

## Getting Acquainted

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

**Expose the watch to bright light to charge its battery before using it.**  
 You can use this watch even as its battery is being charged by exposure to bright light.  
 • **Be sure to read "Battery" of this manual for important information you need to know when exposing the watch to bright light.**

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



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

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

## General Guide

- Press (C) to change from mode to mode.
- In any mode, press (B) to illuminate the display.

## About This Manual



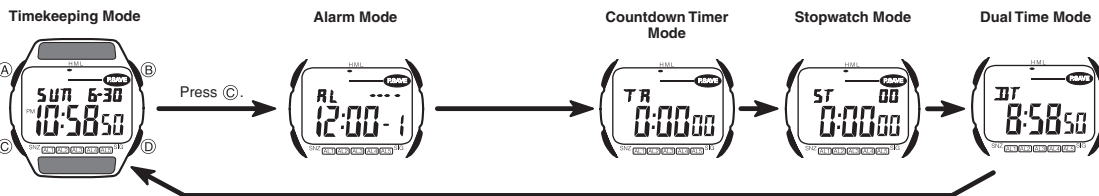
[Module 2590]



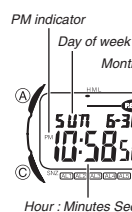
[Module 2591]

- The operational procedures for Modules 2590 and 2591 are identical. All of the illustrations in this manual show Module 2590.
- Button operations are indicated using the letters shown in the illustration.
- Each section of this manual provides you with the information you need to perform operations in each mode. Further details and technical information can be found in the "Reference" section.

- In any mode, hold down (C) for about two seconds to return to the Timekeeping Mode.



## Timekeeping



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

### To set the time and date

1. In the Timekeeping Mode, hold down (A) until the seconds start to flash, which indicates the setting screen.
2. Press (C) to move the flashing in the sequence shown below to select other settings.



3. When the setting you want to change is flashing, press (D) to change it as described below.

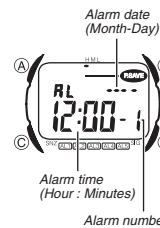
To change this setting	Perform this button operation
Seconds	Press (D) to reset to 00.
Hour, Minutes, Year, Month, Day	Press (D) to increase the setting.

- Pressing (D) while the seconds are in the range of 30 to 59 resets them to 00 and adds 1 to the minutes. In the range of 00 to 29, the minutes are unchanged.
- 4. Press (A) to exit the setting screen.
- The day of the week is automatically displayed in accordance with the date (year, month, and day) settings.
- The year can be set in the range of 2000 to 2099.
- The watch's built-in full automatic calendar automatically makes allowances for different month lengths and leap years. Once you set the date, there should be no reason to change it except after you have the watch's battery replaced or when battery power drops to Level 4.

### To toggle between 12-hour and 24-hour timekeeping

- In the Timekeeping Mode, press (D) to toggle between 12-hour timekeeping and 24-hour timekeeping.
- With the 12-hour format, the PM (Module 2590: PM/Module 2591: P) indicator appears to the left of the hour digits for times in the range of noon to 11:59 p.m. and no indicator appears to the left of the hour digits for times in the range of midnight to 11:59 a.m.
  - With the 24-hour format, times are displayed in the range of 0:00 to 23:59, without any indicator.
  - The 12-hour/24-hour timekeeping format you select in the Timekeeping Mode is applied in all other modes.

## Alarms



- You can set up to five independent multi-function alarms with hour, minutes, month, and day. When an alarm is turned on, the alarm tone sounds when the alarm time is reached. One of the alarms can be configured as a snooze alarm or a one-time alarm, while the other four are one-time alarms.
- You can also turn on an Hourly Time Signal that causes the watch to beep twice every hour on the hour.
- There are five alarms numbered 1 through 5. You can configure Alarm 1 as a snooze alarm or a one-time alarm. Alarms 2 through 5 can be used as one-time alarms only.
  - Alarm settings (and an Hourly Time Signal setting) are available in the Alarm Mode, which you enter by pressing (C).

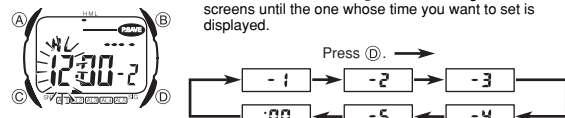
### Alarm Types

The alarm type is determined by the settings you make, as described below.

- **Daily alarm**  
Set the hour and minutes for the alarm time. This type of setting causes the alarm to sound everyday at the time you set.
- **Date alarm**  
Set the month, day, hour and minutes for the alarm time. This type of setting causes the alarm to sound at the specific time, on the specific date you set.
- **1-Month alarm**  
Set the month, hour and minutes for the alarm time. This type of setting causes the alarm to sound everyday at time you set, only during the month you set.
- **Monthly alarm**  
Set the day, hour and minutes for the alarm time. This type of setting causes the alarm to sound every month at time you set, on the day you set.

### To set an alarm time

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



- To set a one-time alarm, display one of the screens indicated by an alarm number from 2 through 5. To set the snooze alarm, display the screen indicated by 1.
2. After you select an alarm, hold down (A) until the hour setting of the alarm time starts to flash, which indicates the setting screen.
  - This operation automatically turns on the alarm.
  3. Press (C) to move the flashing in the sequence shown below to select other settings.



- While a setting is flashing, press **(D)** to increase it.
  - To set an alarm that does not include a month (Daily alarm, Monthly alarm), set -- for the month. Press **(D)** until the -- mark appears (between 12 and 1) while month setting is flashing.
  - To set an alarm that does not include a day (Daily alarm, 1-Month alarm), set -- for the day. Press **(D)** until the -- mark appears (between the end of the month and 1) while the day setting is flashing.
  - When setting the alarm time using the 12-hour format, take care to set the time correctly as a.m. or p.m. (**PM/P** indicator).
- Press **(A)** to exit the setting screen.

### Alarm Operation

The alarm tone sounds at the preset time for 10 seconds, regardless of the mode the watch is in. In the case of the snooze alarm, the alarm operation is performed a total of seven times, every five minutes, until you turn the alarm off or change it to a one-time alarm.

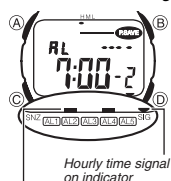
- To stop the alarm tone after it starts to sound, press any button.
- Performing any one of the following operations during a 5-minute interval between snooze alarms cancels the current snooze alarm operation.
  - Displaying the Timekeeping Mode setting screen
  - Displaying the alarm  $\uparrow$  setting screen

### To test the alarm

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

### To turn Alarms 2 through 5 and the Hourly Time Signal on and off

- In the Alarm Mode, use **(D)** to select a one-time alarm (alarm number 2 through 5) or the Hourly Time Signal (**HTS**).
- Press **(A)** to toggle it on and off.
- The on/off status of Alarms 2 through 5 and the Hourly Time Signal is shown by indicators along the bottom of the displays.
- The alarm on indicators and Hourly time Signal on indicator are displayed in all modes.
- While an alarm is sounding, the applicable alarm on indicator flashes on the display.

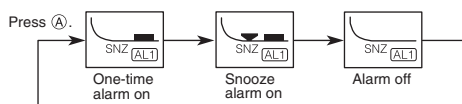


Alarm on indicator

### To select the operation of Alarm 1

- In the Alarm Mode, use **(D)** to select Alarm 1.
- Press **(A)** to cycle through the available settings in the sequence shown below.

#### Snooze on indicator and Alarm $\uparrow$ on indicator



- The snooze on indicator and Alarm  $\uparrow$  on indicator are displayed in all modes.
- The snooze on indicator flashes during the 5-minute intervals between alarms.
- The alarm indicator (Alarm  $\uparrow$  on and/or snooze on) flashes while the alarm is sounding.

### Countdown Timer



Hour : Minutes Seconds

The countdown timer can be set within a range of one minute to 24 hours. An alarm sounds when the countdown reaches zero.

- You can also select auto-repeat, which automatically restarts the countdown from the original value you set whenever zero is reached.
- Countdown timer functions are available in the Countdown Timer Mode, which you enter by pressing **(C)**.

### To use the countdown timer

Press **(C)** while in the Countdown Timer Mode to start the countdown timer.

- When the end of the countdown is reached and auto-repeat is turned off, the alarm sounds for 10 seconds or until you stop it by pressing any button. The countdown time is automatically reset to its starting value after the alarm stops.
- The countdown timer measurement operation continues even if you exit the Countdown Timer Mode.
- Press **(D)** while a countdown operation is in progress to pause it. Press **(D)** again to resume the countdown.
- To completely stop a countdown operation, first pause it (by pressing **(D)**), and then press **(A)**. This returns the countdown time to its starting value.

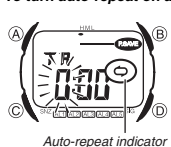
### To set the countdown start time

- In the Countdown Timer Mode, hold down **(A)** until the hours setting of the countdown start time starts to flash, which indicates the setting screen.
- Press **(C)** to move the flashing between the hours and minutes settings.
- While a setting is flashing, use **(D)** to change it.
  - To set the starting value of the countdown time to 24 hours, set **0:00**.
- Press **(A)** to exit the setting screen.



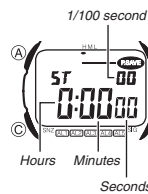
### To turn auto-repeat on and off

- In the Countdown Timer Mode, hold down **(A)** until the hours setting of the countdown start time starts to flash, which indicates the setting screen.
- Press **(B)** to toggle auto-repeat on (**↺** displayed) and off (**↻** not displayed).
  - Note that pressing **(B)** in the above operation also turns on the backlight.
- When the end of the countdown is reached while auto-repeat is on, the alarm sounds, but the countdown restarts from the beginning without stopping. You can stop the countdown by pressing **(D)** and manually reset to the start time by pressing **(A)**.
- The auto-repeat indicator appears in the Countdown Timer Mode only.



Auto-repeat indicator

### Stopwatch



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

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

### To measure times with the stopwatch

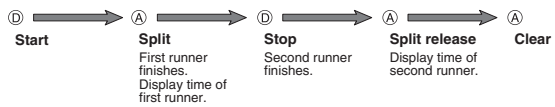
#### Elapsed time



#### Split time



#### Two Finishes



### Dual Time

The Dual Time Mode lets you keep track of time in a different time zone.

- In the Dual Time Mode, the seconds count is synchronized with the seconds count of the Timekeeping Mode.

### To set the Dual Time

- Press **(C)** to enter the Dual Time Mode.
- In the Dual Time Mode, hold down **(A)** until the hour setting starts to flash, which indicates the setting screen.
- Press **(C)** to change the selection in the following sequence.



- Press **(D)** to increase the setting.
- Press **(A)** to exit the setting screen.

### Backlight



Auto light switch indicator

The backlight uses an LED (light-emitting diode) and a light guide panel that cause the entire display to glow for easy reading in the dark. The watch's auto light switch automatically turns on the backlight when you angle the watch towards your face in the dark.

- The auto light switch must be turned on (indicated by the auto light switch indicator) for it to operate.
- See "Backlight Precautions" for other important information about using the backlight.

### To turn on the backlight manually

- In any mode, press **(B)** to illuminate the display for about one second.
- The above operation turns on the backlight regardless of the current auto light switch setting.

### About the Auto Light Switch

Turning on the auto light switch causes the backlight to turn on for about one second, whenever you position your wrist as described below in any mode. Note that this watch features a "Full Auto LED Light," so the auto light switch operates only when available light is below a certain level. It does not turn on the backlight under bright light.

- Be sure to wear the watch on the outside of your left wrist while using the auto light switch.

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



### Warning!

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

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

- In any mode, hold down **(B)** for about two seconds to toggle the auto light switch on (Auto light switch indicator displayed) or off (Auto light switch indicator not displayed).
- The auto light switch indicator is on the display in all modes while the auto light switch is turned on.

## Battery

This watch is equipped with a solar cell and a rechargeable battery (secondary battery) that is charged by the electrical power produced by the solar cell. The illustration shown below shows how you should position the watch for charging.

**Example:** Orient the watch so its face is pointing at a light source.

- Note that charging efficiency drops when any part of the solar cell is blocked by clothing, etc.
- The illustration shows how to position a watch with a resin band.



### Important!

- Storing the watch for long periods in an area where there is no light or wearing it in such a way that it is blocked from exposure to bright light can cause rechargeable battery power to run down. Be sure that the watch is normally exposed to bright light whenever possible.
- This watch employs a solar cell that converts light into electricity, which charges a built-in rechargeable battery. Normally, the rechargeable battery should not need replacement, but after very long use over a number of years, the rechargeable battery may lose its ability to achieve a full charge. Should you notice problems with getting the rechargeable battery to a full charge, contact your dealer or CASIO distributor about having the rechargeable battery replaced.
- The rechargeable battery should be replaced with a CASIO-specified ML2016 battery only. Other rechargeable batteries can cause damage to the watch.
- All data stored in memory is deleted, and the current time and all other settings return to their initial factory defaults whenever battery power drops to Level 4 and when you have the battery replaced.
- Turn on the watch's Power Saving function and keep it in an area normally exposed to bright light when storing it for long periods. This helps to keep the rechargeable battery from going dead.

### Battery Power Indicator

The battery power indicator on the display shows you the current status of the rechargeable battery's power.

#### Battery power indicator



Level	Battery Power Indicator	Function Status
1	HML	All functions enabled.
2	HML	All functions enabled.
3	HML CHARGE	Beeper tone, backlight, display, and buttons are disabled.
4	HML	All functions, including timekeeping, are disabled.

- The flashing **CHARGE** indicator at Level 3 tells you that battery power is very low, and that exposure to bright light for charging is required as soon as possible.
- At Level 4, all functions are disabled and settings return to their initial factory defaults. Functions are enabled once again after the rechargeable battery is charged, but you need to set the time and date after the battery reaches Level 3 (indicated by flashing **CHARGE** indicator) from Level 4. You will not be able to set any of the other settings until the battery reaches Level 2 (no **CHARGE** indicator) after dropping to Level 4.
- Leaving the watch in direct sunlight or some other very strong light source can cause the battery power indicator to temporarily show a reading that is higher than the actual battery level. The correct battery power indicator should appear after a few minutes.
- If you use the backlight or any of the alarm functions a number of times during a short period, the **RECOVER** indicator appears on the display and the following operations become disabled until battery power recovers.

#### Backlight, Beeper tone

After some time, battery power will recover and the **RECOVER** indicator will disappear, indicating that the above functions are enabled again.

### Charging Precautions

Certain charging conditions can cause the watch to become very hot. Avoid leaving the watch in the areas described below whenever charging its rechargeable battery.

#### Warning!

Leaving the watch in bright light to charge its rechargeable battery can cause it to become quite hot. Take care when handling the watch to avoid burn injury. The watch can become particularly hot when exposed to the following conditions for long periods.

- On the dashboard of a car parked in direct sunlight
- Too close to an incandescent lamp
- Under direct sunlight

### Charging Guide

After a full charge, timekeeping remains enabled for up to about 11 months, while the watch is used under the conditions described below.

#### Operating Conditions

- Watch is not exposed to light
- Display on 18 hours per day, sleep state 6 hours per day
- 1 backlight operation (1.5 seconds) per day
- 10 seconds of alarm operation per day

### Charge Times

Exposing the watch to light for the periods shown below each day restores the power used by the above operating conditions.

Exposure Level (Brightness)	Approximate Exposure Time
Outdoor Sunlight (50,000 lux)	5 minutes
Sunlight Through a Window (10,000 lux)	24 minutes
Daylight Through a Window on a Cloudy Day (5,000 lux)	48 minutes
Indoor Fluorescent Lighting (500 lux)	8 hours

- Stable operation is promoted by frequent charging.

### Recovery Times

The table below shows the amount of exposure that is required to take the battery from one level to the next.

Exposure Level (Brightness)	Approximate Exposure Time		
	Level 4	Level 3	Level 2
Outdoor Sunlight (50,000 lux)	24 hours	15 hours	17 hours
Sunlight Through a Window (10,000 lux)	122 hours	76 hours	85 hours
Daylight Through a Window on a Cloudy Day (5,000 lux)	---	155 hours	172 hours

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

### Reference

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

#### Power Saving Function

##### Power Saving on indicator



When turned on, the Power Saving function automatically puts the watch into a sleep state whenever it is left in an area where it is dark for about one hour in the Timekeeping Mode, Alarm Mode, or Dual Time Mode. The sleep state is indicated by a blank screen with Power Saving on (**P.SAVE**) indicator flashing on it. In the sleep state, all functions are enabled, except for the display.

- Wearing watch inside the sleeve of clothing can cause it to enter the sleep state.
- The watch will not enter the sleep state between 6:00 AM and 9:59 PM. If the watch is already in the sleep state when 6:00 AM arrives, however, it will remain in the sleep state.

#### To recover from the sleep state

Perform any one of the following operations.

- Move the watch to a well-lit area.
- Press any button.
- Angle the watch towards your face for reading.

#### To turn Power Saving on and off

In the Timekeeping Mode, hold down **(D)** for about two seconds to toggle Power Saving on (**P.SAVE** indicator displayed) and off (**P.SAVE** indicator not displayed).

- Note that pressing **(D)** also toggles between 12-hour timekeeping and 24-hour timekeeping.



### Auto return features

If you leave a screen with flashing digits for two or three minutes without performing any operation, the watch automatically saves any settings you have made up to that point and exits the setting screen.

### Data and Setting Scrolling

The **(D)** button is used to scroll through setting screen data on the display. Holding down this button during a scroll operation scrolls through the data at high speed.

### Backlight Precautions

- The illumination provided by the backlight may be hard to see when viewed under direct sunlight.
- The backlight automatically stops illuminating whenever an alarm sounds.
- Frequent use of the backlight shortens the battery life.

### Auto light switch precautions

- Avoid wearing the watch on the inside of your wrist. Doing so causes the auto light switch to operate when it is not needed, which shortens battery life. If you want to wear the watch on the inside of your wrist, turn off the auto light switch feature.
- The backlight may not light if the face of the watch is more than 15 degrees above or below parallel. Make sure that the back of your hand is parallel to the ground.
- The backlight turns off in about one second, even if you keep the watch pointed towards your face.
- Static electricity or magnetic force can interfere with proper operation of the auto light switch. If the backlight does not light, try moving the watch back to the starting position (parallel with the ground) and then tilt it back toward you again. If this does not work, drop your arm all the way down so it hangs at your side, and then bring it back up again.
- Under certain conditions, the backlight may not light until about one second after you turn the face of the watch towards you. This does not necessarily indicate malfunction of the backlight.
- You may notice a very faint clicking sound coming from the watch when it is shaken back and forth. This sound is caused by mechanical operation of the auto light switch, and does not indicate a problem with the watch.

More than 15 degrees too high

