

JUNGHANS MEGA MF MULTI-FREQUENZ

W 615.94

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1. Radio technology – The most up-to-date way to keep time

5,000 years have passed since timekeeping began with sundials. In the interim there have been water clocks, the mechanical clocks of the 13th century and quartz watches. Now we have the radio-controlled watch.

A watch that in good reception conditions never goes wrong and never has to be set. The Junghans radio-controlled watch is absolutely precise, as it is linked by radio frequency to the time control systems of the most accurate clocks in the world.

For Europe this is the Caesium Time Base at the Physikalisch-Technischen Bundesanstalt in Braunschweig (Germany's Institute of Natural and Engineering Sciences).

For North America it is the U.S. Commerce Department's Caesium Time Base at the National Institute of Standards and Technology (NIST) in Boulder, Colorado.

For Japan the Ministry of Post and Telecommunication's Caesium Time Base at the Commercial Research Laboratory (CRL).

All of these clocks are so accurate, that they are expected to deviate by no more than 1 second in a million years.

1.1 Usable time signal transmitters

Your Junghans Mega MF radio-controlled watch is capable of fully automatic reception of time signals from the following transmitters:

- DCF77 in Mainflingen (24km Southeast of Frankfurt am Main) for **Europe**
- WWVB in Fort Collins, Colorado (USA) for **North America**
- JJY40 on Mount Otakadoya (near Tokyo in the North East of the country) for **Japan**
- JJY60 on Mount Hagane (in the South West of Japan) for **Japan, the East Coast of China** (Peking, Shanghai), **South Korea** and parts of **Taiwan**



With good reception, the Junghans Mega MF thus always shows the perfectly correct time within any of these four transmission areas. Every day at 2am and 3am by the analogue display, the Junghans radio-controlled watch automatically synchronises itself with the DCF77, WWVB, JY40 and JY60 time signal transmitters.

If reception fails due to interference (e.g. stormy weather, electrical appliances), the Junghans Mega MF radio-controlled watch will pick up the signal automatically at the same time the following day.

It is also possible to use a 'transmitter call' to synchronise the time manually, for example at a location where reception conditions are better.

The latest time information received is stored in a time memory. This original time continues to be kept using a high-precision 32kHz quartz movement until the time is synchronised again. The radio-controlled time synchronisation of your Junghans Mega MF watch not only ensures an always precise display of the time, but – given good reception – also takes care of switching from winter to summer time, and vice versa, fully automatically (at night).

If you travel to a country in a different time zone, changing to the appropriate time for that area is made simple by the time zone switching function of your Junghans Mega MF radio-controlled watch.

2. Readiness for use

So that your watch is always ready for use, you should make sure that does not run low on power. The watch regularly checks to see if it no longer has enough (e.g. the battery has run out or ambient temperature is too low, impairing battery performance), the second hand stops at the 12 o'clock position. Whatever display is set at that time on the LCD also then flashes, alternating with the letters 'L0'. If the battery does not recover (e.g. through an increase in the ambient temperature), you should take the watch as soon as possible to your specialist retailer to have the battery changed, or send it to have this done to the Junghans Service Centre.

Battery type: CR 1620

Please note that manual time synchronisation is not possible when battery power is low. Too much power would be needed.

3. Automatic time synchronisation

Fully automatic time synchronisation takes place daily at 2am and 3am local time as per the analogue display. While the watch is receiving the signal, the second hand temporarily stops. During reception, the flashing bar shows that the reception attempt is being made.

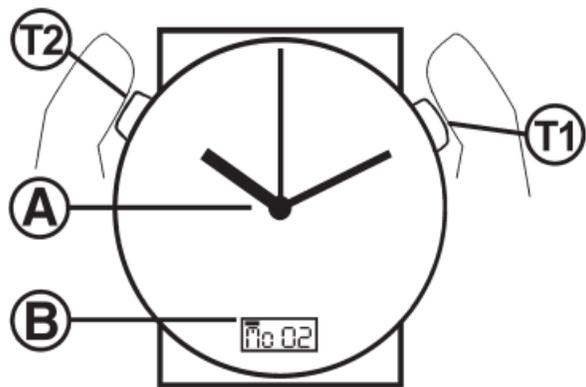


Following successful automatic synchronisation, the transmitter from which the signal was picked up is permanently displayed. Thus if no signal was picked up at 3am, no transmitter is displayed. The date is always advanced automatically by the time signal. This process also takes into account 29th February in leap years.

If all of the attempts at picking up a signal lead to no clear synchronisation, the reception display is switched off (see also description of 'Reception Display' mode in section 6.2). On any such days without synchronisation, your watch continues to run with the accuracy of a quartz timepiece, using the internal time memory. As soon as the signal is picked up again successfully, your watch is synchronised and the reception display is switched back on.

Tip: To ensure the best possible reception conditions for the overnight synchronisation process, you should not leave your watch near to any electrical appliances, such as TV sets, mobile phones or cordless phones.

4. Functions



- A** Analogue display: Hours, minutes, and seconds
- B** LCD display: Day of week, date, transmitter display, 2nd time, language for day of week, power control display (if power is too low the second hand positions itself at 12 and the LCD display flashes, alternating between the then current display and 'Lo').
- T1** Day of week / date display adjustment, transmitter call, 2nd time, day of week language access
- T2** Time zone setting, 2nd time, day of week language

5. Selectable LCD displays

LCD display:

Date – 2nd time – Language (brief display, then switches to 2nd time)

T1 – Briefly press once:

Display switches from date to 2nd time.

T1 – Briefly press twice:

Display shows language setting

After 9 seconds, the language display reverts automatically to showing the 2nd time.

If power is low, the LCD display shows the seconds (flashing in alternation with [Lo]). The second hand stops at 12 o'clock. By pressing T1, however, you can still switch to date or 2nd time.

6. Description of watch functions and how to use them

6.1 Second time

The 2nd time function gives you the option to display another time in the display that independent of the analogue time (e. g. if you are on holiday in another time zone and want to see the time at home).

Press the T1 button repeatedly until the 2nd time is digitally displayed on the LCD. The 2nd time can be set in 30-minute steps using the T2 button.

To do this, with the 2nd time displayed on the LCD, press the T2 button. The 2nd time starts to flash. Each press of the T2 button then lets you advance the 2nd time by 30 minutes. If you hold down the T2 button, you can set the 2nd time in fast forward mode.

6.2 Reception display

The reception display shows you whether the watch has synchronised itself with any of the transmitters. The LCD display has 4 symbols for doing this that indicate the 4 transmitters from which a signal can be received:

DCF 77 (Europe)

JJY 40 (Japan)

JJY 60 (Japan)

WWVB (USA)

If the reception display is shown on the LCD, the watch has picked up the signal properly during the overnight automatic synchronisation. If all of the reception times on the LCD display are switched off, this means that due to poor reception conditions the watch was not able to synchronise automatically. The next time that a signal is successfully picked up from one of the 4 transmitters, the reception display will be shown again.

6.3 Manual time synchronisation (transmitter calls)

Your Junghans Mega MF radio-controlled watch can also be synchronised manually, by performing what is called a 'Manual transmitter call'.

You do this by pressing the T1 button for over 3 seconds. The second hand starts to move and positions itself at 12 o'clock. In parallel with this, the hour and minute hands continue to show the current time. The reception phase then starts. The reception display flashes on the LCD for the transmitter with which synchronisation last took place and, instead of the date, the second's [00] are now digitally displayed. Please put the watch down while the signal is being received as moving the watch around while it is trying to update can cause reception failure

If synchronisation with the transmitter is not possible, all of the other transmitters are then checked for possible reception of any of their signals. As soon as a signal has been picked up, the digital seconds on the LCD display start to advance. When the watch has picked up the signal, the hands automatically set themselves at the transmitter's local time and the second hand advances to the current second. On the LCD the date is shown and the transmitter that was successfully received is represented by the corresponding reception display.

Should you be in a time zone different from that of the transmitter the watch picked up, then after one-off synchronisation you will need to set the applicable local time for that location using the time zone adjustment function.

The time zones displayed when picking up the signal from the respective transmitters are as follows:

Transmitter	Time zone displayed
DCF77 (Europe)	CET or CEST
WWVB (North America)	Pacific time
JJY40	Japanese local time
JJY60	Japanese local time

If you wish, you can interrupt the manual synchronisation process, as soon as the second hand is in the 12 o'clock position. To do so, briefly press the T1 button. The second hand then returns to the original time.

Please note that manual synchronisation is not possible if battery power is too low and the [L0] symbol is showing on the display.

6.4 Time zone adjustment

The Junghans Mega MF radio-controlled watch can pick up the signals from the DCF77, WWVB, JY40 and JY60 transmitters. Within the transmitter coverage areas your watch will thus reliably display summer or winter time respectively. If you travel to a country in another time zone, you can have the local time there displayed as a 2nd time in the lower section of the display (to set this, see 'Second time' section) and/or adjust the analogue time shown to the local time.

You do this by pressing the T1 button repeatedly until the date is shown on the LCD display. You then press the T2 button. The hour is now also shown digitally on the LCD display (e.g.: [T12] for 12 noon). You adjust the time zone, and thus also the hands, to the time in the zone in question by pressing the T2 button again. You can use the digital hour display to help you set the correct time. Repeatedly pressing the T2 button enables you to set the hour in fast forward mode. You can set all time zones using the T2 button. As you do so, the date, if necessary, is also automatically adjusted.

If you want to set the 1st time, and thus the analogue time display, back again to the original time, then please do so by following the same procedure.

6.5 Set language (day of the week display)

The language for the day of the week display on your Junghans Mega MF radio-controlled watch is set at the factory to German.

To change the day of week display to a different language, press the T1 button until [DE] for German (Deutsch) is shown on the LCD display. By pressing briefly on the T2 button, you can then change the date display to English. [En] for English will now be showing on the LCD display.

7. Restart / getting started

Following a change of battery, your watch will automatically begin a restart routine. After you insert the battery, the hands will move to the 12 o'clock position and your watch will start trying to pick up the time signal. As it does so, the reception symbol of the transmitter it is currently trying to pick up flashes. As soon as a signal is being received, the seconds on the LCD display start to advance. After a few minutes, if the reception process has been successful, the watch automatically sets itself to the correct transmitter time.

- On successful reception of the DCF77 transmitter, CET local time is shown, the reception display for the DCF77 is activated on the LCD and the date is displayed with the day of the week in German.

- On successful reception of the WWVB transmitter, the Pacific time zone is shown, the reception display for the WWVB is activated on the LCD and the date is displayed with the day of the week in German.
- On successful reception of the JY40 or JY60 transmitter, Japanese local time is shown, the reception display for the JY40 or JY60 is activated on the LCD and the date is displayed with the day of the week in German.

If the watch goes 30 minutes without picking up a signal, the reception process is aborted to save power. The hands remain in the 12 o'clock position and 2 flashing dashes [--] are shown on the LCD display.

To get the time displayed nevertheless, you will need to set your watch manually to the current time (known as a 'manual start'). It will then run like a normal quartz watch.

7.1 Manual start

After an unsuccessful restart (at least 30 minutes with no reception from any transmitter), you can trigger the manual start routine. This can also be done during the restart process.

After the hands have reached the 12 o'clock position in the restart routine, please press button T2. The watch is now in manual start mode.

The receiver for the transmitter has been switched off and the second hand now begins to move. Two dashes [--] are shown on the LCD display.

With each further press of the T2 button, you are able to adjust the time one step forward. One step equals one minute. The minutes are shown digitally on the LCD display to help you.

If you hold down the T2 button, you go into fast forward mode and the hands start to go around rapidly. Set in this way the time that you want.

If you don't press a button for 9 seconds, the display reverts to normal and 2 flashing dashes [--] are shown on the LCD.

After setting the watch by the manual start routine, it is not possible to display a date. This cannot be done until the watch has successfully synchronised with one of the time signal transmitters.

By pressing button T1 you can have the 2nd time shown on the LCD display. Adjust the 2nd time as described in section 6.1.

When in manual start mode, your Junghans Mega MF radio-controlled tries every 6 hours to pick up a time signal. As soon as successful synchronisation has taken place, the time display is updated and from this point on the date too is also available.

8. General information

- Servicing, such as repairs to the glass, seal or wrist strap should only be carried out by a specialist watch retailer.
- Please have the seals and the glass inspected regularly by an expert, approx. every 2 years.
- If condensation gets into your watch, have it inspected by the Customer Service Unit without delay. Water inside the watch can damage it.
- Your watch is fitted with a quality wrist strap that has undergone multiple inspections in our factory. If, however, you decide to change the wrist strap, please fit a new one of the same quality, preferably an original Junghans strap.
- Clean your watch and wrist strap with a dry or slightly moist cloth. Caution: do not use chemical cleaners (e.g. benzine or paint thinners). These may harm the surface.

● Water resistance:

Marking	Instructions for use				
	 Washing, rain, splashes	 Shower	 Bath	 Swimming	 Diving without a wetsuit etc.
No marking	No	No	No	No	No
3 atm	Yes	No	No	No	No
5 atm	Yes	No	yes	No	No
10 atm	Yes	Yes	Yes	Yes	No

The level of 'water resistance' applies only to brand new watches. External influences can however affect this. Please have your watch checked regularly.

Declaration of Conformity

Junghans Uhren GmbH herewith declares that this radio-controlled product conforms to the principle requirements and other relevant stipulations of Directive 1999/5/EC.

A corresponding declaration of conformity can be requested from info@junghans.de.

9. Technical information

Time taken to self-set with good reception (DCF)	Approx. 3 minutes
Time zone adjustment range	+ 12 hours – 12 hours
Switching from CET to CEST and vice versa	automatic
Time comparison with the time signal transmitters	02:00 and 03:00 hours
Operating temperature	0° to 50°C
No licence fee. Approved by the German Post Office.	
Subject to technical modifications	