting 20 seconds during either the minimum or the maximum readings the unit will automatically return to current data readings.

B. VIEWING THE OUTDOOR TEMPERATURE RECORDS

1. Press the “*OUT*” button once. “MIN” appears in the upper portion of the flashing OUTDOOR LCD, indicating that the minimum temperature and the time and date of occurrence are displayed. The minimum records will display for 20 seconds.
2. Press the “*OUT*” button again (once while “MIN” is still displayed, twice otherwise). “MAX” appears in the upper portion of the flashing OUTDOOR LCD, indicating that the maximum temperature and the time and date of occurrence are displayed.
3. While “MAX” is still displayed press the “*OUT*” button again to return to the current data display. By waiting 20 seconds during either the minimum or the maximum readings the unit will automatically return to current data readings.

C. RESETTING THE MIMIMUM AND MAXIMUM RECORDS

1. All the indoor records (minimum and maximum) will be reset after the “*IN*” button is pressed and held for 5 seconds.
2. All the outdoor records (minimum and maximum) will be reset after the “*OUT*” button is pressed and held for 5 seconds.

IV. ADDING OUTDOOR REMOTE CONTROL SENDERS (OPTIONAL)

The WS-9013U is able to receive signals from 3 different remote temperature sensors. The remote temperature sensor model(s) that you choose will come with their own set of instructions. Follow these instructions for a complete guide to setting up. Following are some brief instructions for the basic set-up of remote temperature sensor units with the WS-9013U. These extra remote temperature sensors can be purchased through the same dealer as this unit, or by contacting La Crosse Technology directly. A TX6U will monitor temperature only, a TX3U will monitor temperature and display the temperature on its LCD, and the TX3UP will monitor the temperature via a probe for measuring soil or water temperatures..

***Note:** When setting up multiple units it is important to remove the batteries from all existing units in operation. Then insert batteries into all the remote temperature sensor units in numeric sequence. Second, install batteries into the indoor weather station. Transmission problems will arise if this is not done correctly and if the total time for set-up exceeds 6 minutes.*

A. SET-UP OF MULTIPLE UNITS

1. It is necessary to remove the batteries from all units currently in operation.
2. Remove the battery covers to all remote temperature sensor units.

3. Place all remote temperature sensor units in a numeric sequential order.
4. In sequential order, install batteries (follow the same battery installation procedures seen in section I. A) of the Detailed Set-Up Guide).
5. Install batteries into the indoor weather station.
6. Follow the Detailed Set-Up Guide for programming and operating instructions.

B. VIEWING AND OPERATING WITH MULTIPLE REMOTE TEMPERATURE SENSOR UNITS

1. To view the temperature of a different remote temperature sensor unit, press and release the “*CH*” button. A shift from one “boxed” number to the next should be observed in the OUTDOOR LCD.
2. To view the Minimum/Maximum temperature: first select which remote temperature sensor to read data from (indicated by the “boxed” number), then press and release the “*MIN/MAX*” button. Pressing this button once will display the minimum temperature and the date and time the data was recorded. Pressing this button a second time (while “*MIN*” is still displayed, otherwise press the button twice) will display the same data for the maximum recordings.
3. To reset the Minimum/Maximum readings, it is necessary to select which remote temperature sensor you wish to reset. Press and hold the “*OUT*” button for 5 seconds, the records for the selected remote temperature sensor unit will be reset.

MOUNTING

Note: Before permanently mounting ensure that the indoor weather station is able to receive WWVB signals from the desired location. Also, extreme and sudden changes in temperature will decrease the accuracy of the indoor weather station. To achieve a true temperature reading, avoid mounting where direct sunlight can reach the remote temperature sensor. We recommend that you mount the remote temperature sensor on a North-facing wall. The sending range is 80ft—obstacles such as walls, concrete and large metal objects can reduce the range. Place both units in their desired location and wait approximately 15 minutes before permanently mounting to ensure that there is proper reception. The indoor weather station should display a temperature in the OUTDOOR LCD within 4 minutes of setting up.

I. THE REMOTE TEMPERATURE SENSOR

The remote temperature sensor can be mounted in two ways:

- with the use of screws, or
- using the adhesive tape.

A. MOUNTING WITH SCREWS

- 1) Remove the mounting bracket from the remote temperature sensor.
- 2) Place the mounting bracket over the desired location. Through the three screw holes of the bracket, mark the mounting surface with a pencil.
- 3) Where marked, start the screw holes into mounting surface.
- 4) Screw mounting bracket onto the mounting surface. Ensure that the screws are flush with the bracket.

B. MOUNTING WITH ADHESIVE TAPE

- 1) With a nonabrasive solution, clean and dry the back of the mounting bracket and the mounting surface to

ensure a secure hold. The mounting surface should be smooth and flat.

- 2) Remove the protective strip from one side of the tape. Adhere the tape to the designated area on the back of the mounting bracket.
- 3) Remove the protective strip from the other side of the tape. Position the remote temperature sensor in the desired location, ensuring that the indoor temperature station can receive the signal.

II. THE INDOOR TEMPERATURE STATION

The indoor temperature station can be mounted in two ways:

- with the table stand or
- on the wall with the use of a wall hanging screw (not included).

A. USING THE TABLE STAND

- 1) The indoor temperature station comes with the table stand already mounted. If you wish to use the table-stand all that is required is to place the indoor temperature station in an appropriate location.

B. WALL MOUNTING

- 1) Remove the table stand. To do this, pull down on the stand from the rear and rotate forward.
- 2) Fix a screw (not included) into the desired wall leaving approximately 3/16 of an inch (5mm) extended from the wall.
- 3) Place the indoor temperature station onto the screw using the hanging hole on the backside. Gently pull the station down to lock the screw into place.

TROUBLESHOOTING

Problem: No reception of WWVB time signal.

Solution: 1) Wait overnight for signal.

- 2) Be sure indoor weather station is at least 6 feet from any electrical devices such as televisions, computers or other radio-controlled clocks.
- 3) Remove batteries for five minutes, reinsert and leave the unit alone overnight without pressing buttons.
- 4) If there are still problems, contact La Crosse Technology.

Problem: Hour is incorrect (minute and date are correct).

Solution: Be sure correct time zone and daylight saving time is selected.

Problem: The LCD is faint

Solution: 1) Set the LCD contrast to a higher number

- 2) Replace batteries

Problem: No outdoor temperature is displayed.

Solution: 1) Remove all batteries, reinsert into remote temperature sensor first, then into the indoor temperature station.

- 2) Place remote temperature sensor closer to the indoor temperature station.
- 3) Be sure all batteries are fresh.

***NOTE:** For problems not solved, please contact La Crosse Technology.*

MAINTENANCE AND CARE INSTRUCTIONS

- Extreme temperatures, vibration and shock should be avoided to prevent damage to the units.
- Clean displays and units with a soft, damp cloth. Do not use solvents or scouring agents. They may mark the displays and casings.
- Do not submerge in water.
- Immediately remove all low powered batteries to avoid leakage and damage.

- Opening the casings invalidates the warranty. Do not try to repair the unit. Contact La Crosse Technology for repairs.

SPECIFICATIONS

Temperature measuring range:	
Indoor:	32°F to 139.8°F with 0.2°F resolution. (0°C to 59.9°C with 0.1°C resolution) “OFL” displayed if outside this range
Outdoor:	-21.8°F to 157.2°F with 0.2°F resolution. (-29.9°C to 69.9°C resolution) “OFL” displayed if outside this range
Indoor temperature checking interval:	Every 10 seconds
Outdoor temperature checking interval: (Remote Temperature Sensor)	Every 1 minute
Outdoor temperature reception: (Indoor Weather Station)	Every 5 minutes
Transmission Range:	80 feet (in open space)
Power Supply:	
Indoor Weather Station:	2 x AA, IEC LR6, 1.5V
Remote Temperature Sensor:	2 x AA, IEC LR6, 1.5V
Battery life cycle:	Approximately 12 months
Recommended battery type:	Alkaline
Dimensions (H x W x D)	
Indoor Weather Station:	5.5” x 3.2” x 1.25” (140 x 81 x 32 mm)
Remote Temperature Sensor:	5.04” x 1.57” x 0.9” (128 x 40 x 23 mm)

WARRANTY INFORMATION

La Crosse Technology provides a 1-year warranty on this indoor weather station. Contact La Crosse Technology immediately upon discovery of any defects covered by this warranty.

Before sending the indoor weather station in for repairs, contact La Crosse Technology. The indoor weather station will be repaired or replaced with the same or similar model.

This warranty does not cover any defects resulting from improper use, unauthorized repairs, faulty batteries, or the indoor weather stations inability to receive a signal due to any source of interference.

LA CROSSE TECHNOLOGY WILL NOT ASSUME LIABILITY FOR INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR OTHER SIMILAR DAMAGES ASSOCIATED WITH THE OPERATION OR MALFUNCTION OF THIS INDOOR WEATHER STATION. THIS PRODUCT IS NOT TO BE USED FOR MEDICAL PURPOSES OR FOR PUBLIC INFORMATION. THIS PRODUCT IS NOT A TOY. KEEP OUT OF CHILDRENS' REACH.

This warranty gives you specific legal rights. You may also have other rights specific to your state. Some states do not allow the exclusion of consequential or incidental damages therefore the above exclusion of limitation may not apply to you.

For warranty work, technical support, or information contact

La Crosse Technology
190 Main St.
La Crescent, MN 55947
Phone: 507.895.7095
Fax: 507.895.8000

e-mail
support@lacrossetechnology.com
(warranty work)

sales@lacrossetechnology.com
(information on other products)

Website
www.lacrossetechnology.com

FCC ID: OMO-01RX (receiver), OMO-01TX (transmitter)

**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 INTERFERENCE RECEIVED,
INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE
OPERATION.**

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