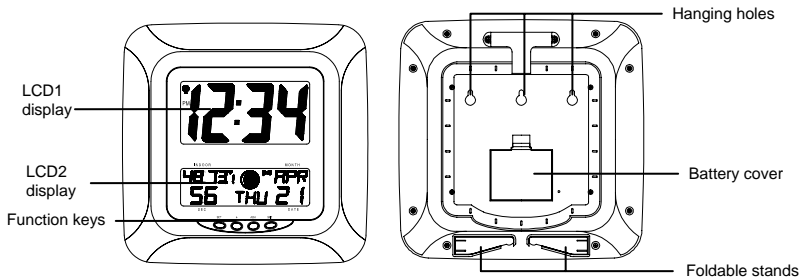


# WS-8236U ATOMIC CLOCK WITH TEMPERATURE, HUMIDITY AND MOON PHASE

## Instruction Manual

### FEATURES:

#### ATOMIC CLOCK:



- WWVB Radio controlled time with manual time setting
- Time display: hour, minute, second
- Alarm setting with snooze function
- Complete calendar display
- Weekday display (3 languages to choose from: English, French and Spanish)
- Time zone setting
- Daylight savings time ON/OFF option (DST)
- Indoor temperature display
- Indoor humidity display
- Wall mount or freestanding
- Moon phase display

## TO INSTALL AND REPLACE BATTERIES IN THE ATOMIC CLOCK

The atomic clock uses 3 x AA, 1.5V batteries. To install and replace the batteries, please follow the steps below:

1. Pull down on the tab at the top of the battery cover and lift up to remove the cover.
2. Insert batteries observing the correct polarity (see marking inside battery compartment).
3. Replace compartment cover.

**DO NOT SET THE CLOCK.**

## SETTING UP:

**Alkaline batteries are recommended for use. Avoid using rechargeable batteries.**

1. Place batteries in the atomic clock. **DO NOT PRESS ANY BUTTONS FOR 15 MINUTES.**
2. After 15 minutes the indoor area on your clock should have a temperature and humidity showing. If not, remove batteries, wait 15 minutes and repeat step one.
3. After the clock receives the WWVB time code reception will automatically start. This reception typically takes between 5-10 minutes in good conditions. If after 15 minutes the WWVB time has not been received, use the "SET" key to manually enter the set-up mode and change either the time or date in order to activate the WWVB reception (see manual settings below). The clock will then automatically attempt to receive the WWVB time from 12:00 am through 6:00 am each day (attempts WWVB reception every full hour within this time frame). When this is successful, the received time will override the manually set time. The date is also updated with the received time (Please refer to notes on "Radio controlled time" and "Manual time setting").
4. After the time signal has been received or the search mode has been manually stopped the indoor temperature will be displayed.

### Note:

When changing batteries in the unit, ensure that the batteries do not spring free from the contacts. Always wait at least 15 minutes after removing the batteries before reinserting, otherwise start up problems may occur.

## FUNCTION KEYS

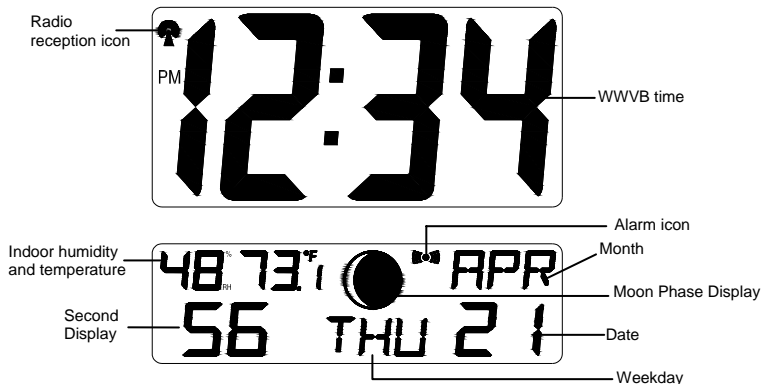
The atomic clock has four easy to use keys:

- SET** key : To enter into the set mode for the following functions: LCD contrast, time zone, DST ON/OFF (daylight saving time), radio-controlled time ON/OFF, language, hour, minute, year, month and date.

- + key** : To change any values in manual set mode or alarm set mode
- ALM key** : To enter into the alarm set mode  
 To set the alarm ON/OFF  
 To display the alarm time in normal mode display  
 To exit the setting modes
- SNZ key** : To activate the snooze function during alarm

### ATOMIC CLOCK LCD SCREEN DESCRIPTIONS

The atomic clock's LCD is divided into 2 sections and once the batteries are inserted, all the segments will light up briefly before displaying the information for time, date, indoor temperature, indoor humidity, and second.



### MANUAL SETTINGS

**Note:**

If the atomic clock has already successfully received the WWVB time signal and displays the correct time and date, then the Manual settings can be skipped.

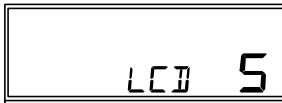
After completion of the above described procedures in "**Setting up**" the manual setting modes can be entered by pressing and holding the **SET** key for 5 seconds. The following settings can now be programmed:

	Default (Factory) Setting
• LCD contrast setting	4
• Time zone setting	-5 (Eastern Standard Time)
• DST ON/OFF	ON
• Radio-controlled time ON/OFF	ON
• Language display setting	ENG (English)
• Manual time setting (Hour then Minute)	12 (hour), 00 (minute)
• Year setting	2004
• Month setting	Jan (January)
• Date setting	1

### LCD CONTRAST SETTING

After entering the manual setting mode as described above, the LCD contrast can be set between 0 and 7.

1. Press and hold the **SET** key for 5 seconds.
2. LCD will be displayed in the lower display and a number will flash to the right of the word LCD.

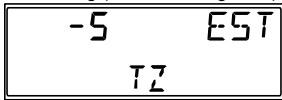


3. Press and release the **+** key to select the desired LCD contrast.
4. Press and release the **SET** key to confirm the LCD contrast and continue to the Time Zone setting.

### TIME ZONE SETTING

The time zone can be set between the -1 to -12 hour or Greenwich Mean Time (GMT) range.

1. The time zone will start flashing (Default setting "-5h") in the lower LCD display.



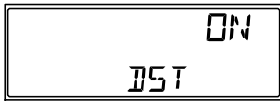
2. Press and release the **+** key to select the desired time zone.
3. Press and release the **SET** key to confirm the time zone setting and continue to the DST (Daylight Saving Time) setting.

**Note:** The time zones from -4 to -10 hours will be displayed with 3 characters abbreviations:

- -4 ATL (Atlantic time),
- -5 EST (Eastern time; default time zone),
- -6 CST (Central time),
- -7 MST (Mountain time),
- -8 PST (Pacific time),
- -9 ALA (Alaska time),
- -10 HAW (Hawaii time).
- "GMT" will be displayed if set to GMT (0).

### DST SETTING (daylight saving time)

1. The word ON will start flashing in the lower LCD display.



2. Press and release the **+** key to select DST ON or OFF.
3. Press and release the **SET** key to confirm the DST setting and continue to the Radio-controlled time setting.

**Note:** The DST default is "ON", meaning that the WWVB will automatically change the time according to Daylight Saving Time in the spring and fall. For areas that do not recognize DST changes (Arizona and parts of Indiana) turn the DST "OFF".

### RADIO-CONTROLLED TIME SETTING

1. The word ON will start flashing in the lower LCD display.



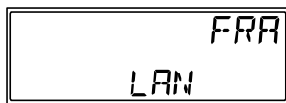
2. Press and release the **+** key to select radio-controlled time ON or OFF.
3. Press and release the **SET** key to confirm the radio-controlled time setting and continue to the Language setting.

**Note:** Turn off the radio-controlled time feature only if you DO NOT want the clock to automatically update itself.

## LANGUAGE SETTING

The weekdays can be displayed in LCD2 with the pre-set languages: US English (ENG), French (FRA) and Spanish (ESP).

1. **LAN** will be displayed in the lower LCD along with one of the three letter language abbreviations.



2. Press and release the **+** key to select the desired language.
3. Press and release the **SET** key to confirm the language setting and enter the Manual Time setting mode.

## MANUAL TIME SETTING

In case the atomic clock is not able to detect the WWVB-signal (disturbances, transmitting distance, etc.), the time can be manually set. The clock will then work as a normal Quartz clock.

1. The hour digits will start flashing in the upper LCD.
2. Select the desired hours by pressing and releasing the **+** key.
3. Press and release the **SET** key to advance to the minutes setting.
4. Now the minute digits will start flashing.
5. Select the desired minutes by pressing and releasing the **+** key. If the **+** key is held, the units will increase by 5.

6. Press and release the **SET** key to confirm the Time setting and continue to the Year setting.

**Note:**

The unit will still try to receive the signal every day despite it being manually set. When it does receive the signal, it will change the manually set time into the received time. During reception attempts the WWVB tower icon will flash. If reception has been unsuccessful, then the WWVB tower icon will not appear but reception will still be attempted the following hour.

WWVB time reception takes place from 12:00 am through 6:00 am each day (attempts WWVB reception every full hour within this time frame). When the time signal is received for example at 1:00 am, the atomic clock will not attempt to receive the WWVB signal for the remaining hours until 6:00 am. Therefore, the next signal attempt will take place between 12:00 am and 6:00 am the next day. The other times WWVB reception takes place, are upon setup and after manual time set exiting mode. Reception is generally not possible during daylight hours due to the interference of the sun.

## **YEAR SETTING**

The year can be selected sequentially from 2003 to 2029 and will then start over again (default setting 2004). None of the digits of the year will be visible on the lower LCD display however the year must be correct as it affects the day of the week display.

1. The year digits will start flashing in the lower LCD.
2. Press and release the **+** key to select the desired year.
3. Press and release the **SET** key to confirm the Year setting and continue to the Month setting.

## **MONTH SETTING**

1. The month digits on LCD2 will start flashing.
2. Press and release the **+** key to select the desired month.
3. Press and release the **SET** key to confirm the Month setting and continue to the Date setting.

## **DATE SETTING**

1. The digits for the date will start flashing in the lower LCD (Default setting 1).
2. Press and release the **+** key to select the desired date.
3. Press and release the **SET** key to confirm the Date setting and exit the manual setting mode.

**Note:** The date can only be set in conjunction with the selected month. For example, it is not possible to set the date 30 if the month of February is selected.

## EXIT THE MANUAL SETTING MODES

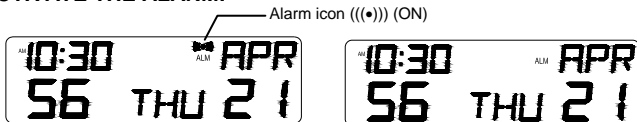
- To return to the normal display mode from anywhere in manual setting mode simply press the **ALM** key at anytime.
- If no keys are pressed for at least 15 seconds in setting mode, the atomic clock will automatically switch back to normal display mode.

## ALARM SETTING

To enter into the alarm setting mode:

1. Hold the **ALM** key for 5 seconds. The hour digits start flashing.
2. Press and release the + key to set the hour.
3. Press and release the **ALM** key to continue to the minutes setting.
4. The minute digits start flashing.
5. Press and release the + key to set the minutes.
6. Press and release the **ALM** key to exit the Alarm setting mode or wait for 15 seconds for the clock to automatically timeout and return to the standard display mode.

## TO DEACTIVATE THE ALARM:



The alarm will be automatically switched ON when the alarm time is set. To deactivate the alarm (OFF), press and release once the **ALM** key in normal mode display. The alarm icon will disappear, the alarm is now off.

## SNOOZE SETTING

The snooze can only be activated during alarm time for a snooze duration of 10 minutes by pressing the SNZ key.



## WWVB RADIO CONTROLLED TIME

The NIST radio station, WWVB, 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 atomic clock. However, due to the nature of the Earth's Ionosphere, reception is very limited during daylight hours. The atomic clock 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 continually measures every second of every day to an accuracy of ten billionths of a second a 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. This atomic clock regulates the WWVB transmitter.

The WWVB tower icon in the clock display will start flashing in the top center of the LCD. This indicates that the clock has detected a radio signal and is trying to receive it. When the time code is received, the WWVB tower becomes permanently lit and the time will be displayed.

If the tower icon flashes, but does not set the time or the WWVB tower does not appear at all, then please take note of the following:

- Recommended distance to any interfering sources like computer monitors or TV sets is a minimum of 6 feet (2 meters).
- Within ferro-concrete rooms (basements, superstructures), the received signal is naturally weakened. In extreme cases, please place the unit close to a window and/ or point its front or back towards the Fort Collins, Colorado, transmitter.
- During nighttime, the atmospheric disturbances are usually less severe and reception is possible in most cases. A single daily reception is adequate to keep the accuracy deviation below 1 second.

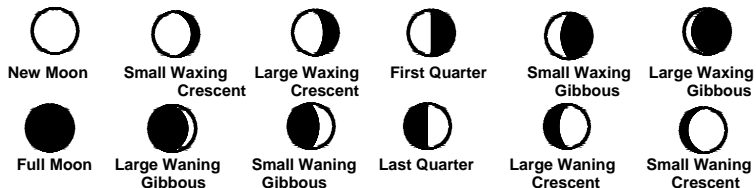
### Note:

In case the atomic clock is not able to detect the WWVB-signal (disturbances, transmitting distance, etc.), the time can be manually set (please refer to notes on **Manual time setting**).

## MOON PHASE

The moon phases appear in the middle of the lower LCD. There are 12 visible Moon Phases that will show in the LCD:

## MOON PHASES FOR THE WS-8236U



### POSITIONING

Before permanently mounting ensure that the atomic clock is able to receive WWVB signals from the desired location. Also, extreme and sudden changes in temperature will decrease the accuracy of the atomic clock, and changes in elevation will result with inaccurate temperatures readings for the next 12 to 24 hours. These changes will require a 12 to 24 hour wait before obtaining reliable data.

### POSITIONING THE ATOMIC CLOCK:

There are two possible ways to mount the atomic clock:

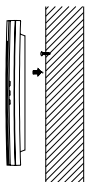
- use of the foldout table stands, or
- wall mounting

### FOLDOUT TABLE STAND



The foldout table stand legs are located on the backside, at the lower corners, just below the battery cover. The hinges are towards the edges of the atomic clock, and the ends (with no hinge) need to be folded out towards the edge. Once the foldout table stands are extended, place the atomic clock in an appropriate location.

## WALL MOUNTING



- 1) Using a straight edge, horizontally space at about 2" (50 mm) three screw positions on a wall.
- 2) Install three mounting screws (not included) into a wall —leaving approximately 0.19" (5mm) extended from the wall.
- 3) Place the atomic clock onto the screws, using the hanging holes on the backside. Gently pull the atomic clock down to lock the screws into place.

### Note:

Always ensure that the atomic clock locks onto the screws before releasing.

## TROUBLESHOOTING

<b>Problem:</b>	The LCD is faint.
<b>Solution:</b>	1) Replace the batteries.
<b>Problem:</b>	No reception of WWVB signal
<b>Solution:</b>	<ol style="list-style-type: none"><li>1) It may help reception to face the front of the atomic clock in the general direction of Ft. Collins, Colorado.</li><li>2) Wait overnight for signal.</li><li>3) Be sure the atomic clock is at least 6 feet (2 meters) from any electrical devices, i.e. TV sets, computers, or other radio controlled clocks.</li><li>4) Remove batteries for five minutes, reinsert and leave the unit alone overnight without pressing any keys.</li></ol>
<b>Problem:</b>	Hour is incorrect (minute and date are correct).
<b>Solution:</b>	1) Be sure the correct time zone and daylight saving time are selected.
<b>Problem:</b>	"OFL" appears in the indoor temperature section of the LCD
<b>Solution:</b>	1) Move the atomic clock to an area with warmer or cooler surrounding temperature. Current surrounding temperatures are outside measuring range.

## CARE AND MAINTENANCE:

- Avoid placing the unit in areas prone to vibration and shock as these may cause damage.
- Avoid areas where the unit can be exposed to sudden changes in temperature, i.e. direct sunlight, extreme cold and wet/moist conditions as these will lead to rapid changes which reduces the accuracy of readings.

- When cleaning the LCD and casing, use a soft damp cloth only. Do not use solvents or scouring agents.
- Do not submerge the unit into water.
- Immediately remove all low powered batteries to avoid leakage and damage. Replace only with new batteries of the recommended size.
- Do not make any repairs to the unit. Please return it to the original point of purchase. Opening and tampering with the units may invalidate the warranty.

### **SPECIFICATIONS:**

Indoor temperature measuring range	:	+14.1°F to +99.9°F with 0.2°F resolution
Temperature checking interval	:	every 15 seconds
Indoor humidity measuring range	:	0 to 99%
Humidity checking interval	:	every 20 seconds
Power source (Alkaline batteries recommended)	:	3 x AA, 1.5V batteries
Battery life	:	about 12 months
Dimensions (H x W x D)	:	9.5" x 9.25" x 1.16" / 240.4 x 236 x 29.5mm

### **LIABILITY DISCLAIMER:**

- 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 only designed for use in the home or office.
- 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.

### **BATTERIES CHANGE:**

For best performance, batteries should be replaced at least once a year to maintain the best running accuracy. Ensure that the batteries used are new and the correct size.



**Please help in the preservation of the environment and return used batteries to an authorized depot.**

## **WARRANTY INFORMATION**

La Crosse Technology, Ltd 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 used in North America and only to the original purchaser of this product. To receive warranty service, the purchaser must contact La Crosse Technology, Ltd for problem determination and service procedures. Warranty service can only be performed by a La Crosse Technology, Ltd authorized service center. The original dated bill of sale must be presented upon request as proof of purchase to La Crosse Technology, Ltd or La Crosse Technology, Ltd's authorized service center.

La Crosse Technology, Ltd will repair or replace this product, at our option and at no charge as stipulated herein, with new or reconditioned parts or products if found to be defective during the limited warranty period specified above. All replaced parts and products become the property of La Crosse Technology, Ltd and must be returned to La Crosse Technology, Ltd. Replacement parts and products assume the remaining original warranty, or ninety (90) days, whichever is longer. La Crosse Technology, Ltd will pay all expenses for labor and materials for all repairs covered by this warranty. If necessary repairs are not covered by this warranty, or if a product is examined which is not in need of repair, you will be charged for the repairs or examination. The owner must pay any shipping charges incurred in getting your La Crosse Technology, Ltd product to a La Crosse Technology, Ltd authorized service center. La Crosse Technology, Ltd will pay reasonable return shipping charges to the owner of the product.

Your La Crosse Technology, Ltd warranty covers all defects in material and workmanship with the following specified exceptions: (1) damage caused by accident, unreasonable use or neglect (including the lack of reasonable and necessary maintenance); (2) damage occurring during shipment (claims must be presented to the carrier); (3) damage to, or deterioration of, any accessory or decorative surface; (4) damage resulting from failure to follow instructions contained in your owner's manual; (5) damage resulting from the performance of repairs or alterations by someone other than an authorized La Crosse Technology, Ltd authorized service center; (6) units used for other than home use (7) applications and uses that this product was not intended or (8) the products inability to receive a signal due to any source of interference.. 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.

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

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