Operation Guide 3261 3281

CASIO®

Congratulations upon your selection of this CASIO watch.

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.
• The Moon phase indicator that appears on the display of this watch is not intended for navigation purposes. Always use proper instruments and resources to obtain data for navigation purposes.
• When engaging in mountain climbing or other activities in which losing your way can create a dangerous or life-threatening situation, always use a second compass to confirm direction readings.
• Note that CASIO COMPUTER CO., LTD. assumes no responsibility for any damage or loss suffered by you or any third party arising through the use of this product or its malfunction.

About This Manual
• Depending on the model of your watch, display text appears either as dark figures on a light background (Module 3261), or light figures on a dark background (Module 3281). All of the illustrations in this manual show Module 3261.
• Button operations are indicated using the letters shown in the illustration.
• Note that the product illustrations in this manual are intended for reference only, and so the actual product may appear somewhat different than depicted by an illustration.
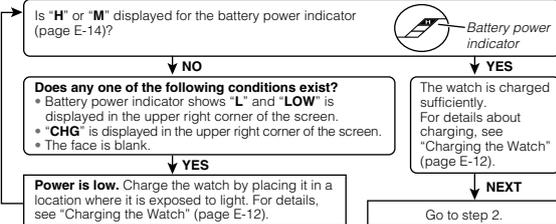
Module 3261   Module 3281

Things to check before using the watch

1. Check the battery power level.

Is "**H**" or "**M**" displayed for the battery power indicator (page E-14)?

Battery power indicator

NO

Does any one of the following conditions exist?
• Battery power indicator shows "**L**" and "**LOW**" is displayed in the upper right corner of the screen.
• "**CHG**" is displayed in the upper right corner of the screen.
• The face is blank.

YES

The watch is charged sufficiently. For details about charging, see "Charging the Watch" (page E-12).

YES

Power is low. Charge the watch by placing it in a location where it is exposed to light. For details, see "Charging the Watch" (page E-12).

NEXT

Go to step 2.

2. Check the Home City and the daylight saving time (DST) setting.
Use the procedure under "To configure Home City settings" (page E-26) to configure your Home City and daylight saving time settings.

Important!
World Time Mode data depend on correct Home City, time, and date settings in the Timekeeping Mode. Make sure you configure these settings correctly.

3. Set the current time.
See "Configuring Current Time and Date Settings" (page E-29).

The watch is now ready for use.

Contents

Charging the Watch

The face of the watch is a solar cell that generates power from light. The generated power charges a built-in rechargeable battery, which powers watch operations. The watch charges whenever it is exposed to light.

Charging Guide

Whenever you are not wearing the watch, leave it in a location where it is exposed to light.
• Best charging performance is achieved by exposing the watch to the strongest light available.

When wearing the watch, make sure that its face is not blocked from light by the sleeve of your clothing.
• The watch may enter a sleep state (page E-18) if its face is blocked by your sleeve even only partially.

Warning!
Leaving the watch in bright light for charging 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

Important!
• 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.
• Turn on the watch's Power Saving function (page E-18) and keep it in an area normally exposed to bright light when storing it for long periods. This helps to ensure that power does not run down.
• 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 power to run down. Expose the watch to bright light whenever possible.

Power Levels

You can get an idea of the watch's power level by observing the battery power indicator on the display.
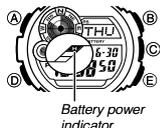
Battery power indicator

Level	Battery Power Indicator	Function Status
1 (H)		All functions enabled.
2 (M)		All functions enabled.
3 (L)	LOW	Illumination, beeper, and sensor operation disabled.
4 (C)	CHG	Except for the **CHG** (charge) indicator, all functions and display indicators disabled.
5		All functions disabled.

• The flashing **LOW** indicator at Level 3 (**L**) 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 or 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 or Level 5, reconfigure the current time, date, and other settings.
• If charging starts from Level 5, **CHG** will start flashing on the display when Level 4 is reached. Note, however, that watch functions are not restored at this time. Leave the watch exposed to sufficiently strong light until the battery level reaches Level 2 or Level 1 before using it.
• Leaving the watch exposed to 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 level should be indicated after a few minutes.
• 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 or Level 5, and when you have the battery replaced.

Power Recovery Mode

• Performing multiple sensor, illumination, or beeper operations during a short period may cause all of the battery power indicators (**H**, **M**, and **L**) to start flashing on the display. This indicates that the watch is in the power recovery mode. Illumination, alarm, countdown timer alarm, hourly time signal, and sensor operations will be disabled until battery power recovers.
• Battery power will recover in about 15 minutes. At this time, the battery power indicators (**H**, **M**, **L**) will stop flashing. This indicates that the functions listed above are enabled again.
• If all of the battery power indicators (**H**, **M**, **L**) are flashing and the **CHG** (charge) indicator also is flashing, it means the battery level is very low. Expose the watch to bright light as soon as possible.
• Even if battery power is at Level 1 (**H**) or Level 2 (**M**), the Digital Compass/Thermometer Mode sensor may be disabled if there is not enough voltage available to power it sufficiently. This is indicated when all of the battery power indicators (**H**, **M**, **L**) are flashing.
• Frequent flashing of all of the battery power indicators (**H**, **M**, **L**) probably means that remaining battery power is low. Leave the watch in bright light to allow it to charge.

Charging Times

Exposure Level (Brightness)	Daily Operation *1	Level Change *2				
		Level 5	Level 4	Level 3	Level 2	Level 1
Outdoor sunlight (50,000 lux)	5 min.	2 hours			16 hours	5 hours
Sunlight through a window (10,000 lux)	24 min.	6 hours			79 hours	21 hours
Daylight through a window on a cloudy day (5,000 lux)	48 min.	12 hours			159 hours	43 hours
Indoor fluorescent lighting (500 lux)	8 hours	168 hours			– – –	– – –

*1 Approximate amount of exposure time required each day to generate enough power for normal daily operation.
*2 Approximate amount of exposure time (in hours) required to take power from one level to the next.

• The above exposure times all are for reference only. Actual exposure times depend on lighting conditions.
• For details about the operating time and daily operating conditions, see the "Power Supply" section of the Specifications (page E-101).

Power Saving

When turned on, Power Saving enters a sleep state automatically whenever the watch is left for a certain period in an area where it is dark. The table below shows how watch functions are affected by Power Saving.
• There actually are two sleep state levels: "display sleep" and "function sleep".

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

• The watch will not enter a sleep state between 6:00 AM and 9:59 PM. If the watch is already in a sleep state when 6:00 AM arrives, however, it will remain in the sleep state.
• The watch will not enter a sleep state while it is in the Stopwatch Mode or Countdown Timer Mode.

To recover from the sleep state
Move the watch to a well-lit area, press any button, or angle the watch towards your face for reading (page E-86).

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To turn Power Saving on and off
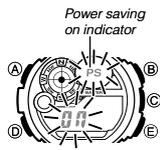
Power saving on indicator

1. In the Timekeeping Mode, hold down Ⓐ until **SET** starts to flash and the city name starts to scroll on the display.
   - This is the setting screen.
2. Use Ⓓ to display the Power Saving On/Off screen shown nearby.
3. Press Ⓔ to toggle Power Saving on (**On**) and off (**OFF**).
4. Press Ⓐ to exit the setting screen.
   - The Power Saving on indicator (**PS**) is on the display in all modes while Power Saving is turned on.

Mode Reference Guide

Your watch has 7 "modes". The mode you should select depends on what you want to do.

To do this:	Enter this mode:	See:
• View the current date in the Home City • Configure Home City and daylight saving time (DST) settings • Configure time and date settings	Timekeeping Mode	E-25
• Determine your current bearing or the direction from your current location to a destination as a direction indicator and angle value • Determine your current location using the watch and a map	Digital Compass/Thermometer Mode	E-33
• View the temperature at your current location	Digital Compass/Thermometer Mode	E-57
View the current time in one of 48 cities (31 time zones) around the globe	World Time Mode	E-71
Use the stopwatch to measure elapsed time	Stopwatch Mode	E-74
Use the countdown timer	Countdown Timer Mode	E-77
Set an alarm time	Alarm Mode	E-80

Selecting a Mode

World Time Mode   **Moon Data Mode**   **Timekeeping Mode**

Stopwatch Mode   **Countdown Timer Mode**   **Alarm Mode**
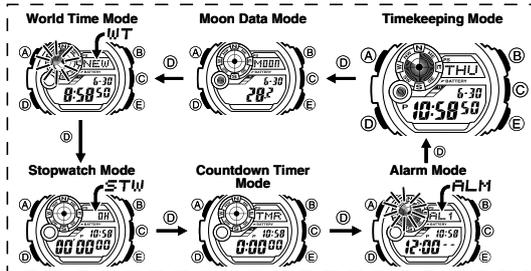
- The illustration below shows which buttons you need to press to navigate between modes.
- Press Ⓓ to change from mode to mode.
- Hold down Ⓓ for about two seconds to return to the Timekeeping Mode from any other mode.
- In any mode, press Ⓒ to enter the Digital Compass/Thermometer Mode. Press Ⓓ in the Digital Compass/Thermometer Mode to return to the mode you entered from.
- In any mode (except when a setting screen is on the display), press Ⓑ to illuminate the display.

Digital Compass/Thermometer Mode

Press Ⓒ

Press Ⓓ
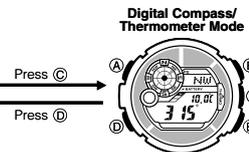
General Functions (All Modes)

The functions and operations described in this section can be used in all of the modes.

Auto Return Features

- The watch returns to the Timekeeping Mode automatically if you do not perform any button operation for two or three minutes in the Alarm, or Moon Data 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.

Initial Screens

When you enter the World Time or Alarm Mode, the data you were viewing when you last exited the mode appears first.
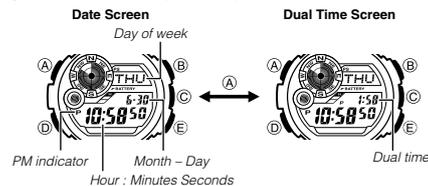
Scrolling

The Ⓔ and Ⓑ 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.

Timekeeping

Use the Timekeeping Mode to set and view the current time and date.
- Press Ⓐ to toggle between the day of the week and date (Date screen), and the currently selected World Time (Dual Time).

Date Screen   **Dual Time Screen**

Day of week

PM indicator   *Month – Day*

Hour : Minutes Seconds

Dual time

Configuring Home City Settings

City name

Hour : Minutes

PM indicator   *Seconds*

There are two Home City settings: actually selecting the Home City and selecting either standard time or daylight saving time (DST).

To configure Home City settings

1. In the Timekeeping Mode, hold down Ⓐ until **SET** starts to flash and the city name starts to scroll on the display.
   - This is the setting screen.
   - The watch will exit the setting mode automatically if you do not perform any operation for about two or three minutes.
   - For details about city names, see the "City Code Table" at the back of this manual.

2. Press Ⓔ (East) and Ⓑ (West) to select the city name you want to use as your Home City.
   - Keep pressing Ⓔ or Ⓑ until the city name you want to select as your Home City appears on the display.
3. Press Ⓓ to display the DST setting screen.
4. Use Ⓔ to toggle the DST settings between **OFF** and **On**.
   - Note that you cannot switch between standard time and daylight saving time (DST) while UTC is selected as your Home City.
5. After all the settings are the way you want, press Ⓐ to return to the Timekeeping Mode.
   - The **DST** indicator appears to indicate that Daylight Saving Time is turned on.

Note
- After you specify a city name, the watch will use UTC* offsets in the World Time Mode to calculate the current time for other time zones based on the current time in your Home City.
- * Coordinated Universal Time, the world-wide scientific standard of timekeeping. The reference point for UTC is Greenwich, England.

To change the Daylight Saving Time (summer time) setting

1. In the Timekeeping Mode, hold down Ⓐ until **SET** starts to flash and the city name starts to scroll on the display.
   - This is the setting screen.
2. Press Ⓓ to display the DST setting screen.
3. Use Ⓔ to toggle the DST settings between **OFF** and **On**.
4. After all the settings are the way you want, press Ⓐ to return to the Timekeeping Mode.
   - The **DST** indicator appears to indicate that Daylight Saving Time is turned on.

Configuring Current Time and Date Settings

You can use the procedure below to adjust the Timekeeping Mode time and date settings if they are off.

To change the current time and date settings

City name
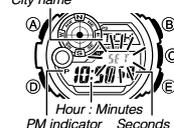
Hour : Minutes

PM indicator   *Seconds*

1. In the Timekeeping Mode, hold down Ⓐ until **SET** starts to flash and the city name starts to scroll on the display.
   - This is the setting screen.
2. Use Ⓔ and Ⓑ to select the city name you want.
   - Select your Home City name before changing any other setting.
   - For full information on city names, see the "City Code Table" at the back of this manual.

3. Press Ⓓ to move the flashing in the sequence shown below to select the other settings.

City Name → DST → 12/24-Hour Format → Seconds → Hour → Minutes → Year

Thermometer unit → Power Saving → Illumination Duration → Button Operation Tone On/Off → Day → Month

- The following steps explain how to configure timekeeping settings only.

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

Screen	To do this:	Do this:
TOKYO	Change the city name	Use Ⓔ (East) and Ⓑ (West).
OFF	Toggle between Daylight Saving Time (**On**) and Standard Time (**OFF**).	Press Ⓔ.

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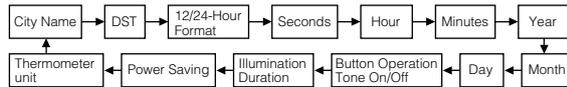| Screen	To do this:	Do this:
12H	Toggle between 12-hour (**12H**) and 24-hour (**24H**) timekeeping.	Press Ⓔ.
50	Reset the seconds to **00**	Press Ⓔ.
P 10:58	Change the hour or minutes	Use Ⓔ (+) and Ⓑ (–).
20 11 6-30	Change the year, month, or day	

5. Press Ⓐ to exit the setting screen.

Note
- For information about selecting a Home City and configuring the DST setting, see "Configuring Home City Settings" (page E-26).

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- While 12-hour format is selected for timekeeping, a **P** (PM) indicator will appear for times from noon to 11:59 p.m. No indicator appears for times from midnight to 11:59 a.m. With 24-hour format, time is displayed from 0:00 to 23:59, without any **P** (PM) indicator.
- 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 rechargeable battery replaced or after power drops to Level 5 (page E-14).
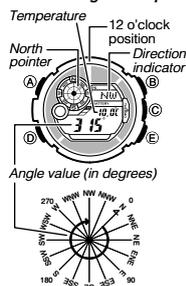
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Digital Compass

A built-in bearing sensor detects magnetic north at regular intervals and indicates one of 16 directions on the display.
- The watch also takes temperature readings in the Digital Compass/Thermometer Mode. For more information, see "Thermometer" (page E-57).

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To take a digital compass reading

Temperature
12 o'clock position
North pointer
Direction indicator
Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Angle value (in degrees)

1. Place the watch on a flat surface. 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 check.
3. Press Ⓒ to enter the Digital Compass/Thermometer Mode and take a digital compass reading.
   - **COMP** will appear on the display to indicate that a digital compass operation is in progress.
   - See "Digital Compass Readings" on page E-35 for information about what appears on the display.

Note
- If a value appears to the right of the direction indicator, it means that the bearing memory (page E-45) screen is displayed. If this happens, press Ⓐ to exit the bearing memory screen.

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4. After you are finished using the digital compass, press Ⓓ to return to the mode you entered the Digital Compass/Thermometer Mode from.

Digital Compass Readings
- When you press Ⓒ to start digital compass measurement, **COMP** will appear on the display initially to indicate that a digital compass operation is in progress.
- About two seconds after you start a digital compass measurement operation, letters on the display will indicate the direction that the 12 o'clock position of the watch is pointing. Four pointers that indicate magnetic north, south, east, and west also will appear.
- After the first reading is obtained, the watch will continue to take digital compass readings automatically each second for up to 20 seconds. After that, measurement will stop automatically.
- The direction indicator and angle value will show **- - -** to indicate that digital compass readings are complete.
- The auto light switch is disabled during the 20 seconds that digital compass readings are being taken.

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- 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

- The margin of error for the angle value and the direction indicator is ±11 degrees while the watch is horizontal (in relation to the horizon). If the indicated direction is northwest (**NW**) and 315 degrees, for example, the actual direction can be anywhere from 304 to 326 degrees.

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- Note that taking a measurement while the watch is not horizontal (in relation to the horizon) can result in large measurement error.
- You can calibrate the bearing sensor if you suspect the direction reading is incorrect.
- 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 illumination is turned on (by pressing Ⓑ). The measurement operation resumes for its remaining duration after the operation that caused it to pause is finished.
- See "Digital Compass Precautions" (page E-54) for important information about taking direction readings.

Calibrating the Bearing Sensor
You should calibrate the bearing sensor whenever you feel that the direction readings being produced by the watch are off. There are three different calibration methods available: magnetic declination correction, bidirectional calibration, and northerly calibration.

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- **Magnetic Declination Correction**
With magnetic declination correction, you input a magnetic declination angle (difference between magnetic north and true north), which allows the watch to indicate true north. You can perform this procedure when the magnetic declination angle is indicated on the map you are using. Note that you can input the declination angle in whole degree units only, so you may need to round off the value specified on the map. If your map indicates the declination angle as 7.4°, you should input 7°. In the case of 7.6° input 8°, for 7.5° you can input 7° or 8°.

- **Bidirectional Calibration and Northerly Calibration**
Bidirectional calibration and northerly calibration calibrate the accuracy of the bearing sensor in relation to magnetic north. 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).

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Important!
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.

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To perform magnetic declination correction
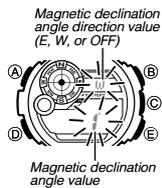
Magnetic declination angle direction value (E, W, or OFF)

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Magnetic declination angle value

1. In the Digital Compass/Thermometer Mode, hold down Ⓐ until the current magnetic declination settings start to flash on the display. This is the setting screen.
2. Use Ⓔ (East) and Ⓑ (West) to change the settings.
   • The following explains magnetic declination angle direction settings.
   OFF: No magnetic declination correction performed. The magnetic declination angle with this setting is 0°.
   E: When magnetic north is to the east (east declination)
   W: When magnetic north is to the west (west declination)
   • You can select a value within the range of W 90° to E 90° with these settings.
   • You can turn off (**OFF**) magnetic declination correction by pressing Ⓔ and Ⓑ at the same time.

• The illustration, for example, shows the value you should input and the direction setting you should select when the map shows a magnetic declination of 1° West.
3. When the setting is the way you want, press Ⓐ to exit the setting screen and take direction and temperature 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.
• 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. In the Digital Compass/Thermometer Mode, hold down Ⓐ until the current magnetic declination settings start to flash on the display. This is the setting screen.
2. Press Ⓓ to display the bidirectional calibration screen.
   • At this time, the north pointer flashes at the 12 o'clock position and the display will show **-1-** 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 Ⓒ to calibrate the first direction.
   • **- - -** is shown on the display while calibration is being performed. When calibration is successful, the display will show **OK** and **-2-**, and the north pointer flashing at the 6 o'clock position. This means that the watch is ready for calibration of the second direction.
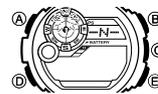4. Rotate the watch 180 degrees.

5. Press Ⓒ again to calibrate the second direction.
   • **- - -** is shown on the display while calibration is being performed. When calibration is successful, the display will show **OK** and then take direction and temperature readings.

To perform northerly calibration

Important!
If you want to perform both northerly and bidirectional calibration, perform bidirectional calibration first, and then perform northerly calibration. This is necessary because bidirectional calibration cancels any existing northerly calibration setting.
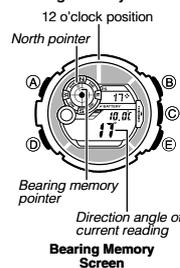
Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

1. In the Digital Compass/Thermometer Mode, hold down Ⓐ until the current magnetic declination settings start to flash on the display. This is the setting screen.
2. Press Ⓓ twice to display the northerly calibration screen.
   • At this time, **-N-** (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 Ⓒ to start the calibration operation.
   • **- - -** is shown on the display while calibration is being performed. When calibration is successful, the display will show **OK** and then take direction and temperature readings.

Bearing Memory

12 o'clock position

North pointer

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Bearing memory pointer

Direction angle of current reading

Bearing Memory Screen

Bearing Memory lets you store a direction reading and display that reading as you take subsequent digital compass measurements. The Bearing Memory screen displays the direction angle for the stored direction, along with an indicator on the display that also indicates the stored direction.
When you take digital compass measurements while the Bearing Memory screen is on the display, the direction angle of the current digital compass measurement (as read from the 12 o'clock position of the watch) and the currently stored Bearing Memory direction information will both be displayed.

To store a direction angle reading in Bearing Memory
1. Press Ⓒ to start a digital compass measurement operation (page E-34).
   • If a bearing memory direction angle value is already displayed, it means that the bearing memory screen is displayed. If this happens, press Ⓐ to clear the value currently in Bearing Memory and exit the bearing memory screen.
2. During the 20 seconds that digital compass measurement is in progress, press Ⓐ to store the current direction angle reading in Bearing Memory.
   • The Bearing Memory direction angle flashes for about one second as it is stored in Bearing Memory. After that, the Bearing Memory screen (which shows the bearing memory direction angle) will appear, and a 20-second direction reading operation will start.
   • While the Bearing Memory screen is displayed, you can press Ⓒ to start a new 20-second direction reading operation, which displays the direction angle for the direction that the 12 o'clock position of the watch is pointed. The direction angle of the current readings will disappear from the display after the direction reading operation is complete.

• During the first 20 seconds after you display the Bearing Memory screen or during the 20-second direction reading operation while the Bearing Memory screen is on the display, the direction stored in memory is indicated by a Bearing Memory pointer.
• Pressing Ⓐ while the Bearing Memory screen is displayed will clear the direction angle currently in Bearing Memory and start a 20-second direction reading operation.

Using the Digital Compass While Mountain Climbing or Hiking
This section provides three practical applications for using the watch's built-in digital compass.
• Setting a map and finding your current location
  Having an idea of your current location is important when mountain climbing or hiking. To do this, you need to "set the map", which means to align the map so the directions indicated on it are aligned with the actual directions of your location. Basically what you are doing is aligning north on the map with north as indicated by the watch.
• Finding the bearing to an objective

• Determining the direction angle to an objective on a map and heading in that direction

To set a map and find your current location
1. With the watch on your wrist, position it so the face is horizontal.
2. Press Ⓒ to take a compass reading.
   • The reading will appear on the display after about two seconds.

North indicated on the map

Current location

N

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

N

North indicated by north pointer
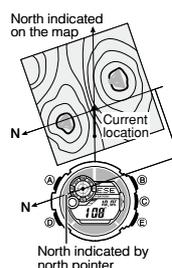
3. Rotate the map without moving the watch so the northerly direction indicated on the map matches north as indicated by the watch.
   • If the watch is configured to indicate magnetic north, align the map's magnetic north with the watch indication. If the watch has been configured with a declination to correct to true north, align the map's true north with the watch indication. For details, see "Calibrating the Bearing Sensor" (page E-37).
   • This will position the map in accordance with your current location.
4. Determine your location as you check the geographic contours around you.

To find the bearing to an objective

1. Set the map so its northerly indication is aligned with north as indicated by the watch, and determine your current location.
   • See "To set a map and find your current location" on page E-48 for information about how to perform the above step.
2. Set the map so the direction you want to travel on the map is pointed straight in front of you.
3. With the watch on your wrist, position it so the face is horizontal.
4. Press Ⓒ to take a compass reading.
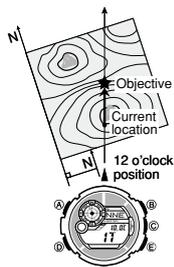   • The reading will appear on the display after about two seconds.

5. Still holding the map in front of you, turn your body until north as indicated by the watch and the northerly direction on the map are aligned.
   • This will position the map in accordance with your current location, so the bearing to your objective is straight ahead of you.

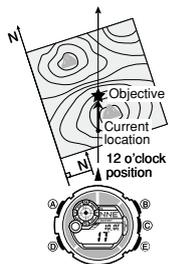**To determine the direction angle to an objective on a map and head in that direction**

1. Set the map so its northerly indication is aligned with north as indicated by the watch, and determine your current location.
   • See "To set a map and find your current location" on page E-48 for information about how to perform the above step.
2. As shown in the illustration to the left, change your position so you (and the 12 o'clock position of the watch) are pointed in the direction of objective, while keeping the northerly direction indicated on the map aligned with north as indicated by the watch.
   • If you find it difficult to perform the above step while keeping everything aligned, first move into the correct position (12 o'clock position of the watch pointed at the objective) without worrying about the orientation of the map. Next, perform step 1 again to set the map.

12 o'clock position
North pointer
Bearing memory pointer
Bearing memory direction angle value
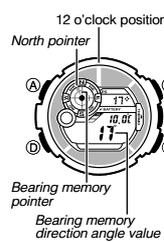
3. Press Ⓒ to take a compass reading.
4. While direction angle readings are in progress, press Ⓐ to record the currently displayed direction in Bearing Memory.
   • The direction angle value and pointer stored in Bearing Memory will remain on the display for about 20 seconds.
   • See "Bearing Memory" (page E-45) for more information.
5. Now you can advance while monitoring the Bearing Memory pointer to ensure that it remains in the 12 o'clock position.
   • To re-display the Bearing Memory direction angle value and Bearing Memory pointer, press Ⓒ.

• Pressing Ⓐ while the Bearing Memory direction angle value and Bearing Memory pointer are on the display will clear the Bearing Memory data you saved in step 3 and save the current direction reading in Bearing Memory.

Note
• When mountain climbing or hiking, conditions or geographic contours may make it impossible for you to advance in a straight line. If this happens, return to step 1 and save a new direction to the objective.

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 while indoors, especially inside ferroconcrete 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 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 the procedure under "To perform bidirectional calibration" (page E-42).

Thermometer

This watch uses a temperature sensor to take temperature readings.
• The watch also takes direction readings in the Digital Compass/Thermometer Mode. For more information, see "Digital Compass" (page E-33).

Direction indicator
Temperature
Angle value (in degrees)
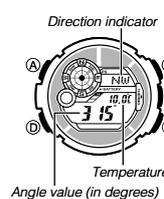
To enter and exit the Digital Compass/Thermometer Mode
1. Press Ⓒ to enter the Digital Compass/Thermometer Mode.
   • Press Ⓒ to take another reading.
2. Press Ⓓ to return to the mode you entered the Digital Compass/Thermometer Mode from.
   • The watch will automatically return to the mode you entered the Digital Compass/Thermometer Mode from if you do not perform any operation for about one or two minutes.

Temperature
• 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 reappear as soon as the measured temperature is within the allowable range.

Display Units
You can select either Celsius (°C) or Fahrenheit (°F) for the displayed temperature value. See "To specify temperature unit" (page E-61) for more information.

Temperature Sensor Calibration
The watch's temperature sensor is calibrated at the factory and normally requires no further adjustment. If you notice serious errors in the temperature readings produced by the watch, you can calibrate the sensor to correct the errors.

Important!
• Incorrectly calibrating the temperature sensor can result in incorrect readings. Carefully read the following before doing anything.
   – Compare the readings produced by the watch with those of another reliable and accurate thermometer.
   – If adjustment is required, remove the watch from your wrist and wait for 20 or 30 minutes to give the temperature of the watch time to stabilize.

To calibrate the temperature sensor
1. Press Ⓒ to enter the Digital Compass/Thermometer Mode.
2. Hold down Ⓐ until the current magnetic declination correct values (page E-40) starts to flash on the display. This is the setting screen.
3. Press Ⓓ three times.
   • **TEMP** will appear on the display along with the current temperature calibration value.

4. Use Ⓔ (+) and Ⓑ (–) to change the displayed calibration by 0.1°C (0.2°F) steps.
   • To return the currently flashing value to its initial factory default setting, press Ⓔ and Ⓑ at the same time. **OFF** will appear in place of the flashing temperature value for about one second, followed by the initial default value.
5. Press Ⓐ to return to the Digital Compass/Thermometer Mode screen, and then take direction and temperature readings.

Thermometer Precautions
• 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.

Specifying Temperature Unit

Use the procedure below to specify the temperature unit to be used in the Digital Compass/Thermometer Mode.

Important!
When **TOKYO** is selected as the Home City, the temperature unit is set automatically to Celsius (**°C**). These settings cannot be changed.

To specify temperature unit
1. In the Timekeeping Mode, hold down Ⓐ until **SET** starts to flash and the city name starts to scroll on the display.
   • This is the setting screen.

2. Press Ⓓ as many times as necessary until **TEMP** is displayed.
   • See step 3 under "To change the current time and date settings" (page E-29) for information about how to scroll through setting screens.
3. Press Ⓓ to toggle the temperature unit between **°C** (Celsius) and **°F** (Fahrenheit).
4. After the setting is the way you want, press Ⓐ to exit the setting screen.

Temperature Reading Precautions

When taking temperature readings, it is best to remove the watch from your wrist in order to eliminate the effects of body heat. Remove the watch from your wrist and allow it to hang freely from your bag or in another location where it is not exposed to direct sunlight.
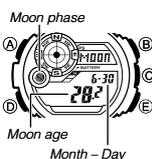
Using the Moon Data

In the Moon Data Mode, you can see the current date's Moon phase for your Home City. You can specify a date and view Moon data for that date.

To enter the Moon Data Mode

Moon phase

Moon age

Month – Day

Use Ⓓ to select the Moon Data as shown on page E-22.
   • About one second after **MOON** appears on the display, the display will change to show the moon age.

Note
• Moon age is calculated to an accuracy of ±1 day.

Moon Data

The Moon phase and Moon age information that appears first when you enter the Moon Data Mode shows the data at noon for your currently selected Home City on the current date, according to the Timekeeping Mode. After that you can specify another date to view data.
• If the Moon data is not correct, check your Timekeeping Mode settings and correct them if necessary.
• The Moon phase is displayed in the Timekeeping Mode, and the Moon Data Mode.
• If the Moon phase indicator shows a phase that is a mirror image of the actual moon phase in your area, you can use the procedure under "Reversing the Displayed Moon Phase" (page E-66) to change it.
• Use the Moon Data Screen to specify the Moon Data date. You can use Ⓔ (+) to change the displayed date in one-day increments. Pressing Ⓔ will display the year of the displayed date.

Reversing the Displayed Moon Phase

The left-right (east-west) appearance of the Moon depends on whether the Moon is north of you (northerly view) or south of you (southerly view) as you view it.
You can use the procedure below to reverse the displayed Moon phase so it matches the actual appearance of the Moon where you are located.
• To determine the viewing direction of the Moon, use a compass to take a direction reading of the Moon at its meridian passage.
• For information about the Moon phase indicator, see "Moon Phase Indicator" (page E-68).

To reverse the displayed Moon phase
1. In the Moon Data Mode, hold down Ⓐ until the Moon phase indicator starts to flash.
   • This is the indicator switching screen.
2. Press Ⓔ to toggle the Moon phase indicator between the southerly view (indicated by N⊢S) and northerly view (indicated by N⊣S).
   • Northerly view: Moon is north of you.
   • Southerly view: Moon is south of you.
3. When the Moon phase indicator setting is the way you want, press Ⓔ to exit the switching screen and return to the Moon Data Mode screen.

Moon Phase Indicator

Module 3261

Moon Phase Indicator

Module 3281
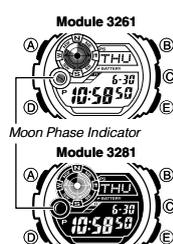
The Moon phase indicator of this watch indicates the current phase of the Moon as shown below. It is based on the view of the left side of the moon at meridian transit from the northern hemisphere of the Earth. If the appearance of the Moon phase indicator is reversed from the actual Moon as viewed from your location, you can use the procedure under "To reverse the displayed Moon phase" (page E-67) to change the indicator.

		(part you cannot see)			Moon phase (part you can see)			
Moon Phase Indicator	Module 3261							
	Module 3281							
Moon Age		28.7-29.8 0.0-0.9	1.0-2.7	2.8-4.6	4.7-6.4	6.5-8.3	8.4-10.1	10.2-12.0	12.1-13.8
Moon Phase		New Moon				First Quarter (Waxing)		

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CASIO

Moon phase (part you can see) ——————— (part you cannot see)

Moon Phase Indicator	Module 3261									
	Module 3281									
Moon Age		13.9-15.7	15.8-17.5	17.6-19.4	19.5-21.2	21.3-23.1	23.2-24.9	25.0-26.8	26.9-28.6	
Moon Phase		Full Moon				Last Quarter (Waning)				

Checking the Current Time in a Different Time Zone

You can use the World Time Mode to view the current time in one of 31 time zones (48 cities) around the globe. The city that is currently selected in the World Time Mode is called the "World Time City".

Currently selected World Time City

Current time in the currently selected World Time City
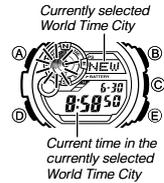
To enter the World Time Mode
Use Ⓓ to select the World Time Mode (**WT**) as shown on page E-22.
• Entering the World Time Mode will cause **WT** to be displayed for the mode name for about one second, and then the name of the currently selected city will scroll on the display. After that, the city code will be displayed. If you select a different city, the city name will scroll first and then the city code will appear. For information about city codes, see the "City Code Table" at the back of this manual.
• To view the name of the currently selected city, press Ⓐ in the World Time Mode. This will cause the city name to scroll on the display.

To view the time in another time zone
In the World Time Mode, use Ⓔ (East) to scroll through city names.
• Pressing Ⓔ and Ⓑ at the same time will jump to the UTC time zone.

To specify standard time or daylight saving time (DST) for a city

DST indicator

1. In the World Time Mode, use Ⓔ (East) to display the city name (time zone) whose Standard Time/Daylight Saving Time setting you want to change.

2. Hold down Ⓐ to toggle between Daylight Saving Time (**DST** indicator displayed) and Standard Time (**DST** indicator not displayed).
   • The **DST** indicator is shown on the World Time Mode screen while Daylight Saving Time is turned on.
   • Using the World Time Mode to change the DST setting of the city name that is selected as your Home City also will change the Timekeeping Mode time DST setting.

• Note that you cannot switch between standard time/daylight saving time (DST) while **UTC** is selected as the World Time City.
• Note that the standard time/daylight saving time (DST) setting affects only the currently selected time zone. Other time zones are not affected.

Using the Stopwatch

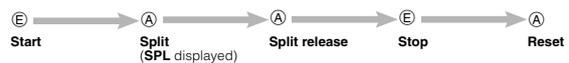The stopwatch measures elapsed time, split times, and two finishes.

Current time   Hours

Minutes   1/100 second

Seconds

To enter the Stopwatch Mode
Use Ⓓ to select the Stopwatch Mode (**STW**) as shown on page E-22.
• About one second after **STW** appears on the display, the display will change to show the stopwatch hours.
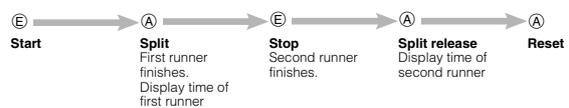
To perform an elapsed time operation

Ⓔ → Ⓔ → Ⓔ → Ⓔ → Ⓐ
Start   Stop   (Restart)   (Stop)   Reset

To pause at a split time

Ⓔ → Ⓐ → Ⓐ → Ⓔ → Ⓐ
Start   Split (**SPL** displayed)   Split release   Stop   Reset

To measure two finishes

Ⓔ → Ⓐ → Ⓔ → Ⓐ → Ⓐ
Start   Split — First runner finishes. Display time of first runner   Stop — Second runner finishes.   Split release — Display time of second runner   Reset

Note
• The Stopwatch Mode can indicate elapsed time up to 999 hours, 59 minutes, 59.99 seconds.
• Once started, stopwatch timing continues until you press Ⓐ to stop it, even if you exit the Stopwatch Mode to another mode and even if timing reaches the stopwatch limit defined above.
• Exiting the Stopwatch Mode while a split time is frozen on the display clears the split time and returns to elapsed time measurement.

Using the Countdown Timer

The countdown timer can be configured to start at a preset time, and sound an alarm when the end of the countdown is reached.

Countdown time (Hour, minutes, seconds)

Current time
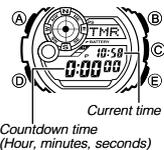
To enter the Countdown Timer Mode
Use Ⓓ to select the Countdown Timer Mode (**TMR**) as shown on page E-22.
• About one second after **TMR** appears on the display, the display will change to show the countdown time hours.

To specify the countdown start time
1. Enter the Countdown Timer Mode.
   • If a countdown is in progress (indicated by the seconds counting down), press Ⓔ to stop it and then press Ⓐ to reset to the current countdown start time.
   • If a countdown is paused, press Ⓐ to reset to the current countdown start time.
2. Hold down Ⓐ until the hour setting of the current countdown start time starts to flash. This is the setting screen.
3. Press Ⓓ to move the flashing between the hour and minute settings.
4. Use Ⓔ (+) and Ⓑ (–) to change the flashing item.
   • To set the starting value of the countdown time to 24 hours, set **0H 00'00**.
5. Press Ⓐ to exit the setting screen.

To perform a countdown timer operation

Ⓔ → Ⓔ → Ⓔ → Ⓔ → Ⓐ
Start   Stop   (Restart)   (Stop)   Reset

• Before starting a countdown timer operation, check to make sure that a countdown operation is not in progress (indicated by the seconds counting down). If it is, press Ⓔ to stop it and then Ⓐ to reset to the countdown start time.
• An alarm sounds for ten seconds when the end of the countdown is reached. This alarm will sound in all modes. The countdown time is reset to its starting value automatically when the alarm sounds.

To stop the alarm
Press any button.

Using the Alarm

Current time

Alarm time
(Hour : Minutes)
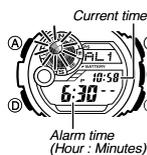
You can set four one-time alarms and one snooze alarm. When an alarm is turned on, the watch will beep for about 10 seconds each day when the time in the Timekeeping Mode reaches the preset alarm time. This is true even if the watch is not in the Timekeeping Mode.
You can also turn on an Hourly Time Signal, which will cause the watch to beep twice every hour on the hour.

To enter the Alarm Mode
Use Ⓓ to select the Alarm Mode (**ALM**) as shown on page E-22.
• About one second after **ALM** appears on the display, the display will change to show one of the following alarm screens: **AL1** (Alarm 1) through **AL4** (Alarm 4), **SNZ** (snooze alarm), or **SIG** (Hourly Time Signal).
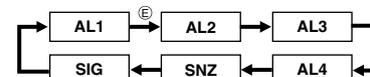
• When you enter the Alarm Mode, the screen you were viewing when you last exited the mode appears first.

To set an alarm time

Alarm ON/OFF indicator

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

AL1 → AL2 → AL3
SIG ← SNZ ← AL4

2. Hold down Ⓐ until the alarm time starts to flash. This is the setting screen.
3. Press Ⓓ to move the flashing between the hour and minute settings.

4. While a setting is flashing, use Ⓔ (+) and Ⓑ (−) to change it.
• When setting the alarm time using the 12-hour format, take care to set the time correctly as a.m. (no indicator) or p.m. (**P** indicator).
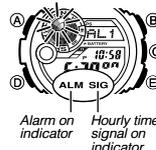5. Press Ⓐ to exit the setting screen.

To test the alarm
In the Alarm Mode, hold down Ⓔ to sound the alarm.

To turn an alarm and the Hourly Time Signal on and off
1. In the Alarm Mode, use Ⓔ to select an alarm or the Hourly Time Signal.

2. When the alarm or the Hourly Time Signal you want is selected, press Ⓐ to turn it on and off.

Alarm on indicator   Hourly time signal on indicator

• The alarm on indicator and hourly time signal on indicator are displayed when the alarm and/or signal is turned 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.
• The alarm on indicator flashes while the alarm is sounding.
• The snooze alarm indicator (**SNZ**) flashes while the snooze alarm is sounding and during the 5-minute intervals between alarms.

To stop the alarm
Press any button.

Illumination

The display of the watch is illuminated for easy reading in the dark.
The watch's auto light switch turns on illumination automatically when you angle the watch towards your face.
• The auto light switch must be turned on (page E-86) for it to operate.

To turn on illumination manually
Press Ⓑ in any mode to illuminate the display.
• You can use the procedure below to select either 1.5 seconds or 3 seconds as the illumination duration. When you press Ⓑ, the display will remain illuminated for about 1.5 seconds or 3 seconds, depending on the current illumination duration setting.

• The above operation turns on illumination regardless of the current auto light switch setting.
• Illumination is disabled while configuring sensor measurement mode settings, and during bearing sensor calibration.

To change the illumination duration
1. In the Timekeeping Mode, hold down Ⓐ until **SET** starts to flash and the city name starts to scroll on the display.
• This is the setting screen.
2. Keep pressing Ⓓ until **LT1** or **LT3** is displayed.
• See step 3 under "To change the current time and date settings" (page E-29) for information about how to scroll through setting screens.
3. Press Ⓔ to toggle the illumination duration between three seconds (**LT3** displayed) and 1.5 seconds (**LT1** displayed).
4. After the settings are the way you want, press Ⓐ to exit the setting screen.

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.
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.

More than 40°

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.**

Note
• 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
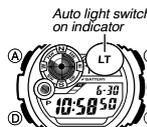*While a bearing sensor calibration operation is being performed in the Digital Compass/Thermometer Mode*

To turn the auto light switch on and off

Auto light switch on indicator

In the Timekeeping Mode, hold down Ⓑ for about three seconds to toggle the auto light switch on (**LT** displayed) and off (**LT** not displayed).
• The auto light switch on indicator (**LT**) 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 (page E-14).

Illumination Precautions
• 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

• 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.
• Frequent use of illumination runs down the battery.

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.
• 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.

- 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 after the preset illumination duration (page E-84), 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 towards your face 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.
- 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.

Graphic Area

The information shown in the graphic area depends on the current mode.

Graphic Area

Mode	Graphic Area
Timekeeping Mode	Timekeeping Mode seconds
World Time Mode	World Time Mode hours
Alarm Mode	Timekeeping Mode hours
Stopwatch Mode	Stopwatch Mode minutes
CountdownTimer Mode	CountdownTimer Mode minutes

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

Mute indicator

1. In the Timekeeping Mode, hold down Ⓐ until **SET** starts to flash and the city name starts to scroll on the display.
   - This is the setting screen.
2. Keep pressing Ⓓ until **KEY ♪** or **MUTE** is displayed.
   - See step 3 under "To change the current time and date settings" (page E-29) for information about how to scroll through setting screens.
3. Press Ⓔ to toggle the button operation tone on (**KEY ♪**) and off (**MUTE**).
4. After the settings are the way you want, press Ⓐ to exit the setting screen.

Note
- The mute indicator is displayed in all modes when the button operation tone is turned off.

Troubleshooting

Time Setting
■ The current time setting is off by one hour.
You may need to change your Home City's standard time/daylight saving time (DST) setting. Use the procedure under "To change the current time and date settings" (page E-29) to change the standard time/daylight saving time (DST) setting.

Sensor modes
■ I can't change the temperature unit setting.
The temperature unit setting is always Celsius (°**C**) whenever **TOKYO** is selected as the Home City. In this case, the setting cannot be changed.

■ "ERR" appears on the display while I am using a sensor.
Subjecting the watch to strong impact can cause sensor malfunction or improper contact of internal circuitry. When this happens, ERR (error) will appear on the display and sensor operations will be disabled.

- If **ERR** appears while a measurement operation is being performed in a sensor mode, restart the measurement. If **ERR** appears on the display again, it can mean there is something wrong with the sensor.
- Even if battery power is at Level 1 (**H**) or Level 2 (**M**), the Digital Compass/Thermometer Mode sensor may be disabled if there is not enough voltage available to power it sufficiently. In this case, **ERR** will appear on the display. This does not indicate malfunction, and sensor operation should resume once battery voltage returns to its normal level.

- If **ERR** keeps appearing during measurement, it could mean there is a problem with the applicable sensor.

■ ERR appears on the display after I perform bidirectional calibration or northerly calibration.
If **- - -** appears and then changes to **ERR** (error) on the calibration screen, it means that there is something wrong with the sensor.
- If **ERR** disappears after about one second, try performing the calibration again.
- If **ERR** keeps appearing, contact your original dealer or nearest authorized CASIO distributor to have the watch checked.

■ ERR appears on the display after I perform northerly calibration.
The **ERR** message indicates there may be some problem with the sensor. The **ERR** message also may be due to movement of the watch while the calibration procedure is being performed. Try performing calibration again, taking care to ensure that the watch is not moved.
If this does not solve the problem, the problem may be due to some nearby source of terrestrial magnetism. Try performing the calibration procedure again from the beginning.

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

■ What causes incorrect direction readings?
- Incorrect bidirectional calibration. Perform bidirectional calibration (page E-42).
- 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.

■ What causes different direction readings to produce different results at the same location?
Magnetism generated by nearby high-tension wires is interfering with detection of terrestrial magnetism. Move away from the high-tension wires and try again.

■ Why am I having problems taking direction readings indoors?
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.

World Time Mode
■ The time for my World Time City is off in the World Time Mode.
This could be due to incorrect switching between standard time and daylight saving time. See "To specify standard time or daylight saving time (DST) for a city" (page E-72) for more information.

Charging
■ The watch does not resume operation after I expose it to light.
This can happen after the power level drops to Level 5 (page E-14). Continue exposing the watch to light until the battery power indicator shows "**H**" or "**M**".

Specifications

Accuracy at normal temperature: ±15 seconds a month
Timekeeping: Hour, minutes, seconds, p.m. (P), year, month, day, day of the week
    Time format: 12-hour and 24-hour
    Calendar system: Full Auto-calendar pre-programmed from the year 2000 to 2099
    Other: Home City name (can be assigned one of 48 city names); Standard Time / Daylight Saving Time (summer time)
Digital Compass: 20 seconds continuous measurement; 16 directions; Angle value 0° to 359°; Four direction pointers; Calibration (bidirectional, northerly); Magnetic declination correction; Bearing Memory
Thermometer:
    Measurement and display range: −10.0 to 60.0°C (or 14.0 to 140.0°F)
    Display unit: 0.1°C (or 0.2°F)
    Measurement timing: Every five seconds in the Digital Compass/Thermometer Mode
    Other: Calibration; Manual measurement (button operation)

Bearing Sensor Precision:
Direction: Within ±10°
Values are guaranteed for a temperature range of –10°C to 40°C (14°F to 104°F).
North pointer: Within ±2 digital segments
Temperature Sensor Precision:
±2°C (±3.6°F) in range of –10°C to 60°C (14.0°F to 140.0°F)
Moon Data: Moon phase indicator for specific date, Moon age indicator
Other: Moon phase reversal
World Time: 48 cities (31 time zones)
Other: Daylight Saving Time/Standard Time
Stopwatch:
Measuring unit: 1/100 second
Measuring capacity: 999:59' 59.99"
Measuring modes: Elapsed time, split time, two finishes

Countdown Timer:
Measuring unit: 1 second
Countdown start time setting range: 1 minute to 24 hours (1-hour increments and 1-minute increments)
Alarms: 5 daily alarms (four one-time alarms; one snooze alarm); Hourly Time Signal
Illumination: EL Backlight (electro-luminescent panel); Selectable illumination duration (approximately 1.5 second or 3 seconds); Auto Light Switch (Full Auto EL Light operates only in the dark)
Other: Battery power indicator; Power Saving; Button operation tone on/off
**Power Supply:** Solar cell and one rechargeable battery
Approximate battery operating time: 8 months (from full charge to Level 4) under the following conditions:
• Watch not exposed to light
• Internal timekeeping
• 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
• 10 digital compass operations per week

Frequent use of illumination runs down the battery. Particular care is required when using the auto light switch (page E-89).
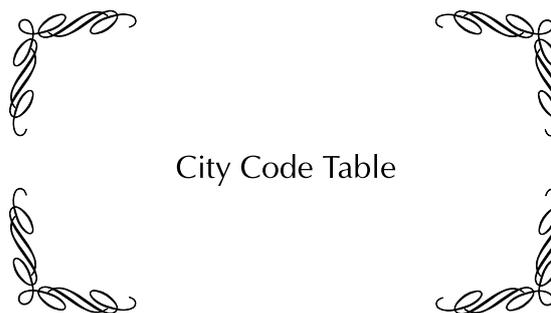
City Code Table

City Code Table

City Code	City	UTC Offset/ GMT Differential
PPG	PAGO PAGO	–11
HNL	HONOLULU	–10
ANC	ANCHORAGE	–9
YVR	VANCOUVER	–8
LAX	LOS ANGELES	
YEA	EDMONTON	–7
DEN	DENVER	
MEX	MEXICO CITY	–6
CHI	CHICAGO	
NYC	NEW YORK	–5

City Code	City	UTC Offset/ GMT Differential
SCL	SANTIAGO	–4
YHZ	HALIFAX	
YYT	ST. JOHN'S	–3.5
RIO	RIO DE JANEIRO	–3
FEN	F.DE NORONHA	–2
RAI	PRAIA	–1
UTC		0
LIS	LISBON	
LON	LONDON	

City Code	City	UTC Offset/ GMT Differential
MAD	MADRID	+1
PAR	PARIS	
ROM	ROME	
BER	BERLIN	
STO	STOCKHOLM	
ATH	ATHENS	+2
CAI	CAIRO	
JRS	JERUSALEM	
MOW	MOSCOW	+3
JED	JEDDAH	
THR	TEHRAN	+3.5
DXB	DUBAI	+4

City Code	City	UTC Offset/ GMT Differential
KBL	KABUL	+4.5
KHI	KARACHI	+5
DEL	DELHI	+5.5
KTM	KATHMANDU	+5.75
DAC	DHAKA	+6
RGN	YANGON	+6.5
BKK	BANGKOK	+7
SIN	SINGAPORE	+8
HKG	HONG KONG	
BJS	BEIJING	
TPE	TAIPEI	

City Code	City	UTC Offset/ GMT Differential
SEL	SEOUL	+9
TYO	TOKYO	
ADL	ADELAIDE	+9.5
GUM	GUAM	+10
SYD	SYDNEY	
NOU	NOUMEA	+11
WLG	WELLINGTON	+12

• Based on data as of July 2010.
• The rules governing global times (GMT differential and UTC offset) and summer time are determined by each individual country.