

SKYSCAN®

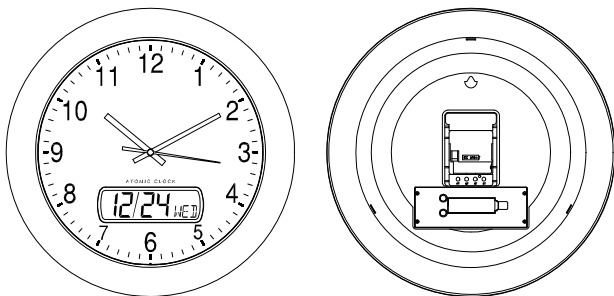
RADIO CONTROLLED ANALOG CLOCK

INSTRUCTION MANUAL

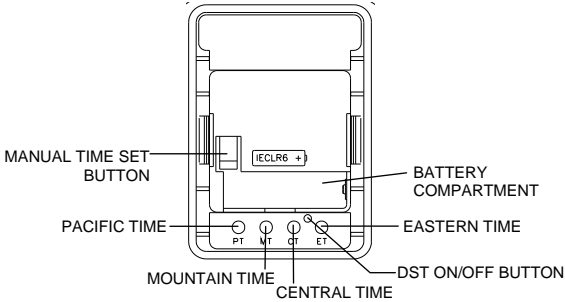
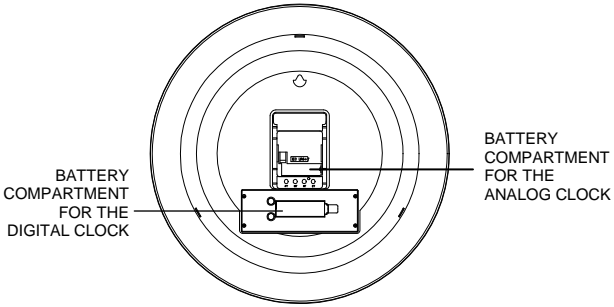
Model 28800

Quick set up instructions

Welcome to the world of atomic timekeeping technology. We hope you will enjoy the convenience of never having to set your clock again and the confidence of knowing exactly what time it is.



- Insert 1 new AA, LR6 1.5 volt ALKALINE battery in the analog clock battery compartment according to the polarity marked on the case, then 1 new battery AA, LR6 1.5 V into the digital clock.
- Once the battery is installed, the clock will begin searching for a signal. For the initial setting, it is recommended to stand the clock in an upright position near a window. Within five minutes the clock will either receive the WWVB signal and set itself to the exact time (for the default Pacific Time Zone), or it will determine that the signal is not receivable at its current location and time of day. The clock will fast-forward the hands to the 4, 8, or 12 o'clock position immediately and search for WWVB at specific time until a signal is received. If the time is manually set, the clock will continue to periodically search for a signal and automatically reset the hands when the signal is received.
- Press time zone button to select a time zone after the clock received the WWVB signal. If you are in the Pacific Time Zone- you are ready to hang your clock.
If you are not in the Pacific Time Zone, select your time zone by press and holding for 5 second, one of the four time zone buttons PT-Pacific Time, MT-Mountain Time, CT-Central Time, ET-Eastern Time. If multiple buttons are pressed, the clock will set to the time zone selected last. If no time zone is selected the clock will default to Pacific Time. If you live in an area that does not recognize DST (Arizona) you must press the (unmarked) DST button for one second to deactivate your clock's DST program.
For time zones outside of PT, MT, CT or ET you must manually set the time using the Manual Time set button on the back of the movement. (See instructions below). **Please Note:** WWVB time will over ride a manual setting.



For a better understanding of how and why your clock works please continue reading.

NOTHING IS MORE PRECISELY MEASURED THAN TIME!

And nothing keeps track of time more precisely and trouble free than **SkyScan** atomic clocks.

Since the beginning of time, man has been fascinated with the measurement of time and has devised more accurate machines to trap and measure time. Today, time is precisely measured in the United States by the most accurate clock in North America, the Atomic Clock of the US National Institute of Standards and Technology, Time and Frequency Division in Boulder, Colorado. A team of atomic physicists continually measures 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. This atomic clock regulates the WWVB radio transmitter located in Fort Collins, Colorado, where the exact time signal is continuously broadcast throughout the United States at 60 kHz to take advantage of stable long wave radio paths found in that frequency range. Radio waves at these low frequencies use the earth and the ionosphere as a wave-guide and follow the curvature of the earth for long distances.

The built in antenna system will receive the WWVB signal anywhere in North America within 2000 miles of Fort Collins where long-wave radio reception is undisturbed. A microprocessor activates the receiver and processes the time signal from Fort Collins overnight.

Through the radio signals, **SkyScan** atomic clocks always keep precise time. The changeover from standard time to daylight saving time, and vice versa, takes place automatically with the same precision.

ADDITIONAL DETAILS

To set up your clock simply install one **new AA, LR6 ALKALINE** battery. Due to the nature of long wave radio signals it is normally not

possible to receive a signal during the day so it is best to install the battery late in the evening. After the clock sets itself to Pacific Time, select your time zone by pressing one of the four time zone buttons PT-Pacific Time, MT-Mountain Time, CT-Central Time, ET-Eastern Time. Your clock can only set itself to one of the four time zones stated above. For time zones outside of PT, MT, CT or ET you must manually set the time using the Manual Time set button on the back of the movement. Please Note: WWVB time will over ride a manual setting.

The SkyScan atomic clock is designed for indoor use. For indoor locations, select a location to place your radio controlled clock where it will be at least six feet away from a TV, computer, air conditioner or other household electrical appliances. The optimal location is near a window. Windows facing Colorado provide the best signal.

Note:

- Do not submerge clock in water.
- Extreme temperatures, vibration, and shock should be avoided to prevent damage to the clock.

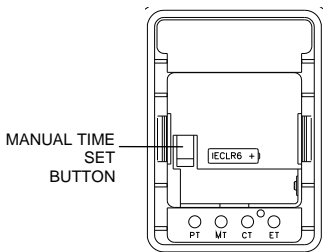
The WWVB time signal will easily penetrate masonry and wood framed buildings. The WWVB signal will penetrate almost every residential building and most steel buildings if they have adequate windows. It is not possible, however, for the WWVB signal to penetrate most indoor shopping malls and rooms in the center of large office buildings that do not have windows. In buildings that WWVB cannot penetrate you may set the time using the manual time set button. When the clock receives the WWVB signal it will automatically set the hands to the exact time.

SkyScan atomic clocks do not receive or process radio controlled time signals from Germany's DCF 77, Japan's J Ga AS, or England's MSFs atomically regulated transmitters. SkyScan atomic clocks can be manually set and used anywhere. Please Note: WWVB time will over ride a manual setting.

For more information on the NIST and radio controlled time, see www.boulder.nist.gov/timefreq/

SET THE TIME USING THE MANUAL TIME SET BUTTON

In some cases, the SkyScan atomic clock may not receive the WWVB signal due to atmospheric disturbances or hard to reach locations such as inside shopping malls. In this case, please use the Manual Time Set button, located at the back of the clock to manually set the time. To do this:



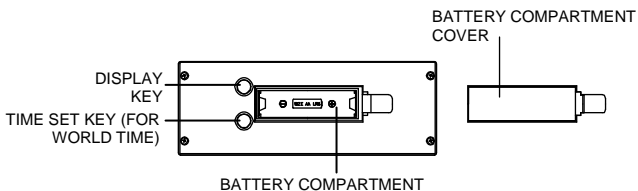
1. Remove the battery and press the Manual set button 10 times.
2. Insert 1 new AA Alkaline battery.
3. Press and hold the Manual Set button until the second hand of the clock moves to the 12 position.
4. Release the Manual Set button and again press and hold the Manual Set button. The minute and hour hands will fast-forward while the button is held.
5. Keep holding the Manual Set button until the time is set as required.
6. Release the button. About 3 seconds later, the second hands will start to move and the clock is now running with manual time.

Note:

When the clock displays manual time, it will continue to try to receive the WWVB signal at each of the even numbered hours: 0:00, 2:00, 4:00, 6:00 ... 20:00 & 22:00.

DIGITAL CLOCK

1. Remove the battery cover at the back of the clock and insert 1 AA Alkaline battery in the battery compartment.
2. All segments of the LCD will light up briefly, then the display "--:--" and the current indoor temperature will be displayed.
Note: If the Display time is pressed while the analog clock is still searching for the WWVB signal, the digital clock will display "--/--" for the date and "--:--" for the world time.
3. Wait for the digital clock to receive the WWVB time and date from the analog clock. Then the digital clock will start normal runs.



Note:

- The time of the digital clock cannot be manually set. It will receive the WWVB time from the analog clock.
- The time format is fixed to "12-hr" time display. "PM" will be shown in hours from noon to midnight.
- The calendar will also be updated once the WWVB signal from the analog clock has been received.

WORLD TIME SETTING:

This feature allows you to choose a 2nd time to be displayed from anywhere in the world you choose. The world time can be manually adjusted by 1 hour increment (24 hour time zone).

1. Press the Time Set key to enter world time setting.
2. Press again the Time Set key to set the desired world time; each pressing of the key will increase the world time by 1 hour.

Note:

- Once the WWVB signal has been received by the digital clock, the manually set world time will be updated.
- If a world time has been manually set prior reception of the WWVB time, the time in the digital clock will change correspondingly with the analog clock.
- The calendar (month/day) will not follow the set world time; it can only be updated from the WWVB signal.
- When DST changes the digital and analog time will set ahead or back in accordance with the NIST signal. To maintain proper World Time, you may have to manually adjust the hour.

CHANGING THE DISPLAY MODE (Indoor Temperature, Date, Weekday, World Time, Seconds)

There are 4 possible display modes to view the indoor, month & day, weekday, world time, seconds.

The *month & day / indoor temperature* is the default display.

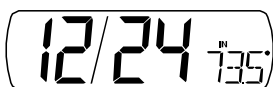
To change the display:

1. Press the Display key once. The display will show the *month & day / weekday*.
2. Press the Display key a second time. The display will show the *world time / indoor temperature*.

Note: the indoor temperature can only be displayed in degree Fahrenheit. The temperature range is from 14.2°F to 103.8°F with 0.2°F resolution. The temperature is updated every 20 seconds.

3. Press the Display key a third time. The display will show the *world time / seconds*.

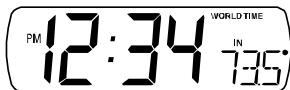
4. Press the Display key a fourth time. The display will return to the default display.



Month & day / Indoor temperature



Month & day / Weekday



World time / Indoor temperature



World Time / Seconds

Note:

If the Display key is pressed during the initial set-up of the of analog clock. The date and world time sections will not be shown in the different display modes.

LOW BATTERY ICON

When the battery of the digital clock needs to be replaced, the low battery icon will appear on the LCD section of the digital clock.

TROUBLESHOOTING

The wonderful advantage of owning a SkyScan atomic clock is that it is virtually trouble free. If the clock receives a clear signal it will set itself perfectly. If it does not receive a signal consider the following:

- Battery** - The SkyScan atomic clock must have a fresh battery to receive and process the time signal.
- Location** - Try a different location, ideally near a window. It should be at least six feet from computers, TVs, air conditioners, other atomic clocks and other electrical appliances that cause interference.
- Weather** - Electrical storms between you and Colorado during the night will interfere with the WWVB signal.
- Reception** - **The clock seems to “take off” for no reason and then stopping at the same time.**
It is not uncommon for the clock to make a “correction”, sometimes daily. This happens if the clock gets ahead of itself by a fraction of a second. To correct this, the clock will advance a complete rotation the next time it receives a signal.

DAYLIGHT SAVING TIME

The National Institute of Standards and Technology and WWVB encode a special DST “bit” in the WWVB transmission for DST. Your SkyScan clock will read this information and automatically advance the hands one hour in the spring and eleven hours in the fall.

ARIZONA

If you live in an area that does not recognize DST you must press the (unmarked) DST button for one second to deactivate your clock’s DST program. To reactivate the DST program simply press the DST button again for one second.

FREQUENTLY ASKED QUESTIONS

Q. Will the digital World Time display also set ahead or back one hour for DST?
A. Yes, if you have DST set to “ON”. (By default DST is set to “ON”.) If the digital World Time display is set to a foreign time zone for a country that has not adopted the same DST dates, you will need to manually set the LCD.

Q. How long will the battery last?

A. A good AA alkaline battery will last over one year. If your clock is located in an area with little interference where it can quickly receive a signal the battery can last much longer than one year.

Q. *Can this SkyScan clock be used outdoors?*

A. **No.** Outdoor use is not recommended for this clock.

Q. *Can the SkyScan atomic clock be wired to control timing circuits?*

A. No.

WARRANTY:

This product is warranted to be free of defects in manufacturing for 1 year after purchase. Defective clocks should be returned to the place of retail purchase.

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.

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