

# Operation Guide 2825

CASIO®

## Getting Acquainted

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

### Expose the watch to bright light to charge its battery before using it.

You can use this watch even as its battery is being charged by exposure to bright light.

- Be sure to read "Battery" of this manual for important information you need to know when exposing the watch to bright light.

## 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.

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

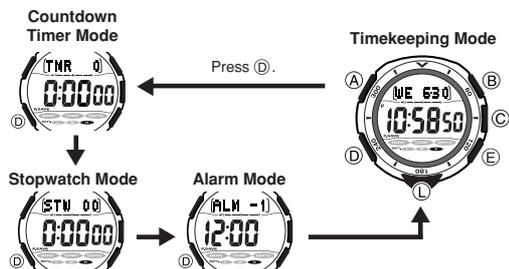


If the **P.SAVE** indicator is on the display (either flashing or steady), it means that the display is blank because the watch's Power Saving function has turned off the display to conserve power. Power Saving automatically turns off the display and enters a sleep state whenever the watch is left for a certain period where it is dark.

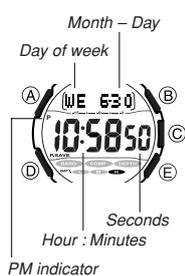
- The initial factory default setting is Power Saving on.
- The watch recovers from the sleep state if you move it to a well-lit area,\* if you press any button, or if you angle the watch towards your face for reading.
- \* It can take up to two seconds for the display to turn on.
- See "Power Saving Function" for more information.

## 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.



## Timekeeping

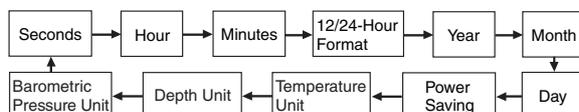


Use the Timekeeping Mode to view the current time and date. You also need to enter the Timekeeping Mode to configure timekeeping settings, as well as the following settings.

- Display illumination duration ("To specify the illumination duration")
- 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")

### To set the time and date

1. In the Timekeeping Mode, hold down **A** until the seconds start to flash, which indicates the setting screen.
2. Press **D** to cycle through the setting items in the sequence shown below, and display the one you want to configure.



### 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

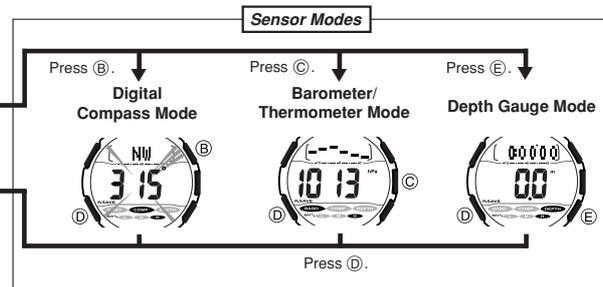


(Light)



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

- Pressing **B**, **C**, or **E** while in the Timekeeping Mode directly enters the applicable sensor mode. To enter a sensor mode from the Countdown Timer, Stopwatch, or Alarm Mode, first enter the Timekeeping Mode and then press the applicable button.



- The following steps explain how to configure timekeeping settings only. See the other sections of this manual for information about configuring the display illumination duration, Power Saving, Temperature Unit, Depth Unit, and Barometric Pressure Unit settings.
3. When the timekeeping setting you want to change is flashing, use **E** and/or **B** to change it as described below.

Screen	To do this:	Do this:
✦ 630	Reset the seconds to 00	Press <b>E</b> .
10:5850	Change the hour or minutes	Use <b>E</b> (+) and <b>B</b> (-).
12H	Toggle between 12-hour (12H) and 24-hour (24H) timekeeping	Press <b>E</b> .
04 630	Change the year, month, or day	Press <b>E</b> (+) and <b>B</b> (-).

4. After the settings are the way you want, press **A** to exit the setting screen.

### Note

- Resetting the seconds to 00 while the current count is in the range of 30 to 59 causes the minutes to be increased by 1. In the range of 00 to 29, the seconds are reset to 00 without changing the minutes.
- With the 12-hour format, the **P** (PM) indicator appears on the display for times in the range of noon to 11:59 p.m. and no indicator appears for times in the range of midnight to 11:59 a.m.

- With the 24-hour format, times are displayed in the range of 0:00 to 23:59, without any indicator.
- The 12-hour/24-hour timekeeping format you select in the Timekeeping Mode is applied in all modes.
- The year can be set in the range of 2000 to 2039. The day of the week is calculated automatically in accordance with the date you set.
- The watch's built-in full automatic calendar automatically makes allowances for different month lengths and leap years. Once you set the date, there should be no reason to change it except when battery power drops to Level 4.

## Digital Compass

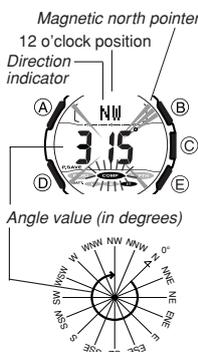
A built-in bearing sensor detects magnetic north and indicates one of 16 directions on the display. Direction readings are performed in the Digital Compass Mode.

- 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 (B) to enter the Digital Compass Mode.
  - At this time, the watch immediately starts a Digital Compass operation. 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

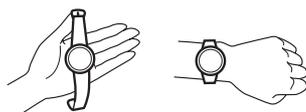


1. Enter the Digital Compass Mode.
2. Place the watch on a flat surface or, if you are wearing the watch, make sure that your wrist is horizontal (in relation to the horizon).
3. Point the 12 o'clock position of the watch in the direction you want to measure.
4. Press (B) to start a Digital Compass measurement 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.
- The COMP indicator flashes on the display while a measurement is in progress.

### 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 temporarily paused while the watch is performing an alert operation (daily alarm, Hourly Time Signal, countdown timer alarm) or while the watch's backlight is turned on (by pressing (L)). 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



- You can adjust the rotary direction bezel so that the  $\blacktriangledown$  is aligned with the magnetic north pointer. This aligns all of the direction angle markings on the bezel with their correct directions.
- See "Digital Compass Precautions" for other important information about taking direction readings.

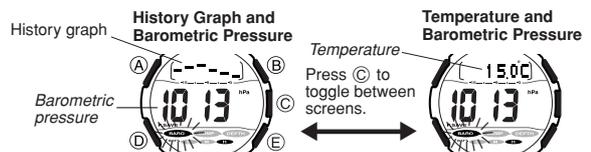
## Barometer/Thermometer

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

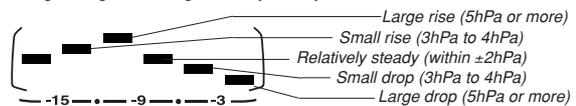
Pressing (C) in the the Timekeeping or Digital Compass Mode enters the Barometer/Thermometer Mode and automatically starts taking barometric pressure and temperature measurements.



- It can take up to four or five seconds for the barometric pressure reading to appear after you enter the Barometer/Thermometer Mode.
- Barometric pressure is displayed in units of 1 hPa (or 0.05 inHg).
- The displayed barometric pressure value changes to ---- hPa (or inHg) if a measured barometric pressure falls outside the range of 600 hPa to 1100 hPa (17.70 inHg to 32.45 inHg). The barometric pressure value will be displayed again as soon as the measured barometric pressure is within the allowable range.
- Temperature is displayed in units of 0.1 °C (or 0.2 °F).
- The displayed temperature value changes to ---- °C (or °F) if a measured temperature falls outside the range of -10.0 °C to 60.0 °C (14.0 °F to 140.0 °F). The temperature value will be displayed again as soon as the measured temperature is within the allowable range.
- In some areas, barometric pressure is expressed in millibars (mb) instead of hecto-pascals (hPa). It really makes no difference, because 1 hPa = 1 mb.
- You can select either hectopascals (hPa) or inchesHg (inHg) as the display unit for the measured barometric pressure, and Celsius (°C) or Fahrenheit (°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 History Graph

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



- Though you can configure the watch to display barometric pressure in units of hPa or inHg, the history graph displays changes in hPa units only.
- If a measurement operation cannot be performed by the watch due to sensor malfunction, low battery power, or some other reason, the value produced by next successful barometric pressure measurement is compared with the value of the last successful measurement and plotted on the history graph accordingly.
- Note that barometric pressure measurement is not performed while the watch is in the Depth Gauge Mode. The value produced by the next successful barometric pressure measurement is compared with the value of the last successful measurement and plotted on the history graph accordingly.

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

A rising graph generally means improving weather.

A falling graph generally means deteriorating weather.

## To specify barometric pressure and temperature units



1. Enter the Timekeeping Mode.
2. Hold down (A) until the seconds start 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" for information about how to scroll through setting screens.

4. When the setting you want to change is flashing, press (E) 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 (A) to exit the setting screen.
- Changing the barometric pressure unit automatically restarts the barometric pressure history graph.

## About Barometric and Temperature Measurements

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

## Barometer and Thermometer Precautions

- The pressure sensor built into this watch measures changes in air pressure, which you can then apply to your own weather predictions. It is not intended for use as a precision instrument in official weather prediction or reporting applications.
- Sudden temperature changes can affect pressure sensor readings.
- Temperature measurements are affected by your body temperature (while you are wearing the watch), direct sunlight, and moisture. To achieve a more accurate temperature measurement, remove the watch from your wrist, place it in a well ventilated location out of direct sunlight, and wipe all moisture from the case. It takes approximately 20 to 30 minutes for the case of the watch to reach the actual surrounding temperature.

## Depth Gauge

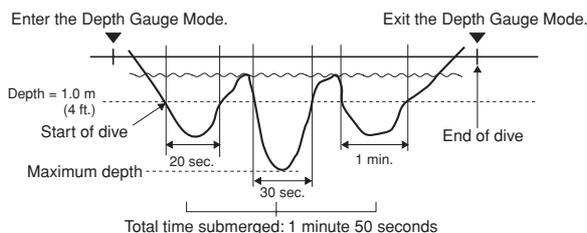
The pressure sensor of the watch can also be used to perform underwater depth measurement while skin diving or snorkeling. Depth readings are taken every three seconds, and displayed as a value up to 30 meters (98 feet). You can store the data of your last dive in log memory, including total time submerged,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

### Important!

- Never use this watch to measure depth while scuba diving.
- This watch is designed to start depth measurement and record data in memory after a depth of 1 meter (4 feet) is reached. Because of this, the explanations in this 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"?

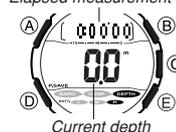
A dive starts when you pass a depth of one meter (about four feet) while the watch is in the Depth Gauge Mode. The dive ends when you are on the surface and exit the Depth Gauge Mode. A dive does not end if you surface but do not exit the Depth Gauge Mode.



- 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 (E) 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 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 manually reset the reference depth to 0 meters (feet)".
  - See "Log Data" 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.
  - CHARGE (indicating a weak battery)
  - RECOV. (indicating a weak battery)
  - E r r (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, occasionally clean inside the gaps in the band using a soft toothbrush and soapy water. Failure to do so can result in corrosion of the timepiece, soiling of clothing or irritation to sensitive skin.

## Depth Gauge Mode Precautions

- After you enter the Depth Gauge Mode, the watch automatically takes a reference pressure reading and sets the result a 0 meters (feet). This means that before starting a dive, you should enter the Depth Gauge Mode while at the water's surface, never while the watch is submerged.
- A major change in air temperature or other phenomena while you are using the Depth Gauge Mode can cause the display to show a value other than 0 meters (feet) when you are at the surface of the water. If this happens, reset the reference depth to 0 meters (feet). See "To manually reset the reference depth to 0 meters (feet)" for more information.
- Depth values are displayed in units of 0.1 meter (or 1 foot).
- **00** (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 automatically switch to the Timekeeping Mode and store the data for the current dive into log memory.

- The progress beeper and auto-repeat timer alarm do not sound while the watch is in the Depth Gauge Mode.
- The watch can take about five minutes to display the correct water temperature when there is a great difference between air temperature and water temperature, when there is a sudden change in water temperature, etc.

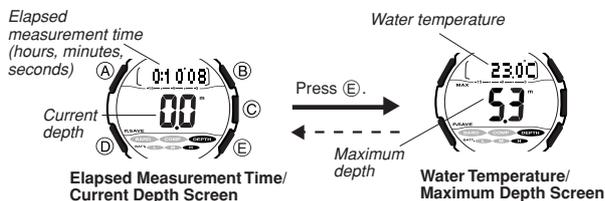
### To specify the depth unit



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

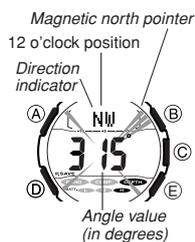
### To view water temperature and maximum depth screen

Pressing (E) in the Depth Gauge Mode displays the Water Temperature/Maximum Depth screen. After about five or six seconds, the watch will return to the Elapsed Measurement Time/Current Depth screen automatically.



- You can also return to the Elapsed Measurement Time/Current Depth screen by pressing (E) again.
- Never operate the buttons of the watch while underwater.

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



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 (B) 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.
  - Also, four pointers appear to indicate magnetic north, south, east, and west.

- About five or six seconds after displaying the Digital Compass screen, the watch will return to the Elapsed Measurement Time/Current Depth screen automatically.
- You can also return to the Elapsed Measurement Time/Current Depth screen by pressing (B) again.

### Log Data

Exiting the Depth Gauge Mode after a dive causes the measured data to be stored automatically into log memory. Stored data remains in log memory until you start a new dive, which causes the existing data to be replaced with the data of the new dive.

There is memory for a single log memory record, which includes the following data.

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

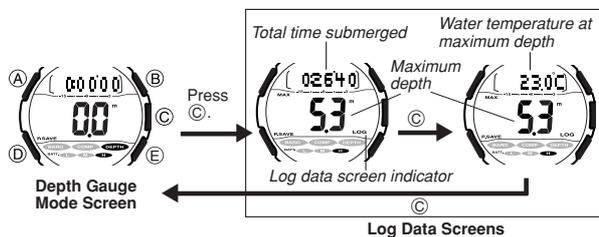
**Maximum depth:** This value shows the maximum depth you attained during the dive.

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

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

### To view log data

1. Enter the Depth Gauge Mode.
2. While 0.0 (or 0) is shown on the display, press (C) to cycle through the data screens in the sequence shown below.

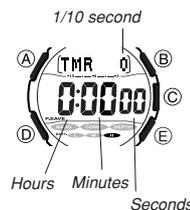


- About five or six seconds after displaying a Log Data screen, the watch will return to the Depth Gauge Mode screen automatically.
  - You cannot view log memory data while a depth measurement operation is in progress.
3. To exit the Depth Gauge Mode, press (D).

### To delete log memory data

1. Enter the Depth Gauge Mode.
2. While 0.0 (or 0) is shown on the display, press (C) to display the log memory data.
3. Hold down (A) for about two seconds until the log data is deleted and the watch returns to the Depth Gauge Mode screen.
4. To exit the Depth Gauge Mode, press (D).

### Countdown Timer



You can set a countdown timer start time in the range of 1 minute to 24 hours. An alarm sounds when the countdown reaches zero. An auto-repeat feature causes the countdown to restart automatically when the end of a countdown is reached, and a progress beeper signals the progress of the countdown. All of this makes the countdown timer a valuable tool for timing the start of a yacht race.

- All of the operations in this section are performed in the Countdown Timer Mode, which you enter by pressing (D).

### Configuring the Countdown Timer

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

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

#### Countdown start time

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

#### Auto-repeat

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

#### Progress Beeper

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

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



1. While the countdown start time is on the display in the Countdown Timer Mode, hold down (A) until the hour setting of the countdown start time 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.
2. Press (D) to move the flashing in the sequence shown below to select other settings.



Auto-repeat indicator



3. Perform the following operations, depending on which setting is currently selected on the display.

- While the hour or minute setting is flashing, use (E) (+) or (B) (-) to change it.
  - For a 24-hour countdown, set a start time of 0:00.
  - While the auto-repeat on/off setting (FF or FFF) is flashing on the display, press (E) to toggle auto-repeat on (FF) and off (FFF).
4. Press (A) to exit the setting screen.
- The auto-repeat indicator (↻) appears on the display while auto-repeat is turned on.

### To turn the progress beeper on and off



Progress beeper on indicator

Pressing (B) 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 (E) while in the Countdown Timer Mode to start the countdown timer.

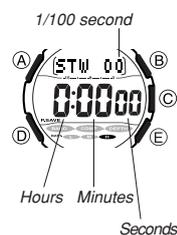
- When the countdown reaches zero, the alarm sounds for 10 seconds or until you stop it by pressing any button.
- Press (E) while a countdown operation is in progress to pause it. Press (E) again to resume the countdown.
- The countdown timer operation continues even if you exit the Countdown Timer Mode.
- To completely stop a countdown operation, first pause it (by pressing (E)), and then press (B). This returns the countdown time to its starting value.
- 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 can run down battery power.

## Stopwatch

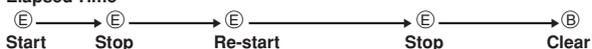


The stopwatch lets you measure elapsed time, split times, and two finishes.

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

### To measure times with the stopwatch

#### Elapsed Time



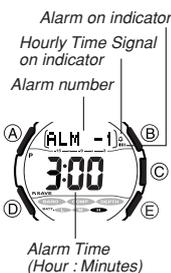
#### Split Time



#### Two Finishes



## Alarms



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

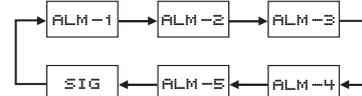
You can also turn on an Hourly Time Signal, which will cause the watch to beep twice every hour on the hour.

- The alarm number (ALM - 1 through ALM - 5) 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



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



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

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

1. In the Alarm Mode, use (E) to select an alarm or the Hourly Time Signal.
2. When the alarm or the Hourly Time Signal you want to is selected, press (B) to turn it on and off.
  - (||||) Indicates alarm is ON.
  - (A) Indicates Hourly Time Signal is ON.
- The alarm on indicator (||||) and the Hourly Time Signal on indicator (A) are shown on the display in all modes while these functions are turned on.
- If any alarm is on, the alarm on indicator is shown on the display in all modes.

## Backlight

Auto light switch on indicator



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

- The auto light switch must be turned on (indicated by the auto light switch on indicator) for it to operate.
- You can specify 1.5 seconds or 2.5 seconds as the display illumination duration.
- See "Backlight Precautions" for other important information about using the backlight.

### To turn on the backlight manually

Press (L) in any mode to illuminate the display.

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

### About the Auto Light Switch

Turning on the auto light switch causes the backlight to turn on, 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 turn on the backlight under bright light.

Moving the watch to a position that is parallel to the ground and then tilting it towards you more than 40 degrees causes the backlight to turn on.  
 • Wear the watch on the outside of your wrist.



**Warning!**

- Always make sure you are in a safe place whenever you are reading the display of the watch using the auto light switch. Be especially careful when running or engaged in any other activity that can result in accident or injury. Also take care that sudden illumination by the auto light switch does not surprise or distract others around you.
- When you are wearing the watch, make sure that its auto light switch is turned off before riding on a bicycle or operating a motorcycle or any other motor vehicle. Sudden and unintended operation of the auto light switch can create a distraction, which can result in a traffic accident and serious personal injury.

**To turn the auto light switch on and off**

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

- The auto light switch on indicator (☀️) is on the display in all modes while the auto light switch is turned on.
- The auto light switch turns off automatically whenever battery power drops to Level 3.
- The backlight may not light right away if you raise the watch to your face while a barometric pressure operation is in progress.
- The auto light switch is always disabled, regardless of its on/off setting, when any one of the following conditions exists.

*While a direction measurement operation is being performed in the Digital Compass Mode or Depth Gauge Mode*

*While a bearing sensor calibration operation is being performed in the Digital Compass Mode*

**To specify the illumination duration**



1. In the Timekeeping Mode, hold down (A) until the seconds start to flash, which indicates the setting screen.
2. Press (B) to toggle the illumination duration setting between 2.5 seconds (⚡️) and 1.5 seconds (⚡️).
3. After the setting is the way you want, press (A) to exit the setting screen.

## Questions & Answers

**Question: What causes incorrect direction readings?**

Answer:

- Incorrect bidirectional calibration. Perform bidirectional calibration.
- Nearby source of strong magnetism, such as a household appliance, a large steel bridge, a steel beam, overhead wires, etc., or an attempt to perform direction measurement on a train, boat, etc. Move away from large metal objects and try again. Note that digital compass operation cannot be performed inside a train, boat, etc.

**Question: What causes different direction readings to produce different results at the same location ?**

Answer: Magnetism generated by nearby high-tension wires is interfering with detection of terrestrial magnetism. Move away from the high-tension wires and try again.

**Question: Why am I having problems taking direction readings indoors ?**

Answer: A TV, personal computer, speakers, or some other object is interfering with terrestrial magnetism readings. Move away from the object causing the interference or take the direction reading outdoors. Indoor direction readings are particularly difficult inside ferro-concrete structures. Remember that you will not be able to take direction readings inside of trains, airplanes, etc.

**Question: What do the numbers on the watch mean ?**

Answer: The face of this watch is marked with values that increase in a counter-clockwise direction. These values represent degrees. When you take a direction reading, you can use these values to find out how many degrees the 12 o'clock position of this watch (which is the direction indicated in the display) differs from magnetic north. For example, when the Magnetic North Pointer is Pointing at 90 on the watch's face, it means that the 12 o'clock position is 90 degrees from magnetic north (which means that the 12 o'clock pointing due east).



**Question: How does the barometer work?**

Answer: Barometric pressure indicates changes in the atmosphere, and by monitoring these changes you can predict the weather with reasonable accuracy. Rising atmospheric pressure indicates good weather, while falling pressure indicates deteriorating weather conditions. The barometric pressures that you see in the newspaper and on the TV weather report are measurements corrected to values measured at 0 m sea level.

**Question: How does the watch calculate depth values?**

Answer: Water pressure increases with depth. In the case of sea water (specific gravity=1.025), water pressure increases by 1 ATM (1.03 kg/cm<sup>2</sup>) with each 10 meters (33 feet) of depth. The pressure sensor of this watch measures water pressure, and then converts it to an underwater depth reading, based on the relationship between pressure and depth.

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

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

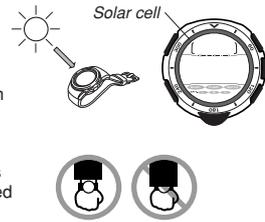
**Example:** When displayed depth is 5 meters, actual depth is  $5 \times 1.025 = 5.1$  meters.

## Battery

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.
- Normally, you should try to keep the watch outside of your sleeve as much as possible. Charging is significantly reduced 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 normally exposed to bright light whenever possible.
- Normally, the rechargeable battery should not need replacement, but after very long use over a number of years, the rechargeable battery may lose its ability to achieve a full charge. If you experience problems getting the rechargeable battery to a full charge, contact your dealer or CASIO distributor about having the rechargeable battery replaced.
- The rechargeable battery should be replaced with a CASIO-specified CTL1616 battery only. Other rechargeable batteries can cause damage to 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 4 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	☉ L M H	All functions enabled.
2	☉ L M H	All functions enabled.
3	☉ L M H CHARGE (Charge Soon Alert)	Except for timekeeping and battery power indicator, all functions and display indicators are disabled.
4	☉ L M H	All functions disabled.

- The flashing **CHARGE** indicator at Level 3 tells you that battery power is very low, and that exposure to bright light for charging is required as soon as possible.

- At Level 4, 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 4 to Level 3.
- Leaving the watch in direct sunlight or some other very strong light source can cause the battery power indicator to temporarily show a reading that is higher than the actual battery level. The correct battery power indicator should appear after a few minutes.



Recover indicator

- If you use the backlight or the alarm a number of times during a short period, **RECOV.** appears on the display and the backlight, 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 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.
  - Watch is not exposed to light
  - Internal timekeeping
  - Display on 18 hours per day, sleep state 6 hours per day
  - 1 backlight 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 charging.

### 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 4	Level 3	Level 2	Level 1
Outdoor Sunlight (50,000 lux)	1 hour	15 hours	3 hours	
Sunlight Through a Window (10,000 lux)	4 hours	73 hours	15 hours	
Daylight Through a Window on a Cloudy Day (5,000 lux)	6 hours	149 hours	30 hours	
Indoor Fluorescent Lighting (500 lux)	71 hours	-----	-----	

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

### Reference

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

### Auto Return Features

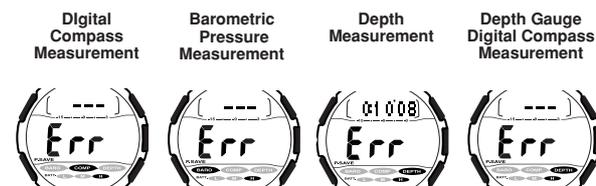
- The watch automatically returns to the Timekeeping Mode if you do not perform any button operation for two or three minutes in the Digital Compass and Barometer/Thermometer Mode.
- The watch automatically returns to the Timekeeping Mode if a depth measurement operation (indicated by ongoing elapsed 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 0.0 (or 0) in the center part of the display and no ongoing elapsed time measurement in the upper part of the display), the watch automatically returns to the Timekeeping Mode if you do not perform any button operation for about one hour in the Depth Gauge Mode.
- If you leave a screen with flashing digits on the display for two or three minutes without performing any operation, the watch automatically exits the setting screen.

### Scrolling

The (B) and (E) 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 5 or 6 seconds (or press (B)) to return to the Elapsed Measurement Time/Current Depth 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 automatically puts the watch into a sleep state 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 <b>P. SAVE</b> flashing	Display is off, but all functions are enabled.
6 or 7 days	Blank, with <b>P. SAVE</b> 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, 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 (A) until the seconds start to flash, which indicates the setting screen.
- Press (D) seven times until the Power Saving on/off screen appears.
- Press (E) to toggle Power Saving on (ON) and off (OFF).
- Press (A) to exit the setting screen.
  - The Power Saving on indicator (**P. SAVE**) is on the display in all modes while the Power Saving is turned on.

### Backlight Precautions

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

### Auto light switch precautions

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

More than 15 degrees too high



- The backlight may not light if the face of the watch is more than 15 degrees above or below parallel. Make sure that the back of your hand is parallel to the ground.
- The backlight turns off after the preset display illumination duration (see "To specify the illumination duration"), even if you keep the watch pointed towards your face.

- Static electricity or magnetic force can interfere with proper operation of the auto light switch. If the backlight does not light, try moving the watch back to the starting position (parallel with the ground) and then tilt it back toward you again. If this does not work, drop your arm all the way down so it hangs at your side, and then bring it back up again.
- Under certain conditions, the backlight may not light until about one second after you turn the face of the watch towards you. This does not necessarily indicate malfunction of the backlight.
- You may notice a very faint clicking sound coming from the watch when it is shaken back and forth. This sound is caused by mechanical operation of the auto light switch, and does not indicate a problem with the watch.

### 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.

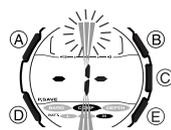
### Important!

- 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.

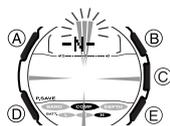
### To perform bidirectional calibration



- Enter the Digital Compass Mode.
- Hold down (A) for about one second until -| 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.
- Place the watch on a level surface facing any direction you want, and press (B) to calibrate the first direction.
  - is shown on the display while calibration is being performed. -| appears in the upper part of the display, -| 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.
- Rotate the watch 180 degrees.
- Press (B) again to calibrate the second direction.

- --- is shown on the display while calibration is being performed. When calibration is complete,  appears in the upper part of the display and then the Digital Compass Mode screen (showing the angle value) appears.
- If  appears and then changes to  (error) on the calibration screen, it means that there is something wrong with the sensor. The  message will disappear after about one second. Try performing the calibration operation again. If  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 (A) for about one second until  appears on the display, which indicates the setting screen.
2. Press (D) to start the northerly calibration procedure.
  - At this time,  (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 (B) to start the calibration operation.
  - --- is shown on the display while calibration is being performed. When calibration is complete,  appears in the upper part of the display and then the Digital Compass Mode screen (with 0° indicated as the angle value) appears.
  - If  appears and then changes to  (error) on the calibration screen, it means that there is something wrong with the sensor. About one second after the  message appears,  will reappear. Try performing the calibration operation again. If  keeps appearing, contact your original dealer or nearest authorized CASIO distributor to have the watch checked.

### Calibrating the Temperature Sensor

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

#### Important!

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

- Compare the readings produced by the watch with those of another reliable and accurate thermometer.
- If adjustment is required, remove the watch from your wrist and wait for 20 or 30 minutes to give the temperature of the watch time to stabilize.

### To calibrate the temperature sensor



1. Enter the Barometer/Thermometer Mode.
2. Hold down (A) for about one second, until the display goes blank.
3. Release (A). After about three or four seconds, either  or a temperature calibration value (if one is set) will appear in the upper part of the display. This is the setting screen.
4. Wait four or five seconds until either  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 (E) (+) or (B) (-) to change the displayed temperature by 0.1°C (or 0.2°F).
  - Pressing (E) and (B) at the same time returns to the factory calibration ().
6. Press (A) 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 is normally not required. If you notice serious errors in the barometric pressure readings produced by the watch, you can calibrate the sensor to correct the errors.

#### Important!

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

### To calibrate the pressure sensor



1. Enter the Barometer/Thermometer Mode.
2. Hold down (A) for about one second, until the display goes blank.
3. Release (A). After about three or four seconds, either  or a temperature calibration value (if one is set) will appear in the upper part of the display. This is the setting screen.
4. Wait four or five seconds until either  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,  or the barometric pressure value should be flashing on the display.
6. Press (E) (+) or (B) (-) to change the displayed barometric pressure by 1 hPa (0.05 inHg).
  - Pressing (E) and (B) at the same time returns to the factory calibration ().
7. Press (A) to exit the setting screen.

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



In the Depth Gauge Mode, press (D) and (E) 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.