

Operation Guide 5302

CASIO®

ENGLISH

Congratulations upon your selection of this CASIO watch.

Applications

This watch has built-in sensors that measure direction and temperature. Measurement results are indicated by the watch's hands and displays. These features make this watch useful when hiking, mountain climbing, or when engaging in other such outdoor activities.

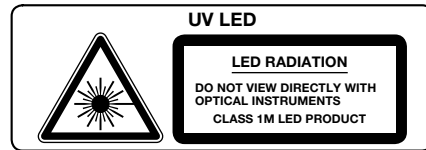
Warning!

- 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 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.

Warning!

Never view directly with optical instruments.

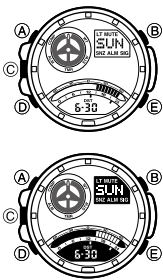
This label is a warning and caution label for Class 1M UV LED products that comply with IEC60825-1:1993+A1:1997. Although Class 1M UV LED light is invisible, never view directly with optical instruments. The UV LED has a maximum output of less than 25mW and a wavelength of 375nm.



E

E-1

About This Manual



- Depending on the model of your watch, display text appears either as dark figures on a light background, or light figures on a dark background. All examples in this manual are shown using dark figures on a light background.
- 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.

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Things to check before using the watch

1. Check the Home City and the daylight saving time (DST) setting.

Use the procedure under "To configure Home City settings" (page E-13) to configure your Home City and daylight saving time settings.

Important!

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

2. Set the current time.

See "Configuring Current Time and Date Settings" (page E-15).

The watch is now ready for use.

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Mode Reference Guide

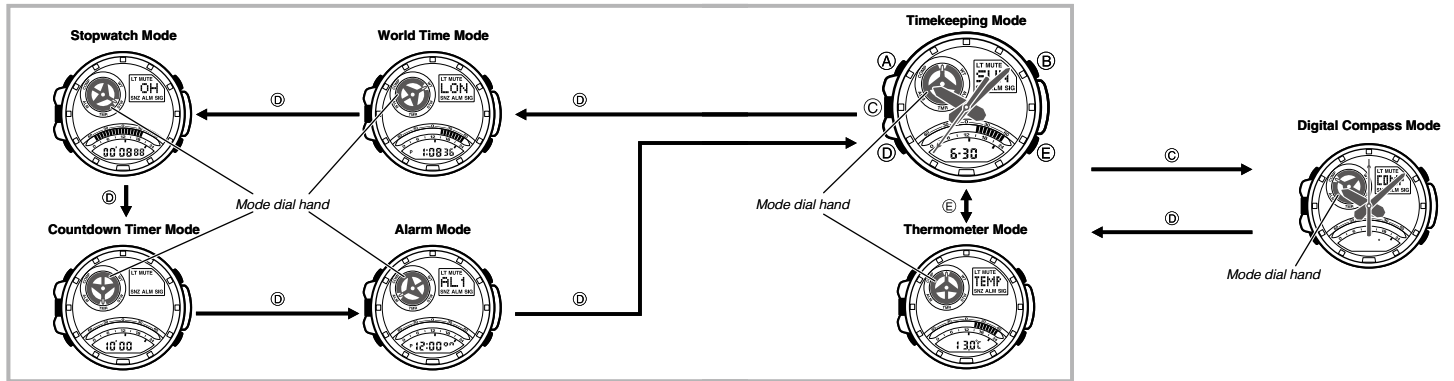
Your watch has 7 "modes". The mode you should select depends on what you want to do.

| To do this: | Enter this mode: | See: |
|--|----------------------|------|
| • View the current date in the Home City | Timekeeping Mode | E-12 |
| • Configure Home City and daylight saving time (DST) settings | | |
| • Configure time and date settings | | |
| • Determine your current bearing or the direction from your current location to a destination as a direction indicator and angle value | Digital Compass Mode | E-20 |
| • Determine your current location using the watch and a map | | |
| Determine the temperature at your current location | Thermometer Mode | E-34 |
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Selecting a Mode

- The illustration below shows which buttons you need to press to navigate between modes.
- To return to the Timekeeping Mode from any other mode, hold down **(D)** for about two seconds.

* The mode dial hand indicates the watch's current mode.



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General Functions (All Modes)

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

Direct Timekeeping Mode Access

- To enter the Timekeeping Mode from any other mode, hold down **(D)** for about two seconds.

Auto Return Features

- The watch will automatically return to the Timekeeping Mode if you do not perform any button operation for a particular amount of time in each mode.

| Mode Name | Approximate Elapsed Time |
|---|--------------------------|
| Alarm, Digital Compass | 3 minutes |
| Thermometer | 1 to 2 minutes |
| Setting screen (digital setting flashing) | 3 minutes |

Initial Screens

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

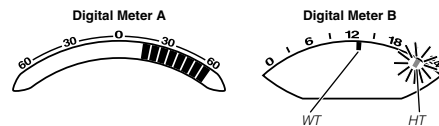
Scrolling

The **(C)** and **(B)** 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.

Digital Meters

- The upper digital meter (Digital Meter A) indicates the seconds count in the Timekeeping Mode (page E-12), World Time Mode (page E-38), and Timer Mode (page E-43). In the Stopwatch Mode (page E-41) it indicates the 1/10-second count. While viewing bearing memory contents in the Digital Compass mode (page E-27), it shows a bearing pointer.
- In all modes (except when a flashing setting screen is displayed), the lower digital meter (Digital Meter B) shows the current Timekeeping Mode time (flashing) and World Time time (not flashing).

Example:



WT: Current World Time time (London, 1:08 p.m.)
HT: Current Timekeeping Mode time (Tokyo, 10:08 p.m.)

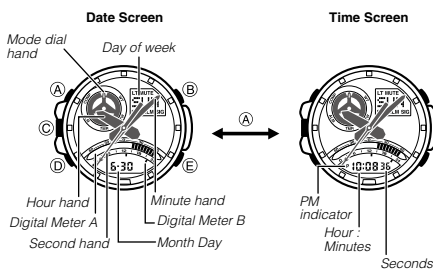
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Timekeeping

Use the Timekeeping Mode to set and view the current time and date.

- Each press of **(A)** in the Timekeeping Mode will change screen contents as shown below.
- Digital Meter A shows the seconds count.

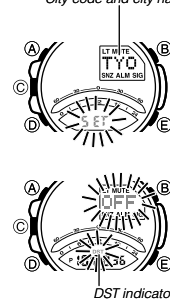


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Configuring Home City Settings

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

City code and city name



To configure Home City settings

- In the Timekeeping Mode, hold down **(A)** until **ADJ** appears in the upper display.
 - When you release **(A)** (after **ADJ** appears), **SET** will be flashing in the lower display. This is the setting mode.
 - The watch will exit the setting mode automatically if you do not perform any operation for about two or three minutes.
- Use **(E)** (East) and **(B)** (West) to scroll through the available city codes.
 - Keep scrolling until the city code you want to select as your Home City is shown in the upper display.
 - For details about city codes, see the "City Code Table" at the back of this manual.
- Press **(D)**.
 - This will cause **DST** to appear in the lower screen and the DST setting of the currently selected Home City to appear in the upper screen.
- Press **(E)** to toggle the DST setting between daylight saving time (**ON**) and standard time (**OFF**).
 - Note that you cannot switch between standard time and daylight saving time (DST) while UTC is selected as your Home City.

- After all of the settings are the way you want, press **(A)** to exit the setting screen.
 - The **DST** indicator appears to indicate that daylight saving time is turned on.

Note

- After you specify a city code, 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

- In the Timekeeping Mode, hold down **(A)** until **ADJ** appears in the upper display.
 - When you release **(A)** (after **ADJ** appears), **SET** will be flashing in the lower display.
- Press **(D)**.
 - This will cause **DST** to appear in the lower screen and the DST setting of the currently selected Home City to appear in the upper screen.
- Press **(E)** to toggle the DST setting between daylight saving time (**ON**) and standard time (**OFF**).
- After all of the settings are the way you want, press **(A)** to exit the setting screen.
 - 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. Changing the digital Home City data should cause the analog time setting to change accordingly. If the analog time does not indicate the digital time, check the home positions of the hands and make adjustments if necessary (page E-18).

To change the current time and date settings

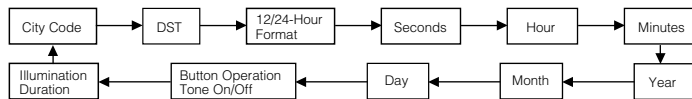
- In the Timekeeping Mode, hold down **(A)** until **ADJ** appears in the upper display.
 - When you release **(A)** (after **ADJ** appears), **SET** will be flashing in the lower display.



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2. Press **(A)** to move the flashing in the sequence shown below to select the other settings.



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

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: |
|------------|--|--|
| TYO: TOKYO | Change the city code | Use (E) (East) and (B) (West). |
| OFF DST | Toggle between daylight saving time (ON) and standard time (OFF). | Press (E) . |
| 12H | Toggle between 12-hour (12H) and 24-hour (24H) timekeeping. | Press (E) . |
| 36 | Reset the seconds to 00 (If the current seconds count is between 30 and 59, one is added to the minute count). | Press (E) . |
| P 10:08 | Change the hour or minutes | Use (E) (+) and (B) (-). |
| 20 13 6:30 | Change the year, month, or day | |

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4. After all of the settings are the way you want, press **(A)** 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-13).
- While the 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 battery replaced.
- The day of the week changes automatically when the date changes.
- Refer to the pages shown below for more information on Timekeeping Mode settings.
 - Button operation tone on/off: "To enable or disable the button operation tone" (page E-52)
 - Illumination duration setting: "To change the illumination duration" (page E-48)

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Hand Home Position Adjustment

Strong magnetism or impact can cause the hands of the watch to be off.

- Home position adjustment is not necessary when the analog time and digital time are the same time in the Timekeeping Mode.

To adjust home positions



- In the Timekeeping Mode, hold down **(A)** and keep it depressed for about five seconds until **H.SET** appears on the upper display.
 - When you release **(A)** after **H.SET** appears, the second hand will move to 12 o'clock. This indicates the second hand home position adjustment mode.
 - Though **ADJ** will appear in the upper display about two seconds after you hold down **(A)**, do not release the button yet. Keep it depressed until **H.SET** appears.
 - Use the **(D)** button to select a hand for adjustment. Each press of **(D)** cycles in sequences from the second hand, to the hour and minute hands, and then the mode dial hand. Selecting a hand causes it to move to 12 o'clock and the content of the lower display changes as shown in the table below.

| Lower display | Selected hand |
|---------------|-----------------------|
| Flashing 00 | Second hand |
| Flashing 0:00 | Hour and minute hands |
| Flashing Sub | Mode dial hand |

* If the selected hand does not move exactly to 12 o'clock, perform step 2 below to adjust it.

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- The watch will return to regular timekeeping automatically if you do not perform any operation for about two or three minutes. Any changes you have made to settings up to that point will be saved.

2. Use **(E)** (+) and **(B)** (-) to adjust the position of the currently selected hand.

- Holding down either button will cause the hand to move at high speed. Once started, high-speed hand movement will continue even if you release the button. To stop high-speed hand movement, press any button.
- The second hand and mode dial hand will automatically stop high-speed movement after they complete one revolution. The minute hand will stop automatically after 12 revolutions.

3. Press **(A)** to exit home position correction and return to regular timekeeping.

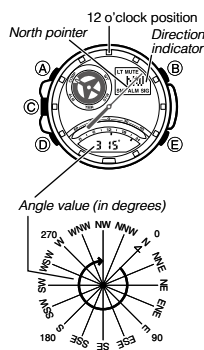
Note

- After performing home position adjustment, enter the Timekeeping Mode and check to make sure that the analog hands and the lower display indicate the same time. If they do not, perform home position adjustment again.

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Using the Digital Compass

In the Digital Compass Mode, a built-in bearing sensor detects magnetic north at regular intervals and indicates one of 16 directions on the upper display.



To perform a digital compass operation

- 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).
- Point the 12 o'clock position of the watch in the direction you want to check.
- In any mode (except a setting mode), press **(C)** to perform a digital compass operation.
 - This will cause the mode dial hand to move to **COMP**.
 - COMP** will appear in the upper display to indicate that a digital compass operation is in progress.
 - See "Digital Compass Readings" (page E-21) for information about how direction readings are indicated by the watch.
- To return to the mode you were in immediately before entering the Digital Compass Mode, press **(D)**. To enter the Timekeeping Mode, hold down **(D)** for at least two seconds.

Note

- If there is an angle value in the upper display, it means that the bearing memory record (page E-26) is displayed. If this happens, press **(E)** to exit the bearing memory record.

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Digital Compass Readings

- When you press **(C)** to start a digital compass operation, **COMP** will initially appear on the upper display. About two seconds after you start a digital compass operation, an indicator will appear in the upper display to indicate what direction the 12 o'clock position of the watch is pointed. The second hand will point to magnetic north.
- 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, the digital compass operation will stop automatically.
- The direction indicator and angle value will show --- to indicate that the digital compass operation is complete.
- The auto light switch is disabled during the 20 seconds that digital compass readings are being taken.
- The following table shows the meanings of each of the direction abbreviations that appear on the upper 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 ± 15 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 300 to 330 degrees.

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- Note that performing a digital compass operation while the watch is not horizontal (in relation to the horizon) can result in large error.
- You can calibrate the bearing sensor if you suspect the direction reading is incorrect.
- Any ongoing digital compass 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 **(B)**). The digital compass operation resumes for its remaining duration after the operation that caused it to pause is finished.
- See "Digital Compass Precautions" (page E-33) 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. You can use any one of two different bearing sensor calibration methods: bidirectional calibration or magnetic declination correction.

Bidirectional Calibration

Bidirectional calibration calibrates 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.

Important!

The more correctly you perform bidirectional calibration, the better the accuracy of the readings produced by the bearing sensor. 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.

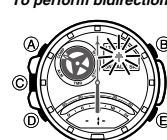
Magnetic Declination Correction

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°.

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



- In the Digital Compass Mode, hold down **(A)**.
 - The second hand will move to 12 o'clock, indicating the bidirectional calibration mode.
 - At this time the upper display will show an upward pointing arrow (**↑**) and the lower display will show -1-. These indicate that the watch is ready for calibration of the first direction.

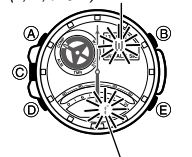
E-22

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- Place the watch on a level surface facing any direction you want, and press **C** to calibrate the first direction.
 - will be shown in the lower display while first direction calibration is in progress. When calibration is successful, **OK** will appear in the upper display for a short while, and then change to **+**. The lower display will show **-2-**. These indicate that the watch is ready for calibration of the second direction.
- Rotate the watch 180 degrees.
- Press **C** again to calibrate the second direction.
 - will be displayed in the lower display while calibration is in progress.
 - After calibration is successful, the upper display will show **OK** and then the watch will return to the Digital Compass Mode.
 - ERR** will appear on the upper display for a short while if an error occurs. After that, the screen will automatically return to the first direction calibration screen (the one that appears after **A** is held down in step 1).

To perform magnetic declination correction

Magnetic declination direction (E, W, or OFF)



Magnetic declination angle value

- In the Digital Compass Mode, hold down **A**.
 - The second hand will move to 12 o'clock, indicating the bidirectional calibration mode.
- Press **D** to enter the magnetic declination correction mode.
 - The upper display will show the current magnetic declination direction, and the lower display will show the current magnetic declination angle value.
- Use **E** (East) and **B** (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 **E** and **B** 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.

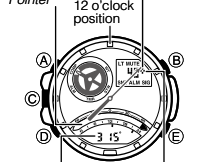
4. When the setting is the way you want, press **A** to exit the setting screen.

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Using Bearing Memory

Bearing Memory Pointer North pointer



Direction angle of current reading Bearing memory direction angle value

Bearing Memory Data

Bearing Memory lets you temporarily store and display a direction reading so you can use it as a reference as you take subsequent digital compass readings. Accessing the Bearing Memory data displays the direction angle for the stored reading in the lower display, along with an indicator in Digital Meter A (page E-27) that shows the stored bearing. If you perform a digital compass operation while Bearing Memory data is displayed, the direction angle of the current digital compass reading (as read from the 12 o'clock position of the watch) will be shown in the lower display and the stored Bearing Memory direction reading will be shown in the upper display.

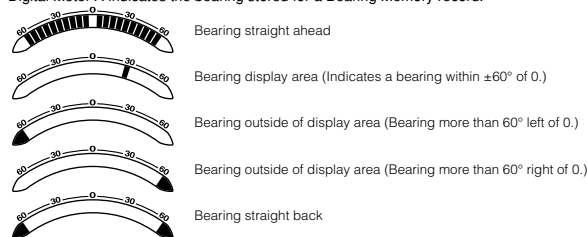
To store a direction angle reading in Bearing Memory

- Press **C** to start a digital compass operation (page E-20).
 - This will take an initial reading and then take readings every second for 20 seconds.
 - If a bearing memory direction angle value is already displayed in the lower display, it means that there is a reading already stored in Bearing Memory. If this happens, press **E** to clear the Bearing Memory reading and exit the bearing memory screen before performing the above step.
- During the 20 seconds that digital compass readings are being taken, press **E** to store the current reading in Bearing Memory.
 - The Bearing Memory direction angle flashes for about one second in the lower display as it is stored in Bearing Memory. After that, the angle value will stop flashing (indicating that it is Bearing Memory data), and a new 20-second direction reading operation will start.

- You can press **C** at any time while the Bearing Memory angle value is displayed, to start a new 20-second direction reading operation. Doing so will display the direction angle for the direction that the 12 o'clock position of the watch is pointed. The direction angle of the current reading will disappear from the display after the 20-second direction reading operation is complete.
- The direction stored in Bearing Memory is indicated by Digital Meter A in the following cases only.
 - During the first 20 seconds after you display Memory data
 - During a direction reading operation triggered by pressing **C** while Bearing Memory data is displayed in the upper display
- Pressing **E** while the Bearing Memory data is displayed will clear the reading currently in Bearing Memory and start a new 20-second direction reading operation.

Bearing Memory Pointer

Digital Meter A indicates the bearing stored for a Bearing Memory record.



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- To position yourself to move in the direction of the recorded bearing, move around until the Bearing Memory Pointer points straight ahead of you, as shown above.

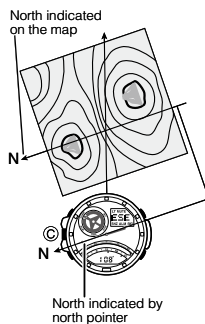
Using the Digital Compass While Mountain Climbing or Hiking

This section shows three actual examples of how to use the watch's 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

- With the watch on your wrist, position it so the face is horizontal.
- While in any mode (except a setting mode), press **C** to take a compass reading.
 - Direction readings are taken every second for 20 seconds.
- 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-22).
 - This will position the map in accordance with your current location.
- Determine your location as you check the geographic contours around you.

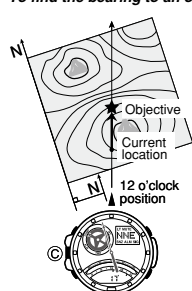


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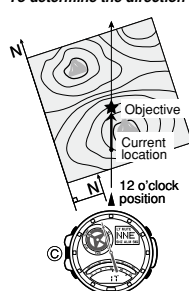
To find the bearing to an objective

- With the watch on your wrist, position it so the face is horizontal.
- 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-29 for information about how to perform the above step.
- Next, set the map so the direction you want to travel on the map is pointed straight in front of you.
- While in any mode (except a setting mode), press **C** to take a compass reading.
 - The reading will appear on the upper display after about two seconds.
- 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.



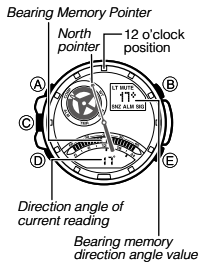
To determine the direction angle to an objective on a map and head in that direction (Bearing Memory)

- 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-29 for information about how to perform the above step.
- 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.



E-30

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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.

- In any mode (except a setting mode), press (C) to take a digital compass reading.
 - This will cause the mode dial hand to move to **COMP**.
- While direction angle readings are in progress, press (E) to record the currently displayed direction in Bearing Memory.
 - The direction angle value and bearing pointer that are stored in Bearing Memory will remain indicated for about 20 seconds.
 - To re-display the Bearing Memory direction angle value and Bearing Memory Pointer, press (C).
 - See "Using Bearing Memory" (page E-26) for more information.
- Now you can advance while monitoring the Bearing Memory Pointer to ensure that it remains in the 12 o'clock position.
 - Pressing (E) while the Bearing Memory direction angle value and Bearing Memory Pointer are shown will clear the Bearing Memory data you saved in step 4.

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

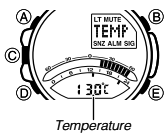
- Taking a direction reading when you are near a source of strong magnetism can cause large errors in readings. Because of this, you should avoid taking direction readings while in the vicinity of the following types of objects: permanent magnets (magnetic necklaces, etc.), concentrations of metal (metal 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 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-23).

Taking Temperature Readings

This watch uses a temperature sensor to measure temperature.

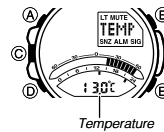


To enter and exit the Thermometer Mode

- While in the Timekeeping Mode, press (E) to enter the Thermometer Mode.
 - **TEMP** will appear in the upper display and temperature measurement will start. After about one second, the measurement reading will appear in the lower display.
 - The watch will continue to take temperature readings every five seconds for one or two minutes.
- Press (E) to return to the Timekeeping Mode.
 - The watch will return to the Timekeeping Mode automatically if you do not perform any operation for about one or two minutes after entering the Thermometer Mode.

To take temperature readings

- While in the Timekeeping Mode, press (E).
- This starts temperature measurement automatically.



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 the temperature unit" (page E-37).

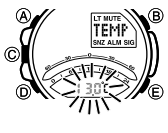
Temperature Sensor Calibration

The temperature sensor built into the watch is calibrated at the factory and normally require 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



- Take a reading with another measurement device to determine the exact current temperature.
- With the watch in the Timekeeping Mode, press (E) to enter the Thermometer Mode.
- Hold down (A) for about two seconds until the temperature reading disappears from the bottom display. Release (A) at this time, which will cause the temperature reading to flash, which indicates the setting mode.

- Use (E) (+) and (B) (-) to calibrate the temperature value with the reading of another instrument.
 - Each press of a button changes the temperature value in units of 0.1°C (0.2°F).
 - To return the currently flashing value to its initial factory default setting, press (E) and (B) at the same time.
- Press (A) to return to the Thermometer Mode.

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.

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".
 * You also can swap the current World Time City and Home Time City in the World Time Mode (page E-40).



To enter the World Time Mode

Use (D) to select the World Time Mode as shown on page E-8.
 • The mode dial hand will point to **WT**, and the current city code and city name will scroll across the upper display. After that, the city code will remain shown in the upper display. You can scroll the city code and city name again by pressing (A).
 • Digital Meter A shows the seconds count.
 • The hour, minute, and second hands will indicate the current Timekeeping Mode time.

To view the time in another time zone

In the World Time Mode, use (E) (East) to scroll through city codes.

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



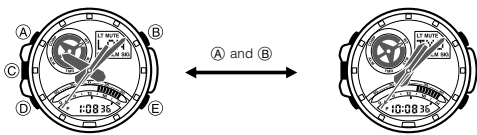
Hold down (A) ↓



- In the World Time Mode, use (E) (East) to scroll through the available city codes.
 - Keep scrolling until the city code whose standard time/daylight saving time setting you want to change is shown in the upper display.
- To toggle between summer time (DST in the lower display) and standard time (DST not displayed), hold down (A).
 - Using the World Time Mode to change the DST setting of the city code 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.
 - To change the city code to **UTC**, press (B) and (E) at the same time.

To swap your Home Time and World Time Cities

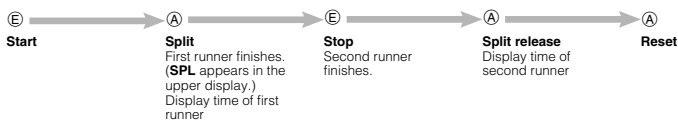
- In the World Time Mode, use (E) to select the city you want to use as your new Home City.
- To swap, press (A) and (B) at the same time.



- This will make the World Time City you selected in step 1 (LON (LONDON)) your new Home City.
- Your previous Home City (TYO (TOKYO)) will be your new World Time City.

E-40

To measure two finishes

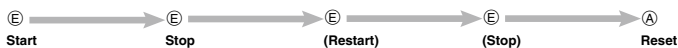


Note

- The Stopwatch Mode can indicate elapsed time up to 23 hours, 59 minutes, 59.99 seconds.
- Digital Meter A shows the 1/10 seconds count.
- Once started, stopwatch timing continues until you press (E) to stop it, even if you exit the Stopwatch Mode to another mode and even if timing reaches the stopwatch limit defined above.

E-42

To perform a countdown timer operation



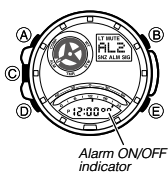
- Digital Meter A shows the seconds count.
- Before starting a countdown timer operation, check to make sure that a countdown operation is not already in progress (indicated by the seconds counting down). If it is, press (E) to stop it and then (A) to reset to the countdown start time.
- An alarm sounds 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 after the alarm sounds.

To stop the alarm

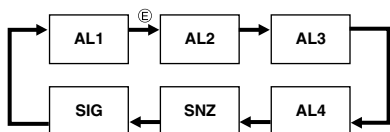
Press any button.

E-44

To set an alarm time



- In the Alarm Mode, use (E) to scroll through the alarm screens in the upper display until the one you want to change is shown.



- Hold down (A) until the hour digits of the alarm setting start to flash in the lower display.
 - This is the setting screen.
- Press (D) to move the flashing between the hour and minute settings.
- 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).
- Press (A) to exit the setting screen.

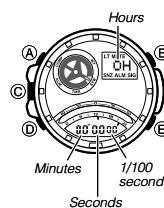
To test the alarm

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

E-46

Using the Stopwatch

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



To enter the Stopwatch Mode

Use (D) to select the Stopwatch Mode as shown on page E-8. The mode dial hand will move to **STW**.

To perform an elapsed time operation



To pause at a split time



E-41

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.



To enter the Countdown Timer Mode

Use (D) to select the Countdown Timer Mode as shown on page E-8. The mode dial hand will move to **TMR** and the lower display will show the current countdown time.

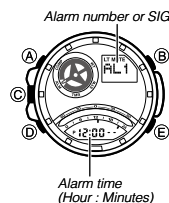
To specify the countdown start time

- Enter the Countdown Timer Mode.
 - If a countdown is in progress (indicated by the seconds counting down), press (E) to stop it and then press (A) to reset to the current countdown start time.
 - If a countdown is paused, press (A) to reset to the current countdown start time.

- Hold down (A) until the minute setting of the current countdown start time starts to flash. This is the setting screen.
- Use (E) (+) and (B) (-) to change the minute.
 - To set the starting value of the countdown time to 60 minutes, set **60'00**.
- Press (A) to exit the setting screen.

E-43

Using the Alarm



You can set five independent daily alarms. When an alarm is turned on, an alarm will sound 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. One of the daily alarms is a snooze alarm. The other four are one-time alarms. The snooze alarm will sound every five minutes up to seven times or until it is turned off. You can also turn on an Hourly Time Signal, which will cause the watch to beep twice every hour on the hour.

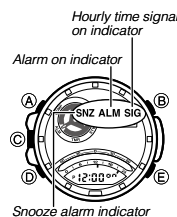
To enter the Alarm Mode

Use (D) to select the Alarm Mode as shown on page E-8. The mode dial hand will move to **ALM**, the upper display will show the currently selected alarm number (**AL1** to **AL4**, or **SNZ**), or the hourly time signal indicator (**SIG**).

- When you enter the Alarm Mode, the data you were viewing when you last exited the mode appears first.

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

- In the Alarm Mode, use (E) to select an alarm or the Hourly Time Signal.
- When the alarm or the Hourly Time Signal you want is selected, press (A) to turn it on and off.



- The alarm on indicator (when any alarm is on), snooze alarm indicator (when the snooze alarm is on), and the Hourly Time Signal on indicator (when the Hourly Time Signal is on) are shown on the upper display in all modes.

To stop the alarm

Press any button.

E-47

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 enabled (page E-50) for it to operate.

To illuminate the display manually

- Press **(B)** in any mode (except when a flashing setting screen is displayed) to illuminate the display.
- You can use the procedure below to select either 1.5 seconds or three seconds as the illumination duration. When you press **(B)**, the display will remain illuminated for about 1.5 seconds or three seconds, depending on the current illumination duration setting.
 - The above operation illuminates the display regardless of whether the auto light switch is enabled or disabled.
 - Illumination is disabled while configuring sensor measurement mode settings, and during bearing sensor calibration.

To change the illumination duration

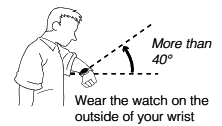
- In the Timekeeping Mode, hold down **(A)** until **ADJ** appears in the upper display.
 - When you release **(A)** (after **ADJ** appears), **SET** will be flashing in the lower display. This is the setting mode.
- Use **(D)** to cycle through the settings on the upper display until the current illumination duration (**LT1** or **LT3**) is shown.
 - See the sequence in step 2 of the procedure under "To change the current time and date settings" (page E-15) for information about how to scroll through setting screens.

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- Press **(E)** to toggle the illumination duration between three seconds (**LT3** displayed) and 1.5 seconds (**LT1** displayed).
- After all of the settings are the way you want, press **(A)** to exit the setting screen.

About the Auto Light Switch

While the Auto Light Switch is enabled, illumination will 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.**



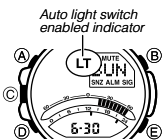
Warning!

- 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 enabled/disabled setting, when any one of the following conditions exists.
 - While an alarm is sounding
 - During sensor measurement
 - While a bearing sensor calibration operation is being performed in the Digital Compass Mode

To enable or disable the auto light switch



- In the Timekeeping Mode, hold down **(B)** for about three seconds to toggle the auto light switch between enabled (**LT** shown in the upper display) and disabled (**LT** not displayed).
- The auto light switch enabled indicator (**LT**) is on the upper display in all modes while the auto light switch is turned enabled.
 - The auto light switch remains enabled for about six hours. After that it disables automatically.

Illumination Precautions

- Do not look directly at the ultraviolet LED light source located at 6 o'clock.
- Never try to remove the ultraviolet LED from the watch and use it as a light source.
- Do not use a lens or other object to concentrate the ultraviolet LED light.
- 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.

E-50

Auto light switch precautions



- 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-48), 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.

E-49

Button Operation Tone

When enabled, the button operation tone sounds any time you press one of the watch's buttons. You can enable or disable the button operation tone as desired.

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

To enable or disable the button operation tone



- In the Timekeeping Mode, hold down **(A)** until **ADJ** appears in the upper display.
 - When you release **(A)** (after **ADJ** appears), **SET** will be flashing in the lower display.
- Use **(D)** to cycle through settings on the upper display until the current button operation tone setting (**MUTE** or **KEY ♪**) is shown.
 - See the sequence in step 2 of the procedure under "To change the current time and date settings" (page E-15) for information about how to scroll through setting screens.
- Press **(E)** to toggle the button operation tone setting between enabled (**KEY ♪**) and disabled (**MUTE**).
- After the setting is the way you want, press **(A)** to exit the setting screen.



Note

- The mute indicator is displayed in all modes when the button operation tone is disabled.

E-52

Troubleshooting

Time Setting

Why is the current time setting off by a couple of hours?

Your Home City setting may be wrong (page E-13). Check your Home City setting and correct it, if necessary.

Why is the current time setting 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-15) to change the standard time/daylight saving time (DST) setting.

Sensor modes

Why can't I 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.

Why does "ERR" appear while a sensor operation is in progress?

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 upper display and sensor operations will be disabled.

Digital Compass Operation



Temperature Measurement



- If **ERR** appears while a measurement operation is being performed in a sensor mode, restart the measurement. If **ERR** appears on the upper display again, it can mean there is something wrong with the sensor.
- If **ERR** keeps appearing during measurement, it could mean there is a problem with the applicable sensor.

Why does "ERR" appear on the upper display following bidirectional 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.

What causes incorrect direction readings?

- Incorrect bidirectional calibration. Perform bidirectional calibration (page E-23).
- 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.

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-39) for more information.

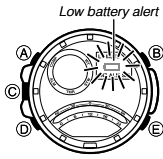
Whenever you have a sensor malfunction, take the watch to your original dealer or nearest authorized CASIO distributor as soon as possible.

E-54

E-55

Battery

Why is the low battery alert flashing?



Battery power is low. Watch operations are disabled while the low battery alert is flashing on the upper display. If the low battery alert disappears after battery power recovers but then starts to flash again after a short while, it means that you need to have the watch's battery replaced.

Specifications

Accuracy at normal temperature: ±15 seconds a month

Digital Timekeeping: Hour, minutes, seconds, p.m. (P), 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: Two display formats (month, day or time); Home City code (can be assigned one of 48 city codes); standard time / daylight saving time (summer time)

Analog Timekeeping: Hour, minutes (hand moves every 10 seconds), seconds

Other: Calibration (bidirectional); 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 Thermometer Mode

Other: Calibration; Selectable measurement unit

Bearing Sensor Precision:

Direction: Within ±15°

Values are guaranteed for a temperature range of -10°C to 40°C (14°F to 104°F).

North indicated by second hand: Error within ±20°.

Temperature Sensor Precision:

±2°C (±3.6°F) in range of -10°C to 60°C (14.0°F to 140.0°F)

World Time: 48 cities (31 time zones)

Other: daylight saving time/standard time

E-56

E-57

Stopwatch:

Measuring unit: 1/100 second

Measuring capacity: 23:59' 59.99"

Measuring modes: Elapsed time, split time, two finishes

Countdown Timer:

Measuring unit: 1 second

Countdown range: 60 minutes

Setting ranges: Countdown start time (1 to 60 minutes, 1-minute increments)

Alarms: 5 daily alarms (four one-time alarms; one snooze alarm); Hourly Time Signal

Illumination: Ultraviolet LED (light-emitting diode); Selectable illumination duration (approximately 1.5 seconds or 3 seconds); Auto Light Switch

Other: Button operation tone on/off

Battery: Two silver oxide batteries (Type: SR927W)

Approximate battery operating time: 2 years under the following conditions:

- 1 illumination operation (1.5 seconds) per day

- Alarm: 10 seconds/day

- Direction readings: 20 times/month

- Temperature readings: Once/week

Frequent use of illumination runs down the battery. Particular care is required when using the auto light switch (page E-51).

E-58

City Code Table

| City Code | City name | 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 |
| SCL | SANTIAGO | -4 |
| YHZ | HALIFAX | |
| YYT | ST. JOHN'S | -3.5 |
| RIO | RIO DE JANEIRO | -3 |
| FEN | F. DE NORONHA | -2 |
| RAI | PRAIA | -1 |

| City Code | City name | UTC Offset/ GMT Differential |
|-----------|-----------|---------------------------------|
| UTC | | 0 |
| LIS | LISBON | |
| LON | LONDON | |
| MAD | MADRID | +1 |
| PAR | PARIS | |
| ROM | ROME | |
| BER | BERLIN | |
| STO | STOCKHOLM | +2 |
| ATH | ATHENS | |
| CAI | CAIRO | |
| JRS | JERUSALEM | +3 |
| MOW* | MOSCOW | |
| JED | JEDDAH | +3.5 |
| THR | TEHRAN | |
| DXB | DUBAI | +4 |
| KBL | KABUL | +4.5 |
| KHI | KARACHI | +5 |

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

* As of June 2012, the official UTC offset for Moscow, Russia (MOW) has been changed from +3 to +4, but this watch still uses an offset of +3 (the old offset) for MOW. Because of this, you should leave the summer time setting turned on (which advances the time by one hour) for the MOW time.

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