

Infinity Instruments Ltd. / ITC

Radio Controlled Analog Clock

Quick set up instructions

Welcome to the world of radio controlled 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 one new AA battery (1.5 volt Alkaline).**
- **The hands should start to move. They should stop at either 4, 8, or 12.**
- **DO NOT PUSH ANY BUTTONS. Wait for the clock to catch the radio wave signal. This usually happens overnight. Depending on your location, it may happen quicker or it could take up to 48 hours.**
- **After the clock catches the signal, push the gray button for your time zone.**

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

Who really knows what time it is?

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, Infinity Instruments radio controlled clocks always keep precise time. The changeover from standard time to daylight savings time, and vice versa, takes place automatically with the same precision.

Additional details

To set up your clock simply install one fresh 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. 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. The time zone buttons may be pressed any time after installing the batteries. 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. Another time zone can be selected during or after the clock has set itself. 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.

When 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, or it will determine that the signal is not receivable at its current location and time of day. If a signal is not receivable it will fast-forward the hands to the 4, 8, or 12 o'clock position and search for WWVB each hour 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.

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. The WWVB time signal will easily penetrate masonry and wood framed buildings. WWVB will penetrate almost every residential building and most steel buildings if they have adequate windows. It is not possible, however, for WWVB 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 is exposed to the WWVB signal it will automatically set the hands to the exact time.

Infinity Instruments 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.

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

Troubleshooting

The wonderful advantage of owning an Infinity Instruments radio controlled 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 Infinity Instruments 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 Radio-Controlled clocks and other electrical appliances that cause interference.

Weather - Electrical storms between you and Colorado during the night will interfere with the WWVB signal.

Daylight Savings Time

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

Arizona and Indiana

If you live in an area that does not recognize DST you must press the (unmarked button between CST and EST time zone buttons) 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. 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 will last much longer than one year.

Q. Can the Infinity Instruments clock be wired to control timing circuits?

A. No.

Thermometer

Thermometers are operated by sensitive mechanisms that respond to air temperature changes. Each mechanism has been adjusted after manufacture and will accurately read room temperature if properly located.

Place the thermometer in area where known temperature can be determined for 90 minutes. In case the reading does not agree, make necessary adjustment using a screw- driver, through the adjustment slot at the back of the instrument.

Humidity Meter (Hygrometer)

These instruments register the percentage of water vapor which is actually present in the room compared with the maximum amount of water vapor that could be present. Humidity meters respond slowly, and when conditions are abruptly changed, it can take an hour or more for the humidity meter to reach an accurate reading.

To ensure durable operation of the instrument, it should be adjusted regularly (at least once every 2 years). This should be done as follows : wrap the Instrument in a moist piece of linen or cloth for one hour. The pointer should then indicate 94 to 96%. If this is not the case, you should adjust the setting using the Screw-driver and turn the adjustment slot at the back of the instrument.