

JUNGHANS

Atomic watch Reloj atómico

Instruction Manual
Manual de instrucciones

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42.712-0364/0402

Junghans. Zeit bewegt uns.

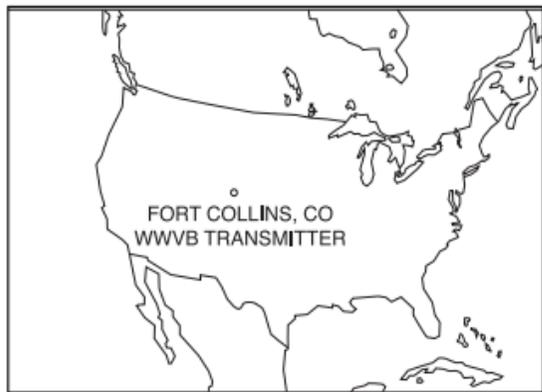
**JUNGHANS**
GERMANY. SEIT 1861

1. Technology description

The most accurate clock in America is the atomic cesium clock located at:

U.S. Department of Commerce
National Institute of Standards and Technology (NIST)
Boulder, Colorado

Your Junghans atomic watch receives "time telegrams" on long wave radio (60 kHz) from the NIST operated WWVB time signal transmitter located in Fort Collins, Colorado and coupled with the atomic caesium clock in Boulder. Until recently, the transmitter was used predominantly by telephone companies, radio and television stations, navigators of planes and ships, and for scientific purposes in laboratories. Now this precise signal can be received by the Junghans atomic watch technology.



Your Junghans atomic watch receives the WWVB time signal via its built-in antenna system. The proper function of the receiver contained in this product has been tested as a prototype with regard to its sensitivity and range of reception in different places throughout the United States.

Any claim for warranty – express or implied – due to the watch's failure to properly receive the radio signal because of interference, whatever may be the source of this interference, are hereby expressly excluded in all respects.

For more information about the WWVB-Radio signal visit NIST's **website at: www.boulder.nist.gov**

For actual signal coverage in North America visit:

www.boulder.nist.gov/timefreq/stations/wwvbcoverage.htm

The Junghans atomic watch's internal computer processes the received time signals and automatically synchronizes the hands, date and the change over between daylight savings time and standard time and the leap year accordingly. The signal reception and synchronization occurs automatically every night and manually upon demand.

Even outside of the reception range your Junghans atomic watch will continue to keep excellent time. The highly accurate 32 kHz quartz movement will ensure precise time keeping.

For technical questions please contact our customer service center at **Egana of Switzerland (America) Corp., FL, Ph.: 1-800-260-3151.**

For replacing the battery, please send your watch to:

PWH Attn: Service Department, 1024 Reservoir Ave., Cranston, RI 02910, Ph.: (401)-944-5100.

2. Functional description

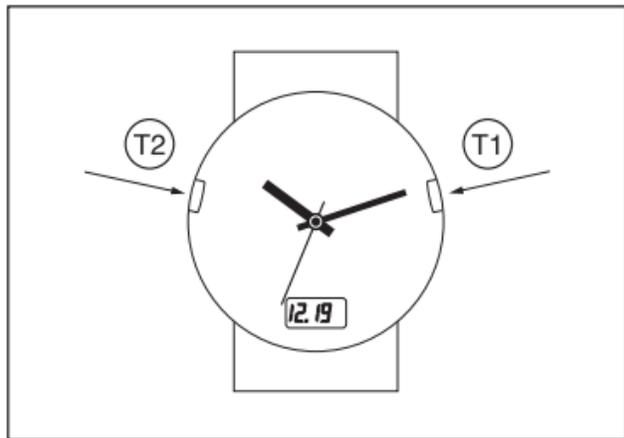


Fig. 2

T1 button (mode):

The T1 button has two functions:

- 1) Switches digital display between date (for example *12.31*) and time zone (for example, *PO2 AM*). The letter P,M,C or E in front of the digitally displayed hour shows the respective U.S time zone Pacific, Mountain, Central, or Eastern.
- 2) Receives the WWVB time signal and synchronizes the time automatically.

T2 button (adjust):

Depending on the mode the T2 button either

- 1) Advances the time zone in 1 hour increments when setting the time zones.
- 2) Advances the hands when manually synchronizing the watch (only after battery change).

3. Synchronizing the time (signal reception)

The automatic signal reception and synchronization occurs automatically every night. At any desired time you can perform a "manual" reception by pressing the T1 button for at least 3 seconds. The hands will set to the 12 o'clock position during reception and will reset themselves thereafter. Note that your Junghans atomic watch will not receive the WWVB time signal if set to a time zone other than Pacific, Mountain, Central or Eastern standard time.

4. Setting the time zone

The factory preset time zone is Pacific standard time. You can set an alternative time zone as follows:

- 1) Press the T1 button. The digital display will change from displaying the date (for example, *12.31*) to displaying the current hour (for example, *PO2 AM*). The letter P, M, C or E in front of the digitally displayed hour stands for Pacific, Mountain, Central and Eastern standard time respectively.

- 2) Press (either short for incremental advance or long for rapid advance) the T2 button to set the desired hour for your time zone. Please take note of the AM/PM symbols in the digital display. The proper date will be calculated by the internal microprocessor. And at the end of the adjustment the display returns to the default value.

5. Replacing the battery

A low battery is signaled by the second hand remaining in the 12 o'clock position and a blinking "LD" in the digital display.

The battery should be replaced by trained personnel to avoid damage and ensure water resistance according to factory specifications.

After battery replacement your Junghans atomic watch will automatically receive the WWVB signal and set itself to Pacific standard time. You must then either press the T1 button to confirm the time or set the desired time zone as described in **4. Setting the time zone.**

Dependent on your location and/or the time of day it may take between 3 and 30 minutes for a successful reception of the time signal. If you find yourself outside of the reception range or in a disturbance field, you need to synchronize the time manually as follows.

Synchronizing the time after battery change:

In case the watch does not receive the WWVB-signal immediately after the battery change, the time can be set manually as follows.

- 1) Press the T2 button to advance the hands. The hands can be advanced either incrementally by repeatedly pressing the T2 button or rapidly by holding the T2 button pressed. The digital display shows the minutes.
- 2) Press the T1 button to confirm and set the time. The digital display will go blank. It is not possible to set the date in the manual synchronized mode.

After manual synchronization, your Junghans atomic watch attempts to receive an automatic signal every hour on the hour until the WWVB signal has been successfully received.

After having received a signal, the Junghans atomic watch sets itself to Pacific standard time. You must then either press the T1 button to confirm the time or set the desired time zone as described in **4. Setting the time zone.**

6. Technical data

Reception frequency	60 kHz, amplitude modulated, WWVB coding
Receiver range	See 1. Technology description
Quartz time base	32 kHz
Battery type	Li CR 1620 (3V/68 mAh)
Operating range voltage	2.4 V to 3.4 V
Battery life	2 years (approximately)
Operating temperature	-0 °C to 50 °C / 32 °F to 122 °F
Storage temperature	-10 °C to 60 °C / 14 °F to 140 °F

Limited Warranty

This Junghans product is warranted by Junghans to the customer for a period of one (1) year from the date of original purchase ("warranty period") against defects in material and workmanship. If such a defect occurs during the warranty period Junghans will – at its option – repair or replace the product provided that proof of date and place of purchase is supplied by the customer. This limited warranty does not cover bracelets, straps, crystals, batteries or wear to the case nor does it apply in case of misuse or abuse including defects caused by servicing not performed by an authorized Junghans SERVICE CENTER.

Exclusion of Warranty

The proper functioning of the receiver contained in this product has been tested as a prototype with regard to its sensitivity and range of reception in different places throughout the United States. Any Claims for warranty – express or implied – due to the clock's failure to properly receive radio signals because of interference whatever may be the source of that interference are hereby expressly excluded in all respects.

Service for your Junghans atomic watch

Should your watch require service, please send it in its original box to:

PWH · Attn: Service Department
1024 Reservoir Ave. · Cranston, RI 02910
1-401-944-5100

7. Trouble shooting

	Symptom	Description	Problem	Solution
1)	Hands move but the digital display is blank	The watch has been manually synchronized and has not yet received WWVB time signal.	You may be out of reception range (see 1. Technology description).	If you find yourself within the reception range (see fig. 1), press the T1 button for at least 3 seconds and place your watch in a free field* position for at least 9 minutes, preferably at night when reception is best.
			You may be in or near a disturbance field such as a metal structure, appliances or particular climatic conditions.	Press the T1 button and place your watch in a free field* position for at least 30 minutes, preferably at night when reception is best.
			The watch movement may be damaged.	Your watch must be serviced.
2)	The second hand remains in the 12 o'clock position and the letters "LG" blink in the digital display.		The battery is running low.	The battery must be replaced (see 5. Replacing the battery).
3)	Your watch does not automatically change between daylight savings time and standard time.	The watch has not received the WWVB time signal.	Your watch may be set to a time zone other than a US time zone. After pressing the T1 button, the letter P, M, C, or E must appear in the digital display.	Reset the watch to a US time zone (see 4. Setting the time zone).
			You may be out of reception range (see Fig. 1 under 1. Technology description).	Press the T1 button for at least 3 seconds after reentering the reception range.
			You may be in or near a disturbance field such as a metal structure, appliances or particular climatic conditions.	Press the T1 button and place your watch in a free field* position for at least 9 minutes, preferably at night when reception is best.
			The watch movement may be damaged.	Your watch must be serviced.

	Symptom	Description	Problem	Solution
4)	The hands do not move and digital display is blank.		The battery may be empty.	The battery must be replaced (see 5. Replacing the battery).
5)	The second hand remains stationary at the 15 second position for several minutes.	This is a normal state during signal reception and is necessary for optimal reception.		

*Free field position means a place free of radio disturbances such as electrical appliances, metal structures and particular climatic conditions.

This product complies with the EMC directives of the European Union and is subject to technical changes without notice.

For more information on Junghans and atomic watch technology see our internet site at **www.junghanswatches.com**