Congratulations upon your selection of this CASIO watch.

Applications

The built-in sensors of this watch measure direction, barometric pressure, temperature and altitude. Measured values are then shown on the display. Such 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 by confirm direction reading.

• 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.

Important!

• Button operations are indicated using the letters shown in the illustration.

• 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.

About This Manual

• The operational procedures for Modules 3173 and 3246 are identical. All of the illustrations in this manual show Module 3173.

• 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 sample displays 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.

Things to check before using the watch

1. Check the battery power level.

   • Is H or M displayed for the battery power indicator?

   NO

   YES

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

   Use the procedure under “To configure Home City settings” to configure your Home City and daylight saving time settings.

   Important!

   World Time Mode and Sunrise/Sunset 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”.

   The watch is now ready for use.

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 if its face is blocked by your sleeve even slightly.

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 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.

<table>
<thead>
<tr>
<th>Level Battery Power Indicator Function Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

The scrolling 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 5, all functions are disabled and settings return to their initial factory defaults. Once the battery reaches Level 2 (M) after failing to Level 5, the power recovery mode is initiated, and all settings are restored to their initial factory defaults whenever battery power drops to Level 5 and when you have turned 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, and sensor operations will be disabled until battery power recovers.

• Power battery 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 C (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 (M) or Level 2 (M), the Digital Compass Mode, Barometer/Thermometer Mode, or Altimeter 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

<table>
<thead>
<tr>
<th>Exposure Level (Brightness)</th>
<th>Daily Operation 1</th>
<th>Level Change 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outdoor sunlight (50,000 lux)</td>
<td>5 min.</td>
<td>12 hours</td>
</tr>
<tr>
<td>Sunlight through a window (10,000 lux)</td>
<td>24 hours</td>
<td>12 hours</td>
</tr>
<tr>
<td>Daylight through a window on a cloudy day (1000 lux)</td>
<td>46 hours</td>
<td>120 hours</td>
</tr>
<tr>
<td>Indoor fluorescent lighting (500 lux)</td>
<td>8 hours</td>
<td>32 hours</td>
</tr>
</tbody>
</table>

1 Approximate amount of exposure time required each day to generate enough power for normal daily operations.

2 Approximate amount of exposure time (in hours) required to take power from one level to the next.

3 The above exposure times are intended for reference only. Actual exposure times depend on lighting conditions.

4 For details about the operating time and daily operating conditions, see the “Power Supply” section of the Specifications.

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.

• Thrice actually are two sleep state levels: “display sleep” and “function sleep.”

To turn Power Saving on and off

1. In the Timekeeping Mode, hold down until the currently selected city code starts to flash. This is the city code setting screen.

2. Before the city code starts to flash, the message SET Hold will appear on the display. Keep depressed until SET Hold disappears and the city code starts to flash.

3. Use to display the Power Saving On/Off screen shown nearby.

4. Press to toggle Power Saving on (ON) and off (OFF).

5. 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 10 “modes”. The mode you should select depends on what you want to do.

To do this: Enter this mode:
• View the current date in the Home City Timekeeping Mode
• Configure Home City and daylight saving time (DST) settings
• Configure time and date settings
View the sunrise and sunset times for a specific date Sunrise/Sunset Mode
• Determine your current bearing or the direction from your current location to a destination as a direction indicator and angle value Digital Compass Mode
• Determine your current location using the watch and a map
• View the barometric pressure and temperature at your current location Barometer/Thermometer Mode
• View a graph of barometric pressure readings
Selecting a Mode
• The illustration below shows which buttons you need to press to navigate between modes.

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 Sunrise/Sunset, Data Recall, Alarm, or Digital Compass 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, Alarm, or Digital Compass Mode, the data you were viewing when you last exited the mode appears first.

Scrolling
The \( A \) 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.

Timekeeping
Use the Timekeeping Mode to set and view the current time and date:
• Pressing \( C \) while in the Timekeeping Mode will cycle through the Timekeeping Mode display formats as shown below:

To do this: Enter this mode:
• View the altitude at your current location
• Determine the altitude differential between two locations (reference point and current location)
• Record an altitude reading with the measurement time and date
View the current time in one of 48 cities (31 time zones) around the globe World Time Mode
Use the stopwatch to measure elapsed time Stopwatch Mode
Use the countdown timer Countdown Timer Mode
Set an alarm Alarm Mode

You can use buttons \( A \), \( B \), and \( C \) to enter a sensor mode directly from the Timekeeping Modes or from another sensor mode. To enter a sensor mode from the Sunrise/Sunset Mode, Data Recall, World Time, Stopwatch, Countdown Timer, or Alarm Mode, first enter the Timekeeping Mode and then press the applicable button.

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).
To configure Home City settings
1. In the Timekeeping Mode, hold down \( D \) until the currently selected city code starts to flash. This is the city code setting screen.
2. To change the Daylight Saving Time (DST) while UTC is selected as your Home City:
3. Press \( E \) to display the DST setting screen.
4. Use \( F \) to toggle the DST settings between OFF and On.

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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
1. In the Timekeeping Mode, hold down \( D \) until the currently selected city code starts to flash. This is the city code setting screen.
2. Press \( D \) to display the DST setting screen.
3. Use \( F \) to toggle the DST settings between OFF and On.
4. After all the settings are the way you want, press \( F \) twice to return to the Timekeeping Mode.

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 Sunrise/Sunset, Data Recall, Alarm, or Digital Compass Mode.
• If you leave a screen with flashing digits on the display for two or three minutes in the Sunrise/Sunset, Data Recall, Alarm, or Digital Compass Mode.
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 display.

To take a digital compass reading

1. Make sure the watch is in the Timekeeping Mode or any one of the Auto Light-On Mode screens.
2. Place the watch on a level surface, and position it so that its 12 o'clock position of the watch is horizontal (in relation to the horizon).
3. Press \( \text{A} \) to start the digital compass operation. The illustration, for example, shows the value you should input for a magnetic declination of 1° West.
4. When the operation is successful, the display will show \( \text{–}1 \) and the direction setting you should select when the map shows a rose bearing of 1° West.

Digital Compass Readings

- When you press \( \text{A} \) to start digital compass measurement, \( \text{COMP} \) 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 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 \( \text{–} \) 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.
- The following table shows the meanings of each of the direction abbreviations that appear on the display.

### Table 1: Direction Abbreviations

<table>
<thead>
<tr>
<th>Direction</th>
<th>Meaning</th>
<th>Direction</th>
<th>Meaning</th>
<th>Direction</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>North</td>
<td>NE</td>
<td>Northeast</td>
<td>E</td>
<td>East</td>
</tr>
<tr>
<td>S</td>
<td>South</td>
<td>SW</td>
<td>Southwest</td>
<td>W</td>
<td>West</td>
</tr>
<tr>
<td>ESE</td>
<td>East-South-East</td>
<td>SSE</td>
<td>South-South-East</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NNE</td>
<td>North-North-East</td>
<td>N</td>
<td>North</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WNW</td>
<td>West-North-West</td>
<td>NNE</td>
<td>North-North-East</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>East</td>
<td>NE</td>
<td>Northeast</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>South</td>
<td>SW</td>
<td>Southwest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NNE</td>
<td>North-North-East</td>
<td>E</td>
<td>East</td>
<td></td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>West</td>
<td>NW</td>
<td>Northwest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>North</td>
<td>NN</td>
<td>North-North</td>
<td></td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>West</td>
<td>NW</td>
<td>Northwest</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- The margin of error for the angle and the direction indicator is \( \pm 11 \) 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 308 degrees.
The displayed barometric pressure value changes to

To find the bearing to an objective

To set a map and find your current location

Using the Digital Compass While Mountain Climbing or Hiking

This section provides three practical applications for using the watch’s built-in digital compass.

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 it is 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 a objective on a map and heading in that direction

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

Barometric Pressure

Barometric pressure indicates changes in the atmosphere. By monitoring these changes you can predict the weather with reasonable accuracy. This watch displays the barometric pressure graph automatically every two hours (at the 30th minute of every even numbered hour). Each reading is used to produce a barometric pressure graph and barometric pressure directional pointers.

Reading the Barometric Pressure Graph

The barometric pressure graph shows readings of previous measurements for up to 24 hours.

Barometric Pressure Graph

[Diagram of a barometric pressure graph with time on the x-axis and pressure on the y-axis, showing a trend line with arrows indicating direction]

1. Set the map so its northerly indication is aligned with north as indicated by the watch, and determine your location.

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. While in the Timelapse Mode or in any of the sensor modes, press C to take a compass reading.

5. The reading will appear on the display after about two seconds.

Before Using the Digital Compass

The Barometric Pressure graph will appear on the display, indicating that barometric pressure and temperature measurements are in progress. The measurement results will appear on the display after about five seconds.

4. After you press C, the watch will take readings every five seconds for the first five minutes, and then every two minutes after that.

Digital Compass Precautions

This watch features a built in digital bearing sensor that detects terrestrial magnetism. This means that north indicated by this watch is magnetic north, which is somewhat different from true 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

• 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) at the objective, and then try to perform the above step.

• Pressing B while the Bearing Memory screen is displayed will clear the direction angle currently in Bearing Memory and start a 20-second direction reading operation.

Bearing Memory

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

To enter and exit the Barometer/Thermometer Mode

• Enter and exit the Barometer/Thermometer Mode.

To take barometric pressure and temperature readings

While in the Timelapse Mode or in any of the sensor modes, press B to enter the Barometer/Thermometer Mode.

• BARO will appear on the display, indicating that barometric pressure and temperature measurements are in progress. The measurement results will appear on the display after about five seconds.

• After you press B, the watch will take readings every five seconds for the first five minutes, and then every two minutes after that.

• The watch will return to the Timelapse Mode automatically if you do not perform any operation for about one hour after entering the Barometer/Thermometer Mode.

Barometric Pressure

• Barometric pressure is displayed in units of 1 Pa (or 0.05 inHg).

• The displayed barometric pressure value changes to ----- if a measured barometric pressure falls outside the range of 280 hPa to 1,100 hPa (7.65 inHg to 34.25 inHg). The barometric pressure value will reappear as soon as the measured barometric pressure is within the allowable range.

• 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 hectopascals (hPa) or inchesHg (inHg) as the display unit for the measured barometric pressure, and Celsius (°C) or Fahrenheit (°F) as the display unit for the measured temperature value. See “To specify temperature, barometric pressure, and altitude units”.

Barometric Pressure Graph

[Diagram of a barometric pressure graph with time on the x-axis and pressure on the y-axis, showing a trend line with arrows indicating direction]

Digital Compass Precautions

This watch features a built in digital 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

• 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) at the objective, and then try to perform the above step.

• Pressing B while the Bearing Memory screen is displayed will clear the direction angle currently in Bearing Memory and start a 20-second direction reading operation.

Bearing Memory

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

To enter and exit the Barometer/Thermometer Mode

• Enter and exit the Barometer/Thermometer Mode.

To take barometric pressure and temperature readings

While in the Timelapse Mode or in any of the sensor modes, press B to enter the Barometer/Thermometer Mode.

• BARO will appear on the display, indicating that barometric pressure and temperature measurements are in progress. The measurement results will appear on the display after about five seconds.

• After you press B, the watch will take readings every five seconds for the first five minutes, and then every two minutes after that.

• The watch will return to the Timelapse Mode automatically if you do not perform any operation for about one hour after entering the Barometer/Thermometer Mode.

Barometric Pressure

• Barometric pressure is displayed in units of 1 Pa (or 0.05 inHg).

• The displayed barometric pressure value changes to ----- if a measured barometric pressure falls outside the range of 280 hPa to 1,100 hPa (7.65 inHg to 34.25 inHg). The barometric pressure value will reappear as soon as the measured barometric pressure is within the allowable range.

• 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 hectopascals (hPa) or inchesHg (inHg) as the display unit for the measured barometric pressure, and Celsius (°C) or Fahrenheit (°F) as the display unit for the measured temperature value. See “To specify temperature, barometric pressure, and altitude units”.

Barometric Pressure Graph

[Diagram of a barometric pressure graph with time on the x-axis and pressure on the y-axis, showing a trend line with arrows indicating direction]
The following shows how to interpret the data that appears on the barometric pressure graph.

A rising graph generally means improving weather.

A falling graph generally means deteriorating weather.

When you measure altitude using a reference altitude specified by you

When you measure altitude based on preset values

Note

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

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

— Barometric reading that is out of range (260 hPa to 1,100 hPa or 7.65 inHg to 32.45 inHg)
— Sensor malfunction

Barometric Pressure Differential Pointer

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

Reading Barometric Pressure Differential Pointer

Pressure differential is indicated in the range of ±10 hPa, in 1-hPa units.

The pressure sensor and temperature sensor built into the watch are calibrated at the factory and normally require no further adjustment. If you notice serious errors in the pressure readings and temperature readings produced by the watch, you can adjust the sensor to correct the errors.

Important

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

• Inaccurately 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 pressure sensor and the temperature sensor

1. While in the Timekeeping Mode or in any of the sensor modes, press to enter the Barometer/Thermometer Mode.

2. Hold down ( ) until the current temperature value starts to flash on the display. This is the setting screen.

3. Before the reference temperature value starts to flash, the message SET Hold will appear on the display. Keep ( ) depressed until SET Hold disappears.

4. Press ( + ) and ( - ) to set the calibration value in the units shown below.

   Temperature
   0.1°C (0.2°F)

   Barometric Pressure
   1 hPa (0.15 inHg)

5. Press ( ) to return to the Barometer/Thermometer Mode screen.

Barometer and Thermometer Precautions

• The barometric pressure sensor built into this watch measures changes in air pressure, which you can then apply to your own weather predictions. It is not intended for use as a precision instrument in official weather prediction or reporting applications.

• Sudden temperature changes can affect pressure sensor readings.

• Temperature measurements are affected by your body temperature (while you are wearing the watch), direct sunlight, and moisture. To achieve a more accurate temperature measurement, remove the watch from your wrist, place it in a well-ventilated location out of direct sunlight, and wipe off all moisture from the case. It takes approximately 20 to 30 minutes for the case of the watch to reach the actual surrounding temperature.

Altimeter

The watch displays altitude values based on air pressure readings taken by a built-in pressure sensor.

How the Altimeter Measures Altitude

The altimeter can measure altitude based on its own preset values (initial default method) or using a reference altitude specified by you.

When you measure altitude based on preset values

Data produced by the watch's barometric pressure sensor is converted to approximate altitude based on ISA (International Standard Atmosphere) conversion values stored in watch memory.

When you measure altitude using a reference altitude specified by you

After you specify a reference altitude, the watch uses that value to convert barometric pressure readings to altitude.

— When mountain climbing, you can specify a reference altitude value in accordance with a map along the way or altitude information from a map. After that, the altitude readings produced by the watch will be more accurate than they would without a reference altitude value.

To make sure the watch is in the Timekeeping Mode or any one of the sensor modes.

• The sensor modes are: Digital Compass Mode, Barometer/Thermometer Mode, and Altimeter Mode.

2. Press ( ) to start Altimeter measurement.

The watch will start the measurement routine. The first reading will appear on the display after about four or five seconds.

• The current altitude value is displayed in units of 5 meters (20 feet).

• After the first reading is obtained, the watch continues to take altimeter readings automatically every five seconds for the first three minutes, and then every two minutes after that (under initial default settings).

• If you leave the watch in the Altimeter Mode, it will update the displayed altitude value regularly and indicate reading-to-reading changes in graph form.

• You can use the procedure under “Selecting an Altitude Auto Measurement Method” to specify the altitude auto measurement method you want to use.

3. After you are finished using the Altimeter, press ( ) to return to the Timekeeping Mode and stop auto measurement.

• The watch will return to the Timekeeping Mode automatically if you do not perform any operation for about 24 hours after entering the Altimeter Mode (under initial default settings).

Selecting an Altitude Auto Measurement Method

You can select either of the following two altitude auto measurement methods.

0'05: Readings at five-second intervals for one hour

2'00: Readings at five-second intervals for the first three minutes followed by two-minute intervals for approximately 24 hours

To select the altitude auto measurement method

1. In the Altimeter Mode, hold down ( ) until the current reference altitude value starts to flash. This is the setting screen.

2. Before the reference altitude value starts to flash, the message SET Hold will appear on the display. Keep ( ) depressed until SET Hold disappears.

3. Press ( ) to toggle the altitude auto measurement setting between 0'05 and 2'00.

4. Press ( ) to exit the setting screen.

Using the Altitude Differential Value

The Altimeter Mode screen includes an altitude differential value that shows the change in altitude from a reference point you specify. The altitude differential value is updated each time the watch takes an altitude reading.

• The range of the altitude differential value is –3,000 meters (–9,980 feet) to 3,000 meters (9,980 feet).

• It is displayed in place of the altitude differential value whenever the measured value is outside the allowable range.

See “Using the Altitude Differential Value While Mountain Climbing or Hiking” for some real-life examples of how to use this feature.

To specify the altitude differential start point

1. In the Altimeter Mode, press ( ).

The watch will take an altitude reading and register the result as the altitude differential start point. The altitude differential value will be reset to zero at this time.
Using the Altitude Differential Value While Mountain Climbing or Hiking

After you specify the altitude differential start point while mountain climbing or hiking, you can easily measure the change in the altitude between that point and other points along the way.

To use the altitude differential value
1. In the Altimeter Mode, check to make sure that an altitude reading is on the display.
   • If an altitude reading is not displayed, press [REC] to take one. See “To take an altimeter reading” for details.

2. Use the contour lines on your map to determine the difference in altitude between your current location and your destination.

3. In the Altimeter Mode, press [SET] to specify your current location as the altitude differential start point.
   • This watch will take an altitude reading and register the result as the altitude differential value start point. The altitude differential value will be reset to zero at this time.

4. While comparing the altitude difference you determined on the map and the watch’s altitude differential value, advance towards your destination.
   • If the map shows that the difference in altitude between your location and your destination is +80 meters for example, you know you will be nearing your destination when the displayed altitude differential value shows +80 meters.

Specifying a Reference Altitude Value

The altitude readings produced by this watch are subject to error caused by changes in air pressure.

Because of this, we recommend that you update the reference altitude value whenever one is available during your climb. After you specify a reference altitude value, the watch adjusts its air-pressure-to-altitude conversion calculation accordingly.

To specify a reference altitude value
1. In the Altimeter Mode, hold down [SET] until the current reference altitude value flashes. This is the setting screen.
   • Before the reference altitude value starts to flash, the message SET Hold will appear on the display. Keep [SET] depressed until SET Hold disappears.

2. Press [A] (+) or [C] (−) to change the current reference altitude value by 5 (or 20) feet.
   • Specify a reference altitude value based on accurate altitude information about your current location from a map, etc.
   • You can set the reference altitude value within the range of −10,000 to +10,000 meters (−32,800 to +32,800 feet).

3. Press [REC] to exit the setting screen.

Types of Altitude Data
The watch can maintain two types of altitude data in its memory: manual measurement records, and auto save values (minimum, maximum, vertical ascent, vertical descent).

Use the Data Recall Mode to view data stored in memory. See “Viewing Altitude Records” for details.

Manual Measurement Records
Any time you perform the procedure below in the Altimeter Mode, the watch will create and store a record with the currently displayed altitude reading, along with the date and time the reading was taken. There is enough memory to store up to 25 manual measurement records, which are numbered from REC01 through REC25.

To save a manual measurement
1. In the Altimeter Mode, check to make sure that an altitude reading is on the display.
   • If an altitude reading is not displayed, press [REC] to take one. See “To take an altimeter reading” for details.

   • This will save the currently displayed altitude reading in a manual measurement record, along with the measurement time and date.
   • The watch will return to the Altimeter Mode screen automatically after the save operation is complete.
   • There is enough memory to store up to 25 manual measurement records. If there are already 25 manual measurement records in memory, the above operation will cause the oldest record to be deleted automatically to make room for the new one.

Auto Save Values
Two sets of auto save values (Set 1 and Set 2) are maintained in watch memory.

<table>
<thead>
<tr>
<th>Set 1</th>
<th>Set 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Altitude (MAX-1)</td>
<td>Maximum Altitude (MAX-2)</td>
</tr>
<tr>
<td>Minimum Altitude (MIN-1)</td>
<td>Minimum Altitude (MIN-2)</td>
</tr>
<tr>
<td>Vertical Ascent (ASC-1)</td>
<td>Vertical Ascent (ASC-2)</td>
</tr>
<tr>
<td>Vertical Descent (DSC-1)</td>
<td>Vertical Descent (DSC-2)</td>
</tr>
</tbody>
</table>

These values are checked and updated automatically by the watch as altitude auto measurements are taken.

How Maximum and Minimum Values Are Updated
While the watch is in the Altimeter Mode, altitude readings are taken automatically at the interval specified by the altitude auto measurement method. With each reading, the watch compares the current reading against the MAX (MAX-1 and MAX-2) and MIN (MIN-1 and MIN-2) values. It will replace the MAX value if the current reading is greater than MAX, or the MIN value if the current reading is less than MIN.

How Vertical Ascent/Descent Values Are Updated

• Entering the Altimeter Mode starts a new altitude auto measurement session, but it does not reset the current ASC and DSC values. ASC-1 and DSC-1 will show the current ASC and DSC values when you exit the Altimeter Mode auto measurement session. Each time you complete an Altimeter auto measurement session by returning to the Timekeeping Mode, the vertical ascent and descent values of the current session (930 meters in the above example) is added to the session’s starting ASC value. Also, the vertical descent value of the current auto measurement session (<320 meters in the above example) is added to the session’s starting DSC value.

• Note any change in elevation when ascending that is less than 15 meters (<49 feet) is not added to the vertical ascent value for the current Altimeter Mode auto measurement session. Also, any change in elevation when descending that is less than −15 meters (<−49 feet) is not added to the vertical descent value for the current Altimeter Mode auto measurement session.

The values in Set 1 and Set 2 can be cleared independently of each other. This means you can use them to keep track of daily and cumulative data as described in the example below.

Example: Keeping track of data on a three-day climb
Day 1
Clear both Set 1 and Set 2, and start your Day 1 climb.
At the end of the day, both sets of auto save values contain the same data (MAX-1 = MAX-2, MIN-1 = MIN-2, etc.).

Day 2
Clear only Set 1, and start your Day 2 climb.
At the end of the day, the values in Set 1 (MAX-1, MIN-1, ASC-1, DSC-1) will show the results of Day 2 only. In Set 2, MAX-2 and MIN-2 will show the maximum and minimum altitudes reached over the two-day span. ASC-2 will show the total vertical ascent for the two days (Day 1 + Day 2) and DSC-2 will show the total vertical descent for the two days.

Day 3
Clear only Set 1, and start your Day 3 climb.
At the end of the day, the values in Set 1 will show the results of Day 3 only. In Set 2, MAX-2 and MIN-2 will show the maximum and minimum altitudes reached over the three-day span. ASC-2 will show the total vertical ascent for the three days (Day 1 + Day 2 + Day 3) and DSC-2 will show the total vertical descent for the three days.

For details about cleaning altitude data, see “To clear the contents of a specific memory area”.

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

Air Pressure and Temperature

<table>
<thead>
<tr>
<th>Altitude</th>
<th>Air Pressure</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>4900 m</td>
<td>1015.7 hPa</td>
<td>−11°C</td>
</tr>
<tr>
<td>3900 m</td>
<td>1019.3 hPa</td>
<td>−5°C</td>
</tr>
<tr>
<td>2900 m</td>
<td>1023.1 hPa</td>
<td>0°C</td>
</tr>
<tr>
<td>1900 m</td>
<td>1026.8 hPa</td>
<td>5°C</td>
</tr>
<tr>
<td>900 m</td>
<td>1029.3 hPa</td>
<td>10°C</td>
</tr>
</tbody>
</table>

Source: International Civil Aviation Organization

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

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

Altimeter Precautions
• This watch estimates altitude based on air pressure. This means that altitude readings for the same location may vary if air pressure changes.

• The semiconductor pressure sensor used by the watch for altitude measurements is also affected by temperature. When taking altitude measurements, do not subject the watch to temperature changes.

• Do not use this watch for altitude measurements during diving, hang gliding, or paragliding, while riding a gyrocopter, glider, or any other aircraft, or while engaging in any other activity where there is the chance of sudden altitude changes.

• Do not use this watch for measuring altitude in applications that demand professional or industrial level precision.

• Remember that the air inside of a commercial aircraft is pressurized. Because of this, the readings produced by this watch will not match the altitude readings announced or indicated by the flight crew.
Specifying Temperature, Barometric Pressure, and Altitude Units

Use the procedure below to specify the temperature, barometric pressure, and altitude units to be used in the Barometer/Thermometer Mode and the Altimeter Mode.

**Important!**
When TYO (Tokyo) is selected as the Home City, the altitude unit is set automatically to meters (m), the barometric pressure unit to hectopascals (hPa), and the temperature unit to Celsius (°C). These settings cannot be changed.

To specify temperature, barometric pressure, and altitude units:
1. In the Timkeeping Mode, hold down \( \mathbb{E} \) until the currently selected city code starts to flash. This is the city code setting screen.
2. Before the city code starts to flash, the message SET Hold will appear on the display. Keep \( \mathbb{E} \) depressed until SET Hold disappears and the city code starts to flash.
3. Keep pressing \( \mathbb{E} \) until \( \mathbb{A} \) UNIT appears in the upper left corner of the screen.
4. Select step 3 under “To change the current time and date settings” for information about how to scroll through setting screens.

3. Perform the operations below to specify the units you want.

<table>
<thead>
<tr>
<th>To specify this unit:</th>
<th>Press this key:</th>
<th>To toggle between these settings:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altitude</td>
<td>( \mathbb{A} )</td>
<td>m (meters) and ft (feet)</td>
</tr>
<tr>
<td>Barometric Pressure</td>
<td>( \mathbb{B} )</td>
<td>hPa (hectopascals) and inHg (inches of mercury)</td>
</tr>
<tr>
<td>Temperature</td>
<td>( \mathbb{D} )</td>
<td>°C (Celsius) and °F (Fahrenheit)</td>
</tr>
</tbody>
</table>

4. After the settings are the way you want, press \( \mathbb{C} \), twice to exit the setting screen.

Precautions Concerning Simultaneous Measurement of Altitude and Temperature

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

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

Viewing Altitude Records

Use the Data Recall Mode to view manually saved altitude readings and automatically saved high altitude, low altitude, total ascent, and total descent values. Altitude data records are created and saved in the Altimeter Mode.

To view altitude records:
1. Use \( \mathbb{A} \) to select the Data Recall Mode (REC) as shown in “Selecting a Mode.”
2. About one second after REC appears on the display, the display will change to show the final record of the memory area you were viewing when you last exited the Data Recall Mode.
3. Use \( \mathbb{B} \) to select the memory area you want.

4. After you have finished viewing data, use \( \mathbb{A} \) to exit the Data Recall Mode.

- If the total ascent (ASC) or total descent (DSC) value becomes negative digits, the leftmost (ten thousandth) digit will appear in the upper right of the display. The nearby illustration shows the display when the ASC-4 value is 99995 meters.

- If the total ascent (ASC) or total descent (DSC) value becomes positive digits, the leftmost (ten thousandth) digit will appear in the upper right of the display. The nearby illustration shows the display when the ASC-4 value is 99995 meters.

To clear the contents of a specific memory area:
1. Use \( \mathbb{A} \) to enter the Data Recall Mode.
2. Use \( \mathbb{E} \) to select the memory area you want to clear.
3. Hold down \( \mathbb{E} \) until CLR Hold appears on the display and then disappears. Release \( \mathbb{E} \) after CLR disappears.

- This will clear the memory area you selected in step 2 and then return to the data display screen, which now shows 

Looking up Sunrise and Sunset Times

You can use the Sunrise/Sunset Mode to look up the sunrise and sunset times for a particular date (year, month, day) and location.

To enter the Sunrise/Sunset Mode:
1. While in the Timkeeping Mode, press \( \mathbb{A} \) to enter the Sunrise/Sunset Mode.
2. This will display the sunrise and sunset times for the current date based on the currently specified city code, latitude, and longitude.
3. The Daylight Pointers described below are on the display in the Sunrise/Sunset Mode.

- Pointer 1: Sunset time in 24-hour format
- Pointer 2: Sunset time in 24-hour format
- Pointer 3: Flashing pointer appears only when Pointer 1 and Pointer 2 are indicating sunset time and current Timkeeping Mode data. It indicates the current Timkeeping Mode time in 24-hour format.

4. Before trying to use the Sunrise/Sunset Mode, you need to configure settings for the city code, longitude, and latitude for the location whose sunrise and sunset times you want to view.
5. The factory default configuration of the location is City Code: TYO (Tokyo), Latitude: North 36 degrees; Longitude: East 140 degrees.
6. You can select the latitude and longitude for various cities around the globe in the “Site Data list.”

To view the sunrise/sunset time for a particular date:
1. Enter the Sunrise/Sunset Mode.
2. While the sunrise/sunset time are on the display, use \( \mathbb{A} \) and \( \mathbb{C} \) to scroll through the date.

- The sunrise and sunset times for the selected date will be indicated by values and pointers.
- You can select any date between January 1, 2000 and December 31, 2039.

Note:
Sunrise/sunset time is displayed in 5-minute units.
If you think that the sunrise and/or sunset times are not correct for some reason, check the watch’s city code, longitude and latitude settings.
- The sunrise and sunset times displayed by this watch are times at sea level. Sunrise and sunset times are different at altitudes other than sea level.

To look up the sunrise and sunset times for a specific city code:

**Important!**
- You do not need to perform this procedure to look up the sunrise and sunset times in your currently selected Home City.
- If you select a different city code to look up the sunrise and sunset times there, return to the city code of your Home City (your current location) when you are finished. Otherwise, the time shown in the Timkeeping Mode will not be correct.
- For information about the Home City setting, see “Configuring Home City Settings.”

1. In the Timkeeping Mode, hold down \( \mathbb{E} \) until the currently selected city code starts to flash. This is the city code setting screen.
2. Before the city code starts to flash, the message SET Hold will appear on the display. Keep \( \mathbb{E} \) depressed until SET Hold disappears and the city code starts to flash.
3. Use \( \mathbb{A} \) (East) and \( \mathbb{C} \) (West) to select the city code whose sunrise and sunset times you want to view.
4. For details about city codes, see the “City Code Table.”
5. Press \( \mathbb{B} \), twice to exit the setting screen.

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**Operation Guide 3173 3246**
To configure longitude and latitude settings
1. In the Timekeeping Mode, hold down \( \text{SET Hold} \) until the currently selected city code starts to flash. This is the city code setting screen.
2. Before the city code starts to flash, the message \( \text{SET Hold} \) will appear on the display. Keep \( \text{SET Hold} \) depressed until \( \text{SET Hold} \) disappears and the city code starts to flash.
3. Press \( \) to display the longitude/latitude setting screen, with the latitude setting flashing.
4. Use \( \) and \( \) to change the flashing setting.
5. You can configure the longitude and latitude setting within the following ranges.
   - Longitude Range: -179°W (West 179 degrees) to 0°E – 180°E (East 180 degrees)
   - Latitude Range: -85°S (South 85 degrees) to 0°N – 85°N (North 85 degrees)
6. Latitude and longitude values are rounded off to the nearest degree.
7. You can find latitude and longitude for various cities around the globe in the “Site Data List.”
8. Press \( \) to return to the Timekeeping Mode.

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.”

To enter the World Time Mode
Use \( \) to select the World Time Mode (WT) as shown in “Selecting a Mode.”
- About one second after WT appears on the display, the display will change to show the city code of the currently selected World Time City.
- The two pointers described below are on the display in the World Time Mode.
  - Pointer 1 (not flashing): Indicates the current time in the currently selected World Time City.
  - Pointer 2 (flashing): Indicates the current Timekeeping Mode time in 24-hour format.

To view the time in another time zone
In the World Time Mode, use \( \) (East) and \( \) (West) to scroll through city codes.

To specify standard time or daylight saving time (DST) for a city
1. In the World Time Mode, use \( \) (East) and \( \) (West) to display the city code (time zone) whose Standard Time/Daylight Saving Time setting you want to change.
2. Hold down \( \) until DST Hold appears on the display and then disappears. Release \( \) after DST Hold disappears.
   - This toggles the city code you selected in step 1 between Daylight Saving Time (DST indicator displayed) and standard time (DST indicator not displayed).
   - Using the World Time Mode to change the DST setting of the city code that is selected as your Home City will also change the Timekeeping Mode time DST setting.
   - Note that you cannot switch between standard time/daylight saving time (DST) setting affects only the currently selected time zone. Other time zones are not affected.
3. Before the time of the currently selected World Time City changes, the DST indicator will disappear.
4. Once switched, the DST indicator will remain until you return to the World Time Mode.

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

To enter the Stopwatch Mode
Use \( \) to select the Stopwatch Mode (STW) as shown in “Selecting a Mode.”
- About one second after STW appears on the display, the display will change to show the stopwatch hours.

To perform an elapsed time operation
1. Start
2. Stop
3. Start
4. Stop
5. Start
6. Stop

To pause at a split time
1. Split
2. Split

To measure two finishes
1. Start
2. Stop
3. Start
4. Stop

Note
- The Stopwatch Mode can indicate elapsed time up to 23 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.

To enter the Countdown Timer Mode
Use \( \) to select the Countdown Timer Mode (TMR) as shown in “Selecting a Mode.”
- 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 restart 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. Before the hour setting starts to flash, the message \( \text{SET Hold} \) will appear on the display. Keep \( \text{SET Hold} \) depressed until \( \text{SET Hold} \) disappears and the hour setting starts to flash.
4. Press \( \) to move the flashing between the hour and minute settings.
5. Use \( \) and \( \) to change the flashing item.
   - To set the starting value of the countdown time to 24 hours, set 00 00 00.
6. Press \( \) to exit the setting screen.

To perform a countdown timer operation
1. Start
2. Stop
3. Restart
4. Stop
5. Reset

To set an alarm time
1. In the Alarm Mode, use \( \) and \( \) to scroll through the alarm screens until the one whose time you want to set is displayed.
2. Hold down \( \) until the alarm time starts to flash. This is the setting screen.
3. Before the alarm time starts to flash, the message \( \text{SET Hold} \) will appear on the display. Keep \( \text{SET Hold} \) depressed until \( \text{SET Hold} \) disappears and the alarm time starts to flash.
4. While a setting is flashing, use \( \) and \( \) to change it.
5. 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).
6. Press \( \) to exit the setting screen.

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. 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 in “Selecting a Mode.”
- About one second after ALM appears on the display, the display will change to show the alarm number (AL1 through AL5) or the SIG indicator.
- The alarm number indicates an alarm screen; SIG is shown when the Hourly Time Signal screen is on the display.
- When you enter the Alarm Mode, the data you were viewing when you last exited the mode appears first.

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

   - To set an alarm time
     1. In the Alarm Mode, use \( \) and \( \) to select the alarm number.
     2. Hold down \( \) until the alarm time starts to flash. This is the setting screen.
     3. Before the alarm time starts to flash, the message \( \text{SET Hold} \) will appear on the display. Keep \( \text{SET Hold} \) depressed until \( \text{SET Hold} \) disappears and the alarm time starts to flash.
     4. While a setting is flashing, use \( \) and \( \) to change it.
     5. 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).
     6. Press \( \) to exit the setting screen.

To set the starting value of the countdown time
1. In the Alarm Mode, use \( \) and \( \) to select the alarm time.
2. Hold down \( \) until the alarm time starts to flash. This is the setting screen.
3. Before the alarm time starts to flash, the message \( \text{SET Hold} \) will appear on the display. Keep \( \text{SET Hold} \) depressed until \( \text{SET Hold} \) disappears and the alarm time starts to flash.
4. While a setting is flashing, use \( \) and \( \) to change it.
5. 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).
6. Press \( \) to exit the setting screen.

To stop the alarm
Press any button.
Illumination

The display of the watch is illuminated for easy reading in the dark. The auto light switch turns off automatically when you angle the watch towards your face.

• The auto light switch must be turned on for it to operate.

To turn on illumination manually

Press the AEL button (AEL) in any mode to illuminate the display.

You can use the procedure below to select either one second or three seconds as the illumination duration. When you press the AEL button, the display will remain illuminated for about one second or three 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 the AEL button until the currently selected city code starts to flash. This is the city code setting screen.

• Before the city code starts to flash, the message SET Hold will appear on the display. Keep the AEL button depressed until SET Hold disappears and the city code starts to flash.

2. Keep pressing the AEL button until LT3 (LT3) is displayed in the upper left corner of the display.

• See step 3 under “To change the current time and date settings” for information about how to scroll through setting screens.

3. Press the AEL button to toggle the illumination duration between three seconds (LT3 displayed) and one second (LT1 displayed).

4. After the settings are the way you want, press the AEL button twice 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 parallel with your face 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 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 a bicycle or operating a motorcycle or any other motor vehicle. Sudden and unintended operation of the auto light switch can cause a distraction, which can result in a traffic accident and serious personal injury.

Note

• This watch features a “Full Auto E.L. Light”, so the auto light switch operates only when available light is below a certain level. It does not operate under bright light.

• The auto light switch is always disabled, regardless of its on/off setting, when any one of the following conditions exists.

• While an alarm is sounding

• During sensor measurement

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

While a sunrise or sunset time is being calculated

To turn the auto light switch on and off

In the Timekeeping Mode, hold down the AEL button for about three seconds to toggle the auto light switch on (AEL displayed) and off (AEL not displayed).

• The auto light switch on indicator (AEL) 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.

Illumination Precautions

• Flickering 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:

Approximately five minutes exposure to bright sunlight coming in through a window.

Approximately one minute 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 turn off 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, 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. Illumination does not turn on, turn off or move the watch back to the starting position (parallel with the ground) and then tilt it back towards your face again.

• If you are using a metal object to perform work, drop your arm down so that it hangs at your side, and then bring it back up again.

• You may hear a 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.

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 by following the procedure below.

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

To turn the button operation tone on and off

1. In the Timekeeping Mode, hold down the AEL button until the currently selected city code starts to flash. This is the city code setting screen.

• Before the city code starts to flash, the message SET Hold will appear on the display. Keep the AEL button depressed until SET Hold disappears and the city code starts to flash.

2. Keep pressing the AEL button until MUTE or KEY ² is displayed in the upper left corner of the display.

• See step 3 under “To change the current time and date settings” for information about how to scroll through setting screens.

3. Press the AEL button to toggle the button operation tone on (KEY ²) and off (MUTE).

4. After the settings are the way you want, press the AEL button twice to exit the setting screen.

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” to change the standard time/daylight saving time (DST) setting.

Sensor modes

• I can’t change the temperature, barometric pressure, and attitude units.

When, TF (Temperature) is selected as the attitude unit, it automatically changes to meters (m), the barometric pressure unit to hectopascals (hPa), and the temperature unit to Celsius (°C). These settings 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 on the display after I perform bidirectional calibration or northerly calibration.

If ERR appears on the display after calibration, 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.

• If 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 may also be displayed when the 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.

• Near 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. Try moving the object causing the interference or take the direction reading outdoors.

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

• Incorrect bidirectional calibration. Perform bidirectional calibration.

• Looks like there is something wrong with the sensor. If this does not solve the problem, contact your original dealer immediately.

• The barometric pressure differential pointer does not appear on the display when I enter the Barometer/Thermometer Mode.

This could indicate sensor malfunction or pressing the AEL button again.

• The barometric pressure differential pointer is not displayed when the displayed current barometric value is outside of the allowable measurement range (260 to 1,100 hPa).

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” 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. Continue exposing the watch to light until the battery power indicator shows “H” or “M”.

9
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:** 3 display formats (Day of the week, Year, Barometric pressure graph); Home City code (can be assigned one of 48 city codes); Standard Time / Daylight Saving Time (summer time)

**Digital Compass:** 20-second continuous measurement; 16 directions; Angle value 0° to 359°; Four direction pointers; Calibration (bidirectional, notherly); Magnetic declination correction; Bearing Memory

**Barometer:**
- Measurement and display range: 260 to 1,100 hPa (or 0.66 to 32.45 inHg)
- Display unit: 1 hPa (or 0.05 inHg)
- Measurement timing: Daily from midnight, at two hour intervals (12 times per day); Every five seconds in the Barometer/Thermometer Mode

**Thermometer:**
- Measurement and display range: –10°C to 40°C (14°F to 104°F)
- Display unit: 0.1°C (or 0.2°F)
- Measurement and display range: –10.0 to 60.0°C (or 14.0 to 140.0°F)

**Power Supply:** Solar cell and one rechargeable battery

**Other:** Auto saved values: Two sets (memory areas) each of high altitude and its measurement date and time, auto saved values: Two sets (memory areas) each of low altitude and its measurement date and time, total ascent and its save start date and time, total descent and its save start and time, total ascent and its save start and time

**Battery power indicator:** Power Saving; Low-temperature resistance (–10°C/14°F); Button operation

**Daily Alarms:** 10 digital compass operations per week

**El Backlight:** Selectable illumination duration (approximately 1 minute)

**Auto Light Switch:** Full Auto EL Light (operates only in the dark)

**Display unit:** 0.1°C (0.2°F)

**Measurement and display range:** 260 to 1,100 hPa (or 0.66 to 32.45 inHg)

**Display unit:** 1 hPa (0.05 inHg)

**Measurement timing:** Daily from midnight, at two hour intervals (12 times per day)

**Frequency use of illumination runs down the battery. Particular care is required when using the auto light switch.**

**Barometric pressure:**
- ± (pressure differential × 2%)
- ± (pressure differential × 2%)

**Temperature Sensor:**
- ± (temperature differential × 2%)
- ± (temperature differential × 2%)

**Power Supply:**
- Solar cell and one rechargeable battery
- Auto saved values: Two sets (memory areas) each of high altitude and its measurement date and time, auto saved values: Two sets (memory areas) each of low altitude and its measurement date and time, total ascent and its save start date and time

**Battery power indicator:** Power Saving; Low-temperature resistance (–10°C/14°F); Button operation

**Daily Alarms:** 10 digital compass operations per week

**El Backlight:** Selectable illumination duration (approximately 1 minute)

**Auto Light Switch:** Full Auto EL Light (operates only in the dark)

**Display unit:** 0.1°C (0.2°F)

**Measurement and display range:** 260 to 1,100 hPa (or 0.66 to 32.45 inHg)

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