Oregon Scientific" In-Out Thermometer with Cable-Free Sensor and RF Clock
Model: EMR898A
User Manual

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INTRODUCTION

BRIEF DESCRIPTION

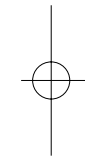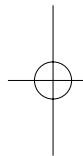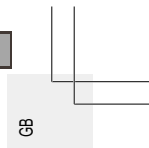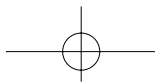Thank you for selecting the Oregon Scientific" In-Out Thermometer with Cable-Free Sensor and RF Clock as your personal product of choice. The EMR898A is a device that integrates the display of the indoor temperature, calendar clock, and the temperature collected by the remote unit. The features of the product include:

¥ **Radio-Controlled Calendar Clock**
Automatically synchronizes the current time and date when it is brought within range of the radio signal from the U.S. Atomic Clock.

¥ **Temperature Display**
The device is able to display the indoor temperature where the main unit is located.

¥ **Remote Temperature Measurement with 433 MHz Cable-Free Sensor**
Records and displays the temperature from a different location, such as outdoors.

¥ **Dual Alarm**
The clock has a dual alarm function for two different alarm time sets.

SAFETY NOTES

To ensure that you use your product correctly, read these Safety Notes and your User Manual carefully beforehand. The warnings given here provide important safety information and should be observed at all times.

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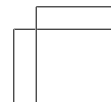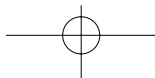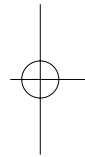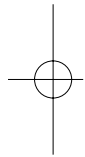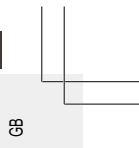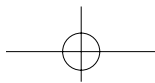
⚠ GENERAL WARNINGS

¥ Do not attempt to repair the product yourself. Contact the retailer or our customer service department if it requires servicing.

¥ Take precautions when handling all battery types. They can cause injuries, burns, or property damage as a result of contact with conducting materials, heat, corrosive materials or explosives.

¥ Remove the batteries before storing the product for long periods of time.

¥ The product is a precision instrument. Never attempt to take this device apart. There is a serious danger of powerful electric shocks.

¥ Do not immerse the device in water.

¥ Do not, under any circumstances, touch the exposed electronic circuitry of the device as there is a danger of electric shock should it become exposed.

¥ Take special care when handling a damaged LCD display, as the liquid crystals can be harmful to your health.

¥ Do not use or store the device, including the remote sensor, in locations that may adversely affect the product such as rain, snow, desert, and magnetic fields.

¥ Do not use this device in aircrafts or hospitals. This can cause malfunctions in the control devices of other equipment.

¥ Check all major functions when the device is unused for a long period of time. This is to ensure its full operation. Maintain a regular internal testing and cleaning of your device.

Cleaning your Device

Cleaning

LCD Screen	Clean with a soft, dry cloth.
Body	Clean with a damp cloth; dry immediately.

¥ Do not use benzene, thinner, or similar cleaning agents to clean your device, as these may cause permanent damage not covered by the warranty.

¥ Do not scratch hard objects against the LCD screen as it is easily damaged.

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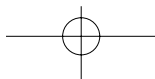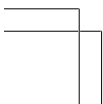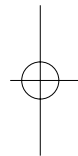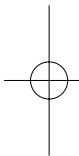
FCC NOTICE

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 of an experienced radio/TV technician for help.

Changes or modifications not expressly approved by Oregon Scientific for compliance could void the warranty and your authority to use this equipment.

DECLARATION OF CONFORMITY

The following declaration is required for us to fully meet the FCC requirements. The information below is not to be used as contact for support or sales. Please call our customer service number, listed on our website at www.oregonscientific.com, or on the warranty card for this product) for all inquiries instead.

We

Name: Oregon Scientific, Inc.
Address: 19861 SW 95th Place, Tualatin, Oregon 97062 USA

declare that the product

Product No.:   EMR898A
Manufacturer: IDT Technology Limited
Address: Block C, 9/F, Kaiser Estate, Phase 1,
               41 Man Yue St., Hung Hom, Kowloon, Hong Kong

is in conformity with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

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

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OTHER NOTICES

Disposing of this Product

When disposing of this product, do so in accordance with your local waste disposal regulations.

Statement of Responsibility

Oregon Scientific assumes no responsibility for any incidental losses (such as the costs of recording or the loss of income from recording) incurred as a result of faults with this product. In addition, Oregon Scientific will not be held liable for any bodily injury, death, property damages or any other claims of whatever nature resulting from the misuse or negligence of the EMR898A product, whether intentional or unintentional.

KEY FEATURES

MAIN UNIT

Front View

A. LCD Status Display

The three-line LCD Status Display facilitates easy readings of the remote and indoor temperatures, as well as the calendar clock.

B. MODE Button

Toggles the display modes and confirms values set as shown on the display.

C. MEMORY Button

Recalls the maximum or minimum temperature of main or remote unit.

D. ALARM Button

Toggles between Weekday Alarm, Single Alarm, and Clock Mode.

E. Radio Reception Signal

Indicates the strength of radio reception.
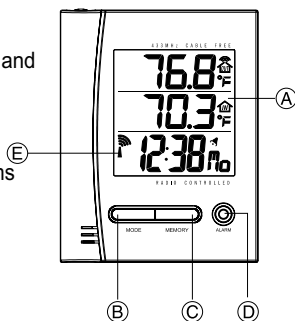
Back View

F. ▼ (Down) Button

Decreases the value of a setting

G. ▲ (Up) Button

Increases the value of a setting.

H. RESET Hole

Returns all settings to default values.

I. Wall-Mount Recess Hole

For mounting the main unit on a wall.

J. °C/°F Button

Selects temperature display between degrees Fahrenheit (°F) or Centigrade (°C).

K. Table Stand

For standing the main unit on a flat surface.

L. Battery Compartment

Accommodates two UM-3 or AA -sized 1.5V batteries.
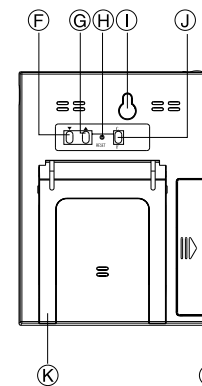
Side View

M. SNOOZE Button

Activates the snooze function when an alarm is ringing.

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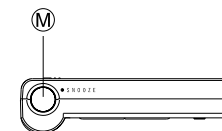
REMOTE UNIT

Front View

A. LCD Status Display
Displays the current temperature measured by the remote unit.

B. LED Indicator
Flashes when the remote unit transmits a reading.
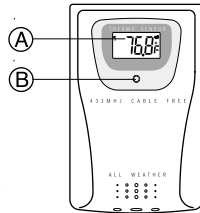
Back View

C. °C/°F Slide Switch
Selects temperature display between degrees Fahrenheit (°F) or Centigrade (°C).

D. RESET hole
Returns all settings to default values.

E. Battery compartment
Accommodates two UM-3 or AA -sized 1.5V batteries.

F. Battery Door
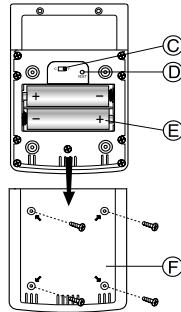
Remote Unit Accessories

G. Wall-Mount Holder
Supports the remote unit when mounted on the wall.

H. Removable Table Stand
For standing the remote unit on a flat surface.

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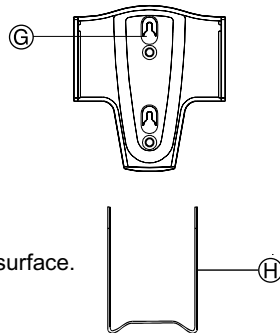
GETTING STARTED

PACKAGE CONTENTS

When you unpack this product, make sure to keep all the packing materials in a safe place, in case you need to later transport the device or return it for servicing.

In the box, you will find:

¥ EMR898A unit	¥ Quick Start Guide
¥ Removable table stand	¥ Wall-mount holder
¥ THR268 remote unit	¥ User Manual

NOTE When using the product for the first time, the batteries have already been installed in both the main and remote units. Locate the clear plastic separator inside the battery compartment. Remove the clear plastic, and close the battery door. The device will then automatically turn on.

INSTALLING THE BATTERIES

Main Unit

Instructions	Diagram
1. Locate the battery compartment at the back of the main unit (→ p.**5,L.**).	
2. Slide the **Battery Door** to the right.	
3. Insert two 1.5V alkaline AA batteries into the compartment, making sure to align the polarities correctly as shown by the diagram.	
4. Place the Battery Door back onto the Battery Compartment.	

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Remote Unit

1. Locate the battery compartment at the back of the remote unit (→ p.**6,E.**).

2. Remove the screws on the battery compartment using a screwdriver (sold separately).

3. Insert two 1.5V alkaline AA batteries into the compartment, making sure to align the polarities correctly as shown by the diagram.

4. Replace the Battery Door onto the Battery Compartment and secure the screws.

UNIT CALIBRATION & RESET

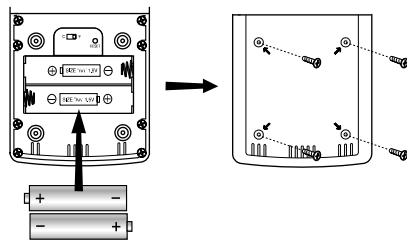Before you use this product, you must calibrate the unit to synchronize the transmission and reception of signals. It can also be used to reset all the functions of the unit to default settings, or in the case of discrepancies between the units values.

1. Place the remote unit next to the main unit.

2. Using a blunt stylus, press and hold the **RESET Hole** located at the back of the main unit (→ p.**5,H.**).

3. The main unit searches for remote signals soon after the reset. Typically the device will take up to four minutes to receive the signals.
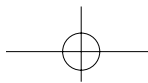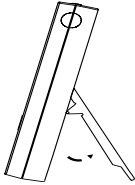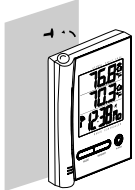
PLACEMENT OF UNITS

NOTE Position the remote unit and the main unit within the effective transmission range of 20 to 30 meters (65 to 100 feet). The effective range is greatly affected by building materials and where the units are positioned. Try various setups for the best result.

Main Unit

You can either mount the main unit on a wall or make it stand on a flat surface.

Method	Instruction	Diagram
Table Stand	The main unit is already equipped with a pull-out Table Stand which can support the unit on a flat surface (→ p.**5,K.**). Simply pull out the Table Stand and rest the main unit on the surface.	
Wall Mount	The main unit can be mounted onto a wall using a No. 6 screw (3.0mm). a) Position and nail the screw into the place where you would like to hang your main unit. b) Leave ample space between the wall and the screw head while testing to make sure the nail is secure. c) Fit the Wall-Mount Recess Hole (→ p.**5,I.**) of the main unit onto the screw head.	
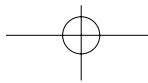
Remote Unit

Similarly, you can choose to either mount the remote unit on a wall or make it stand on a flat surface.

NOTE It is recommended to place the unit away from direct sunlight, rain, and snow.

Method	Instruction	Diagram
Table Stand	The remote unit can be outfitted with the Removable Table Stand (→ p.**6,H.**).	
Wall Mount	Use no.6 screws with the Wall-Mount Holder and fit the remote unit onto the holder (→ p.**6,G**).	

MAIN UNIT TEMPERATURE READINGS

Once the batteries are installed and the main and remote units are calibrated and set in place, the main unit will start reading temperatures.
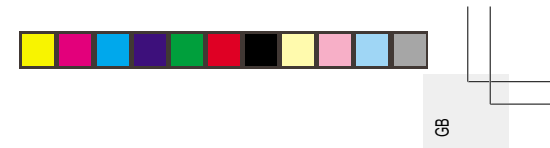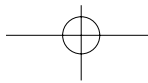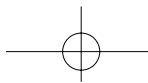
LCD DISPLAY

A. Remote Temperature
Displays the temperature measured by the remote unit (in either °F or °C).

B. Indoor Temperature
Displays the temperature measured by the main unit (in either °F or °C).

C. Radio Reception Display
Shows the status of clock synchronization with the U.S. Atomic Clock.

D. Kinetic Wave Display
Shows the receiving status of temperature readings from the remote unit.

E. Current Time
Shows current time (in 12-hour or 24-hour mode).

F. Current Weekday
Shows the current weekday.
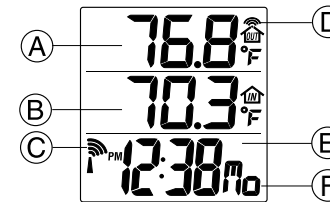
NOTE To switch the LCD display s temperature unit between Fahrenheit and Centigrade, press the °**F**/°**C Button.**
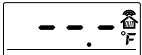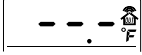
INDOOR TEMPERATURE READINGS

The main unit also reads the temperature of its own surroundings. It displays this temperature on the second line of the LCD display (→ p.**11,B.**). This second reading is updated approximately every 78 seconds.

LCD Display	Description
74.7°F	Soon after the batteries have been installed, the main unit immediately reads and displays the surrounding temperature on the second line of the LCD screen.

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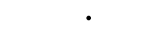
REMOTE TEMPERATURE READINGS

The remote temperature readings are displayed on the top line of the LCD screen display (→ p.**11,A.**).

LCD Display	Description
	Soon after the batteries have been installed, the main unit searches for signals from the remote unit. This process takes about 4 minutes.
	Upon successful reception, the remote unit temperature is displayed on the top line of the LCD (→ p.**11.A.**).
	If no signals are received from the remote unit, the top temperature remains blank and the unit stops searching. To force the main unit to search once again, use a blunt stylus to press the **RESET Hole** located at the back (→ p.**11,A.**).
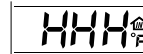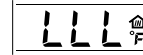
Kinetic Wave Display

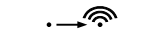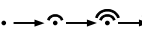The Kinetic Wave Display is only shown on the top line of the main unit. It displays the current receiving signal status from the remote unit to the main unit. The display is shown in three different forms:

LCD Display	Signal	Description
	Blinking signal	The main unit is searching for signals from the remote unit.
	Radiating signal	Temperature readings from the remote unit are securely registered.
	No signal	No signals received from the remote unit. Searching has stopped.

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TEMPERATURE RANGE

This product is designed to work under the widest temperature ranges possible. However, if the temperature falls above or below the device s operation range, the display will change to the following:

LCD Display	Description
HHH	When the LCD screen displays HHH , the temperature is above the measuring range of the remote or main unit (see Specifications → p.**24**).
LLL	When the screen displays LLL , the temperature is below the measuring range of the remote or main unit (see Specifications → p.**24**).

MAXIMUM / MINIMUM TEMPERATURES

Displaying Maximum / Minimum Temperatures
The maximum and minimum indoor and remote temperatures recorded are automatically stored in memory. To display them, follow the instructions below:
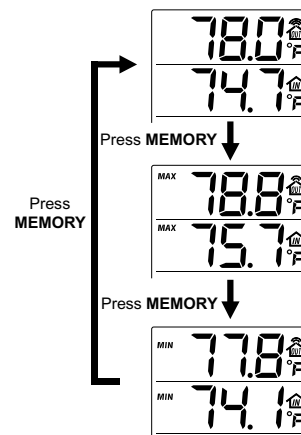
1. Current remote and indoor temperatures displayed.

Press **MEMORY**

2. Maximum temperatures recorded are shown for both remote and indoor temperatures.

Press **MEMORY**

3. Minimum temperatures recorded are shown for both displays. shown for both remote and indoor temperatures.

Press **MEMORY**

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Resetting Maximum / Minimum Temperatures
To clear the maximum and minimum recorded temperatures:

Press **MEMORY**
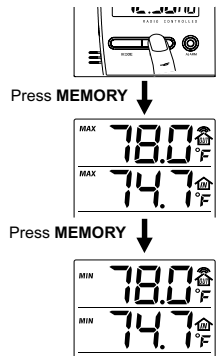
Press **MEMORY**

1. Press and hold MEMORY for 2 seconds. The maximum and minimum temperatures for both indoor and remote readings will be erased.

2. The maximum and minimum temperatures will have the same values as the current temperature until different readings are recorded.

CLOCK FUNCTIONS

Your product is designed to synchronize its calendar clock automatically once it is brought within range of the radio signal from the U.S. Atomic Clock. When the main unit is new and just out of the box, synchronization with the U.S. Atomic Clock can take up to 72 hours. When the unit is receiving the signal, the Radio Reception symbol with start to blink. Generally, complete reception takes around 2 to 10 minutes, depending on the strength of the radio signal. The clock automatically searches for radio signal at 1AM, 2AM, 3AM, 9AM, 3PM and 7PM daily.

Radio Reception	Description
📶	Strong reception of the U.S. Atomic Clock signal.
📡	Weak reception of the U.S. Atomic Clock signal.
❙	No reception of the U.S. Atomic Clock signal.
☀	Receiving the U.S. Atomic Clock signal.
	Radio Reception is disabled.

NOTE Reception can be affected by a number of factors. For best reception, place the device away from metal objects and electrical appliances. Other causes for signal interference include electrical transmission towers, steel reinforced construction, and metal siding. Reception is ideal when placed near a window.

NOTE Even though there are areas that may have more difficulty in receiving a signal, the Atomic Clock contains accurate quartz movement and will retain precise timing even if the signal is occasionally missed.

ENABLING / DISABLING RADIO RECEPTION

To manually disable the reception of the Radio Frequency (RF) signal, press and hold ▼ (→ p.**4,C.**) for 2 seconds until the Radio Reception symbol completely disappears.

To enable the reception again, press and hold ▲ (→ p.**4,C.**) for 2 seconds. The Radio Reception symbol will blink and the unit will search for the RF signal automatically.

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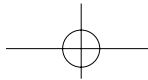
LANGUAGE OPTIONS

The main unit can display the weekday in five different selectable languages. Refer to **Setting the Time and Language Displays** for instructions on changing the language (→ p.**18**).

Symbol	Language
E	English
II	German
F	French
I	Italian
S	Spanish

TIME ZONE OPTIONS

Time zones around the world are identified by how many hours they are offset from the Greenwich Mean Time (GMT). US time zones are 5 to 10 hours behind the Greenwich Mean Time. The main unit is pre-set to Pacific Standard Time (PST). Adjust the GMT Difference according to which time zone you live in order to obtain accurate time from the U.S. Atomic Clock (→ p.**18**).

NOTE   The U.S. Atomic Clock automatically adjusts for Daylight Savings during the year. However, if Daylight Savings is not applicable in your area, you may instead want to manually set the time and disable the U.S. Atomic Clock (→ p.**18**).

Name	GMT Difference	States
Eastern Standard Time (EST)	-5 Hours	Michigan, Georgia, West Virginia, Ohio, Virginia, Connecticut, Vermont, Rhode Island, Massachusetts, Maine, New York, New Jersey, Delaware, New Hampshire, Washington D.C., Pennsylvania, Maryland, Florida*, Kentucky*, Indiana**
Central Standard Time (CST)	-6 Hours	Illinois, Louisiana, Alabama, Mississippi, Oklahoma, Iowa, Arkansas, Minnesota, Wisconsin, Missouri, Texas*, Kansas*, Tennessee*, South Dakota*, North Dakota*, Nebraska*
Mountain Standard Time (MST)	-7 Hours	Colorado, Utah, Wyoming, New Mexico, Arkansas, Montana*, Idaho*
Pacific Standard Time (PST)	-8 Hours	Washington, California, Nevada, Arizona**, Oregon*
Alaska Standard Time (AKST)	-9 Hours	Alaska
Hawaii Standard Time (HST)	-10 Hours	Hawaii**

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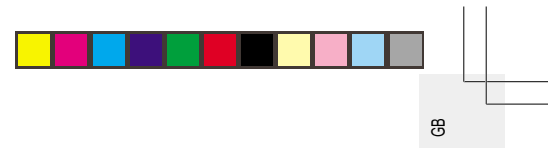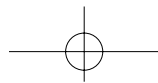
* These states have certain parts where a different time zone is followed. Check to make sure to set the correct time zone for your area.

** These states have certain areas where Daylight Savings are not observed. In Hawaii, the whole state does not follow Daylight Savings.

SETTING THE TIME AND LANGUAGE DISPLAYS

Your clock is designed to automatically set itself using the radio signal from the U.S. Atomic Clock. However, should you need to manually set the clock without using the radio signal, follow the instructions below. You can also choose your language for the weekday display here.

NOTE Press ▲ or ▼ to adjust the values for each setting. To return to normal clock mode, press the **ALARM** button anytime during the procedures below.

NOTE We recommended that you disable the RF signal before manually setting the clock (→ p.**15**).

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Press **MEMORY**
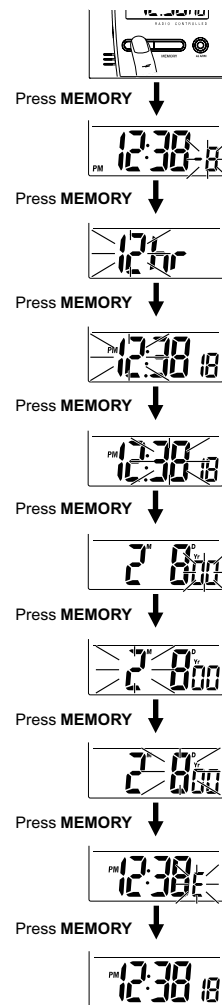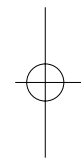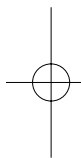
1. Press and hold MODE for 2 seconds.

Press **MEMORY**

2. Adjust the GMT difference according to your timezone.

Press **MEMORY**

3. Choose between 12-hour or 24-hour time formats.

Press **MEMORY**

4. Adjust the current hour.

Press **MEMORY**

5. Adjust the current minute.

Press **MEMORY**

6. Adjust the current year.

Press **MEMORY**

7. Adjust the current month.

Press **MEMORY**

8. Adjust the current date.

Press **MEMORY**

9. Choose the language for the day of the week displayed.

Press **MEMORY**

10. Return to normal clock operation.

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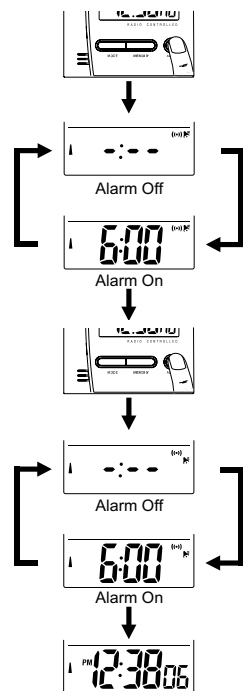
ALARM FUNCTIONS

The unit is equipped with 2 alarms: Weekday Alarm ⮝ and ⮝ Single Alarm.

Icon	Type	Description
⮝w	Weekday Alarm	The Weekday Alarm will sound Monday to Friday at the preset time. It is automatically disabled during weekends (Saturdays and Sundays).
⮝s	Single Alarm	The Single Alarm sounds only once according to the preset time.

Activating / De-activating the Alarms

1. Press ALARM. The clock will enter Weekday Alarm setting.

Alarm Off

Alarm On

2. Press ▲ or ▼ to toggle the Weekday Alarm on or off.

3. Press ALARM. The clock will enter Single Alarm setting.

Alarm Off

Alarm On

4. Press ▲ or ▼ to toggle the Single Alarm on or off.

5. Press **ALARM** to return to normal clock operation.

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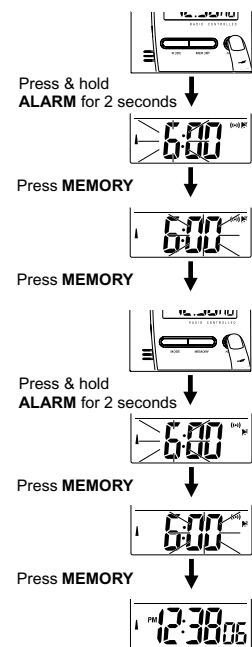
NOTE To return to normal clock mode, press the **MODE** button anytime during the procedures below.

Setting the Alarms

NOTE Press ▲ or ▼ to adjust the values for each setting. To return to normal clock mode, press the **MODE** button anytime during the procedures below.

Press & hold
ALARM for 2 seconds

1. Press **ALARM** to enter Weekday Alarm setting.

2. Adjust the Weekday Alarm s hour setting.

Press **MEMORY**

3. Adjust the Weekday Alarm s minute setting.

Press **MEMORY**

Press & hold
ALARM for 2 seconds

4. Press **ALARM** to enter Single Alarm setting

5. Adjust the Single Alarm s hour setting.

Press **MEMORY**

6. Adjust the Single Alarm s minute setting.

Press **MEMORY**

7. Press **ALARM** to return to normal clock operation.

Crescendo Alarm

When the alarm goes off at the preset time, the Alarm Icon (⮝w or ⮝s) then flashes and the alarm audibly rings. The alarm sound gradually increases in volume and intensity for 2 minutes.

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Press **SNOOZE** (→ p.**5,M.**) to temporarily stop the alarm. The alarm will sound again after 8 minutes unless another key on the clock is pressed. To stop the ringing completely, press **ALARM**.

NOTE The Single Alarm will automatically disable itself after the clock has gone off at the preset time. The Weekday Alarm will still be enabled even after the alarm has gone off.

OTHER FEATURES

LOW BATTERY WARNING

When the battery is low, a battery icon will appear on the main unit s LCD screen.

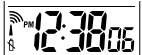| LCD Display	Description
`78.0°F`	When the indicator appears on the top line of the LCD screen, the **remote unit** battery is low.
`12:38`	When the indicator appears on the bottom line of the LCD screen, the **main unit** battery is low.

TROUBLESHOOTING

This section includes a list of frequently asked questions for problems you may encounter. If your device is not operating as you think it should, check here before arranging for servicing.

Problem	Symptom	Check This	Remedy
- displayed on LCD screen.	The remote signal cannot be received.	Obstacles (either electromagnetic interference or objects) are barring the remote signal from reaching the main unit.	Move the main unit away from any sources of interference, including other electronic devices. Also try moving the remote and the main units closer.
	Batteries of the remote unit are low.	Check LCD Display of the remote unit.	Install new batteries into the remote unit.
Discrepancies between remote and main unit readings.	Another remote sensor is using the same frequency and ID Code.	Check if another remote sensor is present within the area.	Place the remote sensor closer to the main unit. Recalibrate the units to ensure synchronization.
Measurement does not seem accurate.	Displayed temperature data are different from other measuring instruments.	The measurement method is different.	The temperature resolution for different products may also be different.
		The areas under evaluation are different or are influenced by climate.	Place the 2 instruments very closely for a time period (no less than 30 minutes), avoiding direct light and air movements.

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Problem	Symptom	Check This	Remedy
Clock time is not correctly set.	No radio signal reception.	The areas under evaluation are different or are influenced by climate.	Electromagnetic interference or objects are barring reception. Orientation or placement of main unit is not optimum for receiving U.S. Atomic Clock signal.
No Alarm	Alarm does not sound.	Alarm is disabled.	Turn on the alarm setting.
Operation Not Normal	Certain functions do not perform.	Device requires reset.	Reset the unit with a blunt stylus pressed against the **RESET** Hole.

SPECIFICATIONS

Main Unit

Type	Description
Indoor Temperature Operation Range	23.0ßF to 122.0ßF (-5.0ßC to +50.0ßC)
Temperature Resolution	0.2ßF (0.1ßC)
Power	2 x UM-3 or AA 1.5V batteries
Weight (without battery)	5.01 Oz. (142g)
Dimension	4.72 x 3.63 x 0.95 inches (L x W x H) 120 x 93 x 24 mm (L x W x H)

Remote Unit

Type	Description
Temperature Operation Range	-4ßF to 140ßF (-20.0ßC to +60.0ßC)
Temperature Resolution	0.2ßF (0.1ßC)
RF Transmission Frequency	433 MHz
RF Transmission Range	Maximum 100 feet (30 meters)
Temperature Sensing Cycle	78 seconds
Power	2 x UM-3 or AA 1.5V batteries
Weight (without battery)	2.84 Oz. (80.5g)
Dimension	4.13 x 2.76 x 0.83 inches (L x W x H) 105 x 70 x 21 mm (L x W x H)

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Visit our website (www.oregonscientific.com) to learn more about your device and other Oregon Scientific products such as hand-held organizers, alarm clocks, and weather stations. The website also includes contact information for our customer service department, in case you need to reach us.

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