

# Operation Guide 3047

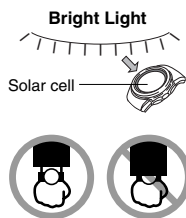
## Getting Acquainted

Congratulations upon your selection of this CASIO watch. To get the most out of your purchase, be sure to read this manual carefully.

### Applications

The built-in sensors of this watch measure direction, 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.

### Keep the watch exposed to bright light

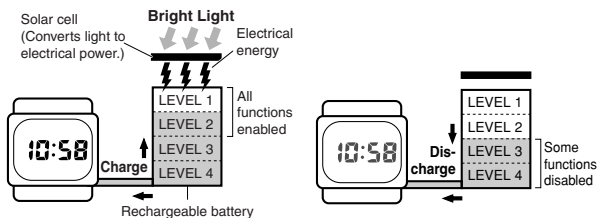


The electricity generated by the solar cell of the watch is stored by a built-in battery. Leaving or using the watch where it is not exposed to light causes the battery to run down. Make sure the watch is exposed to light as much as possible.

- When you are not wearing the watch on your wrist, position the face so it is pointed at a source of bright light.
- You should try to keep the watch outside of your sleeve as much as possible. Charging is reduced significantly if the face is only partially covered.

- The watch continues to operate, even when it is not exposed to light. Leaving the watch in the dark can cause the battery to run down, which will cause some watch functions to be disabled. If the battery goes dead, you will have to re-configure watch settings after recharging. To ensure normal watch operation, be sure to keep it exposed to light as much as possible.

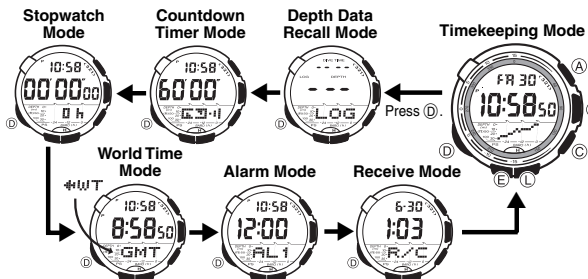
**Battery charges in the light. Battery discharges in the dark.**



- The actual level at which some functions are disabled depends on the watch model.
- Frequent display illumination can run down the battery quickly and require charging. The following guidelines give an idea of the charging time required to recover from a single illumination operation.
  - Approximately five minutes exposure to bright sunlight coming in through a window
  - Approximately 50 minutes exposure to indoor fluorescent lighting
- Be sure to read "Power Supply" for important information you need to know when exposing the watch to bright light.

## General Guide

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



### If the display of the watch is blank...

If the display of the watch is blank, it means that the watch's Power Saving function has turned off the display to conserve power.

- See "Power Saving Function" for more information.

### 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.
- When engaging in mountain climbing or other activities in which losing your way can create a dangerous or life-threatening situation, always be sure to use a second compass to confirm direction readings.
- 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.

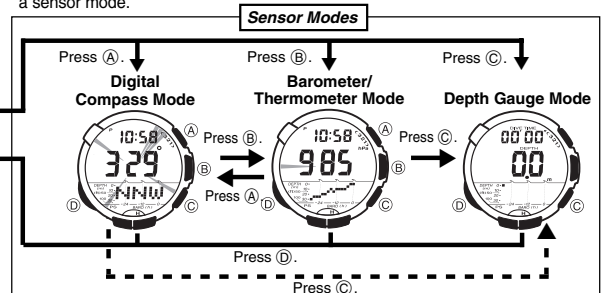
### About This Manual



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



- Pressing **A**, **B**, or **C** while in the Timekeeping Mode directly enters the applicable sensor mode. If you want to go to a sensor mode from the Depth Data Recall, Countdown Timer, Stopwatch, World Time, Alarm, or Receive Mode, go to the Timekeeping Mode first, and then press one of the above buttons to enter a sensor mode.



## Radio-controlled Atomic Timekeeping

This watch receives a time calibration signal and updates its time setting accordingly.

- This watch is designed to pick up the time calibration signal transmitted in Germany (Mainflingen), England (Rugby), and the United States (Fort Collins) and the time calibration signals transmitted in Japan.

### Current Time Setting

This watch adjusts its time setting automatically in accordance with a time calibration signal. You also can perform a manual procedure to set the time and date, when necessary.

- The first thing you should do after purchasing this watch is to specify your Home City (the city where you normally will use the watch). For more information, see "To specify your Home City" below.
- When using the watch outside the areas covered by the time signal transmitters, you will have to adjust the current time setting manually as required. See "Timekeeping" for more information about manual time settings.
- The U.S. time calibration signal can be picked up by the watch while in North America. \* The term "North America" in this manual refers to the area that consists of Canada, the continental United States, and Mexico.

### To specify your Home City



- In the Timekeeping Mode, hold down **(E)** until the city code starts to flash, which indicates the setting screen.
- Press **(C)** (east) and **(D)** (west) to select the city code you want to use as your Home City.  
**LON** : London  
**PAR, BER** : Paris, Berlin, Milan, Rome, Amsterdam, Hamburg, Frankfurt, Vienna, Barcelona, Madrid

- ATH** : Athens  
**TYO, SEL** : Tokyo, Seoul  
**NYC** : New York, Detroit, Miami, Boston, Montreal  
**CHI** : Chicago, Houston, Dallas/Fort Worth, New Orleans, Winnipeg, Mexico City  
**DEN** : Denver, El Paso, Edmonton, Culiacan  
**LAX** : Los Angeles, San Francisco, Las Vegas, Seattle/Tacoma, Vancouver, Tijuana

- Press **(E)** to exit the setting screen.
- Normally, your watch should show the correct time as soon as you select your Home City code. If it does not, it should adjust automatically after the next auto receive operation (in the middle of the night). You also can perform manual receive or you can set the time manually.
- The watch will receive the time calibration signal automatically from the applicable transmitter (in the middle of the night) and update its settings accordingly. For information about the relationship between city codes and transmitters, see "Transmitters".
- See the maps under "Reception Ranges" for information about the reception ranges of the watch.
- You can disable time signal reception, if you want. See "To turn auto receive on and off" for more information.

### Time Calibration Signal Reception

There are two different methods you can use to receive the time calibration signal: auto receive and manual receive.

#### Auto Receive

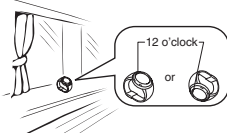
With auto receive, the watch receives the time calibration signal automatically up to six times a day. When any auto receive is successful, the remaining auto receive operations are not performed. For more information, see "About Auto Receive".

#### Manual Receive

Manual receive lets you start a time calibration receive operation with the press of a button. For more information, see "To perform manual receive".

#### Important!

- When getting ready to receive the time calibration signal, position the watch as shown in the nearby illustration, with its 12 o'clock side facing towards a window. Make sure there are no metal objects nearby.



- The watch should not be facing the wrong way.
- Proper signal reception can be difficult or even impossible under the conditions listed below.

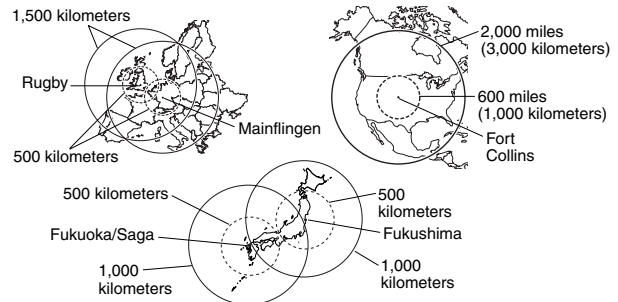


- Inside or among buildings
- Inside a vehicle
- Near household appliances, office equipment, or a mobile phone
- Near a construction site, airport, or other sources of electrical noise
- Near high-tension power lines
- Among or behind mountains

- Signal reception normally is better at night than during the day.
- Time calibration signal reception takes from two to seven minutes, but in some cases it can take as long as 14 minutes. Take care that you do not perform any button operations or move the watch during this time.
- The time calibration signal the watch will attempt to pick up depends on its current Home City code setting as shown below.

Home City Code	Transmitter	Frequency
LON, PAR, BER, ATH	Rugby (England)	60.0 kHz
	Mainflingen (Germany)	77.5 kHz
TYO, SEL	Fukushima (Japan)	40.0 kHz
	Fukuoka/Saga (Japan)	60.0 kHz
NYC, CHI, DEN, LAX	Fort Collins, Colorado (the United States)	60.0 kHz

### Reception Ranges



- Signal reception may not be possible at the distances noted below during certain times of the year or day. Radio interference may also cause problems with reception.  
 Mainflingen (Germany) or Rugby (England) transmitters: 500 kilometers (310 miles)  
 Fort Collins (United States) transmitter: 600 miles (1,000 kilometers)  
 Fukushima or Fukuoka/Saga (Japan) transmitters: 500 kilometers (310 miles)
- Even when the watch is within the reception range of the transmitter, signal reception will be impossible if the signal is blocked by mountains or other geological formations between the watch and signal source.
- Signal reception is affected by weather, atmospheric conditions, and seasonal changes.
- See the information under "Signal Reception Troubleshooting" if you experience problems with time calibration signal reception.

### About Auto Receive

The watch receives the time calibration signal automatically up to six times a day. When any auto receive is successful, the remaining auto receive operations are not performed. The reception schedule (calibration times) depends on your currently selected Home City, and whether standard time or Daylight Saving Time is selected for your Home City.

Your Home City		Auto Receive Start Times					
		1	2	3	4	5	6
LON	Standard Time	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am	Midnight
	Daylight Saving Time	2:00 am	3:00 am	4:00 am	5:00 am	Midnight	1:00 am next day
PAR, BER	Standard Time	2:00 am	3:00 am	4:00 am	5:00 am	Midnight	1:00 am next day
	Daylight Saving Time	3:00 am	4:00 am	5:00 am	Midnight	1:00 am next day	2:00 am next day
ATH	Standard Time	3:00 am	4:00 am	5:00 am	Midnight	1:00 am next day	2:00 am next day
	Daylight Saving Time	4:00 am	5:00 am	Midnight	1:00 am next day	2:00 am next day	3:00 am next day
TYO, SEL	Standard Time	Midnight	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am
NYC, CHI, DEN, LAX	Standard Time and Daylight Saving Time	Midnight	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am

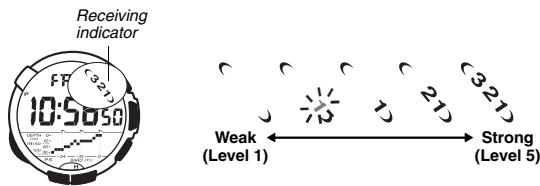
### Note

- When a calibration time is reached, the watch will receive the calibration signal only if it is in either the Timekeeping Mode or World Time Mode. Reception is not performed if a calibration time is reached while you are configuring settings.
- Auto receive of the calibration signal is designed to be performed early in the morning, while you sleep (provided that the Timekeeping Mode time is set correctly). Before going to bed for the night, remove the watch from your wrist, and put it in a location where it can receive the signal easily.

- The watch receives the calibration signal for two to seven minutes everyday when the time in the Timekeeping Mode reaches each of the calibration times. Do not perform any button operation within seven minutes before or after any one of the calibration times. Doing so can interfere with correct calibration.
- Remember that reception of the calibration signal depends on the current time in the Timekeeping Mode. The receive operation will be performed whenever the display shows any one of the calibration times, regardless of whether or not the displayed time actually is the correct time.

### About the Receiving Indicator

The receiving indicator shows the strength of the calibration signal being received. For best reception, be sure to keep the watch in a location where signal strength is strongest. The receiving indicator is displayed while an auto or manual receive operation is in progress.

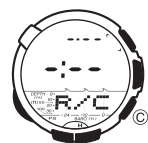


- Even in an area where signal strength is strong, it takes about 10 seconds for signal reception to stabilize enough for the receiving indicator to indicate signal strength.
- Use the receiving indicator as a guide for checking signal strength and for finding the best location for the watch during signal receive operations.
- Following reception of the time calibration signal and calibration of the watch's time setting, the Level 5 receiving indicator will remain on the display in all modes. The Level 5 receiving indicator will not be displayed if signal reception was unsuccessful or after you adjust the current time setting manually.
- The Level 5 receiving indicator is displayed only when the watch is able to receive both time and date data successfully. It does not appear when only time data is received.
- The Level 5 receiving indicator indicates that at least one of the auto calibration signal receive operations was successful. Note, however, that the Level 5 receiving indicator disappears from the display each day when the first auto receive operation of the day is performed.

### To perform manual receive



If there was a previously successful reception



If no reception was successful

1. Enter the Receive Mode.
  2. Place the watch on a stable surface so its 12 o'clock side is facing towards a window.
  3. Hold down **(C)** for about two seconds until **R/C** starts to flash on the display.
- Time calibration signal reception takes from two to seven minutes. Take care that you do not perform any button operations or move the watch during this time.
  - If the receive operation is successful, the reception date and time appear on the display, along with the **GET** indicator. The watch will enter the Receive Mode if you press **(C)** or if you do not perform any button operation for about one or two minutes.
  - If the current reception fails but a previous reception was successful, the display shows the previous reception's date and time, and the **ERR** indicator. -- indicates that none of the reception operations were successful. The watch will enter the Receive Mode without changing the time setting if you press **(C)** or if you do not perform any button operation for about three minutes.

#### Note

- To interrupt a receive operation and return to the Receive Mode, press **(C)**.

### To turn auto receive on and off



1. Enter the Receive Mode.
  2. In the Receive Mode, hold down **(E)** until the current auto receive setting (**OFF** or **OFF**) starts to flash. This is the setting screen.
    - Note that the setting screen will not appear if the currently selected Home City is one that does not support time calibration reception.
  3. Press **(C)** to toggle auto receive on (**ON**) and off (**OFF**).
  4. Press **(E)** to exit the setting screen.
- For information about city codes that support signal receive, see "To specify your Home City".

### To check the latest signal reception results



- Enter the Receive Mode.
- When receive is successful, the display shows the time and date that receive was successful.
- -- indicates that none of the reception operations were successful.
- To return to the Timekeeping Mode, press **(D)**.

### Signal Reception Troubleshooting

Check the following points whenever you experience problems with signal reception.

Problem	Probable Cause	What you should do
Cannot perform manual receive.	<ul style="list-style-type: none"> <li>• The watch is not in the Timekeeping, World Time, or Receive Mode.</li> <li>• Your current Home City is not one of the following: <b>LON, PAR, BER, BER, ATH, TYO, SEL, NYC, CHI, DEN, or LAX</b></li> </ul>	<ul style="list-style-type: none"> <li>• Enter the Timekeeping, World Time, or Receive Mode and try again.</li> <li>• Select <b>LON, PAR, BER, ATH, TYO, SEL, NYC, CHI, DEN, or LAX</b> as your Home City.</li> </ul>
Auto receive is turned on, but the Level 5 receiving indicator does not appear on the display.	<ul style="list-style-type: none"> <li>• You changed the time setting manually.</li> <li>• The DST setting was changed manually in the World Time Mode.</li> <li>• You pressed a button while signal receive was in progress.</li> <li>• Even if receive is successful, the Level 5 receiving indicator disappears from the display each day when the first auto receive operation of the day is performed.</li> <li>• Time data (hour, minutes, seconds) only was received during the last receive operation. The Level 5 receiving indicator appears only when time data and date data (year, month, day) are both received.</li> </ul>	<ul style="list-style-type: none"> <li>• Perform manual signal receive or wait until the next auto signal receive operation is performed.</li> <li>• Check to make sure the watch is in a location where it can receive the signal.</li> </ul>
Time setting is incorrect following signal reception.	<ul style="list-style-type: none"> <li>• If the time is one hour off, the DST setting may be incorrect.</li> <li>• The Home City code setting is not correct for the area where you are using the watch.</li> </ul>	<ul style="list-style-type: none"> <li>• Change the DST setting to Auto DST.</li> <li>• Select the correct Home City code.</li> </ul>

- For further information, see "Important!" under "Time Calibration Signal Reception" and "Radio-controlled Atomic Timekeeping Precautions".

### Digital Compass

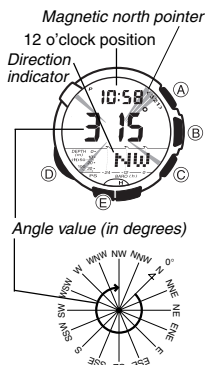
A built-in bearing sensor detects magnetic north and indicates one of 16 directions on the display. Direction readings are performed in the Digital Compass Mode.

- You can calibrate the bearing sensor if you suspect the direction reading is incorrect.

#### To enter and exit the Digital Compass Mode

1. While in the Timekeeping or Barometer/Thermometer Mode, press **(A)** to enter the Digital Compass Mode.
  - At this time, the watch starts a Digital Compass operation immediately. After about two seconds, letters appear on the display to indicate the direction that the 12 o'clock position of the watch is pointing.
2. Press **(D)** to return to the Timekeeping Mode.

## To take a direction reading

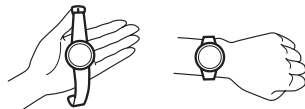


1. Enter the Digital Compass Mode.
2. Place the watch on a flat surface or, if you are wearing the watch, make sure that your wrist is horizontal (in relation to the horizon).
3. Point the 12 o'clock position of the watch in the direction you want to measure.
4. Press (A) to start a Digital Compass measurement operation.
  - After about two seconds, the direction that the 12 o'clock position of the watch is pointing appears on the display.
  - Also, four pointers appear to indicate magnetic north, south, east, and west.
  - After the first reading is obtained, the watch continues to take direction readings automatically each second, for up to 20 seconds.

- During measurement, the watch displays an angle value, a direction indicator, and four direction pointers, which change dynamically when the watch is moved. After measurement is complete, the angle value, direction indicator, and four direction pointers are frozen in accordance with the last measurement.

### Note

- Note that taking a measurement while the watch is not horizontal (in relation to the horizon) can result in large measurement error.



- The margin of error for the angle value is  $\pm 11$  degrees. If the indicated direction is northwest (NW) and 315 degrees, for example, the actual direction can be anywhere from 304 to 326 degrees.
- Any ongoing direction measurement operation is paused temporarily while the watch is performing an alert operation (daily alarm, Hourly Time Signal, countdown timer alarm) or while the watch illuminates the display (by pressing (D)). The measurement operation resumes for its remaining duration after the operation that caused it to pause is finished.
- The following table shows the meanings of each of the direction abbreviations that appear on the display.

Direction	Meaning	Direction	Meaning	Direction	Meaning	Direction	Meaning
N	North	NNE	North-northeast	NE	Northeast	ENE	East-northeast
E	East	ESE	East-southeast	SE	Southeast	SSE	South-southeast
S	South	SSW	South-southwest	SW	Southwest	WSW	West-southwest
W	West	WNW	West-northwest	NW	Northwest	NNW	North-northwest

- See "Digital Compass Precautions" for other important information about taking direction readings.

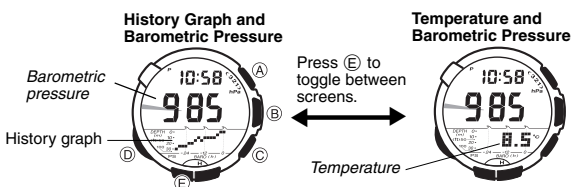
## Barometer/Thermometer

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 (B) in the Timekeeping or Digital Compass Mode enters the Barometer/Thermometer Mode and starts taking barometric pressure and temperature measurements automatically.



- 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  $-10.0^{\circ}\text{C}$  to  $60.0^{\circ}\text{C}$  ( $14.0^{\circ}\text{F}$  to  $140.0^{\circ}\text{F}$ ). The temperature value will be displayed again as soon as the measured temperature is within the allowable range.
- In some areas, barometric pressure is expressed in millibars (mb) instead of hecto-pascals (hPa). It really makes no difference, because  $1\text{hPa} = 1\text{mb}$ .
- You can select either hectopascals (hPa) or inchesHg (inHg) as the display unit for the measured barometric pressure, and Celsius ( $^{\circ}\text{C}$ ) or Fahrenheit ( $^{\circ}\text{F}$ ) as the display unit for the measured temperature value. See "To specify barometric pressure and temperature units".
- See "Barometer and Thermometer Precautions" for important precautions.

### Barometric Pressure Graph

Barometric pressure indicates changes in the atmosphere. By monitoring these changes you can predict the weather with reasonable accuracy. In every mode except for the Depth Gauge Mode, your watch takes barometric pressure readings every two hours (at the top of each even-numbered hour). Measurement results are used to produce barometric pressure graph and barometric pressure differential pointer readings.

The barometric pressure graph shows readings of previous measurements for up to 30 hours. The horizontal axis of the graph represents time, with each dot standing for two hours. The rightmost dot (flashing) represents the most recent reading. The vertical axis of the graph represents barometric pressure, with each dot standing for the relative difference between its reading and that of the dots next to it. Each dot represents 1hPa.

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



A rising graph generally means improving weather.

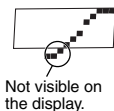


A falling graph generally means deteriorating weather.

Note that if there are sudden changes in weather or temperature, the graph line of past measurements may run off the top or bottom of the display. The entire graph will become visible once barometric conditions stabilize.

The following conditions cause the barometric pressure measurement to be skipped, with the corresponding point on the barometric pressure graph being left blank.

- Barometric reading that is out of range (600 hPa/mb to 1,100 hPa/mb or 17.70 inHg to 32.45 inHg)
- Sensor malfunction

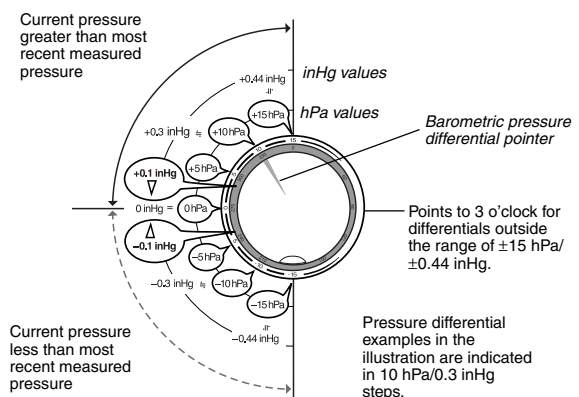


Not visible on the display.

### Barometric Pressure Differential Pointer

This pointer indicates the relative difference between the most recent barometric pressure reading indicated on the barometric pressure graph, and the current barometric pressure value displayed in the Barometer/Thermometer Mode.

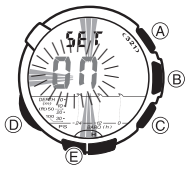
- Pressure differential is indicated in the range of  $\pm 15$  hPa, in 1-hPa units.
- The barometric pressure differential pointer is not displayed when the displayed current barometric value is outside of the allowable measurement range (600 to 1,100 hPa).
- Barometric pressure is calculated and displayed using hPa as the standard. The barometric pressure differential also can be read in inHg units as shown in the illustration.



Current pressure greater than most recent measured pressure

Current pressure less than most recent measured pressure

### To turn display of the barometric pressure differential pointer on and off



1. In the Barometer/Thermometer Mode, hold down (E) until **SE T** appears in the upper display area.
2. Release (E), and wait for four or five more seconds until either **FFF** or the current reference temperature value (if set) starts to flash. This is the setting screen.
3. Press (D) twice to display the pointer on/off setting screen.
4. Press (C) to toggle display of the barometric pressure differential pointer on (**00** displayed) and off (**FFF** displayed).
5. When the setting is the way you want, press (E) to exit the setting screen.

### 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.
- You also can perform a barometric pressure and temperature measurement at any time by pressing (B) in the Barometer/Thermometer Mode.

### Depth Gauge

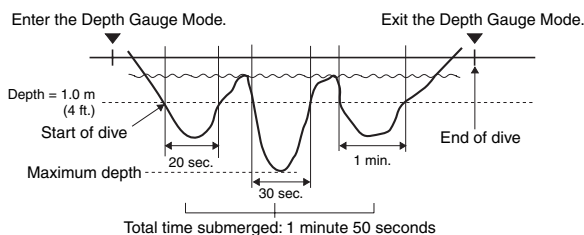
The pressure sensor of the watch also can be used to perform underwater depth measurement while skin diving or snorkeling. Depth readings are taken every three seconds, and displayed as a value up to 30 meters (98 feet). You can store the data of your last dive in log memory, including total time submerged, 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, and even take direction readings while in the Depth Gauge Mode.

#### Important!

- This watch is intended for use up to skin diving and snorkeling. Never use this watch 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 manual 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.

#### What is "a dive"?

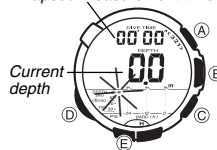
A dive starts when you pass a depth of one meter (about four feet) while the watch is in the Depth Gauge Mode. The dive ends when you are on the surface and exit the Depth Gauge Mode. A dive does not end if you surface but do not exit the Depth Gauge Mode.



- 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

#### Elapsed measurement time



1. Before beginning a dive, in the Timekeeping, Digital Compass, or Barometer/Thermometer Mode, press (C) to enter the Depth Gauge Mode.
  - It can take up to four or five seconds until **00** (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 (D) 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 elapsed time is displayed in minutes and seconds for the first hour. After the first hour, it switches to hours and minutes.
  - Pressing (E) while your current depth is less than one meter will toggle the display between the graph and the temperature screens.
  - If the watch stays at a depth of less than one meter and you do not perform any operation for about one hour, the watch will revert to the Timekeeping Mode automatically.
  - The watch will not exit the Depth Gauge Mode if any value other than **00** (or **0**) is displayed for the depth when you press (D). If **00** (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 reset the reference depth to 0 meters (feet) manually".
  - You can select either meters (m) or feet (ft) as the display unit for depth. For details, see "To specify the depth unit".
  - See "Depth Data Recall Mode" for information about viewing dive data.

#### 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.
  - CHG (indicating a weak battery)
  - RECOV (indicating a weak battery)
  - E.F.F. (indicating sensor malfunction)
- Make sure that **00** (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 performed properly.
- Take care when skin diving/snorkeling near rocks or coral to avoid scratching the watch.

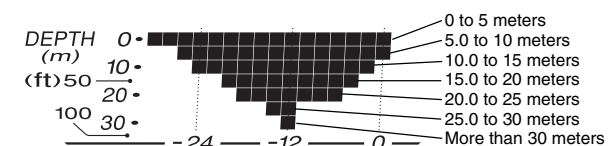
#### After Skin Diving/Snorkeling

- 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, clean inside the gaps in the band occasionally 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 Graph

Changes in depth are displayed in a graph in the Depth Gauge Mode. The contents of the graph are updated every three seconds whenever you enter the Depth Gauge Mode.

- The horizontal axis of the graph represents 3-second time increments, and the bar on the far right is the latest measurement result.
- The vertical axis represents depth values, in 5-meter steps.



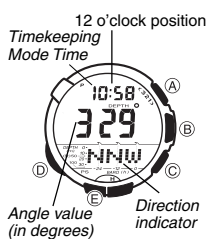
- The graph always indicates depths in meters (m), even if you have feet (ft) selected as the depth unit.
- If you press a button while a measurement operation is in progress, the measurement operation is stopped, and the graph is not updated.
- Manually resetting the reference depth to 0 meters will change the pressure reference value. Because of this, all of the graph's data will be cleared.
- If an error occurs while a measurement operation is in progress, the graph bar for that measurement is left blank.
- Pressing (E) while at a depth of less than one meter will toggle between the depth graph and the temperature screen.

## Depth Gauge Mode Precautions

- After you enter the Depth Gauge Mode, the watch takes a reference pressure reading automatically 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 reset the reference depth to 0 meters (feet) manually" for more information.
- Depth values are displayed in units of 0.1 meter (or 1 foot).
- **0.0** (or **0'**) appears on the display 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 **(D)** 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 switch to the Timekeeping Mode automatically 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.

## To take a direction reading in the Depth Gauge Mode

- **Never operate the buttons of the watch while underwater.**



1. In the Depth Gauge Mode, place the watch on a flat surface, or if you are wearing the watch, make sure that your wrist is horizontal (in relation to the horizon).
  2. Point the 12 o'clock position of the watch in the direction you want to read.
  3. While the elapsed measurement time/current depth screen is displayed, press **(A)** to start direction reading operation.
- After about two seconds, the direction that the 12 o'clock position of the watch is pointing appears on the display.
  - About five or six seconds after you display the Digital Compass screen, the watch will return to the Depth Gauge screen automatically.
  - The watch will also return to the Depth Gauge screen if you press **(A)** again.

## Depth Data Recall Mode

You can use the Depth Data Recall Mode to view log data that was recorded in the Depth Gauge Mode. There is enough memory to store up to 40 log entries, plus one maximum depth record. Each log entry 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.

**Dive Date (Month - Day)**

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

The following information is stored in the maximum depth record when a new maximum is attained.

**Total Time Submerged**

**Maximum depth value:** Maximum depth value in memory

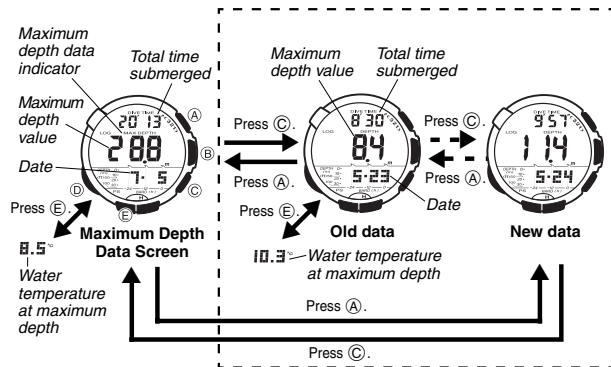
**Dive Date (Month - Day)**

**Water temperature at maximum depth**

- If the depth that is attained is the same as the current maximum depth value, the older data takes priority and the maximum depth record is not updated.
- The maximum depth record is not cleared even if you delete the 40 log data entries.
- Perform the following steps to view the log data that is currently stored in memory.

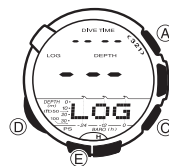
## To view log data

1. Enter the Depth Data Recall Mode.
  - This will display the maximum depth record screen.
  - Pressing **(E)** will toggle between the date screen and the temperature screen.
2. Press **(A)** to display data from the newest to the oldest, or **(C)** to display from oldest to newest.



- The maximum total dive time that can be measured by the watch for a single dive is three hours. If the total elapsed time for a single dive exceeds three hours, the upper part of the display will remain at 3:00, and the maximum depth value in the center of the display will show **---**.
- The maximum depth that can be measured by the watch is 30 meters (98 feet). If the maximum depth reached during a dive exceeds 30 meters, the maximum depth value in the center of the display will show **dEEP**.

## To delete log memory data

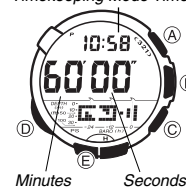


All log entries deleted

- The following steps delete all the entries in log memory.
- You cannot delete individual log entries.
- 1. Enter the Depth Data Recall Mode.
- 2. Hold down **(B)** for about three seconds. **CLF** will appear on the display and then start flashing if you keep **(B)** depressed.
  - If you release **(B)** before three seconds pass, the watch will not enter the data delete mode.
- 3. Release **(B)** after **CLF** starts to flash.
- **CLF** will continue to flash for about two seconds, as the log entries are deleted. After that, **---** will appear on the display.

## Countdown Timer

Timekeeping Mode Time



You can set a countdown timer start time in the range of one minute to 60 minutes. 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 **(D)**.

## Configuring the Countdown Timer

The following are the settings you should configure before actually using the countdown timer.

- Countdown start time and reset time
- Auto-repeat on/off
- Progress beeper on/off

### Countdown start time

You can set a countdown start time from one minute to 60 minutes.

### Auto-repeat

Whenever zero is reached, the watch beeps (auto-repeat timer alarm) and auto-repeat restarts the countdown automatically 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. Auto-repeat will repeat up to 10 times.

### Progress Beeper

The progress beeper actually includes two beepers: a reset time beeper and a reset period progress beeper.

- The reset time beeper and reset period progress beeper sound only while the progress beeper is turned on.

### Reset Time Beeper

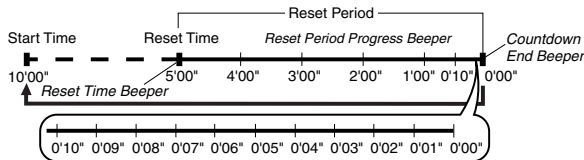
The reset time beeper is similar to the countdown end beeper. When the progress beeper is turned on, the watch beeps each second of the final 10 seconds before the countdown reaches the reset time.

### Reset Period Progress Beeper

The reset period is the portion of the countdown between the reset time and zero. When the progress beeper is turned on, the watch emits four short beeps at the top of each minute during the reset period, and 10 seconds before the end of the countdown.

### Countdown Timer Examples

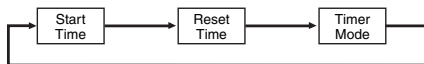
Countdown start time: 10 minutes; Reset time: 5 minutes; Timer mode: Auto-repeat; Progress beeper: On



### To configure the countdown timer



- While the countdown start time is on the display in the Countdown Timer Mode, hold down (E) until the countdown start time setting starts to flash, which indicates the setting screen.
  - If the countdown start time is not displayed, use the procedure under "To use the countdown timer" to display it.
- Press (D) to move the flashing in the sequence shown below to select other settings.



- When the setting you want to change is flashing, use (C) and (A) to change it as described below.

Setting	Screen	Button Operations
Start Time	SE T 60:00	Use (C) (+) and (A) (-) to change the setting. • You can set a start time in the range of 1 to 60 minutes in 1-minute increments.
Reset Time	RS T 05:00	Use (C) (+) and (A) (-) to change the setting. • You can set a reset time in the range of 1 to 5 minutes in 1-minute increments.
Timer Mode	SE T 05:00 [REPEAT]	Press (C) to toggle between the auto-repeat mode ([REPEAT]) and the elapsed time mode ([ELAPSED]). • An auto-repeat indicator ([REPEAT]) appears when the auto-repeat mode is selected.

- Press (A) to exit the setting screen.
  - The reset time setting must be less than the countdown start time setting.

### To turn the progress beeper on and off



Pressing (E) 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 (C) while in the Countdown Timer Mode to start the countdown timer.
- Press (C) while a countdown operation is in progress to pause it. Press (C) again to resume the countdown.
  - The countdown timer operation continues even if you exit the Countdown Timer Mode.
  - To stop a countdown operation completely, first pause it (by pressing (C)), and then press (A). This returns the countdown time to its starting value.
  - You also can stop the timer and return it to the starting value by pressing (A) while a timer operation is in progress.
  - The following describes what happens if you enter the Depth Gauge Mode for diving while a countdown operation is in progress.
    - Auto-repeat off:** The alarm sounds when the end of the countdown is reached. The progress beeper does not sound.
    - Auto-repeat on:** Auto-repeat timer alarm does not sound when the end of a countdown is reached. The progress beeper does not sound.
  - Frequent use of auto-repeat and the alarm runs down the battery.

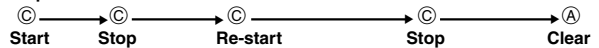
## Stopwatch



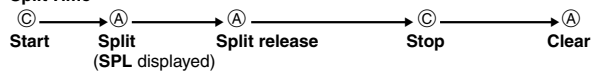
- The stopwatch lets you measure elapsed time, split times, and two finishes.
- The display range of the stopwatch is 99 hours, 59 minutes, 59.99 seconds.
  - The stopwatch continues to run, restarting from zero after it reaches its limit, until you stop it.
  - The stopwatch measurement operation continues 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 (D).

### To measure times with the stopwatch

#### Elapsed Time



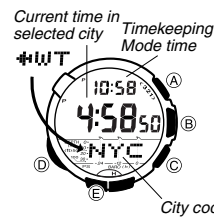
#### Split Time



#### Two Finishes



## World Time



- The World Time Mode shows you the current time in 30 cities (29 time zones) around the world.
- If the current time shown for a city is wrong, check your Home City time settings and make the necessary changes.
  - All of the operations in this section are performed in the World Time Mode, which you enter by pressing (D).

### To view the time in another city

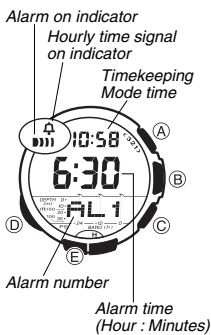
- While in the World Time Mode, press (C) to scroll eastward through the city codes (time zones) or (A) to scroll westward.
- For full information on city codes, see "City Code Table".

### To toggle a city code time between Standard Time and Daylight Saving Time



- In the World Time Mode, use (A) and (C) to display the city code (time zone) whose Standard Time/Daylight Saving Time setting you want to change.
- Hold down (E) to toggle Daylight Saving Time (DST indicator displayed) and Standard Time (DST indicator not displayed).
- Note that you cannot switch between Standard Time and Daylight Saving Time while GMT is selected as the city code.
- The DST indicator will appear whenever you display a city code for which Daylight Saving Time is turned on.
- Note that the DST/Standard Time setting affects only the currently displayed city code. Other city codes are not affected.

## Alarms



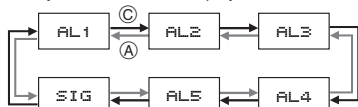
You can set five independent daily alarms. When an alarm is turned on, the alarm tone sounds when the alarm time is reached.

- You also can turn on an Hourly Time Signal, which will cause the watch to beep twice every hour on the hour.
- The alarm number (AL1 through AL5) indicates an alarm screen. SIG is shown for the alarm number when the Hourly Time Signal screen is on the display.
  - When you enter the Alarm Mode, the data you were viewing when you last exited the mode appears first.
  - All of the operations in this section are performed in the Alarm Mode, which you enter by pressing (D).

### To set an alarm time



- In the Alarm Mode, use (C) or (A) to scroll through the alarm screens until the one whose time you want to set is displayed.



- Hold down (E) until the hour digits of the alarm time start to flash, which indicates the setting screen.
  - This automatically turns on the alarm.
- Press (D) to move the flashing between the hour and minute settings.
- While a setting is flashing, use (C) (+) and (A) (-) 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).
- Press (E) 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.

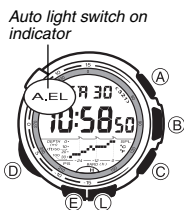
### To test the alarm

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

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

- In the Alarm Mode, use (C) or (A) to select an alarm or the Hourly Time Signal.
- When the alarm or the Hourly Time Signal you want is selected, press (B) 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.

## Illumination



The watch has an EL (electro-luminescent) panel that causes the entire display to glow for easy reading in the dark. The watch's auto light switch illuminates the display automatically 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 "Illumination Precautions" for other important information.

### To turn on illumination manually

Press (L) in any mode to illuminate the display for about one second.

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

## About the Auto Light Switch

Turning on the auto light switch causes illumination to turn on, whenever you position your wrist as described below in any mode.

Note that this watch features a "Full Auto EL Light", so the auto light switch operates only when available light is below a certain level. It does not illuminate the display under bright light.

- The auto light switch is always disabled, regardless of its on/off setting, when any one of the following conditions exists.
  - While an alarm is sounding
  - During sensor measurement
  - While a bearing sensor calibration operation is being performed in the Digital Compass Mode
  - While a receive operation is in progress in the Receive Mode

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

- Wear the watch on the outside of your 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 startle 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

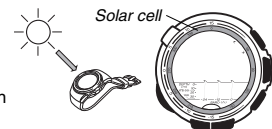
In the Timekeeping Mode, hold down (L) for about three seconds to toggle the auto light switch on (A, EL displayed) or off (A, EL not displayed).

- The auto light switch on indicator (A, EL) is on the display in all modes while the auto light switch is turned on.
- The auto light switch turns off automatically whenever battery power drops to Level 4.
- Watch illumination may not turn on right away if you raise the watch to your face while a barometric pressure operation is in progress.

## Power Supply

This watch is equipped with a solar cell and a rechargeable battery (secondary battery) that is charged by the electrical power produced by the solar cell. The illustration shown below shows how you should position the watch for charging.

**Example:** Orient the watch so its face is pointing at a light source.



- The illustration shows how to position a watch with a resin band.
- Note that charging efficiency drops when any part of the solar cell is blocked by clothing, etc.
- You should try to keep the watch outside of your sleeve as much as possible. Charging is reduced significantly if the face is only partially covered.



### Important!

- Storing the watch for long periods in an area where there is no light or wearing it in such a way that it is blocked from exposure to light can cause rechargeable battery power to run down. Be sure that the watch is exposed to bright light whenever possible.
- This watch uses a special rechargeable battery to store power produced by the solar cell, so regular battery replacement is not required. However, after very long use, the rechargeable battery may lose its ability to achieve a full charge. If you experience problems getting the special rechargeable battery to charge fully, contact your dealer or CASIO distributor about having it replaced.
- Never try to remove or replace the watch's special battery yourself. Use of the wrong type of battery can damage the watch.
- All data stored in memory is deleted, and the current time and all other settings return to their initial factory defaults whenever battery power drops to Level 5 and when you have the battery replaced.
- Turn on the watch's Power Saving function and keep it in an area normally exposed to bright light when storing it for long periods. This helps to keep the rechargeable battery from going dead.

## Battery Power Indicator and Recover Indicator

The battery power indicator on the display shows you the current status of the rechargeable battery's power.



Battery power indicator

Level	Battery Power Indicator	Function Status
1	<b>H</b>	All functions enabled.
2	<b>M</b>	All functions enabled.
3	<b>LOW</b> (Charge Soon Alert)	Illumination, beeper tone, receive operation, and sensors disabled.
4	<b>CHG</b> (Charge Soon Alert)	All functions disabled.
5		All functions disabled. All settings revert to factory defaults.

- The flashing **LOW** indicator at Level 3 and the **CHG** indicator flashing at Level 4 tell you that battery power is very low, and that exposure to bright light for charging is required as soon as possible.
- At Level 5, all functions are disabled and settings return to their initial factory defaults. Once the battery reaches Level 2 (**M**) after falling to Level 4, reconfigure the current time, date, and other settings.
- Display indicators reappear as soon as the battery is charged from Level 5 to Level 2.
- Leaving the watch in direct sunlight or some other very strong light source can cause the battery power indicator to show a reading temporarily that is higher than the actual battery level. The correct battery power indicator should appear after a few minutes.



Recover indicator

- If you use illumination or the alarm a number of times during a short period, **RECOV** appears on the display and the illumination, alarm, hourly time signal, and sensor operations become disabled until battery power recovers. After some time, battery power will recover and **RECOV** will disappear, indicating that the above functions are enabled again.

- Even if battery power is at Level 1 or Level 2, the Digital Compass Mode, Barometer/Thermometer Mode, or Depth Gauge Mode sensor may be disabled if there is not enough voltage available to power it sufficiently. This is indicated by **RECOV** on the display. If battery power goes low while a measurement operation is in progress, the value produced by the last successful measurement operation remains on the display. Attempting a measurement operation while battery power is too low will cause the display to go blank. Sensor operation should resume when battery voltage returns to normal levels.
- If **RECOV** starts to flash on the display when you enter the Depth Gauge Mode (before starting measurement), the log data date will not be recorded if you start measurement after **RECOV** disappears from the display. In this case, exit and re-enter the Depth Gauge Mode, and then start the measurement again.
- If **RECOV** 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, - - - is displayed in place of the maximum depth and water temperature. After you surface from your dive, hold down **D** for about three seconds to exit the Depth Gauge Mode to clear **RECOV**.
- If **RECOV** appears frequently, it probably means that remaining battery power is low. Leave the watch in bright light to allow it to charge.

## Charging Precautions

Certain charging conditions can cause the watch to become very hot. Avoid leaving the watch in the areas described below whenever charging its rechargeable battery.

Also note that allowing the watch to become very hot can cause its liquid crystal display to black out. The appearance of the LCD should become normal again when the watch returns to a lower temperature.

### Warning!

Leaving the watch in bright light to charge its rechargeable battery can cause it to become quite hot. Take care when handling the watch to avoid burn injury. The watch can become particularly hot when exposed to the following conditions for long periods.

- On the dashboard of a car parked in direct sunlight
- Too close to an incandescent lamp
- Under direct sunlight

## Charging Guide

After a full charge, timekeeping remains enabled for up to about five months.

- The following table shows the amount of time the watch needs to be exposed to light each day in order to generate enough power for normal daily operations.

Exposure Level (Brightness)	Approximate Exposure Time
Outdoor Sunlight (50,000 lux)	5 minutes
Sunlight Through a Window (10,000 lux)	24 minutes
Daylight Through a Window on a Cloudy Day (5,000 lux)	48 minutes
Indoor Fluorescent Lighting (500 lux)	8 hours

- Since these are the specs, we can include all the technical details.
  - 6 minutes of time calibration reception per day
  - Display on 18 hours per day, sleep state 6 hours per day
  - 1 illumination operation (1.5 seconds) per day
  - 10 seconds of alarm operation per day
  - 1 direction reading (20 seconds continuous measurement) per day
  - 30 seconds of Barometric/Thermometer Mode measurements per day
- Stable operation is promoted by frequent exposure to light.

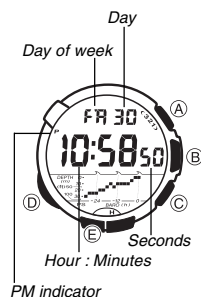
## Recovery Times

The table below shows the amount exposure that is required to take the battery from one level to the next.

Exposure Level (Brightness)	Approximate Exposure Time				
	Level 5	Level 4	Level 3	Level 2	Level 1
Outdoor Sunlight (50,000 lux)		2 hours		13 hours	6 hours
Sunlight Through a Window (10,000 lux)		4 hours		66 hours	30 hours
Daylight Through a Window on a Cloudy Day (5,000 lux)		8 hours		134 hours	60 hours
Indoor Fluorescent Lighting (500 lux)		83 hours		-----	-----

- The above exposure time values are all for reference only. Actual required exposure times depend on lighting conditions.

## Timekeeping



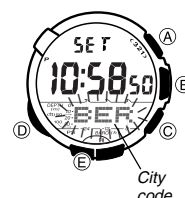
Use the Timekeeping Mode to view the current time and date. You also need to enter the Timekeeping Mode to configure timekeeping settings, as well as the following settings.

- Power saving on/off ("To turn Power Saving on and off")
- Temperature unit ("To specify barometric pressure and temperature units")
- Depth unit ("To specify the depth unit")
- Barometric pressure unit ("To specify barometric pressure and temperature units")

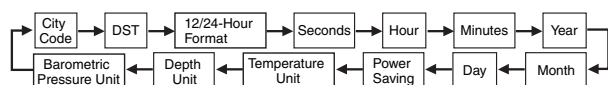
## Setting the Time and Date Manually

Make sure you select your Home City code before you change the current time and date settings. World Time Mode times are all displayed in accordance with the Timekeeping Mode settings. Because of this, World Time Mode times will not be correct if you do not select the proper Home City code before setting the time and date in the Timekeeping Mode.

### To set the time and date manually



- In the Timekeeping Mode, hold down **E** until the city code starts to flash, which indicates the setting screen.
- Press **D** to change the flashing contents in the sequence shown below to select other settings.



3. When the setting you want to change is flashing, use (A) and/or (C) to change it as described below.

Screen:	To do this:	Do this:
BER	Change the city code	Use (C) (east) and (A) (west).
AT	Cycle between auto DST (AT), Standard Time (OFF), and Daylight Saving Time (ON)	Press (C).
12H	Toggle between 12-hour (12H) and 24-hour (24H) timekeeping	Press (C).
50	Reset the seconds to 00	Press (C).
10:58	Change the hour or minutes	Use (C) (+) and (A) (-).
2006	Change the year, month or day	Use (C) (+) and (A) (-).
ON PS	Toggle Power Saving on (ON) and off (OFF)	Press (C).

- See "City Code Table" for a complete list of available city codes.
  - Auto DST (AT) can be selected only while LON, PAR, BER, ATH, NYC, CHI, DEN, LAX, ANC, HNL, TYO, SEL, or HKG is selected as the Home City code. For more information, see "Daylight Saving Time (DST)" below.
  - See the other sections of this manual for information about configuring Temperature Unit, Depth Unit, and Barometric Pressure Unit settings.
4. Press (E) 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 2099. The day of the week is calculated automatically in accordance with the date you set.
- The watch's built-in full automatic calendar makes allowances for different month lengths and leap years automatically. Once you set the date, there should be no reason to change it except when battery power drops to Level 5.

#### Daylight Saving Time (DST)

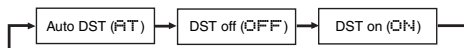
Daylight Saving Time (summer time) advances the time setting by one hour from Standard Time. Remember that not all countries or even local areas use Daylight Saving Time.

The time calibration signals transmitted from Mainflingen (Germany), Rugby (England), or Fort Collins (the United States) include both Standard Time and DST data. When the Auto DST setting is turned on, the watch switches between Standard Time and DST (summer time) automatically in accordance with the signals.

- The time calibration signals transmitted from Fukushima and Fukuoka/Saga (Japan) do not include summer time data.
- The default DST setting is Auto DST (AT) whenever you select LON, PAR, BER, ATH, NYC, CHI, DEN, LAX, ANC, HNL, or TYO as your Home City code.
- If you experience problems receiving the time calibration signal in your area, it probably is best to switch between Standard Time and Daylight Saving Time (summer time) manually.

#### To change the Daylight Saving Time (summer time) setting

1. In the Timekeeping Mode, hold down (E) until the city code starts to flash, which indicates the setting screen.
2. Press (D) and the DST setting screen appears.
3. Use (C) to cycle through the DST settings in the sequence shown below.



4. When the setting you want is selected, press (E) to exit the setting screen.
- The DST indicator appears to indicate that Daylight Saving Time is turned on.
  - If you change your Home City to one that is within the same transmitter area, the current DST setting will be retained. If you change to a city that is outside your current transmitter area, DST will be turned off automatically.
    - Transmitter area city codes
    - HKG, SEL, and TYO
    - LAX, DEN, CHI, NYC, ANC, and HNL
    - LON, PAR, BER, and ATH
    - All other city codes

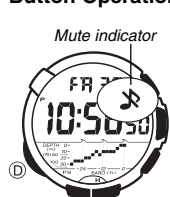
## Reference

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 will return to the Timekeeping Mode automatically if you leave it in the Depth Data Recall, Alarm, Receive, Digital Compass, or Barometer/Thermometer Mode for about two or three minutes without performing any button operation.
- The watch returns to the Timekeeping Mode automatically if a depth measurement operation (indicated by ongoing elapsed time measurement in the upper part of the display) in the Depth Gauge Mode continues for more than three hours. If there is no depth measurement operation being performed (indicated by 00 or 0 in the center part of the display and no ongoing elapsed time measurement in the upper part of the display), the watch returns to the Timekeeping Mode automatically 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 exits the setting screen automatically.

#### Button Operation Tone



The button operation tone sounds any time you press one of the watch's buttons. You can turn the button operation tone on or off as desired.

- Even if you turn off the button operation tone, the alarm, Hourly Time Signal, and Countdown Timer Mode alarm all operate normally.

#### To turn the button operation tone on and off

In any mode (except when a setting screen is on the display), hold down (D) to toggle the button operation tone on (M not displayed) and off (M displayed).

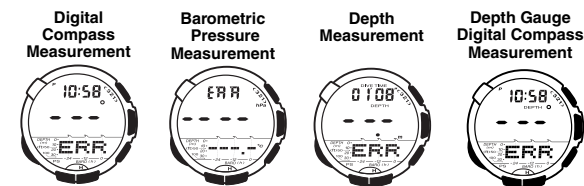
- Since the (D) button is also the mode change button, holding it down to turn the button operation on or off also causes the watch's current mode to change.
- You cannot turn button operation tones on or off while a depth measurement operation is in progress (at depths greater than one meter).
- The M indicator is displayed in all modes when the button operation tone is turned off.

#### Scrolling

The (C) and (A) buttons are used on the setting screen 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

Subjecting the watch to strong impact can cause its sensor to malfunction or improper contact of internal circuitry. When this happens, the message ERR will appear on the display and sensor operations will be disabled.



- If ERR appears during digital compass or barometric pressure measurement, it will disappear from the display as soon as measurement is successful again.
- During depth measurement, elapsed dive time measurement continues even if ERR is on the display. After you surface from your dive, hold down (D) for about three seconds to exit the Depth Gauge Mode. The ERR message should no longer be on the display when you re-enter the Depth Gauge Mode.
- If ERR appears during Depth Gauge digital compass measurement, wait five or six seconds (or press (A)) to return to the depth measurement screen. This should clear the ERR message from the display.
- If the ERR message keeps appearing during measurement, it could mean there is a problem with the applicable 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.

## Power Saving Function

When turned on, the Power Saving function puts the watch into a sleep state automatically whenever it is left for a certain period in an area where it is dark. The table below shows how watch functions are affected by the Power Saving function.

Elapsed Time in Dark	Display	Operation
60 to 70 minutes	Blank, with PS flashing	Display is off, but all functions are enabled.
6 or 7 days	Blank, with PS not flashing	All functions are disabled, but timekeeping is maintained.

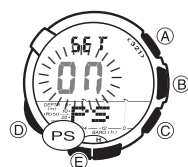
- Wearing the watch inside the sleeve of clothing can cause it to enter the sleep state.
- The watch will not enter the sleep state while the digital time is between 6:00 AM and 9:59 PM. If the watch is already in the sleep state when the digital time reaches 6:00 AM, however, it will remain in the sleep state.
- The watch will not enter the sleep state while it is in the Digital Compass, Barometer/Thermometer, Depth Gauge, Receive, Countdown Timer, or Stopwatch Mode. When the watch is left in any mode besides the Countdown Timer and Stopwatch Mode, the watch will return to the Timekeeping Mode automatically after a specific amount of time. Then if left in the dark for the elapsed time indicated in the table above, the watch will enter the sleep state.

### To recover from the sleep state

Perform any one of the following operations.

- Move the watch to a well-lit area. It can take up to two seconds for the display to turn on.
- Press any button.
- Angle the watch towards your face for reading.

### To turn Power Saving on and off



- In the Timekeeping Mode, hold down (E) until the city code starts to flash, which indicates the setting screen.
- Press (D) nine times until the Power Saving on/off screen appears.
- Press (C) to toggle Power Saving on (PS) and off (PS).
- Press (E) to exit the setting screen.
  - The Power Saving on indicator (PS) is on the display in all modes while the Power Saving is turned on.

## Radio-controlled Atomic Timekeeping Precautions

- Strong electrostatic charge can result in the wrong time being set.
- The time calibration signal bounces off the ionosphere. Because of this, such factors as changes in the reflectivity of the ionosphere, as well as movement of the ionosphere to higher altitudes due to seasonal atmospheric changes or the time of day may change the reception range of the signal and make reception temporarily impossible.
- Even if the time calibration signal is received properly, certain conditions can cause the time setting to be off by up to one second.
- The current time setting in accordance with the time calibration signal takes priority over any time settings you make manually.
- The watch is designed to update the date and day of the week automatically for the period January 1, 2001 to December 31, 2099. Setting of the date by the time calibration signal cannot be performed starting from January 1, 2100.
- This watch can receive signals that differentiate between leap years and non-leap years.
- Though this watch is designed to receive both time data (hour, minutes, seconds) and date data (year, month, day), certain signal conditions can limit reception to time data only.
- If you are in an area where proper time calibration signal reception is impossible, the watch keeps time within  $\pm 15$  seconds a month at normal temperature.
- If you have problems with proper time calibration signal reception or if the time setting is wrong after signal reception, check your current city code, and DST (summer time), and auto receive settings.
- The Home City setting reverts to the initial default of EEF (Berlin) whenever the battery power level drops to Level 5 or when you have the rechargeable battery replaced. If this happens, change the Home City to the setting you want.

### Transmitters

The time calibration signal received by this watch depends on the currently selected Home City code.

- When a U.S. time zone is selected, the watch receives the time calibration signal transmitted from the United States (Fort Collins).
- When a Japanese time zone is selected, the watch receives the time calibration signal transmitted from the Japan (Fukushima and Fukuoka/Saga).
- When a European time zone is selected, the watch receives the time calibration signals transmitted from Germany (Mainflingen) and England (Rugby). The following tables show the reception priority for the European signals.

### When PAR, BER, or ATH is selected as the Home City code:

In this case:	The watch does this:
The first signal search operation after the Home City code has been changed	1. Checks the Mainflingen signal first. 2. If the Mainflingen signal cannot be received, checks the Rugby signal.
The second and subsequent signal searches	1. Checks the signal of the transmitter of the first receive operation (Rugby or Mainflingen). 2. If the checked signal cannot be received, checks the other signal.

### When LON is selected as the Home City code:

In this case:	The watch does this:
The first signal search operation after the Home City code has been changed	1. Checks the Rugby signal first. 2. If the Rugby signal cannot be received, checks the Mainflingen signal.
The second and subsequent signal searches	1. Checks the signal of the transmitter of the first receive operation (Rugby or Mainflingen). 2. If the checked signal cannot be received, checks the other signal.

## Timekeeping

- The year can be set in the range of 2000 to 2099.
- The watch's built-in full automatic calendar 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 or when battery power drops to Level 5.
- The current time for all city codes in the Timekeeping Mode is calculated in accordance with the Greenwich Mean Time (GMT) differential of each zone, based on your Home City time setting.
- GMT differential is calculated by this watch based on Universal Time Coordinated (UTC\*) data.
  - \*UTC is the world-wide scientific standard of timekeeping. It is based upon carefully maintained atomic (cesium) clocks that keep time accurately to within microseconds. Leap seconds are added or subtracted as necessary to keep UTC in sync with the Earth's rotation. The reference point for UTC is Greenwich, England.

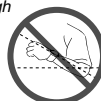
## Illumination Precautions

- The electro-luminescent panel that provides illumination loses power after very long use.
- Illumination may be hard to see when viewed under direct sunlight.
- Illumination turns off automatically 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 illumination runs down the battery.
- Illumination is disabled while the watch is taking a depth reading (every three seconds).

### Auto light switch precautions

- The auto light switch is turned off automatically whenever battery power is at Level 4.
- 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.
- Note that wearing the watch under your sleeve while the auto light switch is turned on can cause frequent illumination of the display and can run down the battery.

More than 15 degrees too high



- Illumination may not turn on 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.
- Illumination turns off in about one second, 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 illumination does not turn on, 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, illumination may not turn on until about one second after you turn the face of the watch towards you. This does not necessarily indicate malfunction of the auto light switch.
- 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.

## Digital Compass Precautions

This watch features a built-in magnetic bearing sensor that detects terrestrial magnetism. This means that north indicated by this watch is magnetic north, which is somewhat different from true polar north. The magnetic north pole is located in northern Canada, while the magnetic south pole is in southern Australia. Note that the difference between magnetic north and true north as measured with all magnetic compasses tends to be greater as one gets closer to either of the magnetic poles. You should also remember that some maps indicate true north (instead of magnetic north), and so you should make allowances when using such maps with this watch.

### Location

- Taking a direction reading when you are near a source of strong magnetism can cause large errors in readings. Because of this, you should avoid taking direction readings while in the vicinity of the following types of objects: permanent magnets (magnetic necklaces, etc.), concentrations of metal (metal doors, lockers, etc.), high tension wires, aerial wires, household appliances (TVs, personal computers, washing machines, freezers, etc.)
- Accurate direction readings are impossible while in a train, boat, air plane, etc.
- Accurate readings are also impossible indoors, especially inside ferro-concrete structures. This is because the metal framework of such structures picks up magnetism from appliances, etc.

### Storage

- The precision of the bearing sensor may deteriorate if the watch becomes magnetized. Because of this, you should be sure to store the watch away from magnets or any other sources of strong magnetism, including: permanent magnets (magnetic necklaces, etc.) and household appliances (TVs, personal computers, washing machines, freezers, etc.)
- Whenever you suspect that the watch may have become magnetized, perform one of the calibration procedures under "Calibrating the Bearing Sensor".

## Calibrating the Bearing Sensor

Whenever you suspect that direction readings produced by the watch are wrong, you should calibrate it. You can use either one of two calibration procedures: *bidirectional calibration* or *northerly calibration*.

Use bidirectional calibration when you want to take readings within an area exposed to magnetic force. This type of calibration should be used if the watch becomes magnetized for any reason.

With northerly calibration, you "teach" the watch which way is north (which you have to determine with another compass or some other means). You could use this calibration procedure, for example, to set the watch to indicate true north instead of magnetic north.

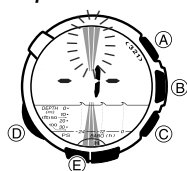
### Important!

- If you want to perform both bidirectional and northerly calibration, be sure to perform bidirectional calibration first, and then perform northerly calibration. This is necessary because bidirectional calibration cancels any previously set northerly calibration setting.
- The more correctly you perform bidirectional calibration, the better the accuracy of the bearing sensor readouts. You should perform bidirectional calibration whenever you change environments where you use the bearing sensor, and whenever you feel that the bearing sensor is producing incorrect readings.

### Precautions about bidirectional calibration

- You can use any two opposing directions for bidirectional calibration. You must, however, make sure that they are 180 degrees opposite each other. Remember that if you perform the procedure incorrectly, you will get wrong bearing sensor readings.
- Make sure that you do not move the watch while calibration of either direction is in progress.
- You should perform bidirectional calibration in an environment that is the same as that where you plan to be taking direction readings. If you plan to take direction readings in an open field, for example, calibrate in an open field.

### To perform bidirectional calibration



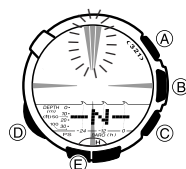
1. Enter the Digital Compass Mode.
2. Hold down (E) until - 1- appears on the display, which indicates the setting screen.
  - At this time, the magnetic north pointer flashes at the 12 o'clock position to indicate that the watch is ready to calibrate the first direction.

3. Place the watch on a level surface facing any direction you want, and press (A) to calibrate the first direction.
  - --- is shown on the display while calibration is being performed. 0:00 appears, - 2- appears in the center part of the display, and the magnetic north pointer flashes at the 6 o'clock position when calibration of the first direction is complete. This means that the watch is ready for calibration of the second direction.
4. Rotate the watch 180 degrees.

5. Press (A) again to calibrate the second direction.

- --- is shown on the display while calibration is being performed. When calibration is complete, 0:00 appears and then the Digital Compass Mode screen (showing the angle value) appears.
- If --- appears and then changes to E:F:F (error) on the calibration screen, it means that there is something wrong with the sensor. The E:F:F message will disappear after about one second. Try performing the calibration operation again. If E:F:F keeps appearing, contact your original dealer or nearest authorized CASIO distributor to have the watch checked.

### To perform northerly calibration



1. While in the Digital Compass Mode, hold down (E) until - 1- appears on the display, which indicates the setting screen.
2. Press (D) to start the northerly calibration procedure.
  - At this time, - 1- (north) appears on the display.

3. Place the watch on a level surface, and position it so that its 12 o'clock position points north (as measured with another compass).
4. Press (A) to start the calibration operation.
  - ----- is shown on the display while calibration is being performed. When calibration is complete, 0:00 appears and then the Digital Compass Mode screen (with 0° indicated as the angle value) appears.
  - If ----- appears and then changes to E:F:F (error) on the calibration screen, it means that there is something wrong with the sensor. About one second after the E:F:F message appears, - 1- will reappear. Try performing the calibration operation again. If E:F:F keeps appearing, contact your original dealer or nearest authorized CASIO distributor to have the watch checked.

## 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.

## Calibrating the Temperature Sensor

The temperature sensor of this watch is calibrated at the factory before shipment, and further adjustment normally is 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. Enter the Barometer/Thermometer Mode.
2. Hold down (E) until SET appears in the upper display area.
3. Release (E). After about three or four seconds, either 0:00 or a temperature calibration value (if one is set) will appear in the lower part of the display. This is the setting screen.

4. Wait four or five seconds until either 0:00 or a barometric pressure calibration value (if there is one set) appears in the center part of the display.
5. After waiting four or five seconds, press (C) (+) or (A) (-) to change the displayed temperature by 0.1°C (or 0.2°F).
  - Pressing (C) and (A) at the same time returns to the factory calibration (0:00).
6. Press (E) to exit the setting screen.

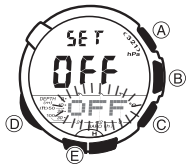
## Calibrating the Barometric Pressure Sensor

The pressure sensor of this watch is calibrated at the factory before shipment and further adjustment normally is 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

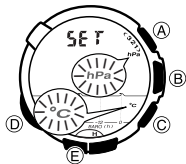


1. Enter the Barometer/Thermometer Mode.
2. Hold down (E) until SET appears in the upper display area.
3. Release (E). After about three or four seconds, either OFF or a temperature calibration value (if one is set) will appear in the lower part of the display. This is the setting screen.
4. Wait four or five seconds until either OFF or a barometric pressure calibration value (if there is one set) appears in the center part of the display.
5. After waiting four or five seconds, press (D) 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.



6. Press (C) (+) or (A) (-) to change the displayed barometric pressure by 1 hPa (0.05 inHg).
  - Pressing (C) and (A) at the same time returns to the factory calibration (OFF).
7. Press (E) to exit the setting screen.

### To specify barometric pressure and temperature units



1. Enter the Timekeeping Mode.
2. Hold down (E) until the city code starts to flash, which indicates the setting screen.
3. Use (D) to select either the temperature unit or barometric pressure unit setting.
  - See step 2 under "To set the time and date manually" for information about how to scroll through setting screens.

4. When the setting you want to change is flashing, press (C) to toggle between the available settings.
  - Temperature Units: Fahrenheit (°F) or Celsius (°C)
  - Barometric Pressure Units: inchesHg (inHg) or Hectopascals (hPa)
5. After the settings are the way you want, press (E) to exit the setting screen.

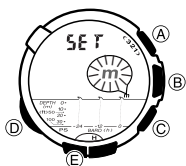
### To reset the reference depth to 0 meters (feet) manually

In the Depth Gauge Mode, press (C) and (D) at the same time.



- Important!**
- This resets the reference depth and causes the displayed depth to change to 0 meters (feet).
  - Never perform the above operation while submerged.

### To specify the depth unit



1. Enter the Timekeeping Mode.
2. Hold down (E) until the city code starts to flash, which indicates the setting screen.
3. Press (D) 11 times to select the depth unit setting.
  - See step 2 under "To set the time and date manually" for information about how to scroll through setting screens.
4. Press (C) to toggle between meters (m) and feet (ft).
5. After the setting is the way you want, press (E) to exit the setting screen.

### City Code Table

City Code	City	GMT Differential	Other major cities in same time zone
-11		-11.0	Pago Pago
HNL	Honolulu	-10.0	Papeete
ANC	Anchorage	-09.0	Nome
LAX	Los Angeles	-08.0	San Francisco, Las Vegas, Vancouver, Seattle/Tacoma, Dawson City, Tijuana
DEN	Denver	-07.0	El Paso, Edmonton, Culiacan
CHI	Chicago	-06.0	Houston, Dallas/Fort Worth, New Orleans, Mexico City, Winnipeg
NYC	New York	-05.0	Montreal, Detroit, Miami, Boston, Panama City, Havana, Lima, Bogota
CCS	Caracas	-04.0	La Paz, Santiago, Port Of Spain
RIO	Rio De Janeiro	-03.0	Sao Paulo, Buenos Aires, Brasilia, Montevideo
-02		-02.0	
-01		-01.0	Praia
GMT		+00.0	Dublin, Lisbon, Casablanca, Dakar, Abidjan
LON	London		
PAR	Paris	+01.0	Milan, Rome, Madrid, Amsterdam, Algiers, Hamburg, Frankfurt, Vienna, Stockholm
BER	Berlin		
ATH	Athens		Helsinki, Istanbul, Beirut, Damascus, Cape Town
CAI	Cairo	+02.0	
JRS	Jerusalem		
JED	Jeddah	+03.0	Kuwait, Riyadh, Aden, Addis Ababa, Nairobi, Moscow
THR	Tehran	+03.5	Shiraz
DXB	Dubai	+04.0	Abu Dhabi, Muscat
KBL	Kabul	+04.5	
KHI	Karachi	+05.0	Male
DEL	Delhi	+05.5	Mumbai, Kolkata
DAC	Dhaka	+06.0	Colombo
RGN	Yangon	+06.5	
BKK	Bangkok	+07.0	Jakarta, Phnom Penh, Hanoi, Vientiane
HKG	Hong Kong	+08.0	Singapore, Kuala Lumpur, Beijing, Taipei, Manila, Perth, Ulaanbaatar
SEL	Seoul	+09.0	Pyongyang
TYO	Tokyo		
ADL	Adelaide	+09.5	Darwin
SYD	Sydney	+10.0	Melbourne, Guam, Rabaul
NOU	Noumea	+11.0	Port Vila
WLG	Wellington	+12.0	Christchurch, Nadi, Nauru Island

•Based on data as of December 2005.