

GETTING ACQUAINTED

Congratulations upon your selection of this CASIO watch. To get the most out of your purchase, be sure to carefully read this manual and keep it on hand for later reference when necessary.

Warning!

- The pulse measurement function built into this watch is not intended for taking measurements that require professional or industrial precision. Values produced by this watch should be considered as reasonable representations only.
- CASIO COMPUTER CO., LTD. assumes no responsibility for any loss, or any claims by third parties that may arise through the use of this watch.

About this manual

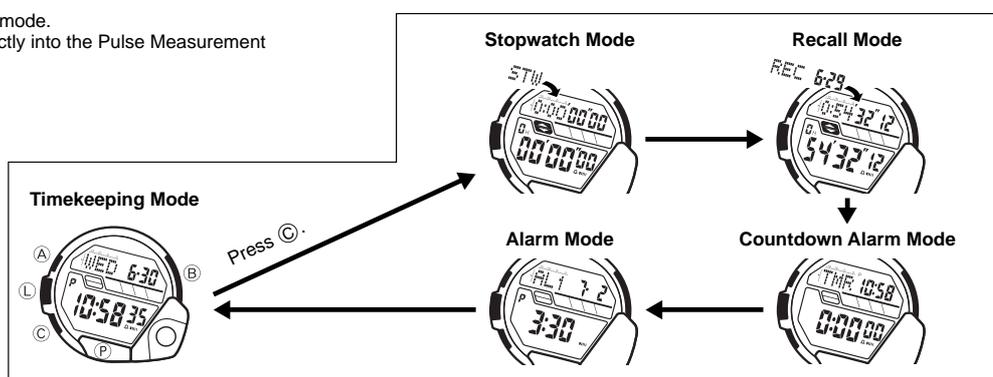


- Button operations are indicated using the letters shown in the illustration.
- Each section of this manual provides you with the information you need to perform operations in each mode. Further details and technical information can be found in the "REFERENCE" section.

GENERAL GUIDE

- Press (C) to change from mode to mode.
- Pressing the (P) button enters directly into the Pulse Measurement Mode from any other mode.

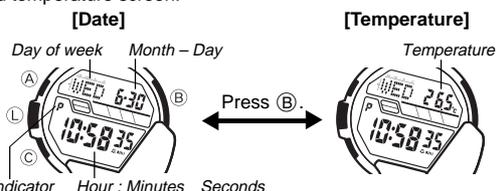
Pulse Measurement Mode



TIMEKEEPING

Use the Timekeeping Mode to set and view the current time and date. You can also display the current temperature.

- In the Timekeeping Mode, press (B) to toggle between the date screen and temperature screen.

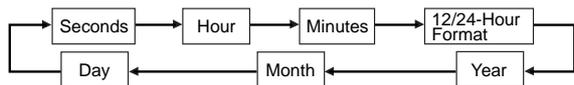


- See the section of this manual titled "THERMOMETER" for information about the temperature screen.

Setting the Time and Date



1. In the Timekeeping Mode, press (B) to display the Date screen.
2. Hold down (A) until the seconds digits start to flash.
3. Press (C) to move the flashing in the sequence shown below to select other settings.

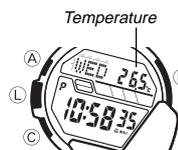


4. While hour, minutes, year, month, or day is flashing, press (B) to increase the setting or (L) to decrease it.
 - While the seconds setting is selected, press (B) to reset seconds to 00.
 - When the 12/24-hour setting is selected, press (B) to toggle between 12-hour (12H) and 24-hour (24H) timekeeping.
5. Press (A) to return to the current time screen.

Resetting the Seconds Count to Zero

1. In the Timekeeping Mode, press (B) to display the Date screen.
2. Hold down (A) until the seconds digits start to flash.
3. Press (B) to set the seconds count to 00.
 - Pressing (B) while the seconds count is in the range of 30 to 59 resets the seconds to 00 and add 1 to the minutes. In the range of 00 to 29, the minutes count is unchanged.
4. Press (A) to return to the current time screen.

THERMOMETER



A built-in temperature sensor measures temperature and shows the measured value on the display. You can calibrate the temperature sensor if you suspect the temperature reading is incorrect.

Understanding the Temperature Screen

1. Use (C) to enter the Timekeeping Mode.
2. Press (B) to display the Temperature screen.
 - Temperature is displayed in units of 0.1°C in the range of -20.0°C to 60.0°C.
 - Press (B) again to return to the date screen.

About Temperature Measurements

- When you first display the Temperature screen, it shows the current temperature at that time. If you leave the Temperature screen on the display, temperature measurements are taken once every even number minute (of the Timekeeping Mode time).
- Temperature measurements are affected by your body temperature (while you are wearing the watch), direct sunlight, and moisture. To achieve a more accurate temperature measurement, remove the watch from your wrist, place it in a well ventilated location out of direct sunlight, and wipe off all moisture from the case. It takes approximately 20 to 30 minutes for the case of the watch to reach the actual surrounding temperature.

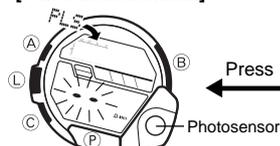
PULSE MEASUREMENT

The pulse measurement function uses a photosensor to detect the movement of blood in your fingertip, which it then converts to a pulse value. A biofeedback feature also lets you set a target pulse and monitor your actual pulse in relation to your target.

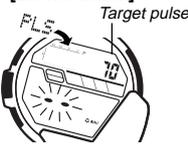
Entering and Exiting the Pulse Measurement Mode

- Pressing **(P)** in any mode enters the Pulse Measurement Mode, indicated by **--** flashing on the display.

[Pulse Measurement]



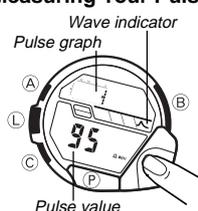
[Biofeedback]



Press **(B)**.

- The flashing indicates that the watch is waiting for you to place your finger on the photosensor (standby). To stop the flashing, press **(P)** again. Each press of **(P)** turns standby on (**--** flashing) and off (**-** not flashing).
 - Press **(B)** to toggle between the pulse measurement screen and the biofeedback screen.
- Press **(C)** to return to the Timekeeping Mode.

Measuring Your Pulse



- Make sure the pulse measurement screen is in standby (**--** flashing).
 - If **--** is not flashing, press **(P)**.
- Lightly place your finger onto the photosensor to start pulse measurement.
 - Measurement continues for two minutes or until you remove your finger from the photosensor.

- Within about 7 to 15 seconds, a value showing the initial measurement result appears on the display, along with a bar on the pulse graph and a wave indicator that are synchronized with your pulse.

Note

- The pulse value on the display is updated every 2 to 3 seconds.
- Take care you do not change your finger pressure or move your finger too much while it is on the photosensor.
- Either of the following indicates that the watch was unable to obtain a good pulse reading.
 - : Unstable measured value
 - E**: No pulse detected
- If you have problems getting a value to appear, press **(P)** to stop the measurement procedure, and see "Tips on Placing Your Finger on the Photosensor".

Biofeedback

The biofeedback feature lets you compare your measured pulse with a target pulse rate you preset. You can use this feedback to check the effect of relaxation techniques designed to reduce your resting heart rate. Joggers and endurance athletes can use this information to maintain their optimum heart rate during training and to monitor post-workout recovery.

Caution!

Always stop running and stand in a safe place whenever performing a pulse measurement. Measuring your pulse while running creates the risk of personal injury to you and others.

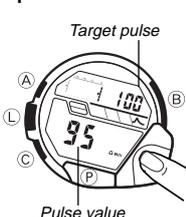
To set your target pulse



- In the Pulse Measurement Mode, hold down **(A)** until the target pulse value flashes on the display.
- Press **(B)** to increase the target pulse value or **(L)** to decrease it.

- You can set the target pulse value within the range of 30 to 200.
- Press **(A)** to return to the biofeedback screen.

To perform a biofeedback operation

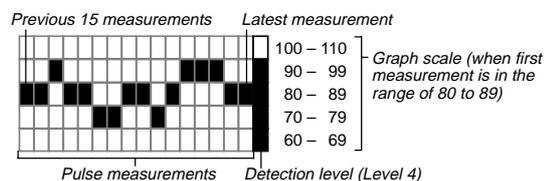


- Make sure the biofeedback screen is in standby (**--** flashing).
 - If **--** is not flashing, press **(P)**.
- Lightly place your finger onto the photosensor to start pulse measurement.
 - Measurement continues for two minutes or until you remove your finger from the photosensor.
 - The target pulse value flashes whenever the current pulse value reading is within ± 5 beats of the target.
 - See the "Note" of "Measuring Your Pulse" for important pulse measurement precautions.

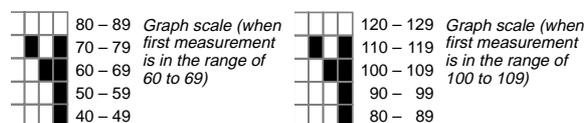
Pulse Graph

The meaning of the data that appears in the pulse graph depends on whether you are performing a pulse measurement screen operation or biofeedback screen operation.

Pulse Measurement Screen

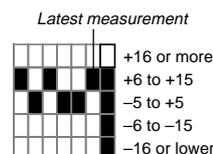


- The detection level indicates the relative quality of the pulse detection. Level 0 (no dots) is the worst, while Level 5 is the best.
- A level of 4 or 5 indicates that the pulse reading is fairly reliable.
- On the pulse measurement screen, the graph shows readings that are relative to the first reading. The first reading is automatically defined as the central point. Because of this, the value range of each dot on the graph is adjusted with each new measurement, based on the first reading.



- The graph scale of the pulse measurement screen graph automatically shifts up or down whenever a measured value is outside the current graph scale.

Biofeedback Screen



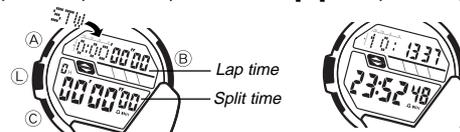
- This graph indicates the difference between your preset target pulse rate and the actually measured pulse rate.
- The detection level is the same as that described for the pulse measurement screen above.
- See "To set your target pulse" for information about setting a target value.

STOPWATCH

The Stopwatch functions let you record elapsed time, lap times, and split times. The range of the stopwatch is 99 hours, 59 minutes, 59 seconds. You can also store lap and split times in memory.

- Stopwatch functions are available in the Stopwatch Mode, which you can enter using **(C)**.
- For the first 10 hours, the screen shows hours, minutes, seconds, and 1/100 second. After 10 hours, the screen format changes to show hours, minutes, and seconds.

[Hours, Minutes, Seconds, 1/100 second] [Hours, Minutes, Seconds]



- The lap time appears in the upper part of the display. You can use this function to time how long it takes to complete a specific portion (such as a single lap) of a race.
- The split time appears in the lower part of the display. You can use this function to time how long it takes to get from the start to a specific point in a race.

Measuring Elapsed Time

- Press **(B)** to start the stopwatch.
- Press **(B)** to stop the stopwatch.
 - You can resume the measurement operation by pressing **(B)** again.
- Press **(L)** to clear the stopwatch to all zeros.

Recording Lap and Split Times

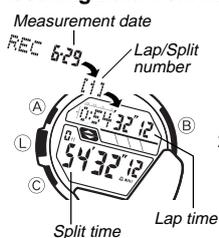
- Press **(B)** to start the stopwatch.
- Press **(L)** to display the timing up to that point. Stopwatch timing continues internally.
 - When you do, times are remaining on the display for about 10 seconds, and then the display changes back automatically to the stopwatch display.
- You can repeat step 2 as many times as you want.
- Press **(B)** to stop the time measurement.
- Press **(L)** to clear the stopwatch to all zeros.

About Stopwatch Memory

Whenever you perform a stopwatch operation, measured times are automatically stored into memory along with the measurement date. You can store up to 30 lap/split times in memory. If you perform more than 30 lap/split time operations, the memory will contain the times for the last 29 laps/splits (as lap/split numbers 1 through 29), and the final lap and split time (as lap/split 30).

- Data in lap/split memory is cleared whenever you start a new stopwatch operation.
- The final elapsed time, or final lap and split time is stored in memory when you press (L) to clear the stopwatch to all zeros.

Recalling Data from Memory

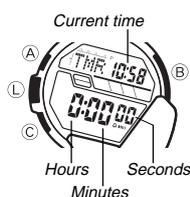


1. Use (C) to enter the Recall Mode.
 - The upper part of the display first shows the measurement date followed by the lap/split number, and then the oldest lap time in memory. The lower part of the display shows the split time.
2. Press (B) to scroll forward through the data items or (L) to scroll backward.
 - The message REC --- appears in the upper display if you enter the Recall Mode when there is no data stored in it.

Deleting the Data from Memory

To delete all data currently in memory, enter the Recall Mode and then hold down (A) until the message REC --- appears in the upper display.

COUNTDOWN ALARM



- The countdown timer can be set within a range of 1 second to 24 hours. When the countdown reaches zero, an alarm sounds.
- Countdown alarm functions are available in the Countdown Alarm Mode, which you can enter using (C).
 - You can also select auto-repeat, which automatically restarts the countdown from the original value you set whenever zero is reached.

Using the Countdown Timer

- Press (B) while in the Countdown Alarm Mode to start the countdown timer.
- When the end of the countdown is reached and auto-repeat is turned off, the alarm sounds for 10 seconds or until you stop it by pressing any button. The countdown time is automatically reset to its starting value after the alarm stops.
 - Press (B) while a countdown operation is in progress to pause it. Press (B) again to resume the countdown.
 - To completely stop a countdown operation, first pause it (by pressing (B)), and then press (L). This returns the countdown time to its starting value.

Setting the Countdown Time

1. In the Countdown Alarm Mode, hold down (A) until the hours digit of the countdown time starts to flash.
2. Press (C) to move the flashing in the sequence shown below to select other settings.



3. While hours, minutes, or seconds digits are flashing, press (B) to increase the setting or (L) to decrease it.
 - To set the starting value of the countdown time to 24 hours, set 0:00 00.
4. Press (A) to return to the countdown alarm display screen.

Turning Auto-repeat On and Off



- In the Countdown Alarm Mode, press (L) to turn auto-repeat on (AUTO REPEAT displayed) and off (AUTO REPEAT not displayed).
- When the end of the countdown is reached and auto-repeat is turned on, the alarm sounds, but the countdown starts again automatically whenever the countdown reaches zero. You can stop timing by pressing (B), and manually reset to the starting countdown time by pressing (L).

- Normally, an alarm tone sounds for 10 seconds when the end of the countdown is reached. If you use auto-repeat with start time of 10 seconds or less, the watch beeps once.

ALARM



You can set up to five independent alarms with hour, minutes, month, and day. When the alarm is turned on, the alarm tone sounds when the time is reached.

You can also turn on an Hourly Time Signal that causes the watch to beep twice every hour on the hour.

- Alarm functions (and Hourly Time Signal settings) are available in the Alarm Mode, which you can enter using (C).
- The alarm number (AL 1 through AL 5) indicates an alarm screen. SIG appears in place of the alarm number when the Hourly Time Signal screen is shown.

Alarm Types

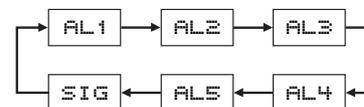
The alarm type is determined by the settings you make, as described below.

- **Daily alarm**
Set the hour and minutes for the alarm time. This type of setting causes the alarm to sound everyday at the time you set.
- **Date alarm**
Set the month, day, hour and minutes for the alarm time. This type of setting causes the alarm to sound at the specific time, on the specific date you set.
- **1-Month alarm**
Set the month, hour and minutes for the alarm time. This type of setting causes the alarm to sound everyday at the time you set, only during the month you set.
- **Monthly alarm**
Set the day, hour and minutes for the alarm time. This type of setting causes the alarm to sound every month at the time you set, on the day you set.

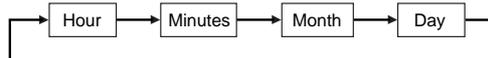
Setting an Alarm Time



1. In the Alarm Mode, press (B) to select the alarm whose time you want to set.



2. After you select an alarm, hold down (A) until the hour digits of the alarm time start to flash.
 - This operation automatically turns on the alarm.
3. Press (C) to move the flashing in the sequence shown below to select other settings.



4. While hour, minutes, month, or day is flashing, press (B) to increase the setting or (L) to decrease it.
 - To set an alarm that does not include a month (Daily alarm, Monthly alarm), set -- for the month. Press (B) or (L) until the -- mark appears (between 12 and 1) while month setting is flashing.
 - To set an alarm that does not include a day (Daily alarm, 1-Month alarm), set -- for the day. Press (B) or (L) until the -- mark appears (between 31 and 1) while the day setting is flashing.
 - When setting the alarm time using the 12-hour format, take care to set the time correctly as a.m. (A indicator) or p.m. (P indicator).
5. Press (A) to return to the alarm display screen.

Alarm Operation

The alarm sounds at the preset time for about 20 seconds, or until you stop it by pressing any button.

To test the alarm

In the Alarm Mode, hold down (L) to sound the alarm.

Turning an Alarm and the Hourly Time Signal On and Off

1. In the Alarm Mode, press (B) to select an alarm or the Hourly Time Signal.
2. When the alarm or the Hourly Time Signal you want to is selected, press (L) to turn it on and off.

- Indicates alarm is on.
- ⚡ Indicates Hourly Time Signal is on.

- The alarm on indicator (■) and the Hourly Time Signal on indicator (⚡) are shown on the display in all modes while these functions are turned on.
- If any alarm is on, the alarm on indicator is shown on the display when you change to another mode.

BACKLIGHT



Auto light switch
on indicator

The backlight uses an EL (electro-luminescent) panel that causes the entire display to glow for easy reading in the dark. The watch's auto light switch automatically turns on the backlight when you angle the watch towards your face.

- The auto light switch must be turned on (indicated by the auto light switch on indicator) for it to operate.

- See "Backlight Precautions" for other important information about using the backlight.

Turning on the Backlight Manually

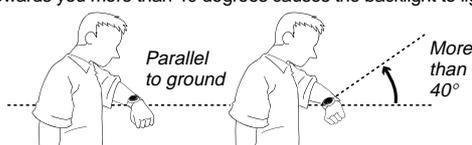
In the Timekeeping or Pulse Measurement Modes, press (L) to illuminate the display for about two seconds.

- The above operation turns on the backlight regardless of the current auto light switch setting.

About the Auto Light Switch

Turning on the auto light switch causes the backlight to turn on for about two seconds, whenever you position your wrist as described below in any mode (except for the Pulse Measurement Mode). Note that the auto light switch of this watch will operate only when available light is below a certain level. It does not turn on the backlight under bright light. You can select one of three trigger levels at which the backlight will turn on.

Moving the watch to a position that is parallel to the ground and then tilting it towards you more than 40 degrees causes the backlight to light.



Warning!

- **Never try to read your watch when mountain climbing or hiking in areas that are dark or in areas with poor footing. Doing so is dangerous and can result in serious personal injury.**
- **Never try to read your watch when running where there is danger of accidents, especially in locations where there might be vehicular or pedestrian traffic. Doing so is dangerous and can result in serious personal injury.**
- **Never try to read your watch when riding on a bicycle or when operating a motorcycle or any other motor vehicle. Doing so is dangerous and can result in a traffic accident and serious personal injury.**
- **When you are wearing the watch, make sure that its auto light switch is turned off before riding on a bicycle or operating a motorcycle or any other motor vehicle. Sudden and unintended operation of the auto light switch can create a distraction, which can result in a traffic accident and serious personal injury.**

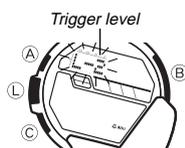
To turn the auto light switch on and off

In the Timekeeping Mode, hold down (B) for two seconds to turn the auto light switch on (AUTO displayed) and off (AUTO not displayed).

- The auto light switch on indicator (AUTO) is on the display in all modes (except for the Pulse Measurement Mode) while the auto light switch is turned on.
- Press (B) to toggle between the date screen and temperature screen.

To select the auto light switch trigger level

1. In any mode, hold down (C) until the trigger level flashes on the display.
2. Press (B) or (L) to cycle through the three trigger level settings.
 - : High sensitivity (Turns on auto light switch as soon as lighting becomes dim.)
 - : Normal sensitivity
 - : Low sensitivity (Does not turn on auto light switch until it becomes relatively dark.)
3. Press (A), (C), or (P) to return to the Timekeeping Mode.



REFERENCE

This section contains more detailed and technical information about watch operation. It also contains important precautions and notes about the various features and functions of this watch.

Auto Return Feature

- After you perform an operation in the Recall and Countdown Alarm Modes, pressing (C) returns to the Timekeeping Mode.
- If you leave a screen with flashing digits on the display for two or three minutes without performing any operation, the watch automatically saves anything you have input up to that point and exits the setting screen.

Data and Setting Scrolling

The (B) and (L) buttons are used in various setting screens to scroll through the available settings on the display. In most cases, holding down these buttons during a scroll operation scrolls through the settings at high speed.

Timekeeping

- The day of the week is automatically displayed in accordance with the date (year, month, and day) settings.
- The year can be set in the range of 1995 to 2039.
- The watch's built-in full automatic calendar automatically makes allowances for different month lengths and leap years. Once you set the date, there should be no reason to change it except after the replacement of the watch's battery.

12-hour/24-hour Timekeeping Formats

The 12-hour/24-hour timekeeping format you select in the Timekeeping Mode is also applied in the Alarm Mode.

- With the 12-hour format, the (P) (PM) indicator appears to the left of the hour digits for times in the range of noon to 11:59 pm. The (A) (AM) indicator is shown from midnight to 11:59 am.
- With the 24-hour format, times are indicated in the range of 00:00 to 23:59, with (24) indicator.

Tips on Placing Your Finger on the Photosensor

The following are useful tips you can use to ensure successful pulse measurements.

Tips On Placing Your Finger On The Photosensor

Note the following points if you experience problems with measurements.

Correct



Place your finger so that the Photosensor is covered by the pads of the finger, not the fingertip. If your fingernail turns white, it means you are pressing too hard. Try pressing down a bit with your finger first, and then make adjustments as you view the display of the watch to see if measurements are being taken.

Note



If you have trouble keeping your finger still after physical exercise, try grasping your other hand as shown in the illustration.

Incorrect



- Finger too upright.
- Finger not covering photosensor completely.
- Finger too far forward on the Photosensor.

Tips on Taking Measurements

Use the following techniques to ensure correct pulse measurements every time.

- Do not change the pressure of your finger on the Photosensor.
- Do not move your finger on the Photosensor.
- Warm up your finger before taking measurements.
- Avoid bright light when taking measurements.
- During measurements, keep still and do not talk.
- Once you start the measurement procedure, place your finger on the Photosensor as soon as possible.
- Remove rings or any other items that might restrict normal blood flow.

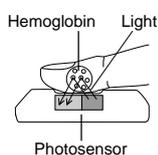
Important!

The following factors may make it difficult or even impossible to achieve good pulse readings with this watch.

- Severe arrhythmia
- Pulse waves are unstable, so they cannot be detected properly by the Photosensor.
- Arteriosclerosis or other circulatory problems
- Circulation at the fingertips is bad, so the Photosensor cannot detect pulse waves.
- Thick fingertip skin
- Thick skin impedes the passage of light through the fingertip. This makes it hard for the Photosensor to take readings.

About the Photosensor

The pulse measurement system of this watch employs a highly sensitive photosensor that detects how much infrared light is absorbed by hemoglobin in the blood as it passes through the capillaries at your fingertip. Changes in the relative infrared light intensity detected by the photosensor are converted into pulse values.



- ① A light emitting diode outputs infrared light.
 - ② The photosensor detects changes in how much of the infrared light is reflected and how much passes through the finger.
- The above process requires that your finger is placed on the photosensor correctly and that certain measurement conditions are met. Otherwise, correct measurements may be impossible.

Backlight Precautions

- The backlight remains lit for about two seconds from the point you press **L**, even if it is already lit when you press **L**. If you keep depressed for five seconds, the backlight will automatically turn off.
- The electro-luminescent (EL) panel loses illuminating power after very long use.
- The illumination provided by the backlight may be hard to see when viewed under direct sunlight.
- The watch will emit an audible sound whenever the display is illuminated. It does not indicate malfunction of the watch.
- The backlight automatically turns off whenever an alarm sounds.

Auto light switch precautions

- Avoid wearing the watch on the inside of your wrist. Doing so causes the auto light switch to operate when it is not needed, which shortens battery life. If you want to wear the watch on the inside of your wrist, turn off the auto light switch feature.

More than 15 degrees
too above



- The backlight may not light if the face of the watch is more than 15 degrees above or below parallel. Make sure that the back of your hand is parallel to the ground.
- The backlight turns off in about two seconds, even if you keep the watch pointed towards your face.

- Static electricity or magnetic force can interfere with proper operation of the auto light switch. If the backlight does not light, try moving the watch back to the starting position (parallel with the ground) and then tilt it back toward you again. If this does not work, drop your arm all the way down so it hangs at your side, and then bring it back up again.
- Under certain conditions the backlight may not light until about one second after you turn the face of the watch towards you. This does not necessarily indicate malfunction of the backlight.
- In order to protect against running down the battery, the auto light switch is automatically turned off approximately 24 hours after you turn it on.
- The watch may not be able to correctly judge the current light level while it is being exposed to infrared light.

Calibrating the Temperature Sensor

The temperature sensor of this watch is calibrated at the factory before shipment and further adjustment is normally not required. If you notice serious errors in the temperature readings produced by the watch, you can calibrate the sensor to correct the errors.

Important!

Incorrectly calibrating the temperature sensor can result in incorrect readings. Carefully read the following before doing anything.

- Compare the readings produced by the watch with those of another reliable and accurate thermometer.
- If adjustment is required, remove the watch from your wrist and wait for 20 or 30 minutes to give the temperature of the watch time to stabilize.
- You can adjust the temperature within the range of -20.0 to 60.0°C , within $\pm 9.9^{\circ}\text{C}$ of the current temperature reading (produced by the factory default temperature adjustment setting).

To calibrate the temperature



1. In the Timekeeping Mode, press **B** to display the Temperature screen.
2. Hold down **A** until the temperature value start to flash.
3. Each press of **B** increases the displayed temperature by 0.1°C while pressing **L** decreases it.
 - Pressing **B** and **L** at the same time returns to the factory calibration.
4. Press **A** to return to the Temperature screen.