

# Operation Guide 5415

CASIO®

Congratulations upon your selection of this CASIO watch.

ENGLISH

## 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.

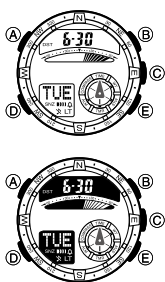
## Important!

- Whenever you use the digital compass of this watch for serious trekking, mountain climbing, or other activities, always be sure to take along another compass to confirm readings. If the readings produced by the digital compass of this watch are different from those of the other compass, perform bidirectional calibration of the digital compass to ensure more accurate readings.
- Direction readings and digital compass calibration will not be possible if the watch is in the vicinity of a permanent magnet (magnetic accessory, etc.), metal objects, high-voltage wires, aerial wires, or electrical household appliances (TV, computer, cellphone, etc.).

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.

E-2

E-3

## Contents

About This Manual .....	E-2
Things to check before using the watch .....	E-3
Mode Reference Guide .....	E-7
Timekeeping .....	E-12
Configuring Home City Settings .....	E-13
To configure Home City settings .....	E-13
To change the daylight saving time (summer time) setting .....	E-14
Configuring Current Time and Date Settings .....	E-15
To change the current time and date settings .....	E-15
Hand Home Position Adjustment .....	E-18
To adjust home positions .....	E-18
Using the Digital Compass .....	E-20
To perform a digital compass operation .....	E-20
To perform bidirectional calibration .....	E-24
To perform magnetic declination correction .....	E-26
To store a direction angle reading in Bearing Memory .....	E-28
Taking Temperature Readings .....	E-33
To take temperature readings .....	E-33
To calibrate the temperature sensor .....	E-35

E-4

E-5

Illumination .....	E-47
To illuminate the display manually .....	E-47
To change the illumination duration .....	E-47
To enable or disable the auto light switch .....	E-49
Button Operation Tone .....	E-51
To enable or disable the button operation tone .....	E-51
Low Battery Indication .....	E-52
Troubleshooting .....	E-53
Specifications .....	E-57

E-6

E-7

## 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.

Specifying Temperature Unit .....	E-36
To specify the temperature unit .....	E-36
Checking the Current Time in a Different Time Zone .....	E-37
To enter the World Time Mode .....	E-37
To configure World Time City and summer time settings .....	E-38
To swap your Home Time and World Time Cities .....	E-39
Using the Stopwatch .....	E-40
To enter the Stopwatch Mode .....	E-40
To perform an elapsed time operation .....	E-40
To pause at a split time .....	E-40
To measure two finishes .....	E-41
Using the Countdown Timer .....	E-42
To enter the Countdown Timer Mode .....	E-42
To specify the countdown start time .....	E-42
To perform a countdown timer operation .....	E-43
To stop the alarm .....	E-43
Using the Alarm .....	E-44
To enter the Alarm Mode .....	E-44
To set an alarm time .....	E-45
To test the alarm .....	E-45
To turn an alarm and the Hourly Time Signal on and off .....	E-46
To stop the alarm .....	E-46

## Mode Reference Guide

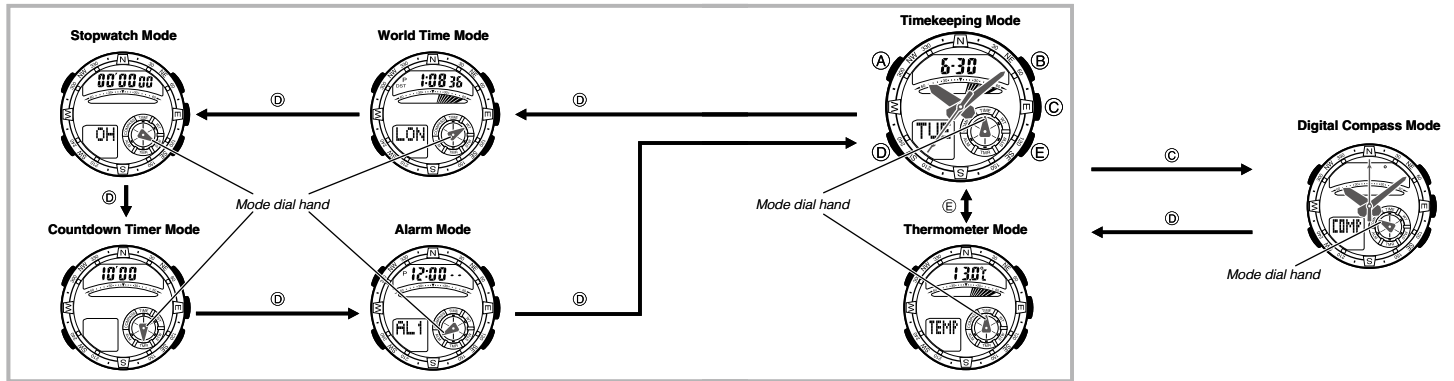
Your watch has 7 "modes". The mode you should select depends on what you want to do.

To do this:	Enter this mode:	See:
• View the current date in the Home City • Configure Home City and daylight saving time (DST) settings • Configure time and date settings	Timekeeping Mode	E-12
• Determine north and the bearing to a destination • Store a bearing (Bearing Memory) • Determine your current location using the watch and a map	Digital Compass Mode	E-20
Determine the temperature at your current location	Thermometer Mode	E-33
View the current time in 48 cities (31 time zones) and UTC	World Time Mode	E-37
Use the stopwatch to measure elapsed time	Stopwatch Mode	E-40
Use the countdown timer	Countdown Timer Mode	E-42
Set an alarm time	Alarm Mode	E-44

## 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.



E-8

E-9

## 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	2 to 3 minutes
Thermometer	1 to 2 minutes
Setting screen (digital setting flashing)	2 to 3 minutes

### Initial Screens

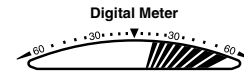
When you enter the Alarm, World Time, or Digital Compass Mode, the data you were viewing when you last exited the mode appears first.

### 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 Meter

- The digital meter indicates the seconds count in the Timekeeping Mode (page E-12), World Time Mode (page E-37), and Timer Mode (page E-42). In the Stopwatch Mode (page E-40) it indicates the 1/10-second count.
- While viewing bearing memory contents in the Digital Compass mode (page E-29), the digital meter shows a bearing pointer.



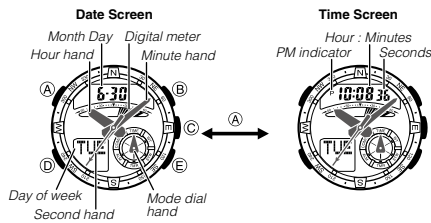
E-10

E-11

## Timekeeping

Use the Timekeeping Mode to view the current time and date, and the day of the week.

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



E-12

E-13

- After all of the settings are the way you want, press **(A)** to exit the setting screen.
  - The **DST** indicator will be on the upper display while 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

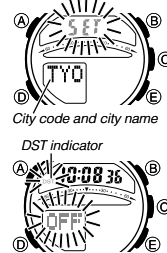
- In the Timekeeping Mode, hold down **(A)** until **ADJ** appears in the lower display.
  - When you release **(A)** (after **ADJ** appears), **SET** will be flashing in the upper display.
- Press **(D)**.
  - This will cause the **DST** indicator to appear in the upper display and the DST setting of the currently selected Home City to appear in the lower display.
- 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 will be on the upper display while daylight saving time is turned on.

## 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

- In the Timekeeping Mode, hold down **(A)** until **ADJ** appears in the lower display.
  - When you release **(A)** (after **ADJ** appears), **SET** will be flashing in the upper 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 lower display.
  - For details about city codes, see the "City Code Table" at the back of this manual.
- Press **(D)**.
  - This will cause the **DST** indicator to appear in the upper display and the DST setting of the currently selected Home City to appear in the lower display.
- 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.

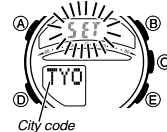


## Configuring Current Time and Date Settings

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

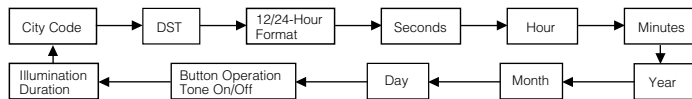
- In the Timekeeping Mode, hold down **(A)** until **ADJ** appears in the lower display.
  - When you release **(A)** (after **ADJ** appears), **SET** will be flashing in the upper display.



E-14

E-15

2. Press **(D)** 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 <b>(E)</b> (East) and <b>(B)</b> (West).
DST OFF	Toggle between daylight saving time (ON) and standard time (OFF).	Press <b>(E)</b> .
12H	Toggle between 12-hour (12H) and 24-hour (24H) timekeeping.	Press <b>(E)</b> .
36	Reset the seconds to 00 (If the current seconds count is between 30 and 59, one is added to the minute count).	Press <b>(E)</b> .
P 10:08	Change the hour or minutes	Use <b>(E)</b> (+) and <b>(B)</b> (-).
20 15 6-30	Change the year, month, or day	

E-16

E-17

## 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 lower 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 lower 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 sequence 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 upper display changes as shown in the table below.

Upper display	Selected hand
Flashing 00	Second hand
Flashing 0:00	Hour and minute hands
Flashing Sub	Mode dial hand

E-18

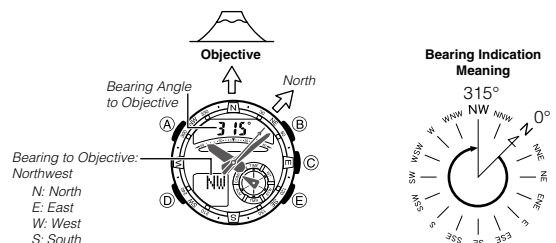
E-19

## Using the Digital Compass

You can use the Digital Compass Mode to determine the direction of north, and to check your bearing to a destination.  
 \* For information about what you can do to improve digital compass reading accuracy, see "Calibrating the Bearing Sensor" (page E-23) and "Digital Compass Precautions" (page E-31).

### 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 **COMPASS**.
  - COMP** will appear in the lower display to indicate that a digital compass operation is in progress.
  - After about two seconds, the second hand will point in the direction of magnetic north. The bearing and direction angle value will appear on the digital display.



\* See "Digital Compass Readings" (page E-22) for information about how direction readings are indicated by the watch.

### Note

- If there is an angle value in the lower display, it means that the bearing memory record (page E-28) is displayed. If this happens, press **(E)** to exit the bearing memory record.

- 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.

E-20

E-21

## Digital Compass Readings

- 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 lower 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  $\pm 15$  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.
- 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.

E-22

E-23

- 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-31) for important information about taking direction readings.
- The direction indicated by the Digital Compass is magnetic north.
- You can use Magnetic Declination Correction to configure the watch to indicate true north, if you want. For details, see "Magnetic Declination Correction" below, "To perform magnetic declination correction" (page E-26), and "Magnetic North and True North" (page E-31).

## 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!

- To ensure correct direction readings by the digital compass, be sure to perform bidirectional calibration before using it. The digital compass may produce incorrect direction readings if you do not perform bidirectional calibration.

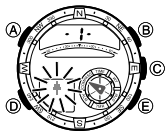
## Magnetic Declination Correction

With magnetic declination correction, you select a declination angle direction and 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.

### 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

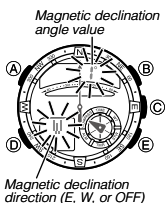


- In the Digital Compass Mode, hold down (A).
  - The second hand will move to 12 o'clock, indicating the bidirectional calibration mode.
  - At this time the lower display will show an upward pointing arrow (↑) and the upper display will show -1-. These indicate that the watch is ready for calibration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

E-24

E-25

### To perform magnetic declination correction



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

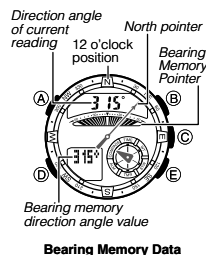
E-26

E-27

## Using Bearing Memory

You can save the bearing to a particular destination in bearing memory and use it to ensure you are headed in the correct direction.

### 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 watch will display the stored reading and start a digital compass operation that lasts for about 20 seconds. The stored bearing will be indicated in the digital meter during this time.
  - Pressing (E) will delete the current Bearing Memory contents (which causes the bearing indication to disappear from the digital meter), and start a new 20-second digital compass operation.

E-28

E-29

- 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.

### Example: Advancing to an objective while monitoring your bearing

Even if you lose sight of your objective, you can use a map to store the required bearing in bearing memory and refer to the memorized information to advance to your objective.

- Set the map.
  - For information about how to set a map, see "Positioning a map in accordance with actual surroundings (setting a map)" below.
- Place the watch on the map at your current location, and point 12 o'clock at your desired objective on the map.
- Press (E) to store the direction to your objective in bearing memory. Now you can advance towards your objective while observing the stored direction on the watch display.

### Important!

- As you progress, the direction to your bearing will change, so you need to keep updating the information in bearing memory.

### Positioning a map in accordance with actual surroundings (setting a map)

You can align a map with the northerly direction indicated by the watch, and then compare what is shown on the map with your actual surroundings. This is helpful for checking your current location and the location of your objective. This process is called "setting a map".

- When setting a map, be sure to align the watch with true north. See "Magnetic North and True North" (page E-31) and "Magnetic Declination Correction" (page E-24).

E-30

E-31

- Place the watch on a level surface facing any direction you want, and press (C).
  - This will start calibration of the first direction.
  - will be shown in the upper display while first direction calibration is in progress. When calibration is successful, OK will appear in the lower display for a short while, and then change to ↓. The upper 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.
  - This will start calibration of the second direction.
  - will be displayed in the upper display while calibration is in progress.
  - After calibration is successful, the lower display will show OK and then the watch will start a digital compass operation.
  - ERR will appear on the lower 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).

- Use (B) and (E) to change the magnetic declination direction and angle setting as required.

North Setting	Setting
Magnetic North	OFF, 0°
True North	E 90° to W 90° E: East declination (Magnetic north is east of true north.) W: West declination (Magnetic north is west of true north.)

- 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°.
- Holding down (B) or (E) will scroll the setting at high speed.
- You can turn off (OFF, 0°) magnetic declination correction by pressing (B) and (E) 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.

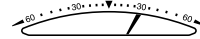
- When the setting is the way you want, press (A) to exit the setting screen.

## Bearing Memory Pointer

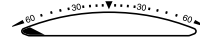
The digital meter indicates the bearing stored for a Bearing Memory record.



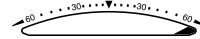
Bearing straight ahead



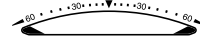
Bearing display area (Indicates a bearing within ±60° of 0.)



Bearing outside of display area (Bearing more than 60° left of 0.)



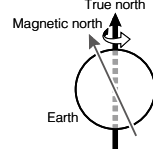
Bearing outside of display area (Bearing more than 60° right of 0.)



Bearing straight back

## Digital Compass Precautions

### Magnetic North and True North



The northerly direction can be expressed either as magnetic north or true north, which are different from each other. Also, it is important to keep in mind that magnetic north moves over time.

- Magnetic north is the north that is indicated by the needle of a compass.
- True north, which is the location of the North Pole of the Earth's axis, is the north that is normally indicated on maps.
- The difference between magnetic north and true north is called the "declination". The closer you get to the North Pole, the greater the declination angle.

### 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 readings are also impossible indoors, especially inside ferroconcrete structures. This is because the metal framework of such structures picks up magnetism from appliances, etc.
- Accurate direction readings are impossible while in a train, boat, air plane, etc.

## Storage

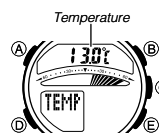
- The precision of the bearing sensor may deteriorate if the watch becomes magnetized. Because of this, you should store the watch away from magnets or any other sources of strong magnetism, including: permanent magnets (magnetic necklaces, etc.), concentrations of metal (metal doors, lockers, etc.), 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-24).

E-32

## Taking Temperature Readings

This watch uses a temperature sensor to measure temperature.

### To take temperature readings



- While in the Timekeeping Mode, press (E).
- TEMP** will appear in the lower display and temperature measurement will start. After about one second, the measurement reading will appear in the upper display.
  - The watch will continue to take temperature readings every five seconds for about two minutes.
  - The watch will return to the Timekeeping Mode after the reading operation is complete (about two minutes).
  - Pressing (E) while a reading operation is in progress will stop the operation and enter the Timekeeping Mode.

### 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.

E-33

## Display Units

You can select either Celsius (°C) or Fahrenheit (°F) for the displayed temperature value. See "To specify the temperature unit" (page E-36).

## Temperature Sensor Calibration

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

### Important!

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

E-34

### 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 temperature to its uncalibrated value (**OFF** 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.

E-35

## Specifying Temperature Unit

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

### Important!

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

### To specify the temperature unit



- 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.
- Press (D) to display the current temperature unit in the upper display.
- Press (E) to toggle the temperature unit between °C (Celsius) and °F (Fahrenheit).
- After the setting is the way you want, press (A) to exit the setting screen.

E-36

## 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-39).

### To enter the World Time Mode

Current time in the currently selected World Time City



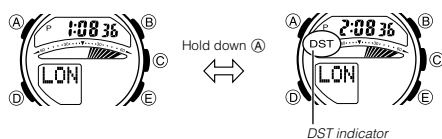
Currently selected World Time City

- 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 lower display. After that, the city code will remain shown in the lower display. You can scroll the city code and city name again by pressing (A).
  - The digital meter shows the seconds count.
  - The hour, minute, and second hands will indicate the current Timekeeping Mode time.

E-37

## To configure World Time City and summer time settings

- In the World Time Mode, use (E) (East) to scroll through city codes.
  - For details about city codes, see the "City Code Table" at the back of this manual.
  - Holding down (E) will scroll at high speed.
  - Pressing down (B) and (E) at the same time will jump to the UTC city code.
- To toggle between summer time (**DST** in the upper 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 city code. Other city codes are not affected.

E-38

## Swapping the Home City and World Time City

You can use the procedure below to swap your Home Time City (whose time is indicated by the hands) with your World Time City (whose time is indicated by the digital display). This function comes in handy for those who often travel between two different time zones.

- You need to configure starting Home City and World Time City settings before performing the procedure below.

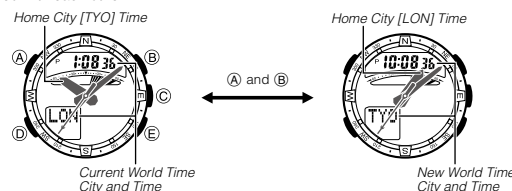
To configure Home City settings (page E-13)

To configure World Time City and summer time settings (page E-38)

### To swap your Home Time and World Time Cities

Press (A) and (B) at the same time.

- The times indicated by the hand (Home City time) and on the digital display (World Time City time) will be swapped with each other.



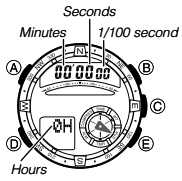
E-39

## 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**.



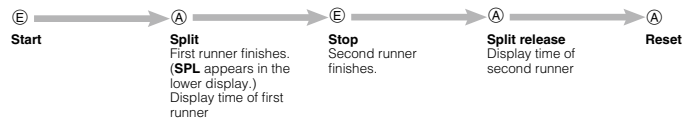
### To perform an elapsed time operation



### To pause at a split time



### To measure two finishes



### Note

- The Stopwatch Mode can indicate elapsed time up to 23 hours, 59 minutes, 59.99 seconds.
- The digital meter 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.
- Exiting the Stopwatch Mode while a split time is frozen on the display clears the split time.

E-40

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 upper display will show the current countdown time.

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

### To perform a countdown timer operation



- The digital meter 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-42

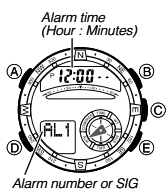
E-43

## 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 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.

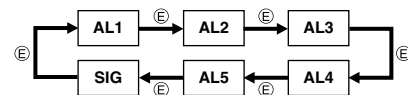
### To enter the Alarm Mode



- Use **(D)** to select the Alarm Mode as shown on page E-8.
- The mode dial hand will move to **ALM**, the lower 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 set an alarm time

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



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



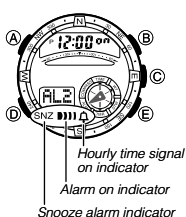
### To test the alarm

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

E-44

E-45

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



1. In the Alarm Mode, use **(E)** to select an alarm or the Hourly Time Signal.
  2. When the alarm or the Hourly Time Signal you want is selected, press **(A)** to turn it on (**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 lower display in all modes.

### To stop the alarm

Press any button.

### Note

- The snooze alarm sounds up to seven times at intervals of about five minutes.
- Performing any one of the operations below during an ongoing snooze alarm (**SNZ** indicator flashing) will cancel the snooze alarm operation (**SNZ** will stop flashing).
  - If you turn off the snooze alarm
  - If you display the snooze alarm setting screen
  - If you display the Timekeeping Mode setting screen

E-46

## 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-49) 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 3 seconds as the illumination duration. When you press **(B)**, the display will remain illuminated for about 1.5 seconds or 3 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.

### To change the illumination duration

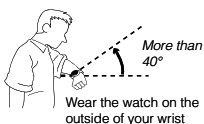
1. In the Timekeeping Mode, hold down **(A)** until **ADJ** appears in the lower display.
  - When you release **(A)** (after **ADJ** appears), **SET** will be flashing in the upper display. This is the setting mode.
2. Use **(D)** to cycle through the settings on the lower display until the current 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.

E-47

- 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.**



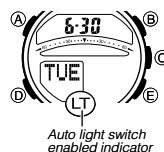
### Warning!

- 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
  - While the watch is in the Digital Compass Mode
- If you have Auto Light enabled, display illumination may be delayed if you angle the watch towards your face while a temperature reading operation is being performed.

### 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 lower display) and disabled (**LT** not displayed).

- The auto light switch enabled indicator (**LT**) is on the lower display in all modes while the auto light switch is turned enabled.
- The auto light switch remains enabled for about six hours. After that disables automatically.

### Illumination Precautions

- 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-48

E-49

### 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-47), 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.

### 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 lower display.
  - When you release **(A)** (after **ADJ** appears), **SET** will be flashing in the upper display.
- Use **(D)** to cycle through settings on the lower 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-50

E-51

### Low Battery Indication

A low battery indicator appears on the display when battery power is low. Have the batteries replaced as soon as possible.

### Note

- For information about battery life guidelines and supported battery types, see the product specifications.
- See "Specifications" (page E-57).

The conditions below are in effect while the low battery indicator is flashing.



Low battery indicator

- All hands are stopped.
- Except for the low battery indicator, all other display functions are disabled.
- Watch tones are disabled.
- Display illumination is disabled.
- Watch operations are disabled.

### Note

- Sequentially or repeatedly performing sensor, light, alarm, and other power intensive operations over a short period can cause a sudden drop in battery power, which will make the low battery indicator flash. Even though the low battery indicator may disappear and watch functions may become re-enabled, battery replacement is recommended.

E-52

B

E-53

### Batteries

#### The low battery indicator is flashing on the digital display.



Low battery indicator

The watch's battery power is low. Have the batteries replaced as soon as possible.

See "Low Battery Indication" (page E-52).

### Troubleshooting

#### Time Setting

##### The current time setting is 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.

##### The current time setting is off by one hour.

You may need to change your Home City's standard time/daylight saving time (DST) setting. Use the procedure under "To change the current time and date settings" (page E-15) to change the standard time/daylight saving time (DST) setting.

#### 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 configure World Time City and summer time settings" (page E-38) for more information.

### Bearing and Temperature Readings

#### The temperature unit setting won't change.

The temperature unit setting is always Celsius (°C) whenever **TOKYO** is selected as the Home City. In this case, the setting cannot be changed.

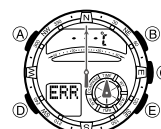
#### "ERR" appears while a sensor operation is in progress.

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 lower 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 lower 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.

E-54

B

E-55

■ "ERR" appears on the lower 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.

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

■ Incorrect direction readings.

- Incorrect bidirectional calibration. Perform bidirectional calibration (page E-24).
- 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.

■ Different results produced by direction readings taken 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.

■ 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.

E-56

## 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

**Digital Compass:** 20 seconds continuous readings; 16 directions; Angle value 0° to 359°; Hand indication of north; Calibration (bidirectional); Magnetic declination correction; Bearing Memory

**Thermometer:**

Measurement and display range: -10.0°C to 60.0°C (or 14.0°F 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)+ UTC; Home City/World Time City swapping

Other: daylight saving time/standard time

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 (with 1 snooze alarm); Hourly Time Signal

**Illumination:** LED light; Selectable illumination duration (approximately 1.5 seconds or 3 seconds);

Auto Light Switch

**Other:** Button operation tone on/off, Low battery alert

**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-48).

E-58



## City Code Table



L-1

## City Code Table

City Code	City name	UTC Offset/ GMT Differential	City Code	City name	UTC Offset/ GMT Differential
PPG	PAGO PAGO	-11	UTC		
HNL	HONOLULU	-10	LIS	LISBON	0
ANC	ANCHORAGE	-9	LON	LONDON	
YVR	VANCOUVER		MAD	MADRID	
LAX	LOS ANGELES	-8	PAR	PARIS	
YEA	EDMONTON		ROM	ROME	+1
DEN	DENVER	-7	BER	BERLIN	
MEX	MEXICO CITY		STO	STOCKHOLM	
CHI	CHICAGO	-6	ATH	ATHENS	
NYC	NEW YORK	-5	CAI	CAIRO	+2
SCL	SANTIAGO		JRS	JERUSALEM	
YHZ	HALIFAX	-4	MOW*	MOSCOW	+3
YYT	ST. JOHN'S	-3.5	JED	JEDDAH	
RIO	RIO DE JANEIRO	-3	THR	TEHRAN	+3.5
FEN	F. DE NORONHA	-2	DXB	DUBAI	+4
RAI	PRAIA	-1	KBL	KABUL	+4.5
			KHI	KARACHI	+5

L-2

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	
HKG	HONG KONG	+8
BJS	BEIJING	
TPE	TAIPEI	
SEL	SEOUL	
TYO	TOKYO	+9
ADL	ADELAIDE	+9.5
GUM	GUAM	
SYD	SYDNEY	+10
NOU	NOUMEA	+11
WLG	WELLINGTON	+12

\* As of December 2013, 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.

- This table shows the city codes of this watch.
- The rules governing global times (UTC offset and GMT differential) and summer time are determined by each individual country.

L-3