

Operation Guide 2802

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.

The Sports Calorie Meter 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.

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



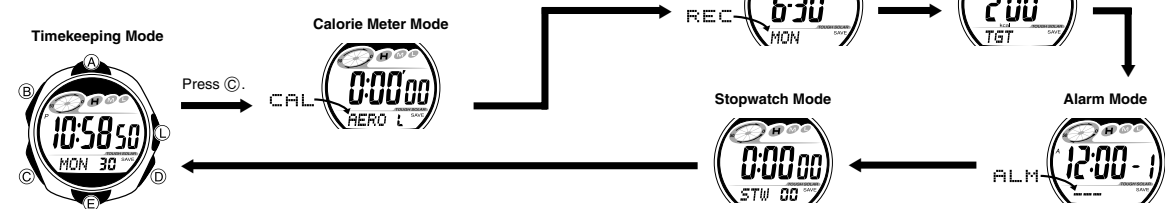
If the **SLEEP** indicator is on the display (either flashing or steady), it means that the display is blank because the watch's Power Saving function has turned off the display to conserve power. Power Saving automatically turns off the display and enters a sleep state whenever the watch is left for 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.
- * It can take up to two seconds for the display to turn on.

• See "Power Saving Function" for more information.

General Guide

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



About This Manual



- 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.

Timekeeping

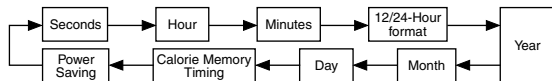


Use the Timekeeping Mode to set and view the current time and date. You can also use the Timekeeping Mode to view date (year, month, day, day of the week) and calorie countdown sub-screens.

- When setting the time, you can also configure settings for the display illumination duration, the 12/24-hour format, calorie memory timing, and power saving on/off.

To set the time and date

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



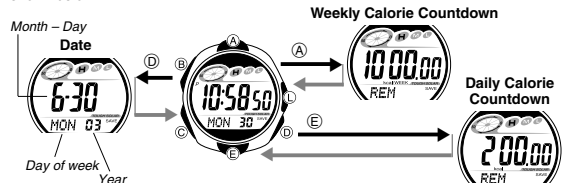
- When the setting you want to change is flashing, use (E) and (A) to change it as described below.

Screen	To do this:	Do this:
10:58:50	Reset the seconds to 00	Press (E).
10:58:50	Toggle the display illumination duration setting between 1.5 second (v) and 2.5 seconds (w)	Press (A) while the second setting is flashing.
10:58:50	Change the hour or minutes	Use (E) (+) and (A) (-).
10:58:50	Toggle between 12-hour (1 24H) and 24-hour (24H) timekeeping	Press (E).
6-30	Change the month, day, or year	Use (E) (+) and (A) (-).
12:00	Toggle calorie memory timing between midnight (12:00) and 2:00 a.m. (2:00)	Press (E).
0A	Toggle power saving on (0A) and off (0FF)	Press (E).

- Press (B) to exit the setting screen.
- For information about settings other than the time and date, see the following.
 - Display Illumination duration: Backlight
 - Calorie Memory Timing: Using the Sports Calorie Meter Functions
 - Power Saving: Power Saving Function
- The year can be set in the range of 2000 to 2049. The day of the week is calculated automatically in accordance with the date you set.

To view Timekeeping Mode sub-screens

In the Timekeeping Mode, hold down (A), (D), or (E) to display one of the sub-screens shown below.



- The daily calorie countdown shows the calories remaining before the current day's calorie target is reached.
- The weekly calorie countdown shows the calories remaining before the current week's (week from Monday to Sunday when the current date occurs) calorie target is reached.
- The daily calorie countdown is displayed in the range of 100.00 to 2,000.00 kcal or 400.0 to 8,000.0 kJ. The weekly calorie countdown is displayed in the range of 100.00 to 9,950.00 kcal or 400.0 to 40,000.0 kJ.
- For more information, see "Using the Sports Calorie Meter Functions".

Using the Sports Calorie Meter Functions



The Sports Calorie Meter calculates the number of calories you consume while exercising. The calculation is based on the basic data you input, the type of activity you are performing, and the duration of the activity. You can also configure the watch to store calorie values in memory, to sound an alarm to let you know when the calorie target you specify is reached, and to display the countdown to your calorie target.

- Calorie measurements are performed in the Calorie Meter Mode, which you enter by pressing (C).

Before Using the Calorie Meter

- Before using the calorie meter for the first time, be sure to set your "basic data" and configure the calorie memory timing.

Basic Data: See "Inputting Basic Data".
 Calorie Memory Timing*: See "To set the time and date".
 * Calorie memory timing is the time of day that data measured in the Calorie Meter Mode is stored in memory. You can specify a timing of midnight or 2:00 a.m. Select 2:00 a.m. if you perform a calorie meter operation after midnight. The initial factory default setting (which is also set when the battery is replaced) is midnight.

- After you input your basic data and specify the calorie memory timing, you should also specify the name of activity you are performing. Calories you burn are then calculated in accordance with settings you configure. For details, see "Activities" and "Calorie Measurements".
- Calorie Meter Mode data is stored in memory using the current Timekeeping Mode time and date. Do not change the time and date setting while a calorie measurement operation is in progress.
- See "Exercising for Optimal Health" for important information about using Sports Calorie Meter functions effectively.

Activities

For proper operation of the Calorie Meter Mode, you need to specify the name of activity you will be performing before starting a calorie measurement operation. You can specify any one of the following 43 activities.

AEROBICS L, AEROBICS M, AEROBICS H, BASEBALL, BASKETBALL, BIKE L, BIKE M, BIKE H, FOOTBALL, GOLF, JOG L, JOG M, JOG H, RUN L, RUN M, RUN H, SWIM L, SWIM M, SWIM H, TENNIS, WALK L, WALK M, WALK H, WEIGHT TRAINING, *:*:* 1, *:*:* 2, *:*:* 3, *:*:* 4, *:*:* 5, *:*:* 6, *:*:* 7, *:*:* 8, *:*:* 9, *:*:* 10, *:*:* 11, *:*:* 12, *:*:* 13, *:*:* 14, *:*:* 15, *:*:* 16, *:*:* 17, *:*:* 18, *:*:* 19

- Some activities appear more than once, with the letters L, M, and H next to them. These letters indicate exercise load, as Low (L), Medium (M), or High (H).
- The values to the right of the line of asterisks *:*:* indicate exercise intensity. The larger the value, the greater the load.
- For more information about the load level for each activity, see "Activity Types and Intensities".

To specify an activity



Activity name

1. In the Calorie Meter Mode, make sure no calorie measurement operation is being performed.
 - If a measurement operation is in progress, press (E) to stop it.
2. Use (D) to select the activity you want.
 - Each press of (D) cycles through the preset activities. Display the name of the activity you want to select.
 - If the full name of an activity cannot fit on the display, it scrolls once from right to left. After scrolling the first four characters of the activity name remain on the display.
 - The watch remembers the activities you select. For details, see "Using Favorite Activity Memory".

Calorie Measurements

You need to start and stop the calorie measurement operation when you start and stop exercising, playing a sport, etc.

The watch displays the elapsed time, number of calories burned, and the calorie target graph while a calorie measurement is in progress. The watch beeps for five seconds when the number of calories burned reaches the calorie target you preset.

- Your burned calorie value is stored in memory (as daily data) when you stop the calorie measurement operation.
- Note that the calorie measurement operation continues even if you exit the Calorie Meter Mode. If you exit the Calorie Meter Mode with data on the display while the measurement operation is stopped, the data will still be on the display when you next enter the Calorie Meter Mode. This means you can accumulate data for multiple calorie measurement operations during a single day.
- If you are engaged in an activity that has rest periods or if you perform more than one activity and want to keep track of the cumulative elapsed time and calorie totals in the Calorie Meter Mode, do not clear the display to all zeroes when you stop measurement during rest periods, etc.
- If you want to keep track of data for each individual session, clear the display to all zeroes each time you stop the measurement operation.

To display the cumulative total data of multiple measurements:

Start → Stop; Start → Stop; Start → Stop...Clear (all-zero reset)

To display the data for each measurement:

Start → Stop → Clear; Start → Stop → Clear;

To perform calorie measurement



1. In the Calorie Meter Mode, use (D) to select the name of the activity you are about to perform.
 - Note that you cannot change the selected activity once the calorie measurement operation starts. To change the activity, you first need to press (E) to stop the measurement operation.
 - Pressing (A) instead of (D) will scroll through the contents of Favorite Activity memory (if it contains any activities). For more information, see "Using Favorite Activity Memory".
2. Press (E) to start the calorie measurement operation, and then start your activity.
 - To view the currently selected activity in place of the current calorie value, hold down (A).
3. After you are finished with your activity, press (E) to stop the measurement operation.

- While the measurement operation is stopped, the display alternates in two-second intervals between the current calorie value and the activity name. In this case, only the first four characters of the activity name are displayed, without scrolling.
- Pressing (E) to stop the measurement operation causes the data to be stored in memory. Pressing (D) while measurement is stopped clears the display to all zeroes.
- You can use the Recall Mode to view data stored in memory.

Note

- The displayed current calorie value is updated every 10 seconds.
- During measurement, the target graph shows how much progress you have made toward achieving your target calorie level for the current date. One segment of the graph is darkened each time you burn 10% of the total target calorie amount for the day. No segments are darkened when your current calorie value is less than 10% of the target total.
- The target graph for the current date is also displayed in the Timekeeping Mode.
- You can view the calorie target countdown in the Timekeeping Mode. See "To view Timekeeping Mode sub-screens" for more information.
- The watch performs either of the following operations whenever the calorie memory timing you specified is reached.

If Calorie Measurement is in progress: The current data is stored automatically in memory, and measurement is restarted from zero.

If Calorie Measurement is stopped: Current measurement data is stored in calorie memory and the Calorie Meter Mode display is reset to all zeroes.

- A measurement operation is stopped automatically whenever the elapsed time exceeds 23 hours.

- Any time the calorie total exceeds 9,999.99 kcal (or 99,999.9 kJ), calorie measurement restarts from zero.
- If you make an operational mistake while performing a calorie measurement (selecting the wrong activity, forgetting to stop measurement during a break, etc.), you can delete the data by stopping the measurement operation and deleting the daily record for the current date. Next, re-start measurement for the current date from zero. See "Recall Mode" for information about deleting the current date's data.

Using Favorite Activity Memory

The watch remembers up to five of the last activities you selected when you performed past calorie measurement operations. You can use Favorite Activity memory to select your most often used activities quickly and easily.

- To display Favorite Activity memory contents, press (A) in the Calorie Meter Mode while measurement is stopped.
- An activity is not added to Favorite Activity memory if it is already there.
- If Favorite Activity memory is already full, performing a measurement operation with a new activity causes the oldest Favorite Activity to be replaced with the new one.
- You can use the following procedure to clear Favorite Activity memory contents.

To clear Favorite Activity memory contents

1. In the Calorie Meter Mode, make sure no calorie measurement operation is being performed.
2. Press (A) and (D) at the same time.
 - This causes CLR to appear on the display, and selects low-load aerobics (AERO L) as the activity type.

Recall Mode

Target graph Month - Day



Use the Recall Mode to recall and delete data stored by Calorie Meter Mode operation.

- All of the operations in this section are performed in the Recall Mode, which you enter by pressing (C).

About Memory Management

The watch maintains three types of Calorie Meter Mode records: Daily, Weekly, and Cumulative. The timing when data is stored to memory depends on the record type, as explained below.

Daily records

Daily records contain the following information for today, and for each of the six days prior to today.

Target graph, month, day, day of the week, calories burned, and elapsed time (hours, minutes, seconds).

Daily record data also includes calories burned and elapsed times for up to seven activities that were selected during the current date and the previous date. Data for the current date's daily record is stored whenever you stop a measurement operation in the Calorie Meter Mode. The current date's daily record expires (becomes yesterday's record) at time you have specified as the calorie memory timing.

- If a daily record is stored while there are already seven daily records in memory, the oldest record is deleted automatically to make room for the new record.

Weekly records

Weekly records contain the following information for up to 11 previous weeks of Calorie Meter Mode measurements.

Target graph, calories burned, elapsed time (hours, minutes, seconds)

Data for a weekly record is stored on Monday morning at the time you have specified as the calorie memory timing.

- If a weekly record is stored while there are already 11 weekly records in memory, the oldest record is deleted automatically to make room for the new record.

Cumulative record

The cumulative record keeps a running total of calories burned and elapsed time (hours and minutes) since the cumulative record was last cleared.

Data is saved to the cumulative record each day at the time you have specified as the calorie memory timing.

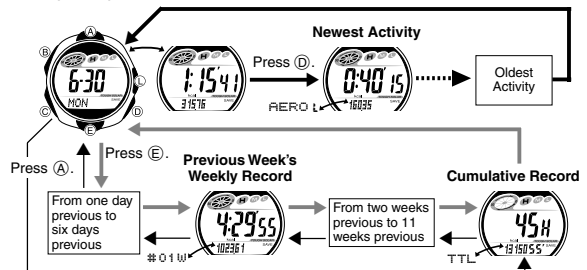
Note

- Data save operations are based on the current time and date as kept in the Timekeeping Mode.
- See "To set the time and date" for information about specifying the calorie memory timing.

To recall Calorie Meter Mode records

In the Recall Mode, use the (A), (D), and (E) buttons to navigate among records as shown below.

Today's Daily Record



- Today's daily record appears first when you enter the Recall Mode.
- The daily record screen initially alternates between the date, and cumulative number of calories burned and elapsed time for that date.
- While today's or yesterday's daily record is on the display, you can press (D) to display calories burned and elapsed time for each activity.
- The weekly record screen alternates between the cumulative total calories for the week and the week number (from # 0 1 W = previous week to # 1 1 W = 11 weeks previous).
- Note that -- is displayed for any record that has not been used yet.

Deleting Calorie Meter Mode Records

You can use the procedure below to delete today's daily record only, or to delete all records.

- You cannot delete records while a Calorie Meter Mode measurement operation is in progress.

To delete today's daily record

- In the Recall Mode, use (E) and (A) to display the today's daily record.
 - Display the initial screen (alternating between the date, and the cumulative time and calories burned). You cannot delete the today's daily record if one of the activity record screens is displayed.
- Hold down (B) until the watch beeps and CLR stops flashing on the display.

To delete all records

- In the Recall Mode, use (E) and (A) to display the cumulative record.
- Hold down (B) until the watch beeps and CLR stops flashing on the display.

Inputting Basic Data



Daily Calorie Target

Note that before you can use the Calorie Meter Mode to perform calorie measurements, you need to input your basic data.

- All of the operations in this section are performed in the Basic Data Input Mode, which you enter by pressing (C).

Basic Data

The term "basic data" refers to information about your current weight and your calorie target setting.

- Be sure to update basic data values whenever the person using the watch changes.

Weight

You can specify either kilograms (kg) or pounds (lb) as the weight unit. The range and increment for each unit are shown below.

- Kilograms: 30 to 150kg in 1kg units
- Pounds: 66 to 330 lb in 2lb units

- If your weight is less than the minimum setting range value shown above, use the minimum setting. If your weight is greater than the maximum value, use the maximum setting.

Calorie Display Unit

You can select either kilocalories (kcal) or kilojoules (kJ) as the calorie display unit.

Calorie Targets

You can specify a calorie target value for each day and each week. After you set a calorie target, the watch beeps for five seconds whenever your total calories burned reaches the target value. The target graph on the display shows your progress to the calorie target. You can set a calorie target in the ranges described below.

- Daily Calorie Target
 - kcal: 100 to 2,000kcal, in 20kcal units
 - kJ: 400 to 8,000kJ, in 100kJ units
- Weekly Calorie Target
 - kcal: 100 to 9,950 kcal, in 50kcal units
 - kJ: 400 to 40,000kJ, in 200kJ units

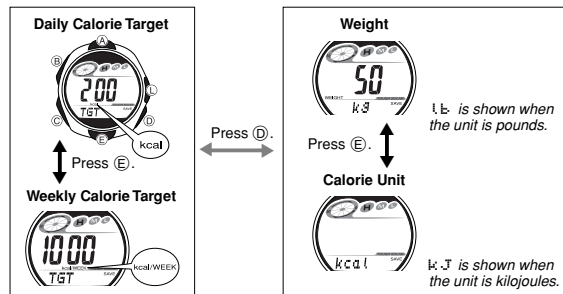
Basic Data Setting Precautions

- Note that you cannot change basic data settings when the following conditions exist.
 - Weight: While a Calorie Meter Mode measurement is in progress
 - Weight unit: Any time there is Calorie Meter Mode data in memory and when the Calorie Meter Mode screen is not cleared to all zeroes
 - Calorie unit: Any time there is Calorie Meter Mode data in memory and when the Calorie Meter Mode screen is not cleared to all zeroes
 - Calorie target: Following a measurement in the Calorie Meter Mode
- Changing the weekly calorie target during a week resets the weekly calorie countdown and the target graph. Normal weekly calorie measurement will resume starting from the next Monday following the day you changed the weekly calorie target.
- Whenever you change the weight unit or the calorie unit, the weight setting or the daily and weekly calorie targets change to the values shown below.
 - Weight: 50kg or 110lb
 - Daily calorie target: 200kcal or 800kJ
 - Weekly calorie target: 1,000kcal or 4,000kJ
- Note that the Basic Data Input Mode has four screens. When inputting basic data, first display the screen for the setting you want to change. For details, see "To view current basic data settings" below.

To view current basic data settings

In the Basic Data Input Mode, use (D) and (E) to display the screen for the basic data setting you want to view (see illustration below).

- When you press (D) to change from the calorie target screens to the weight or calorie unit screen, DFTF appears at the bottom of the display for about one second. DFTF does not appear when you press (E) to toggle between the weight and calorie unit screens.

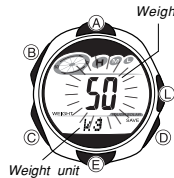


To specify the calorie unit

- In the Basic Data Input Mode, use (D) and (E) to display the calorie unit screen.
- Hold down (B) until the calorie unit setting (kcal or kJ) starts to flash, which indicates the setting screen.
 - If the calorie unit setting does not flash when you hold down (B), perform the following two operations and then perform this entire procedure again from the beginning.
 - Change to the Calorie Meter Mode and clear the measurement to all zeroes.
 - Change to the Recall Mode and delete all records.
- Press (E) to toggle the calorie unit between kilocalories (kcal) and kilojoules (kJ).
- Press (B) to exit the setting screen.

To specify your weight

- In the Basic Data Input Mode, use (D) and (E) to display the weight screen.
 - Hold down (B) until the weight setting starts to flash, which indicates the setting screen.
 - If the weight setting does not start to flash when you hold down (B), change to the Calorie Meter Mode and stop the ongoing calorie measurement operation.
 - Press (C) to move the flashing between the weight and weight unit settings.
 - If the weight unit setting does not flash when you press (C), perform the following three operations and then perform this entire procedure again from the beginning.
 - Press (B) to exit the setting screen.
 - Change to the Calorie Meter Mode and clear the measurement to all zeroes.
 - Change to the Recall Mode and delete all records.



Weight unit

- Changing the weight unit automatically resets the weight to its initial default setting. Because of this, you should always specify the weight unit you want to use before inputting a weight value.
- Specify the weight unit and your weight.
 - While the weight unit setting is selected, press (E) to toggle it between kilograms (kg) and pounds (lb).
 - While the weight setting is selected, use (E) (+) and (A) (-) to change it.
 - Press (B) to exit the setting screen.

To set the daily and weekly calorie targets

- While in the Basic Data Input Mode, use (D) and (E) to display either the daily calorie target or the weekly calorie target screen.
 - Hold down (B) until the calorie target setting starts to flash, which indicates the setting screen.
 - If the calorie target setting does not flash when you hold down (B), perform the following operations and then perform this entire procedure again from the beginning.
 - Change to the Calorie Meter Mode and clear the measurement to all zeroes.
 - Change to the Recall Mode and delete the today's daily record.
- Use (E) (+) and (A) (-) to change it.
- Press (B) to exit the setting screen.



Target calorie

Alarms



Alarm time (Hour : Minutes)
AM indicator
Day of week
Alarm number

You can set up to five independent alarms with hour, minutes, and day of the week. When an alarm is turned on, the alarm tone sounds when the alarm time is reached.

You can also turn on an Hourly Time Signal, which will cause the watch to beep twice every hour on the hour.

- The alarm number (1 through 5) indicates an alarm screen. :00 is shown for the alarm time 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.
- All of the operations in this section are performed in the Alarm Mode, which you enter by pressing (C).

Alarm Types

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

• Daily alarm

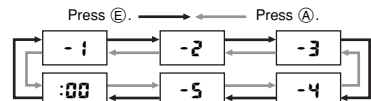
Set the hour and minutes for the alarm time. This type of setting causes the alarm to sound everyday at the time you set.

• Weekly alarm

Set the hour, minutes, and the day of the week for the alarm time. This type of setting causes the alarm to sound every week at the time you set, on the day of the week you set.

To set an alarm time

- In the Alarm Mode, use (E) and (A) to scroll through the alarm screens until the one whose time you want to set is displayed.
 - Press (E) to move left, Press (A) to move right.
- After you select an alarm, hold down (B) until the hour setting of the alarm time starts to flash, which indicates the setting screen.
 - This operation automatically turns on the alarm.
- Press (C) to move the flashing between the hour, minute, and day of the week settings.



- While a setting is flashing, use (E) (+) or (A) (-) to change it.
 - To set an alarm that does not include a day of the week (daily alarm), set ---- for the day of the week. Press (E) or (A) until the ---- mark appears (between ㄩㄢ and ㄩㄤ) while the day of the week setting is flashing.
 - When setting the alarm time using the 12-hour format, take care to set the time correctly as a.m. (A indicator) or p.m. (P indicator).
- Press (B) to exit the setting screen.

Alarm Operation

The alarm sounds at the preset time for about 10 seconds.

- To stop the alarm tone after it starts to sound, press any button.
- The alarm and the hourly time signal operations are performed in all modes except for the Timekeeping Mode setting screen.

To test the alarm

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

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

- Alarm on indicator
- In the Alarm Mode, use (E) and (A) to select an alarm or the Hourly Time Signal.
 - Press (D) to toggle it on and off.
 - Turning on an Alarm (- 1 through -5) displays the alarm on indicator on its Alarm Mode screen.
 - In all modes, the alarm on indicator is shown for any alarm that is currently turned on.
 - The Hourly Time Signal on indicator is shown on the display in all modes while the Hourly Time Signal is turned on.



Stopwatch

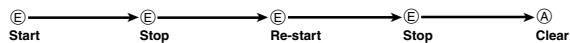
The stopwatch lets you measure elapsed time, split times, and two finishes.

- 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).

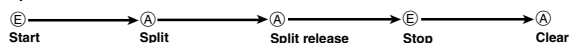


To measure times with the stopwatch

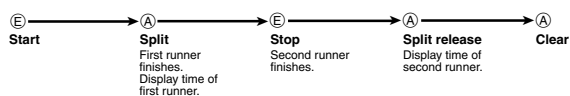
Elapsed Time



Split Time



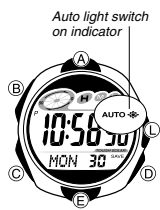
Two Finishes



Backlight

The backlight uses an EL (electro-luminescent) panel that causes 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.

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



To turn on the backlight manually
Press (D) in any mode to illuminate the display.

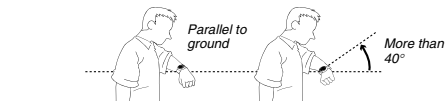
- You can specify 1.5 second or 2.5 seconds as the display illumination duration. See "To set the time and date" for more information.
- The above operation turns on the backlight regardless of the current auto light switch setting.

About the Auto Light Switch

Turning on the auto light switch causes the backlight to turn on, whenever you position your wrist as described below in any mode. Note that this watch features a "Full Auto EL 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.

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

- Wear the watch on the outside of your wrist.



Warning!

- Always make sure you are in a safe place whenever you are reading the display of the watch using the auto light switch. Be especially careful when running or engaged in any other activity that can result in accident or injury. Also take care that sudden illumination by the auto light switch does not 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 the Timekeeping Mode, hold down (D) for about two seconds to toggle the auto light switch on (AUTO -> displayed) or off (AUTO -> not displayed).

- The auto light switch on indicator (AUTO ->) 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 nearby 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 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. If you experience problems 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 CTL1616 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 and RECOV Indicator

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

Level	Battery Power Indicator	Function Status
1		All functions enabled.
2		All functions enabled.
3		Except for timekeeping and battery power indicator, all functions and display indicators are disabled.
4		All functions 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 from Level 4. You will not be able to set any of the other settings until the battery reaches Level 2 after dropping to Level 4.
- Display indicators reappear as soon as the battery is charged from Level 4 to Level 3.
- 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 the alarm a number of times during a short period, RECOV appears on the display, and the backlight and beeper tone become disabled until battery power recovers. After some time, battery power will recover and RECOV will disappear, indicating that the above functions are enabled again.
- If RECOV appears frequently, it probably means that remaining battery power is low. Leave the watch in bright light to allow it to charge.

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. Also note that 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.

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.
 • The following table shows the amount of time the watch needs to be exposed to light each day in order to generate enough power for normal daily operations.

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

- Since these are the specs, we can include all the technical details.
 - Watch is not exposed to light
 - Internal timekeeping
 - 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
 - 1 hour of calorie measurement per day (one 5-second beeper per day and one 5-second beeper per week when the calorie targets are reached)
- Stable operation is promoted by frequent charging.

Recovery Times

The table below shows the amount 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	Level 1
Outdoor Sunlight (50,000 lux)	2 hours	24 hours	7 hours	
Sunlight Through a Window (10,000 lux)	7 hours	119 hours	33 hours	
Daylight Through a Window on a Cloudy Day (5,000 lux)	10 hours	242 hours	67 hours	
Indoor Fluorescent Lighting (500 lux)	117 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.

Timekeeping

- Resetting the seconds to $\frac{00}{00}$ while the current count is in the range of 30 to 59 causes the minutes to be increased by 1. In the range of 00 to 29, the seconds are reset to $\frac{00}{00}$ without changing the minutes.
- With the 12-hour format, the **P** (PM) indicator appears on the display for times in the range of noon to 11:59 p.m. and the **A** (AM) indicator appears 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 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 when battery power drops to Level 4.

Auto Return Features

If you leave a screen with flashing digits on the display for two or three minutes without performing any operation, the watch automatically exits the setting screen.

Scrolling

The \odot and \odot buttons are used in various modes and setting screens 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.

Power Saving Function

When turned on, the Power Saving function automatically puts the watch into a sleep state whenever it is left for a certain period in an area where it is dark. The table below shows how watch functions are affected by the Power Saving function.

Elapsed Time in Dark	Display	Operation
60 to 70 minutes	Blank, with SLEEP flashing	Display is off, but all functions are enabled.
6 or 7 days	Blank, with SLEEP not flashing	All functions are disabled, but timekeeping is maintained.

- Wearing the watch inside the sleeve of clothing can cause it to enter the sleep state.
- The watch will not enter the sleep state while the Timekeeping Mode time is between 6:00 AM and 9:59 PM. If the watch is already in the sleep state when the time reaches 6:00 AM, however, it will remain in the sleep state.
- The watch will not enter the sleep state while it is in the Calorie Meter Mode or Stopwatch Mode.

To recover from the sleep state

Perform any one of the following operations.

- Move the watch to a well-lit area. It can take up to two seconds for the display to turn on.
- Press any button.
- Angle the watch towards your face for reading.

To turn Power Saving on and off



1. In the Timekeeping Mode, hold down \odot until the seconds start to flash, which indicates the setting screen.
 2. Press \odot eight times until the Power Saving on/off screen appears.
 3. Press \odot to toggle Power Saving on ($\frac{00}{00}$) and off ($\frac{00}{00}$).
 4. Press \odot to exit the setting screen.
- The Power Saving on indicator (**SAVE**) is on the display in all modes while the Power Saving is turned on.

Backlight Precautions

- The electro-luminescent panel that provides illumination loses power after very long use.
- The illumination provided by the backlight may be hard to see when viewed under direct sunlight.
- The backlight automatically turns off whenever an alarm sounds.
- The watch may emit an audible sound whenever the display is illuminated. This is due to vibration of the EL panel used for illumination, and does not indicate malfunction.
- Frequent use of the backlight 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.

More than 15 degrees too high



- 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 after the preset display illumination duration (see "To set the time and date"), 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.

Exercising for Optimal Health

Exercises that provide optimal health benefits must be safe and allow you maintain or exceed your maximum oxygen uptake level. The type of exercise that does this best is aerobic exercise.

During aerobic exercise you are able to breathe normally, so you generate energy while taking in oxygen. The body adapts so it can intake and utilize oxygen efficiently under the stress of the exercise, and so maximum oxygen uptake is increased.

Amount of Exercise Required for Good Health

The following is the amount of exercise (in terms of energy consumed) required daily for good health.

Engineers, Office Staff	Men: 200 to 300kcal
	Women: 100 to 200kcal
Manufacturing, Sales, Service Staff	Men: 100 to 200kcal
	Women: About 100kcal

Exercise Duration and Frequency

Continuous Duration: At least 10 minutes of continuous exercise, which is the time required for the body to respond aerobically to the exercise.

Total Time Per Day: At least 20 minutes

Frequency: Daily

Exercise Precautions

- When exercising for health, harder is not necessarily better, nor is longer necessarily better. In fact, overdoing exercise can even be detrimental to good health.
- If you are already under the care of a physician, be sure to exercise in accordance with your physician's instructions.
- Before starting any exercise program, consult a physician, even if you feel you are in good health.

Exercise Intensity

The relative intensity of an exercise can be expressed in terms of the relative metabolic rate (RMR) or the metabolic equivalent (MET).

• RMR (Relative Metabolic Rate)

The relative metabolic rate is a value that represents additional energy consumed during exercise as a multiple of basal metabolism. RMR can be calculated using the following formula.

$$\text{RMR} = (\text{Metabolic Energy Expenditure During Exercise}) - (\text{Metabolic Energy Expenditure at Rest}) / \text{Basal Metabolism}$$

• MET (Metabolic Equivalent)

The metabolic equivalent is a value that represents energy consumed during exercise (including metabolic energy expenditure at rest) as a multiple of basal metabolic energy expenditure at rest. MET can be calculated using the following formula.

$$\text{MET} = \text{Metabolic Energy Expenditure During Exercise} / \text{Metabolic Energy Expenditure at Rest}$$

The following formula can be used to convert between MET and RMR values.

$$\text{MET} \approx 0.83 \times \text{RMR} + 1$$

The activity intensity values used by this watch are MET or MET values converted from RMR values.

Basal Metabolism: Minimum energy consumption required for life
 Metabolic Energy Expenditure at Rest: Energy expenditure when sitting quietly
 Metabolic Energy Expenditure During Exercise: Total energy expenditure due to activity

Sources: Recommended Dietary Allowances for the Japanese

Ministry of Health, Labor and Welfare, Japan

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