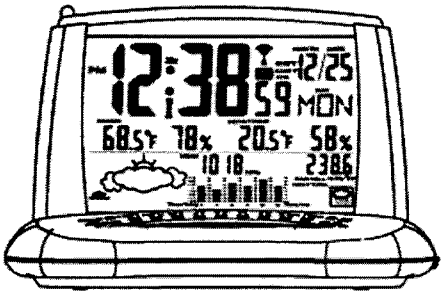
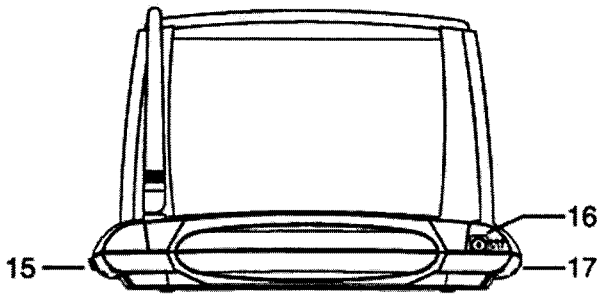
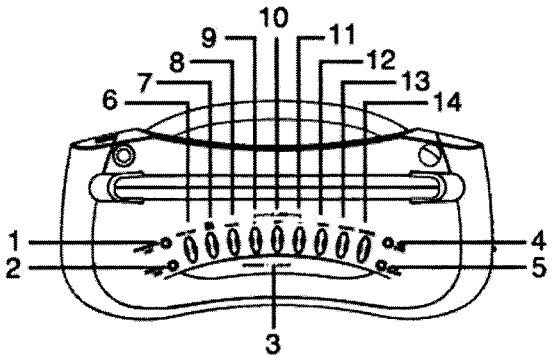
Rain gauge weather centre Instruction Manual

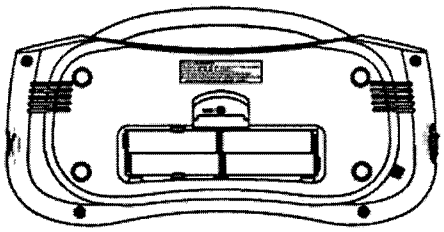
Location of Controls

Main Unit Base



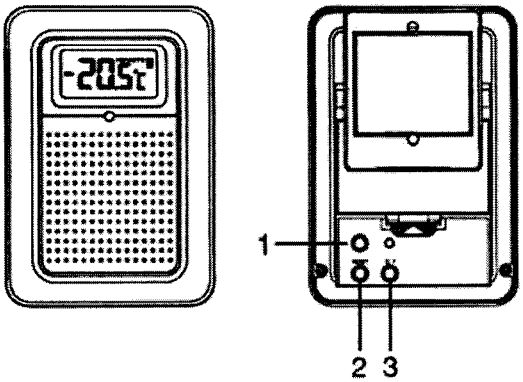






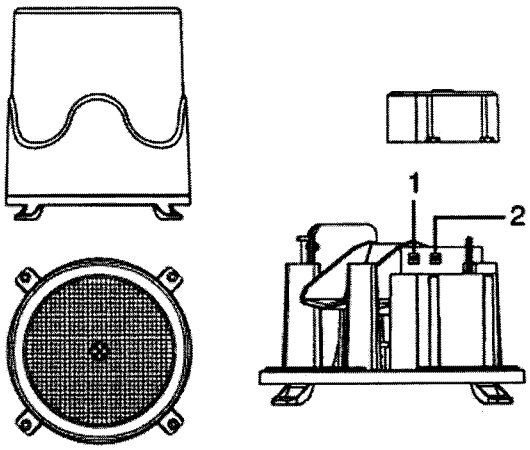
1. PRESSURE UNIT 2. RAINFALL 3. ALARM STOP/LIGHT 4. TIME ZONE
5. DST ON/OFF 6. HISTORY 7. MAX/MIN 8. CLEAR 9. + 10. SET 11. -
12. WAVE 13. RE-SYNC 14. °C / °F 15. ALARM STOP/LIGHT 16. ADAPTER JACK
17. DIMMER 18.RESET

Wireless Temperature/Humidity Sensor (Transmitter)



1. Selection 2. °C/ °F 3. RESET

Wireless Rain Gauge



1. RESET 2. Re-sync

- The configuration of your clock may differ somewhat from that shown in the illustration.
- "AA" or "AAA" size battery. This clock may use more than one piece of battery. Please refer to the engraved battery marks inside the battery compartment for the correct battery type.

Warnings

*Do not expose the main unit to excessive force, shock, dust, extreme temperature, directly sun light or humidity. Any of these conditions may shorten the life of the unit/

*Avoid exposing the wireless remote to extreme temperatures, water or severe shock

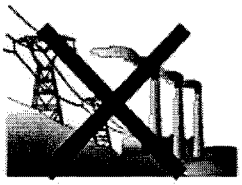
*Avoid contact with any corrosive materials such as perfume, alcohol or cleaning agents.

*Do not tamper with any of the internal components of this clock. This will invalidate the warranty and may cause damage.

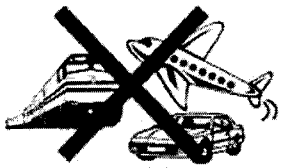
Location Precautions

The clock receives a radio wave much like a TV or radio. Be sure to place it near a window or some other location where is optimal.

Inside or near concrete / steel buildings or structures.



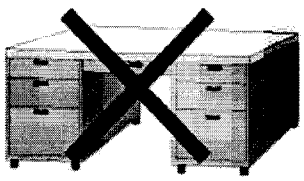
Next or close to power station.



Inside moving vehicles (automobile, train, airplanes etc).

Too close to household appliances (Computer, TV, video/audios, fax machines, speakers).

Near bridge with large steel / metal frame.



Close to or on top of metal surfaces / plates.

Quick Start

Battery Installation

Clock /Main Unit

1. Plug the main unit into the wall outlet using the included 7.5V adapter.
2. Insert 4 AAA batteries into the battery compartment on the bottom of the main unit ensuring proper polarities as indicated.

Note: When a low-battery compartment icons appears in the indoor temperature and humidity window on the LCD, replace the batteries.

Wireless Temperature / Humidity Transmitter

1. Remove the battery door
2. Insert 2 AA batteries already installed in the unit

Note: When a low-battery compartment icons appears in the outdoor temperature and humidity window on the LCD, replace the batteries.

Wireless Rain Gauge Transmitter

1. Detach the outer case of the rain gauge unit
2. Unscrew the battery door
3. Insert 2 AA batteries
4. Screw the battery door

Note: When a low-battery compartment icons appears in the outdoor rain gauge window on the LCD, replace the batteries.

Battery Precautions

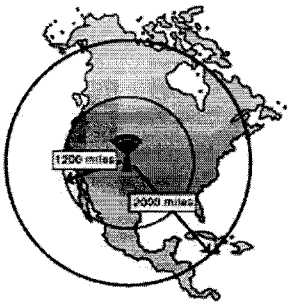
Do not mix old and new batteries.

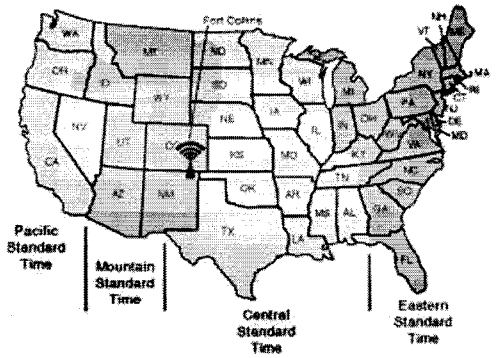
Do not mix alkaline, standard (carbon-zinc) or rechargeable (nickel Cadmium) batteries.

General Instructions

This radio-controlled atomic clock is the most accurate timepiece in North America. It receives a time signal transmitted by the National Institute of Standards and Technology (NIST), which is regulated by 3 atomic clocks and deviates less than one second within 3,000 years. The NIST broadcasts time signal (WWVB, 60kHz) continuously from Fort Collins, Colorado. This signal can be received anywhere in the continental USA that long wave (AM) radio reception I possible with a portable radio. It is expected that signal cover a distance of over 2,000 miles from the transmitter. The clock will receive the signal within the broadcast range anywhere an AM signal can be received. Generally the signal cannot be received. In massive metal and concrete structures unless near a window. In addition, some environmental effects may affect the transmitting distance. (See Environmental Reception Effects.)

For more information, please study the WWVB Web page of the NIST at :
http://www.boulder.nist.gov/timefreg/





Environmental Reception Effects

The radio-controlled clock receives an accurate time signal using wireless technology. As with all wireless devices, the reception ability may be affected by, but not limited to, the following circumstances:

Long transmission distance
Nearby mountains and valleys
Among tall buildings
Near railways, high voltage cables, etc.
Near freeways, airports, etc
Near concrete buildings.
Near electrical appliances
Near computers and televisions.
Bad weather locally or electrical storms between you and Colorado.
Inside moving vehicles.
Nearby metallic structures.

Operation

Clock /Main Unit

To ensure proper functioning of your clock with indoor/outdoor temperature, humidity & rain gauge, please follow below procedure :

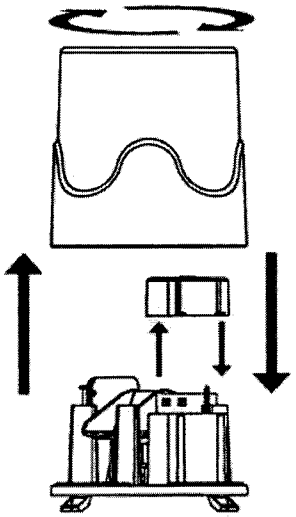
1. Insert new batteries in to the main unit first. (see Battery Installation)
2. Then insert batteries into 2 remote units (Temperature/Humidity Transmitter and Rain Gauge Transmitter) .
3. Press Time Zone button on the main unit to your local time zone:
   PST = Pacific Standard Time
   MST= Mountain Standard Time
   CST = Central Standard Time
   PST = Pacific Standard Time
4. The clock is preset with DST (Daylight Saving time) On. If you live in an area that does not recognize Daylight Saving Time (i.e. Arizona & parts of Indiana), press DST button once and LCD shows DST Off.
5. Do not touch any other buttons or settings on the clock. It will automatically receive the remote temperature/humidity, rain gauge data and sets your clock to the exact time, day, date and indoor temperature/humidity.

Remote Temperature / Humidity Transmitter

1. After installing the batteries (or pressing the RESET button), the temperature/humidity RF (radio frequency) signal is immediately sent to the clock. The clock attempts to receive the RF temperature/humidity signal for the first 5 minutes and refreshes the RF temperature every 3 minutes.
2. To select Fahrenheit or Centigrade temperature units, press F/C buttons on the remote unit.
3. If the RF temperature/humidity signal is not received within 5 minutes, "---" appears in the outdoor temperature window of the clock. In this case, press the RE-SYNC button of the main unit, then press RESET button at the back of the transmitter. The clock then attempts outdoor temperature/humidity reception for another 6 minutes.
4. If the clock does not display the outdoor temperature/humidity after 6 minutes, relocate the clock or the transmitter until reception is successful.

Remote Rain Gauge Transmitter

1. Switch to open the outer case of the rain gauge.
2. Remove the fiber tape from the bucket inside to let it movable
3. After installing the batteries (or pressing the RESET button), the rain gauge RF (radio frequency) signal is immediately sent to the clock. The rain gauge window on main unit appear " 0". The reception is successful.
4. If the rain gauge signal is not received within 5 minutes, "---" appears in the rain gauge window of the clock. In this case, press the RE-SYNC button of the main unit, then press RE-SYNC button at the back of the transmitter. The clock then attempts rainfall reception for another 6 minutes.
5. If the clock does not display the rain gauge data after 6 minutes, relocate the clock or the transmitter until reception is successful.
6. Mount the rain gauge on a level surface. (use metal ring to adjust the leveling of the rain gauge)
7. Switch to close the outer case, The installation of rain gauge is completed.



Synchronization of Remote Units & Main Unit

1. After the batteries have been inserted in the main unit and in the remote transmitter unit, the LCD on the remote should show current temperature / humidity. In a few minutes, the remote temperature / humidity / rainfall are shown in the outside temperature / humidity / rainfall field on the main unit. If at least 10 minutes pass and the outside temperature / humidity / rainfall field displays "- -" instead of the remote unit's temperature / humidity / rainfall, see the "Troubleshooting" section. Be sure the main unit and the remote transmitter units are in sync and the outdoor temperature / humidity / rainfall are displayed on the main unit.
2. After a few minutes, place the remote transmitter unit in the desired outdoor location within 100 feet of the main unit. Place the main unit as close as possible to the outdoor remote unit. For best results, the remote unit should be placed within sight of the main unit, such as outside the closest window. If necessary, screw the included wall-mount bracket to a convenient outdoor location and place the remote unit inside the bracket. The remote/outdoor temperature / humidity / rainfall will be shown on the main unit. Obstacles, walls, etc. reduce the range significantly. The remote should be placed where it will not experience weather extremes such as rain, snow, direct sunlight, etc. This allows you to receive an accurate outside temperature / humidity / rainfall reading and weather forecast.
   Note: For more details on synchronization, please refer to "Wireless Remote Temperature Transmission."

Weather Forecast

The local weather forecast and weather tendency are predicted using the rate of change in atmospheric pressure determined by a precisely calibrated pressure sensor. After turning the unit on for the first time, it takes 24 hours for the weather forecasting data to be calculated for the first time. After 24 hours, the unit calculates the weather for the next 6 hours. To ensure a reliable weather calculation, do not relocate the unit during operation. Weather tendency is indicated by an up or down forecast arrow. (See table below.)

1. The up arrow icon( )- indicates a significant increase in atmospheric pressure. This normally means the weather is going to improve.
2. The down arrow icon( )- indicates a significant decrease in atmospheric pressure. This means the weather is going to get worse.

3. The forecast icon(FORECAST) - without an arrow indicates a steady/insignificant change of atmospheric pressure. This means the weather will remain unchanged.

Tendency - Up
Tendency - Down
Tendency - Steady

TENDENCY - UP	TENDENCY - DOWN	TENDENCY - STEADY
		

Weather Conditions
The current weather condition is displayed using one of five animated icons: Sunny, Partly cloudy, cloudy, Rainy or Stormy. (See table below.) The Stormy icon only appears when a sudden and serious drop in atmospheric pressure is detected.

SUNNY	PARTLY CLOUDY	CLOUDY	RAINY	STORMY
				

Barometric Graph

1. Bar graph shows the last day's pressure changes. Start from 2nd day, the Barograph shows the pressure trend of last day.
2. The Time Axis shows the time of last day. E.g. 4 = 4:00 AM, 8 = 8:00 AM, 12 = 12:00PM, 16 = 4:00PM, 20 = 8:00PM and 24 = 12:00 AM.
3. The program should store the pressure mean of last day from 12:00AM to 11:59PM.
4. The bar chart should show the pressure difference between the pressure at the time(4:00AM, 8:00 AM, 12:00 PM, 4:00 PM, 8:00 PM and 12:00 AM) and the mean pressure.
5. If the Pressure difference exceeds +/-6mb, then the Barograph shows the +/- 6mb.
6. The Bar graph would RESET if there is Time Zone, DST and day set(Manual or RCC) . The Bar graph is reset if the clock set (Manual or RCC) deviation is larger then + or - half hour.

Barometer

1. Current: Show the current Pressure Reading, refresh every 4 seconds.
2. Daily total: Turn on "Mean" Icon, and show the average pressure of the Last day. This reading is updated at everyday 12:00AM
3. Weekly Total: Turn on "Mean" Icon, and show the average pressure of the last week (Sunday to Saturday). This reading is updated at Sunday 12:00AM
4. Monthly Total: Turn on "Mean" Icon, and show the average pressure of last month (1st to 31st). This reading is updated at the 1st of each month 12:00AM
5. Season Total: Turn on "Mean" Icon, and show the average pressure of last season (1st season: 1st Jan, 2nd season: 1st April, 3rd season: 1st July, 4th season: 1st Oct). This reading is updated at the Starting day 12:00AM of each season
6. The Barometer would RESET if there is Time Zone, DST and day set(Manual or RCC) . The Barometer is reset if the clock set (Manual or RCC) deviation is larger then + or - half hour.

Outdoor Rainfall Readout

1. Current: It shows the current rainfall.
2. Daily Total: the total rainfall of last day. It is updated at everyday 12:00 AM
3. Weekly Total: the total rainfall of last week (Sunday to Saturday). It is updated at every Sunday 12:00AM
4. Monthly Total: the total rainfall of last month (1st to 31st). It is updated at the 1st day 12:00AM of each month.
5. Season Total: the total rainfall of last season (1st season: 1st Jan, 2nd season: 1st April, 3rd season: 1st July, 4th season: 1st Oct). It is updated at the 1st day 12:00AM of each season.
6. The Rain Gauge would RESET if there is Time Zone, DST and day set (Manual or RCC) . The Rain Gauge is reset if the clock set (Manual or RCC) deviation is larger then + or - half hour.

Check Data History of Barometer & Rain Gauge

1. Pressing the HISTORY button to see the daily record of mean Barometer and total Rainfall for current daily, weekly monthly and quarterly (season). The sequence is:

   (Current) - daily - weekly - monthly - quarterly - (Current)

2. The display of mean Barometer and total Rainfall will restore to display current Barometer and Rain rate after 5 seconds.
3. Pressing the Clear push button when displaying mean Barometer and total Rainfall will clear the all data in corresponding memory buffer.

Units Setting

1. Barometer: press PRESSURE UNIT button, the unit can select units of mb, inHg, mmHg or hPa.
2. Rainfall: press RAINFALL UNIT button, the unit can select units of in/hr or mm/hr.

Indoor and Outdoor/Remote Temperature / Humidity Readout

1. The indoor and outdoor temperatures can be displayed in either °F or °C. To desired display appears. The main unit converts the temperature if the remote transmitter unit is set to a different temperature display. If the temperature and/or humidity exceeds or falls below the unit's range, the LCD shows either "HI" or "LO" in place of the temperature and/or humidity.
2. To display the recorded minimum and maximum indoor and outdoor temperatures / humidity in succession, press the MAX/MIN button on the main unit repeatedly. The temperature / humidity display returns to the current temperature after 5 seconds or after hitting the MAX/MIN button three times. To clear the maximum and minimum temperature / humidity data, press the CLEAR button while the maximum and minimum temperature /humidity are shown on the LCD.

Wireless Remote Temperature / Humidity and Rainfall Transmission

The Transmission frequency is 433MHz. The outdoor transmission range is 100 feet from the main unit. Obstacles, walls, etc. will reduce the transmission range. Once the main unit is plugged in or the batteries have been installed, it will start to receive signals for 10 minutes. Once batteries are placed in the remote units, it will start to transmit temperature / humidity and rainfall data to the main unit every 3 minutes. Upon successful reception, the remote/outdoor temperature / humidity and rainfall will be shown in the remote temperature / humidity and rainfall field on the LCD. The main unit automatically updates the remote

	**NO SIGNAL DETECTION**
	**SIGNAL DETECTION**
	**SUCCESSFUL RECEPTION**

Transmission Troubleshooting

1. If the main unit does not receive signals within the first 10 minutes, a blank "-" appears in the OUT TEMPERATURE / HUMIDITY or RAINFALL window on the LCD. If at any time during operation a signal is not received after five consecutive intervals, blank "-" appears. If this happens, press the RE-SYNC button. The main unit will receive signals for 10 minutes.
2. If the remote unit's batteries are running low, a low battery icon appears in the OUT TEMPERATURE / HUMIDITY or RAINFALL field. Replace the batteries.
3. If the display unexpectedly goes blank, press the RE-SYNC button on the main unit to force the main unit to receive a signal. If this does not work, check the following:
   - The remote unit is still in place.
   - The batteries in both the remote unit and the main unit are still good. Replace if necessary.
   - The remote transmitter is within range and the path is clear of obstacles or other interference. (See "Interference" section below.) Shorten the distance if necessary.

Interference

Signals from other household devices such as garage-entry controls, doorbells and home security systems may interfere with the temperature-data transmission and may cause temporary reception failure. This is normal and does not affect the general performance of the unit. The transmission and reception of the temperature / humidity / rainfall reading will resume once the interference has stopped.

Atomic Clock signal Reception

Initial reception after power up

1. The main unit will search for WWVB signal and display the time automatically.
2. If the initial reception failed, the main unit will search for the signal every 3 hours until it can receive the accurate time.

Automatic Time update

The main unit will automatically update its 1 time a day.

Wave OK display

The Wave OK box will be displayed which indicates successful reception during the last search for WWVB signal. The Wave OK box may not be displayed daily due to interference between your location and the transmitters, This is normal.

Manual Time update

Reception can be started anytime by pressing the "WAVE" button.

Caution

The main unit is set to show the Pacific Standard Time (PST) with Daylight Saving Time as a factory setting. Please adjust these switches for the location where the clock is used. In some unusual occasions, the main unit may be affected by noise and respond abnormally. In such conditions, press the RESET button to resume normal operation.

Important

It is recommended to put the main unit near a window facing Fort Collins, Colorado. Please move the main unit to another location if difficulty in signal reception is encountered.

Manual Clock Setting

1. Press and hold SET button 2 Sec until a beep sound to start clock setting. The year will display in flashing on the clock time position of the LCD.
2. Press + / - buttons to adjust the year between 2004 and 2099
3. Press SET button consecutively to proceed to Month-Date setting; Hour-Minute setting; 12-Hourr / 24-Hour time; Display.
4. Press and hold either + / - for fast setting

Setting the Alarm
Press + / - Button once for a beep sound, press + / - button again to the alarm time.
Press and hold + / - for fast setting.
After setting, release + / - button, the alarm time is set.

Alarm On
The beeping alarm wakes you to one minute of beeping until the alarm is turned off.
1. To select the alarm on, slide the ALM OFF/ALM ON/SNOOZE switch to ALM ON.
2. To turn off the alarm once it has sounded, press the ALARM STOP/LIGHT button.
   Snooze

Alarm On with Snooze
The beeping alarm with snooze wakes you to one minute of beeping that repeats every five minutes until the alarm is turned off.
1. To select the beeping alarm with snooze, slide the ALM OFF/ALM ON/SNOOZE switch to SNOOZE.
2. To activate the snooze function after the alarm has sounded, you may either wait for the alarm to turn off after one minute or you may press the ALARM STOP/ LIGHT button. In both instances the alarm repeats every five minutes until it is turned off.

Alarm Off
To turn off the snooze alarm, slide the ALM OFF/ALM ON/SNOOZE switch to ALM OFF.

Backlight & Dimmer Switch
1. To enable the always-on backlight, plug the main unit into a wall outlet using the included adapter.
2. To activate the automatic backlight while the unit is running on battery power, press the ALARMSTOP/ LIGHT button. The backlit LCD turns on for 3 seconds.
3. Dimmer switch on the base of the unit allow you to adjust the brightness of the backlit to your desired level.

°C / °F Button
Press the °C / °F button to select Centigrade or Fahrenheit display.

Reset Button
Press the RESET button when either the main unit or remote transmitter unit is not operating properly.

Specifications
Temperature
Measure Range : Indoor / Outdoor (-19°C to 70°C) / (-2.2°F to 158°F)
Resolution : Indoor 0.5°C / 1°F
Outdoor 0.1°C / 0.2°F

Relative Humidity
Measure Range : Indoor 20% to 95%
Outdoor 10% to 90%
Resolution : Indoor / Outdoor 1%

Barometric Pressure
Measure Range : 795mb to 1050mb (23.48inHg to 31.01inHg)
Resolution : 1mb (0.03inHg)

Warning: Changes or modifications to this unit 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 engery 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 of 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 and experienced radio/TV technician for help

Under the environment with radio frequency interference, the sample may malfunction and require user to reset the sample.