Operation Guide 2782

CASIO

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.

Applications

The built-in sensors of this watch measure altitude, barometric pressure, temperature and underwater depth. Measured values are then shown on the display. Such features make this watch useful when hiking, mountain climbing, skin diving, or snorkeling, or when engaging in other such outdoor activities.

For a watch with the elapsed time bezel

Elapsed time bezel

Rotate the elapsed time bezel to align the ▼ mark with the minute hand.
After that, the number of minutes that elapse is indicated by how far the minute hand has moved from ▼.

Warning!

- The measurement functions built into this watch are not intended for taking measurements that require professional or industrial precision. Values produced by this watch should be considered as reasonable representations only.
- This watch is intended for use up to skin diving and snorkeling. Never use this watch while scuba diving.
- Never operate the buttons of the watch while underwater.
- 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.

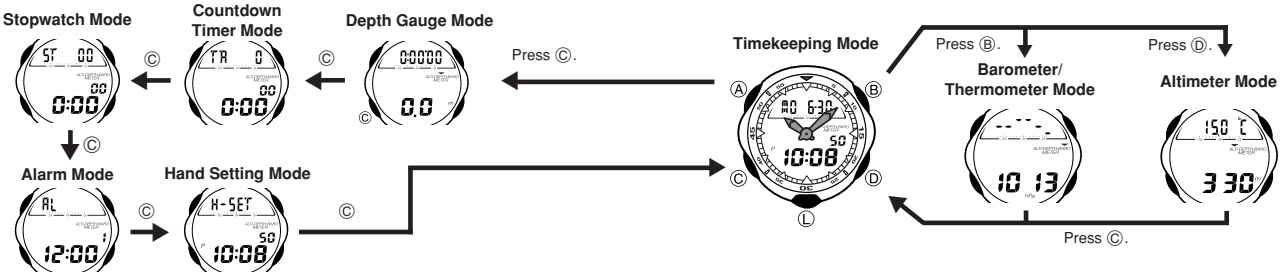
About This Manual

(Light)

- 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.
- Most of the display examples in this manual show only the digital display, without the analog hands, as shown in the lower illustration.

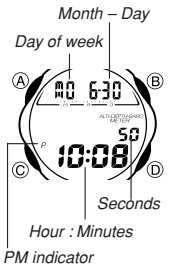
General Guide

- The illustration below shows which buttons you need to press to navigate between modes.
- In any mode, press Ⓛ to illuminate the display.



- From the Timekeeping Mode, you can press Ⓑ to directly enter the Barometer/Thermometer Mode or Ⓓ to enter the Altimeter Mode. You can also use Ⓑ and Ⓓ to switch between the Barometer/Thermometer Mode and the Altimeter Mode.

Timekeeping



This watch features separate digital and analog timekeeping. The procedures for setting the digital time and analog time are different.

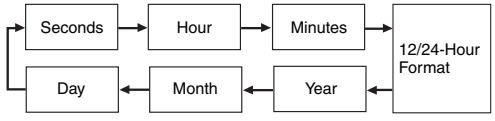
- Whenever you need to adjust both the digital and the analog time settings, make sure you adjust the digital setting first.

Digital Time and Date

Use the Timekeeping Mode to set and view a digital display of the current time and date. When setting the digital time, you can also configure settings for the 12/24-hour format.

To set the digital time and date

1. In the Timekeeping Mode, hold down Ⓐ until the seconds start to flash, which indicates the setting screen.
2. Press Ⓒ to move the flashing in the sequence shown below to select other settings.



3. When the setting you want to change is flashing, use Ⓓ and/or Ⓑ to change it as described below.

Setting	Screen	Button Operations
Seconds	50	Press Ⓓ to reset the seconds to 00.
Hour, Minutes	10:08	Use Ⓓ (+) and Ⓑ (–) to change the setting.
12/24-Hour format	12H	Use Ⓓ to toggle between 12-hour (12H) and 24-hour (24H) timekeeping.
Year, Month, Day	03 6.30	Use Ⓓ (+) and Ⓑ (–) to change the setting.

4. Press Ⓐ to exit the setting screen.

Note

- Resetting the seconds to 00 while the current count is in the range of 30 to 59 causes the minutes to be increased by 1. In the range of 00 to 29, the seconds are reset to 00 without changing the minutes.
- With the 12-hour format, the **P** (PM) indicator appears on the display for times in the range of noon to 11:59 p.m. and no indicator appears for times in the range of midnight to 11:59 a.m.
- With the 24-hour format, times are displayed in the range of 0:00 to 23:59, without any indicator.
- The 12-hour/24-hour timekeeping format you select in the Timekeeping Mode is applied in all modes.
- The year can be set in the range of 2000 to 2039. The day of the week is calculated automatically in accordance with the date you set.
- 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 you have the watch’s battery replaced.

Setting the Analog Time

Perform the procedure below when the time indicated by the analog hands does not match the time of the digital display.

To adjust the analog time

1. In the Timekeeping Mode, press Ⓒ five times to enter the Hand Setting Mode.
2. Hold down Ⓐ until the current digital time starts to flash, which indicates the analog time setting screen.
3. Press Ⓓ to advance the analog time setting by 20 seconds.
   - Holding down Ⓓ advances the analog time setting at high speed.
   - If you need to advance the analog time setting a long way, hold down Ⓓ until the time starts advancing at high speed, and then press Ⓑ. This locks the high-speed hand movement, so you can release the two buttons. High-speed hand movement continues until you press any button. It will also stop automatically after the time advances 12 hours or if an alarm starts to sound.
4. Press Ⓐ to exit the setting screen.

- To return to the Timekeeping Mode, press Ⓒ.

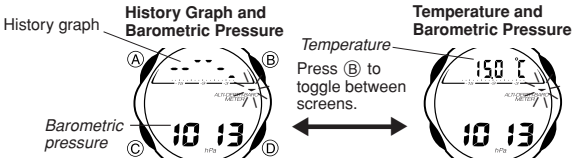
Barometer/Thermometer

This watch uses a pressure sensor to measure air pressure (barometric pressure) and a temperature sensor to measure temperature.

- You can calibrate the temperature sensor and the pressure sensor if you suspect that readings are incorrect.

To take barometric pressure and temperature readings

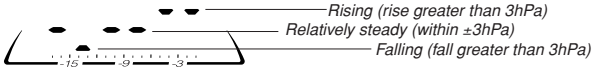
Pressing Ⓑ in the the Timekeeping Mode or in the Altimeter Mode enters the Barometer/Thermometer Mode and automatically starts taking barometric pressure and temperature measurements.



- It can take up to four or five seconds for the barometric pressure reading to appear after you enter the Barometer/Thermometer Mode.
- Barometric pressure is displayed in units of 1hPa (or 0.05 inHg).
- The displayed barometric pressure value changes to - - - - hPa (or inHg) if a measured barometric pressure falls outside the range of 600 hPa to 1100 hPa (17.70 inHg to 32.45 inHg). The barometric pressure value will be displayed again as soon as the measured barometric pressure is within the allowable range.
- Temperature is displayed in units of 0.1°C (or 0.2°F).
- The displayed temperature value changes to - -. - °C (or °F) if a measured temperature falls outside the range of –10.0°C to 60.0°C (14.0°F to 140.0°F). The temperature value will be displayed again as soon as the measured temperature is within the allowable range.
- Some countries refer to the barometric pressure unit hecto-pascal (hPa) as millibars (mb). It really makes no difference, because 1hPa = 1mb.
- See “Barometer and Thermometer Precautions” for important precautions.

Barometric Pressure History Graph

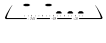
Barometric pressure indicates changes in the atmosphere. By monitoring these changes you can predict the weather with reasonable accuracy. The barometric pressure history graph contains points that show you the changes in barometric pressure readings taken by the watch for up to the last 18 hours. The rightmost point on the graph is the latest reading. The relative positions of the points on the graph indicate whether barometric pressure is rising, falling, or holding relatively steady.



- Though you can configure the watch to display barometric pressure in units of hPa or inHg, the history graph always uses hPa. This means that the points plotted on the history graph are based on ±3hPa changes in barometric pressure.
- No point is plotted on the graph whenever a measurement operation fails due to sensor malfunction, low battery power, or any other reason.
- Barometric pressure measurement is disabled whenever you are performing depth measurement in the Depth Gauge Mode. Because of this, the graph plots of barometric pressure measurement operations that occur during a depth measurement are skipped.

The following shows how to interpret the data that appears on the barometric pressure history graph.


A rising graph generally means improving weather.


A falling graph generally means deteriorating weather.

About Barometric and Temperature Measurements

- Barometric pressure and temperature measurement operations are performed as soon as you enter the Barometer/Thermometer Mode. After that, barometric pressure and temperature measurements are taken every five seconds for the first two or three minutes.
- The ▼ indicator above ***BARO*** flashes while the watch is taking a barometric pressure reading.
- The barometer automatically takes measurements every three hours (starting from midnight), regardless of what mode you are in. The results of these measurements are used for plotting points on the barometric pressure history graph.
- You can also perform a barometric pressure and temperature measurement at any time by pressing Ⓑ in the Barometer/Thermometer Mode.

Barometer and Thermometer Precautions

- The pressure sensor built into this watch measures changes in air pressure, which you can then apply to your own weather predictions. It is not intended for use as a precision instrument in official weather prediction or reporting applications.
- Sudden temperature changes can affect pressure sensor readings.
- 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 all moisture from the case. It takes approximately 20 to 30 minutes for the case of the watch to reach the actual surrounding temperature.
- You can select either hectopascals (hPa) or inchesHg (inHg) as the display unit for the measured barometric pressure. See “Changing the Barometric Pressure and Temperature Units” for details.
- You can select either Celsius (°C) or Fahrenheit (°F) as the display unit for the measured temperature value. See “Changing the Barometric Pressure and Temperature Units” for details.

Altimeter

A built-in altimeter uses a pressure sensor to detect the current air pressure, which is then used to estimate the current altitude. The watch is pre-programmed with ISA (International Standard Atmosphere) preset values, which are used to convert air pressure readings to altitude values. If you preset a reference altitude, the watch will also calculate the current relative altitude based on your preset value.

Important!

- This watch estimates altitude based on air pressure. This means that altitude readings for the same location may vary if air pressure changes.
- This watch employs a semiconductor pressure sensor, which is affected by temperature changes. Make sure that the watch is not being exposed to temperature changes while you are taking altitude measurements.
- To avoid the effect of sudden temperature changes on measurement, wear the watch so it is in direct contact with your wrist during measurement.
- Do not rely upon this watch for altitude measurements or perform button operations while engaging in sports where there are sudden altitude changes, while sky diving, hang gliding, or paragliding, or while riding a gyrocopter, glider, or any other aircraft.
- Remember that the air inside of a commercial aircraft is pressurized. Because of this, the readings produced by this watch will not match the altitude readings announced or indicated by the flight crew.

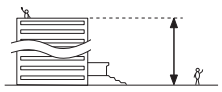
How the Altimeter Works

With the Preset Values (No Reference Altitude)

- The watch measures the air pressure at your current location and uses the built-in ISA values to convert it to the equivalent altitude.

With a Reference Altitude

- If you set a reference altitude, the watch uses that value when calculating altitude based on air pressure.
- To determine the height of a tall building, set the reference altitude to 0 on the ground floor. Note, however, that you may not be able to get a good reading if the building is pressurized or air-conditioned.
- When mountain climbing, you can set the reference value in accordance with a marker along the way or altitude information from a map. After you do this, the altitude readings produced by the watch will be more accurate than they would without a reference altitude.



To take an altitude reading

Pressing Ⓓ in the Timekeeping Mode or in the Barometer/Thermometer Mode enters the Altimeter Mode and automatically starts altitude measurement.

- It can take up to four or five seconds for the altitude reading to appear after you enter the Altimeter Mode.
- The Altimeter Mode screen also displays the current temperature. See “Barometer/ Thermometer” for more information.
- During the first two or three minutes after entering the Altimeter Mode, the ▼ indicator flashes on the display and measurements are taken every five seconds. After that, the ▼ indicator stops flashing and remains on the display as measurements are taken every two minutes.

- Pressing Ⓓ causes the measurement operation to restart from the beginning of the cycle described above.
- Altitude is displayed in units of 5 meters (20 feet).
- The measurement range for altitude is –700 to 4,000 meters (–2,300 to 13,120 feet). The display range for altitude (include values based on the reference altitude) is –4,000 to 4,000 meters (–13,120 to 13,120 feet).
- An altitude reading may result in a negative value in cases when you have a reference altitude value set or because of certain atmospheric conditions.
- The displayed altitude value changes to - - - - meters (or feet) if a measured altitude falls outside the measurement range. The altitude value will be displayed again as soon as the measured altitude is within the allowable range.
- You can change the unit of measurement for the displayed altitude values between meters (m) and feet (ft). See “To change the altitude unit”.

Setting a Reference Altitude

After you set a reference altitude, the watch adjusts its air-pressure-to-altitude conversion calculation accordingly. The altitude measurements produced by this watch are subject to error caused by changes in air pressure. Because of this, we recommend that you update the reference altitude whenever one is available during your climb.

To set a reference altitude

1. In the Altimeter Mode, hold down Ⓐ until OFF appears (flashing) or until the display goes blank. This is the setting screen.
   - Wait for four or five seconds before performing step 2, below. If you don’t wait, there is the chance of setting value error.
   - If the display went blank in step 1, the current reference value will appear (flashing) on the display after the four or five seconds pass.
   - If OFF or the current reference altitude value does not appear at this time, press Ⓐ to return to the Altimeter Mode screen, and perform step 1 again.
2. Press Ⓓ (+) or Ⓑ (–) to change the current reference altitude value by 5 meters (or 20 feet).
   - You can set the reference altitude within the range of –4,000 to 4,000 meters (–13,120 to 13,120 feet).
   - Pressing Ⓓ and Ⓑ at the same time returns to OFF (no reference altitude), so the watch performs air pressure to altitude conversions based on preset data only.
3. Press Ⓐ to exit the setting screen.

Depth Gauge

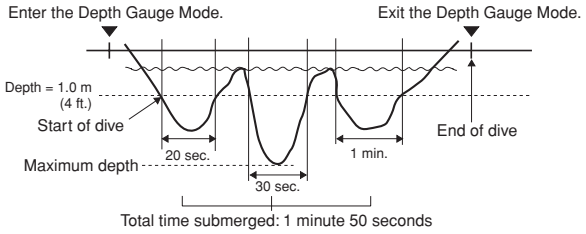
The pressure sensor of the watch can also be used to perform underwater depth measurement while skin diving or snorkeling. Depth readings are taken every three seconds, and displayed as a value up to 30 meters (98 feet). You can store the data of your last dive in log memory, including total time submerged, maximum depth, and water temperature at the maximum depth attained during your dive. You can view the log data of your last dive before beginning a new dive.

Important!

- Never use this watch to measure depth while scuba diving.
- This watch is designed to start depth measurement and record data in memory after a depth of 1 meter (4 feet) is reached. Because of this, the explanations in this User’s Guide uses the term “**submerged**” to refer to any depth deeper than 1 meter, and the “**on the surface**” to refer to any depth shallower than 1 meter.
- Leaving the watch in the Depth Gauge Mode while not in the water consumes battery power. Exit the Depth Gauge Mode whenever you are not using it.
- The measurement unit selected in the Altimeter Mode is also used in the Depth Gauge Mode.

What is “a dive”?

A dive starts when you pass a depth of one meter (about four feet) while the watch is in the Depth Gauge Mode. The dive ends when you are on the surface and exit the Depth Gauge Mode. A dive does not end if you surface but do not exit the Depth Gauge Mode.



- Remember that the term “dive” as used in this manual refers to skin diving or snorkeling only.
- The watch will start depth measurement automatically when the sensor detects that your depth exceeds one meter (about four feet).
- Depth measurement stops automatically whenever your depth becomes less than one meter (four feet).
- Depth measurement restarts whenever you re-submerge past one meter (four feet). All data that is measured between the start of the dive and the end of the dive is treated as part of the same dive, no matter how many times you surface during the dive.

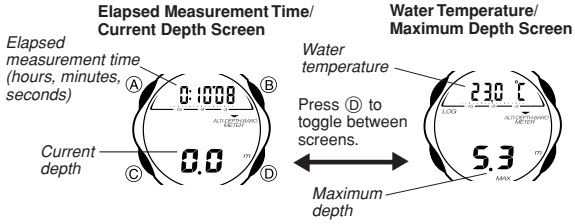
To perform depth measurement

1. Before beginning a dive, enter the Timekeeping Mode and then press Ⓒ to enter the Depth Gauge Mode.
   - It can take up to four or five seconds until 0.0 (or 0) appears on the display.
2. Enter the water and submerge past one meter (four feet) to start the dive.
3. When you want to end the dive, return to the surface and then press Ⓒ to exit the Depth Gauge Mode.

- Exiting the Depth Gauge Mode causes the data accumulated during the dive (time submerged, maximum depth attained, water temperature at maximum depth) to be stored in log memory.
- The watch will not exit the Depth Gauge Mode if any value other than 0.0 (or 0) is displayed for the depth when you press Ⓒ. If 0.0 (or 0) does not appear on the display even though you are on the surface (depth of less than 1 meter/4 feet), perform the procedure under “To manually reset the reference depth to 0 meters (feet)”.
- See “Log Data” for information about viewing dive data.

To view water temperature and maximum depth

In the Depth Gauge Mode, you can press Ⓓ toggles the display between the Elapsed Measurement Time/Current Depth and the Water Temperature/ Maximum Depth screens.



- If you do not perform any button operation for about five or six seconds while the Water Temperature/Maximum Depth screen is on the display, the watch will automatically return to the Elapsed Measurement Time/Current Depth screen.
- Never operate the buttons of the watch while underwater.

Important!

Note the following important precautions whenever using the Depth Gauge Mode.

Before Skin Diving/Snorkeling

- **Before beginning a dive, check to make sure that none of the following marks are shown on the display.**
  - ❑ **BATTERY (indicating a weak battery)**
  - ❑ **RECOVER (indicating a weak battery)**
  - ❑ **Err (indicating sensor malfunction)**
- **Make sure that 0.0 (or 0) is displayed at your current depth.**
- **Make sure that the watch is set to the correct time of day.**
- **Check the glass, case and band for cracks or chips.**
- **Make sure that the band is fastened securely around your wrist.**

While Skin Diving/Snorkeling
- **Check to make sure that timer operation and depth measurement are being properly.**
- **Take care when skin diving/snorkeling near rocks or coral to avoid scratching the watch.**

After Skin Diving/Snorkeling
- **To avoid corrosion, rinse your watch thoroughly with fresh water to remove salt water, dirt, etc. (When possible, soak the watch in fresh water overnight to make sure that all salt is removed.)**
- **When using a metal band, occasionally clean inside the gaps in the band using a soft toothbrush and soapy water. Failure to do so can result in corrosion of the timepiece, soiling of clothing or irritation to sensitive skin.**

Depth Gauge Mode Precautions
- After you enter the Depth Gauge Mode, the watch automatically takes a reference pressure reading and sets the result a 0 meters (feet). This means that before starting a dive, you should enter the Depth Gauge Mode while at the water's surface, never while the watch is submerged.
- A major change in air temperature or other phenomena while you are using the Depth Gauge Mode can cause the display to show a value other than 0 meters (feet) when you are at the surface of the water. If this happens, reset the reference depth to 0 meters (feet). See "To manually reset the reference depth to 0 meters (feet)" for more information.
- Depth values are displayed in units of 0.1 meter (or 1 foot).
- 0.0 (or 0.0)is displayed whenever your depth is less than one meter (four feet).
- dEEP is displayed in place of the depth value whenever your depth is greater than 30 meters (98 feet). If you continue to dive deeper after dEEP appears, - - - - will appear in place of the depth value. If - - - - remains on the display after you surface, hold down Ⓒ for three seconds to exit the Depth Gauge Mode. If - - - - keeps appearing in place of the depth value, it could mean that the sensor is malfunctioning. Take the watch to the place where you purchased it or to some other CASIO retailer to have it checked.
- If the elapsed measurement time exceeds three hours, the watch will automatically switch to the Timekeeping Mode and store the data for the current dive into log memory.
- The progress beeper and auto-repeat timer alarm do not sound while the watch is in the Depth Gauge Mode.
- The watch can take about five minutes to display the correct water temperature when there is a great difference between air temperature and water temperature, when there is a sudden change in water temperature, etc.

Log Data
Exiting the Depth Gauge Mode after a dive causes the measured data to be stored automatically into log memory. Stored data remains in log memory until you start a new dive, which causes the existing data to be replaced with the data of the new dive.
There is memory for a single log memory record, which includes the following data.

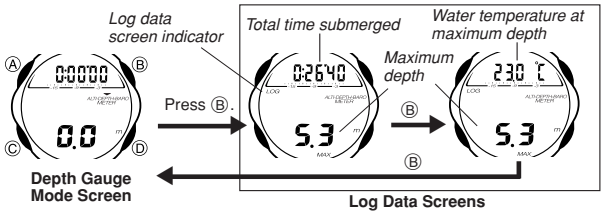
Total Time Submerged: This value shows the cumulative amount of time (hours, minutes, seconds) that you spend submerged at a depth of one meter (four feet) or greater.

Maximum depth: This value shows the maximum depth you attained during the dive.

Water temperature at maximum depth: This value shows the water temperature at the maximum depth attained during the dive.

Perform the following steps to view the log data that is currently stored in memory.

To view log data
1. While in the Timekeeping Mode, press Ⓒ to enter the Depth Gauge Mode.
2. Press Ⓑ to cycle through the data screens in the sequence shown below.

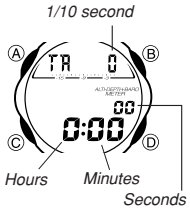


- If you do not perform any button operation for about five or six seconds while a Log Data screen is on the display, the watch will automatically return to the Depth Gauge Mode screen.
- You cannot view log memory data while a depth measurement operation is in progress.

3. To exit the Depth Gauge Mode, press Ⓒ.

To delete log memory data
1. While in the Timekeeping Mode, press Ⓒ to enter the Depth Gauge Mode.
2. Press Ⓑ to display the log memory data.
3. Hold down Ⓐ for about two seconds until the log data is deleted and the watch returns to the Depth Gauge Mode screen.
4. To exit the Depth Gauge Mode, press Ⓒ.

Countdown Timer



You can set a countdown timer start time in the range of 1 minute to 24 hours. An alarm sounds when the countdown reaches zero. An auto-repeat feature causes the countdown to restart automatically when the end of a countdown is reached, and a progress beeper signals the progress of the countdown. All of this makes the countdown timer a valuable tool for timing the start of a yacht race.
- All of the operations in this section are performed in the Countdown Timer Mode, which you enter by pressing Ⓒ.

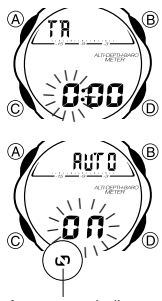
Configuring the Countdown Timer
The following are the settings you should configure before actually using the countdown timer.
- Countdown start time
- Auto-repeat on/off
- Progress beeper on/off

Countdown start time
You can set a countdown start time from 1 minute to 24 hours.

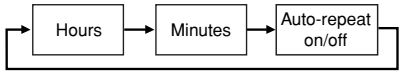
Auto-repeat
Whenever zero is reached, the watch beeps (Auto-repeat timer alarm) and auto-repeat automatically restarts the countdown from the countdown start time you set. Turning off auto-repeat causes the countdown to stop and the countdown start time to appear on the display when the end of the countdown is reached.

Progress Beeper
When the progress beeper is turned on, the watch beeps at minute 10, 5, 4, 3, 2, and 1, of the countdown, and at the second 50, 40, 30, 20, 10, 5, 4, 3, 2, and 1 of the final minute of the countdown.

To set the countdown start time and auto-repeat on/off



1. In the Countdown Timer Mode, hold down Ⓐ until the hour setting of the countdown start time starts to flash, which indicates the setting screen.
2. Press Ⓒ to move the flashing in the sequence shown below to select other settings.



3. Perform the following operations, depending on which setting is currently selected on the display.
   - While the hour or minute setting is flashing, use Ⓓ (+) or Ⓑ (–) to change it.
   - For a 24-hour countdown, set a start time of 0:00.
   - While the auto-repeat setting (On or OFF) is flashing on the display, press Ⓓ to toggle auto-repeat on (On) and off (OFF).
4. Press Ⓐ to exit the setting screen.

- The auto-repeat indicator ( ) appears on the display while auto-repeat is turned on.

To turn the progress beeper on and off

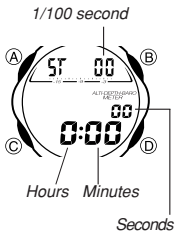
Pressing Ⓑ while the countdown start time is on the display or while a countdown timer operation is in progress in the Countdown Timer Mode toggles progress beeper operation on (♪ displayed) and off (♪ not displayed).

To use the countdown timer

Press Ⓓ while in the Countdown Timer Mode to start the countdown timer.

- When the countdown reaches zero, the alarm sounds for 10 seconds or until you stop it by pressing any button.
- Press Ⓓ while a countdown operation is in progress to pause it. Press Ⓓ again to resume the countdown.
- The countdown timer operation continues even if you exit the Countdown Timer Mode.
- To completely stop a countdown operation, first pause it (by pressing Ⓓ), and then press Ⓑ. This returns the countdown time to its starting value.
- If the countdown timer is running while you are using the Depth Gauge Mode while diving, the alarm will sound when the end of the countdown is reached. However, the following countdown timer beeper operations are disabled during a Depth Gauge Mode dive.
  Auto-repeat timer alarm
  Progress beeper
- Frequent use of auto-repeat and the alarm can run down battery power.

Stopwatch



The stopwatch lets you measure elapsed time, split times, and two finishes.

- The display range of the stopwatch is 23 hours, 59 minutes, 59.99 seconds.
- The stopwatch continues to run, restarting from zero after it reaches its limit, until you stop it.
- The stopwatch measurement operation continues even if you exit the Stopwatch Mode.
- Exiting the Stopwatch Mode while a split time is frozen on the display clears the split time and returns to elapsed time measurement.
- All of the operations in this section are performed in the Stopwatch Mode, which you enter by pressing Ⓒ.

To measure times with the stopwatch

Elapsed Time

Ⓓ **Start** → Ⓓ **Stop** → Ⓓ **Re-start** → Ⓓ **Stop** → Ⓑ **Clear**

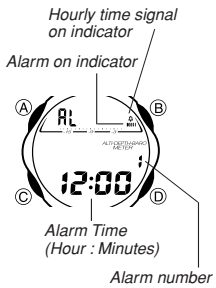
Split Time

Ⓓ **Start** → Ⓑ **Split** (**SPL** displayed) → Ⓑ **Split release** → Ⓓ **Stop** → Ⓑ **Clear**

Two Finishes

Ⓓ **Start** → Ⓑ **Split** (First runner finishes. Display time of first runner.) → Ⓓ **Stop** (Second runner finishes.) → Ⓑ **Split release** (Display time of second runner.) → Ⓑ **Clear**

Alarms

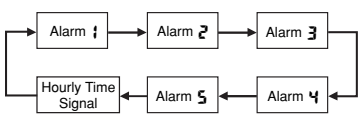


You can set five independent daily alarms. When an alarm is turned on, the alarm tone sounds when the alarm time is reached.
You can also turn on an Hourly Time Signal that causes the watch to beep twice every hour on the hour.

- The alarm number (1 through 5) indicates an alarm screen. :00 is shown for the alarm time when the Hourly Time Signal screen is on the display.
- All of the operations in this section are performed in the Alarm Mode, which you enter by pressing Ⓒ.

To set an alarm time

1. In the Alarm Mode, use Ⓓ to scroll through the alarm screens until the one whose time you want to set is displayed.



2. Hold down Ⓐ until the hour digits of the alarm time start to flash, which indicates the setting screen.
   - This automatically turns on the alarm.
3. Press Ⓒ to move the flashing between the hour and minute settings.
4. While a setting is flashing, use Ⓓ (+) and Ⓑ (–) to change it.
   - When setting the alarm time using the 12-hour format, take care to set the time correctly as a.m. (no indicator) or p.m. (**P** indicator).
5. Press Ⓐ to exit the setting screen.

Alarm Operation

The alarm sounds at the preset time for about 10 seconds (in all modes), or until you stop it by pressing any button.

To test the alarm

In the Alarm Mode, hold down Ⓓ to sound the alarm.

To turn an alarm and the Hourly Time Signal on and off

1. In the Alarm Mode, use Ⓓ to select an alarm or the Hourly Time Signal.
2. When the alarm or the Hourly Time Signal you want to is selected, press Ⓑ 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 in all modes.

Backlight

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.

To turn on the backlight manually

Press Ⓛ in any mode to illuminate the display for about two seconds.

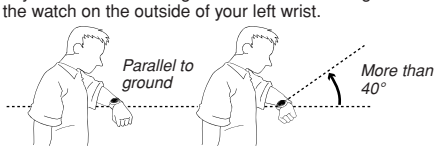
- The above operation turns on the backlight regardless of the current auto light switch setting.

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.

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 turn on.

- Wear the watch on the outside of your left wrist.



Warning!

- **Always make sure you are in a safe place whenever you are reading the display of the watch using the auto light switch. Be especially careful when running or engaged in any other activity that can result in accident or injury. Also take care that sudden illumination by the auto light switch does not surprise or distract others around you.**
- **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

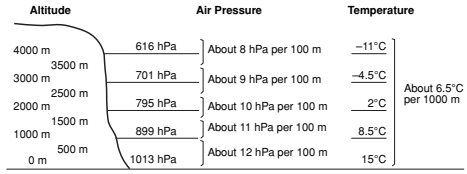
In any mode except while a setting is flashing on the display, hold down Ⓛ for about two seconds to toggle the auto light switch on (displayed) or off (not displayed).

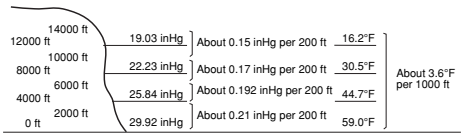
- The auto light switch on indicator ( ) is on the display in all modes while the auto light switch is turned on.
- The auto light switch will remain on for a maximum of about six hours. After that, the auto light switch will turn off automatically in order to conserve battery power.
- The auto light switch is always disabled, regardless of its on/off setting, while the Hand Setting Mode setting screen is on the display.
- The backlight may not light right away if you raise the watch to your face while a barometric pressure or altitude measurement operation is in progress.

Questions & Answers

Question: How does the altimeter work?

Answer: Generally, air pressure and temperature decrease as altitude increases. This watch bases its altitude measurements on International Standard Atmosphere (ISA) values stipulated by the International Civil Aviation Organization (ICAO). These values define relationships between altitude, air pressure, and temperature.

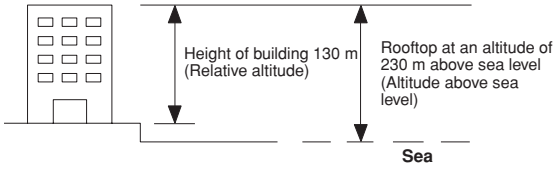




Source: International Civil Aviation Organization

- Note that the following conditions will prevent you from obtaining accurate readings:
  When air pressure changes because of changes in the weather
  Extreme temperature changes
  When the watch itself is subjected to strong impact

There are two standard methods of expressing altitude: Absolute altitude and relative altitude. Absolute altitude expresses an absolute height above sea level. Relative altitude expresses the difference between the height of two different places.



Precautions Concerning Simultaneous Measurement of Altitude and Temperature

Though you can perform altitude and temperature measurements at the same time, you should remember that each of these measurements requires different conditions for best results. With temperature measurement, it is best to remove the watch from your wrist in order to eliminate the effects of body heat. In the case of altitude measurement, on the other hand, it is better to leave the watch on your wrist, because doing so keeps the watch at a constant temperature, which contributes to more accurate altitude measurements.

The following describes what you should do to give priority to either altitude or temperature.

- To give altitude measurement priority, leave the watch on your wrist or in any other location where the temperature of the watch is kept constant.
- To give temperature measurement priority, remove the watch from your wrist and allow it to hang freely from your bag or in another location where it is not exposed to direct sunlight. Note that removing the watch from your wrist can momentarily affect pressure sensor readings.

Question: How does the barometer work?

Answer: Barometric pressure indicates changes in the atmosphere, and by monitoring these changes you can predict the weather with reasonable accuracy. Rising atmospheric pressure indicates good weather, while falling pressure indicates deteriorating weather conditions.

The barometric pressures that you see in the newspaper and on the TV weather report are measurements corrected to values measured at 0 m sea level.

Question: How does the watch calculate depth values?

Answer: Water pressure increases with depth. In the case of sea water (specific gravity=1.025), water pressure increases by 1 ATM (1.03 kg/cm^2) with each 10 meters (33 feet) of depth.

This watch takes advantage of the relationship between pressure and depth using a pressure sensor to measure water pressure, which it then converts to a depth reading.

Question: Is there anything I need to keep in mind when diving at high altitudes or in fresh water?

Answer: The depth reading is automatically reset to “0.0 m (0 ft)” whenever the Depth Gauge Mode is entered, so you can use this watch for skin diving at altitudes. Note, however, that malfunctions occur when skin diving at altitudes greater than approximately 4,000 meters (13,000 ft.). In addition, as this watch bases its calculations on sea water, which has a specific gravity of 1.025, readings will be incorrect during fresh-water skin diving. During fresh-water dives, you must assume that you are approximately 2.5% deeper than the depth shown on the display.

Example: When displayed depth is 5 meters, actual depth is 5 × 1.025 = 5.1 meters.

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 Features

- The watch automatically returns to the Timekeeping Mode if you do not perform any button operation for two or three minutes in the Barometer/Thermometer Mode.
- If you do not perform any button operation while in the Altimeter Mode, the watch automatically returns to the Timekeeping Mode after nine or 10 hours.
- The watch automatically returns to the Timekeeping Mode if a depth measurement operation in the Depth Gauge Mode continues for more than three hours. If there is no depth measurement operation being performed, the watch automatically returns to the Timekeeping Mode if you do not perform any button operation for about one hour in the Depth Gauge Mode.
- If you leave a screen with flashing digits on the display for two or three minutes without performing any operation, the watch automatically exits the setting screen.

Scrolling

The Ⓑ and Ⓓ buttons are used in various modes and setting screens to scroll through data on the display. In most cases, holding down these buttons during a scroll operation scrolls through the data at high speed.

Sensor Malfunction Indicator

Should the pressure sensor malfunction, the message Err will appear on the display and sensor operations will be disabled.

Barometric Pressure Measurement | **Altitude Measurement** | **Depth Measurement**

- If an error occurs during depth measurement, Err appears on the display for about one or two seconds. After that, Err is replaced by ---.-.
- If Err appears while a measurement operation is being performed in the Barometer/Thermometer Mode, Altimeter Mode, or Depth Gauge Mode, restart the measurement. If Err appears on the display again, it can mean there is something wrong with the sensor.

Whenever you have a sensor malfunction, be sure to take the watch to your original dealer or nearest authorized CASIO distributor as soon as possible.

BATTERY and RECOVER Indicators

The **BATTERY** indicator flashes on the display whenever battery power drops below a certain level. All of the following functions are disabled while the **BATTERY** indicator is flashing on the display.

All sensor operations
Backlight
All alarm beepers
Analog hand setting

- While the **BATTERY** indicator is flashing on the display, the indicated barometric pressure and temperature values are the last values measured before battery power went low.
- To avoid problems while diving, it is recommended that you have the battery replaced even before the **BATTERY** indicator appears when you are diving frequently.
- Note that low temperatures decrease battery performance. Frequent use of the backlight when the temperature is very low can cause the **BATTERY** indicator to appear, even though the watch battery is relatively new. Normal battery performance should return when the watch is brought back to normal temperature. If you need to use the backlight frequently when temperature is low, be sure to leave the watch on your wrist so it is warmed by your body heat.

- The **RECOVER** indicator will flash on the display if you use the light or alarms a number of times during a short period. All of the following functions are disabled while the **RECOVER** indicator is flashing on the display.
  All sensor operations
  Backlight
  All alarm beepers
  Analog hand setting
  After some time, battery power will recover and **RECOVER** will disappear, indicating that the above functions are enabled again.

- While the **RECOVER** indicator is flashing on the display, the indicated barometric pressure and temperature values are the last values measured before battery power went low.
- If **RECOVER** starts to flash while a Depth Gauge Mode depth measurement operation is in progress, the measurement operation will continue. Though the elapsed measurement time will be recorded in log memory, maximum depth and water temperature values are not. In this case, `--.-` are displayed in place of the maximum depth and water temperature.

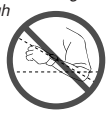
Backlight Precautions

- The electro-luminescent panel that provides illumination loses power after very long use.
- The illumination provided by the backlight may be hard to see when viewed under direct sunlight.
- The backlight automatically turns off whenever an alarm sounds.
- The watch may emit an audible sound whenever the display is illuminated. This is due to vibration of the EL panel used for illumination, and does not indicate malfunction.
- Frequent use of the backlight runs down the battery.
- The backlight is disabled while the watch is taking a depth reading (every three seconds).

Auto light switch precautions

- Wearing the watch on the inside of your wrist, movement of your arm, or vibration of your arm can cause frequent activation of the auto light switch and illumination of the display. To avoid running down the battery, turn off the auto light switch whenever engaging in activities that might cause frequent illumination of the display.

More than 15 degrees too high



- 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.

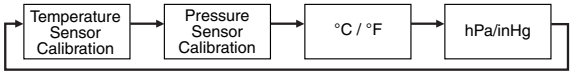
- Static electricity or magnetic force can interfere with proper operation of the auto light switch. If the backlight does not light, try moving the watch back to the starting position (parallel with the ground) and then tilt it back toward you again. If this does not work, drop your arm all the way 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.
- You may notice a very faint clicking sound coming from the watch when it is shaken back and forth. This sound is caused by mechanical operation of the auto light switch, and does not indicate a problem with the watch.

Changing the Barometric Pressure and Temperature Units

Changing the barometric pressure units automatically restarts the barometric pressure history graph.

To change the barometric pressure and temperature units

1. Press Ⓑ to enter the Barometer/Thermometer Mode.
2. Hold down Ⓐ until OFF or - - - - starts to flash in the upper part of the display. This is the setting screen.
   - Wait for at least four or five seconds before advancing to step 3. If you advance to step 3 too soon, your settings will not be configured correctly.
3. After waiting four or five seconds, press Ⓒ to move the flashing in the sequence shown below.



4. Press Ⓒ to move the flashing to the unit setting you want to change (**°C**/**°F** or **hPa**/**inHg**).
5. Use Ⓓ to select the unit you want.
6. Press Ⓐ to return to the Barometer/Thermometer Mode screen.

- If a temperature value is set, - - - - changes to the temperature value after a few seconds.
- The bottom part of the display shows OFF or a barometric pressure value (if set). If a barometric value is set, the display goes blank for four or five seconds, and then the currently set pressure value appears.
- If OFF or a value does not appear in the upper and lower parts of the display, press Ⓐ again to exit the setting screen, and repeat step 2 of this procedure.

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.

To calibrate the temperature sensor

1. Press Ⓑ to enter the Barometer/Thermometer Mode.
2. Hold down Ⓐ until OFF or - - - - starts to flash in the upper part of the display. This is the setting screen.
   - Wait for at least four or five seconds before advancing to step 3. If you advance to step 3 too soon, your settings will not be configured correctly.
3. After waiting four or five seconds, press Ⓓ (+) or Ⓑ (–) to change the displayed temperature by 0.1°C (or 0.2°F).
   - Pressing Ⓓ and Ⓑ at the same time returns to the factory calibration (OFF).
4. Press Ⓐ to return to the Barometer/Thermometer Mode screen.

- If a temperature value is set, - - - - changes to the temperature value after a few seconds.
- The bottom part of the display shows OFF or a barometric pressure value (if set). If a barometric value is set, the display goes blank for four or five seconds, and then the currently set pressure value appears.
- If OFF or a value does not appear in the upper and lower parts of the display, press Ⓐ again to exit the setting screen, and repeat step 2 of this procedure.

Calibrating the Barometric Pressure Sensor

The pressure 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 barometric pressure readings produced by the watch, you can calibrate the sensor to correct the errors.

Important!
Incorrectly calibrating the barometric pressure sensor can result in incorrect readings. Before performing the calibration procedure, compare the readings produced by the watch with those of another reliable and accurate barometer.

To calibrate the pressure sensor

1. Press Ⓑ to enter the Barometer/Thermometer Mode.
2. Hold down Ⓐ until OFF or - - - - starts to flash in the upper part of the display. This is the setting screen.
   - Wait for at least four or five seconds before advancing to step 3. If you advance to step 3 too soon, your settings will not be configured correctly.

- If a temperature value is set, - - - - changes to the temperature value after a few seconds.
- The bottom part of the display shows OFF or a barometric pressure value (if set). If a barometric value is set, the display goes blank for four or five seconds, and then the currently set pressure value appears.
- If OFF or a value does not appear in the upper and lower parts of the display, press Ⓐ again to exit the setting screen, and repeat step 2 of this procedure.

3. After waiting four or five seconds, Ⓒ to move the flashing to the pressure sensor calibration setting.
   - At this time, OFF or the barometric pressure value should be flashing on the display.
   - If OFF or the pressure value does not appear at this time, press Ⓐ to return to the Barometer/Thermometer Mode screen, and perform step 2 again.
4. Press Ⓓ (+) or Ⓑ (–) to change the displayed barometric pressure by 1 hPa (0.05 inHg).
   - Pressing Ⓓ and Ⓑ at the same time returns to the factory calibration (OFF).
5. Press Ⓐ to return to the Barometer/Thermometer Mode screen.

To change the altitude unit

1. Press Ⓓ to enter the Altimeter Mode.
2. Hold down Ⓐ until OFF appears (flashing) or until the display goes blank. This is the setting screen.
   - Wait for four or five seconds before performing step 3, below. If you don't wait, there is the chance of setting value error.
   - If the display went blank in step 2, the current reference value will appear (flashing) on the display after the four or five seconds pass.
   - If OFF or the current reference altitude value does not appear at this time, press Ⓐ to return to the Altimeter Mode screen, and perform step 2 again.
3. Press Ⓒ to move the flashing to the altitude unit setting.
4. Press Ⓓ to select the unit you want (**m** or **ft**).
5. Press Ⓐ to return to the Altimeter Mode screen.

- The altitude unit you select in the Altimeter Mode is also used in the Depth Gauge Mode.

To manually reset the reference depth to 0 meters (feet)

In the Depth Gauge Mode, press Ⓒ and Ⓓ at the same time.
- This resets the reference depth and causes the displayed depth to change to 0 meters (feet).
- Never perform the above operation while submerged.