FEATURES

- Pressure sensor
- Temperature sensor
- Diving Mode for automatic measurement of depth, dive time, and water temperature, along with total time since last dive (Surface Interval).
- Log Memory for automatic storage of up to 20 sets of log data (depth, dive time, water temperature and more). An easy operation recalls data whenever you need it.
- Dive Profile function stores the maximum depth you reach every minute.
- Daily alarm
- Hourly time signal
- Backlight

All servicing, including battery replacement, periodic maintenance, and repair for this watch must be performed by one of the Authorized CASIO Service Points listed in the Warranty Certificate. The watch should be sent with the warranty certificate to an Authorized CASIO Dealer/Distributor who will arrange for servicing.

Special equipment and procedures are required for servicing of this watch. Be sure to have such procedures performed only by an Authorized CASIO Service Point. The manufacturer shall not be deemed responsible for loss of water resistance, timekeeping precision, measurement precision, or other loss of function or performance that results from unauthorized maintenance or battery replacement.

Contents

1 | Precautions

- Make sure that you have received proper diving training before using this watch underwater.
- Note that this watch is NOT a diving computer, and is not capable of making decompression calculations.
- Always use the "buddy system" when diving — never dive alone.
- The depth meter function built into this watch should only be used as a "back-up" to your standard depth gauge.
- Note that this watch cannot be used in helium atmospheres.

Water Resistance

This watch is water resistant to depths of up to 200.0 meters (20 atmospheres) allowing use during scuba diving and other underwater sports.

- Periodic maintenance is required to ensure water resistance. At least once every 2 years, be sure to have an Authorized CASIO Dealer/ Distributor send your watch to an Authorized CASIO Service Point, who will perform an overhaul, replace sealing material and conduct a water resistance test.

Before Diving

- Before beginning each dive, check to make sure that the "BATTERY" message (indicates that battery power is weak) and/or "SENSOR ERROR" message (indicates sensor malfunction) are not shown on the display. If either message appears, be sure to have an Authorized CASIO Dealer/Distributor send your watch to an Authorized CASIO Service Point for battery replacement or service.
- Note that battery replacement also requires replacement of water resistant sealing material and a water resistance test, so be sure to have such work performed by an Authorized CASIO Service Point.
- Make sure that the watch is set to the correct time of day.
- Check the glass, case and band for cracks or chips.
- Make sure that the band is fastened securely around your wrist.

While Diving

- Check to make sure that timer and depth gauge are operating properly.
- Warning marks (♪) flashing on the display indicate the danger of a data error. For details, see page E-41 of this manual, titled "What To Do When a Warning Mark Appears".
- Take care when diving near rocks or coral to avoid scratching the timepiece.

After Diving

- To avoid corrosion, rinse your watch thoroughly with fresh water to remove salt water, dirt, etc. (When possible, soak the watch in fresh water overnight to make sure that all salt is removed.)
- When using a metal band, occasionally clean inside the gaps in the band using a soft toothbrush and soapy water. Failure to do so can result in corrosion of the timepiece, soiling of clothing or irritation to sensitive skin.

2 | Battery Replacement

The battery installed at the factory is for testing purposes, and so it may need replacement before the normally rated service life of CR2025 battery. When the battery becomes weak, be sure to have it replaced as soon as possible.
- Note that the cost of the battery and labor for replacement will be charged to you, even if replacement is required during the warranty period of the watch.

Weak Battery Power

When battery power becomes weak, the message "BATTERY" appears on the display. Do not use this watch for diving until the battery has been replaced.

To have battery replaced

When you notice that the battery is weakening, have an Authorized CASIO Dealer/Distributor send your watch to an Authorized CASIO Service Point for battery replacement. Never attempt to replace the battery yourself or have an unauthorized service center replace the battery.
- When replacing battery, the Authorized CASIO Service Point will also perform a full overhaul, replacing the sealing material which is vital to the water resistance of your watch.
- Note that all log data stored in memory is cleared when the battery is replaced. If you wish to keep the data, be sure to copy it into a log book before having the battery replaced.

3 | Important Points to Remember

1. Avoid using your watch in temperatures outside the suggested operating temperature range (0.0°C to 40.0°C / 32.0°F to 104.0°F). Never use this watch for applications such as "cold water diving" where the water temperature is extremely low, as resulting readings will be incorrect. In some cases, it is necessary to reset the pressure to "0.0 M (0 F)" while on the surface. This can be carried out by pressing holding down the Ⓒ button and Ⓓ button together for at least 1 second.

   If the display does not return to "0.0 M (0 F)" even after holding down the Ⓒ and Ⓓ buttons, hold all four buttons down simultaneously for at least two seconds to return to the Time/Calendar Mode.
   If the depth display indicates a depth of 1.0 meter (4 ft) or more, operation will not return to the Time/Calendar Mode even if you press the Ⓒ button.

2. Avoid using this watch for dives deeper than 80.0 meters (263 ft). This watch is designed to measure depths between 0.0 and 80.0 meters (0 and 263 ft). When a depth of 80.0 meters (263 ft) is exceeded, a "dEEp" message will appear on the display.
   Note also that for recreational diving, it is recommended to dive no deeper than approximately 30.0 meters (99 ft).

3. Calculation is impossible if dive time exceeds 12 hours.
   The maximum dive time that can be measured by this watch is 12 hours. When the dive time reaches 12 hours, the watch automatically changes to the Time/Calendar Mode and the log data accumulated during the 12-hour period is stored in memory.
   When recreational diving, it is suggested that the dive time be kept at less than one hour, no matter what the depth of the dive.

4. This watch cannot be used in helium atmospheres.
   Use of this watch in helium atmospheres may result in malfunction or even damage your watch.

5. This watch does not replace pressure gauges.
   This divers watch is designed only as a backup to your standard diving (snorkel diving and scuba diving) equipment.

4 Care of Your Watch

Sensors

The sensors built into your watch are very high precision instruments — never attempt to take them apart or service them yourself. Also, make sure that the area around the sensors is kept free from sand, dirt, dust and other foreign substances. To clean, rinse with fresh water.

Band

- Avoid fastening the band too tightly. You should be able to insert your finger between the band and your wrist.
- If the band becomes rusted or damaged, replace it as soon as possible. When replacing the band, be sure to replace the spring pin which connects the band and the watch body.

Temperature

Avoid exposing your watch to direct sunlight (in a closed vehicle, for example) for extended periods. Avoid exposing it to extremely high or low temperatures.

Impact

Although your watch is designed for moderate sports use, you should avoid subjecting it to unusually hard impact by dropping it, etc.

Magnetism

The functions of the watch are not affected by magnetism. It should be noted, however, use of the watch in the vicinity of a magnetic field can cause the watch itself to become magnetized. If this happens, the magnetized watch can interfere with the readings produced by diving compasses. Do not hold your diving compass in the vicinity of the watch when taking readings from the compass.

Chemicals

Avoid exposing your watch to strong chemicals such as thinner, gasoline, cleaning solvent, aerosol spray, adhesive agents, paints, etc. The chemical action of such substances may destroy the seals, case and finish.

Storage

When not in use, you should store your watch where it will not be exposed to dirt, dust, high levels of humidity, or extremely high or low temperatures.

5 Warranty and Servicing

All servicing, including battery replacement, periodic maintenance, and repair for this watch must be performed by one of the Authorized CASIO Service Points listed in the Warranty Certificate. The watch should be sent with the warranty certificate to an Authorized CASIO Dealer/Distributor who will arrange for servicing.

Special equipment and procedures are required for servicing of this watch. Be sure to have such procedures performed only by an Authorized CASIO Service Point. The manufacturer shall not be deemed responsible for loss of water resistance, timekeeping precision, measurement precision, or other loss of function or performance that results from unauthorized maintenance or battery replacement.
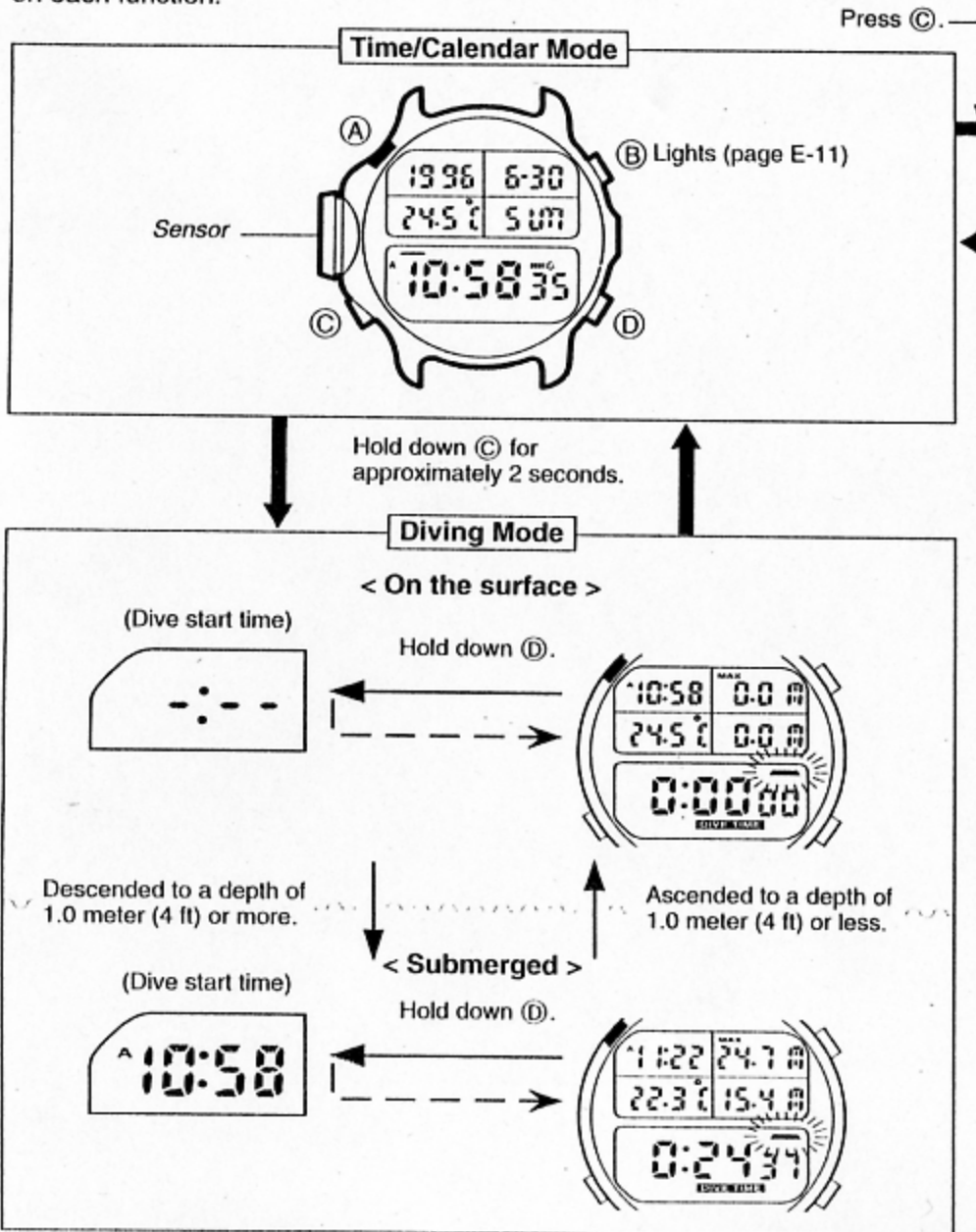
- Periodic maintenance is required to ensure water resistance. At least once every 2 years, be sure to have an Authorized CASIO Dealer/Distributor send your watch to an Authorized CASIO Service Point for the following servicing.

    Replacement of sealing materials
    Water resistance test
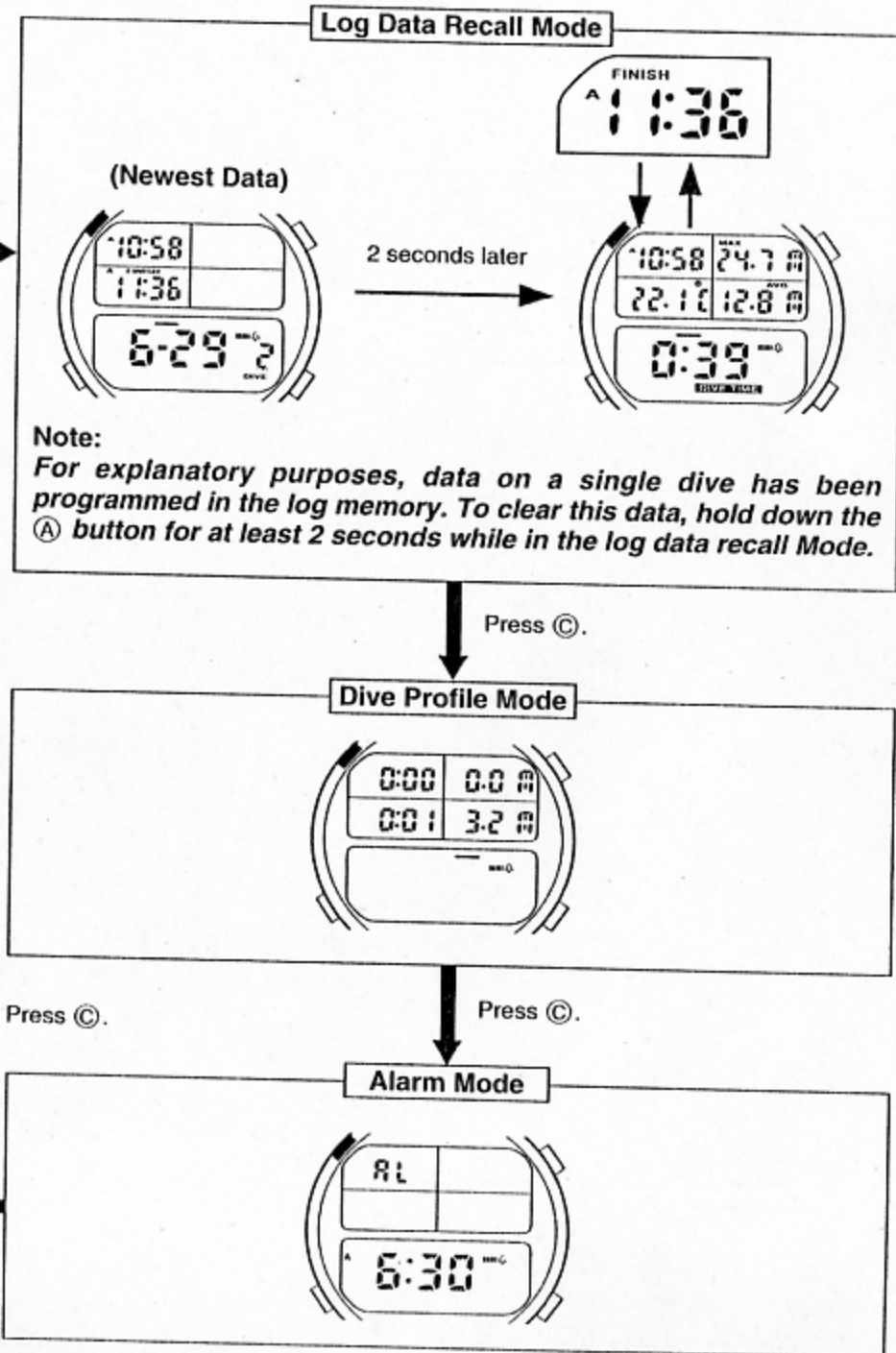   Depth meter test
    Overhaul

- Never try to take this product apart. Doing so can harm the water resistance of this watch.
- Note that the manufacturer assumes no responsibility for any loss or damage suffered from the use of this product, nor for any claims from third parties for any loss or damage arising from use of this product.
- For details on the warranty, see the Warranty Certificate for the CASIO Professional Diver's Watch.

6 Operation

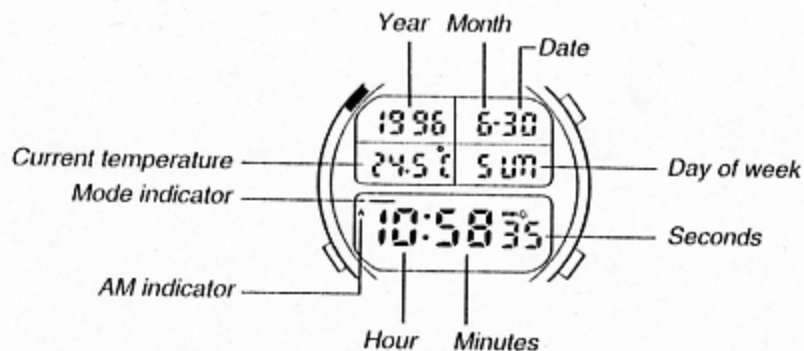For information on how to read the display, refer to the separate instructions on each function.
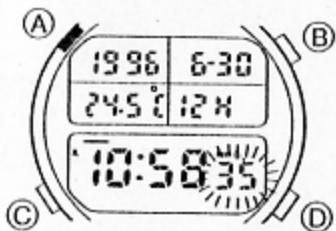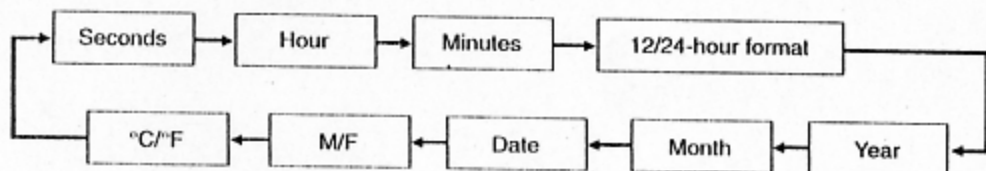
Time/Calendar Mode

Press Ⓒ. —

Ⓐ

Ⓑ Lights (page E-11)

Sensor ——

| 19 36 | 6:30 |
| 24.5℃ | 5 un |

10:58 35

Ⓒ   Ⓓ

Hold down Ⓒ for approximately 2 seconds.

Diving Mode

< On the surface >

(Dive start time)

Hold down Ⓓ.

-:- -

| 10:58 | MAX 0.0 m |
| 24.5℃ | 0.0 m |

0:00 00
DIVE TIME

Descended to a depth of 1.0 meter (4 ft) or more.

< Submerged >

Ascended to a depth of 1.0 meter (4 ft) or less.

(Dive start time)

Hold down Ⓓ.

10:58

| 11:22 | MAX 24.7 m |
| 22.3℃ | 15.4 m |

0:24 34
DIVE TIME

E-8

Log Data Recall Mode

FINISH
11:36

(Newest Data)

| 10:58 | |
| 11:36 | |

6-29 2
DIVE

2 seconds later →

| 10:58 | MAX 24.7 m |
| 22.1℃ | 12.8 m |

0:39
DIVE TIME

Note:
For explanatory purposes, data on a single dive has been programmed in the log memory. To clear this data, hold down the Ⓐ button for at least 2 seconds while in the log data recall Mode.

Press Ⓒ.

Dive Profile Mode

| 0:00 | 0.0 m |
| 0:01 | 3.2 m |

Press Ⓒ.   Press Ⓒ.

Alarm Mode

AL

6:30

E-9

7 | Setting the Time and Calendar

Reading the Time/Calendar Mode Display

Year Month
Date
Current temperature
Mode indicator
Day of week
Seconds
AM indicator
Hour   Minutes

To set the time and date

1. Press the Ⓐ button while in the Time/Calendar Mode. The seconds flash because they are *selected*.

2. Press the Ⓒ button to change the selection in the following sequence.

| Seconds | → | Hour | → | Minutes | → | 12/24-hour format |
| °C/°F | ← | M/F | ← | Date | ← | Month | ← | Year |

3. While the seconds digits are selected (flashing), press the Ⓓ button to reset them to "00". If you press the Ⓓ button while the seconds count is in the range of 30 to 59, it is reset to "00" and 1 is added to the minutes. If the seconds count is in the range of 00 to 29, the minutes count is unchanged.

4. While any digits (besides seconds) are selected (flashing), press the Ⓓ button to increase the number or the Ⓑ button to decrease it. Holding down either button changes the current selection at high speed. While the 12/24-hour, M/F (meter/ft), or °C/°F (Celsius/Fahrenheit) setting is selected, press the Ⓓ button to switch between the two formats.

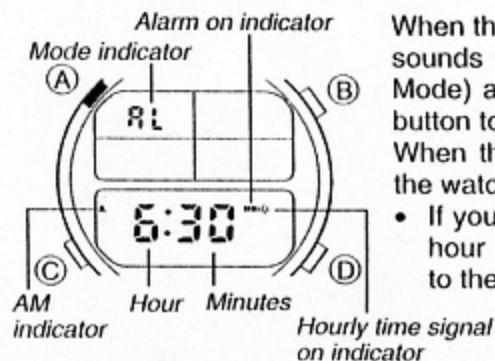5. After you set the time and date, press the Ⓐ button **twice** to return to the Time/Calendar Mode.

• The day of the week is automatically set in accordance with the date.
• The date can be set within the range of January 1, 1995 to December 31, 2039.
• If you do not operate any button for a few minutes while a selection is flashing, the flashing stops and the watch goes back to the Time/Calendar Mode automatically.

Backlight

This watch features an electroluminescent (EL) backlight that helps you easily read the face. In the Time/Calendar, Diving, or Alarm Mode, press Ⓑ to illuminate the display for about three seconds.
• The backlight of the watch employs an electroluminescent (EL) light, which loses illuminating power after very long use.
• The illumination provided by the backlight may be hard to see when viewed under direct sunlight.
• The watch will emit an audible sound whenever the display is illuminated. This is caused by a transistor that vibrates when EL panel lights up. It does not indicate malfunction of the watch.
• The backlight automatically turns off whenever an alarm sounds.
• The backlight does not operate if the temperature is below –5.0°C (23.0°F).
• The backlight temporarily goes out in the Diving Mode if a depth measurement is taken during the 3 or 4 seconds that the light is lit.

Alarm on indicator
Mode indicator
Ⓐ
Ⓑ
ⓒ
Ⓓ
AM indicator
Hour   Minutes
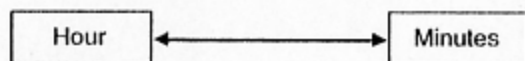Hourly time signal on indicator

When the Daily Alarm is switched on, the alarm sounds for 20 seconds (except for the Diving Mode) at the preset time each day. Press any button to stop the alarm after it starts to sound. When the Hourly Time Signal is switched on, the watch beeps every hour on the hour.

- If you do not press any button for about one hour in the Alarm Mode, the display returns to the Time/Calendar Mode automatically.

To set the alarm time

1. Use ⓒ to enter the Alarm Mode.
2. Press Ⓐ and the hour digits flash on the display because they are selected.
- At this time, the alarm is automatically switched on.
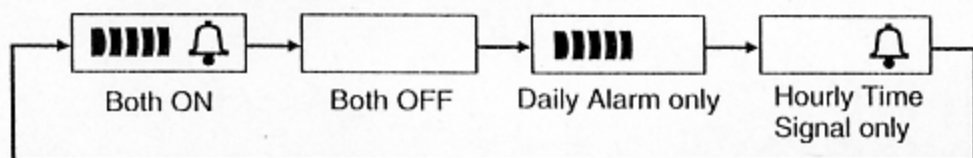3. Press ⓒ to change the selection in the following sequence.

Hour	←→	Minutes

4. Press Ⓓ to increase the selected digits and Ⓑ to decrease them. Holding down either button changes the selection at high speed.
- The format (12-hour and 24-hour) of the alarm time matches the format you select for normal timekeeping.
- When setting the alarm time using the 12-hour format, take care to set the time correctly as morning (A) or afternoon (P).
5. After you set the alarm time, press Ⓐ to return to the Alarm Mode.

To switch the Daily Alarm and Hourly Time Signal on and off

Press Ⓓ while in the Alarm Mode to change the status of the Daily Alarm and Hourly Time Signal in the following sequence.

[Alarm ON Indicator/Hourly Time Signal ON Indicator]

Both ON   Both OFF   Daily Alarm only   Hourly Time Signal only

This watch features a built-in temperature sensor that is capable of measuring both air and water temperature. The readout from the temperature sensor can also be switched between Celsius (°C) and Fahrenheit (°F). The thermometer can be adjusted to correct for measurement error.
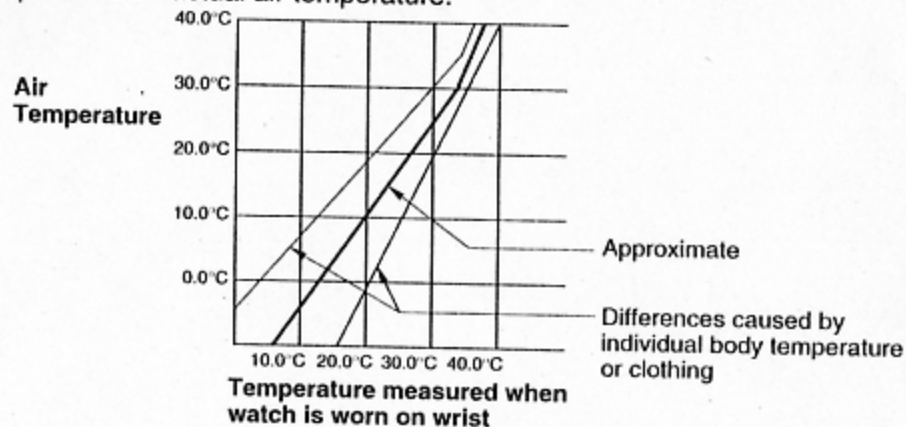
Important

Since the temperature sensor is built into the watch, the value produced on the display represents the temperature of the watch itself. Note the following precautions when precise temperature readings are required.

• Air Temperature Measurements

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

Accurate air temperature measurements cannot be achieved while you are wearing the watch. The following graph illustrates affects of body temperature on actual air temperature.

Air Temperature

40.0°C
30.0°C
20.0°C
10.0°C
0.0°C

10.0°C 20.0°C 30.0°C 40.0°C

Temperature measured when watch is worn on wrist

— Approximate

— Differences caused by individual body temperature or clothing

• Water Temperature Measurements

Water temperature measurements are almost unaffected by wearing the watch on your wrist. Note however that if temperature changes radically, it takes about five minutes for the watch temperature to match the water temperature.

About Temperature Measurements

- During normal operation (Time/Calendar Mode)
Automatic measurements are taken every ten minutes (00, 10, 20, etc.) You can also take instantaneous measurements at any time by pressing Ⓓ.
- While diving (Diving Mode)
Automatic measurements are taken every 20 seconds. Note, however, that measurements are not taken whenever the watch's display light is lit.

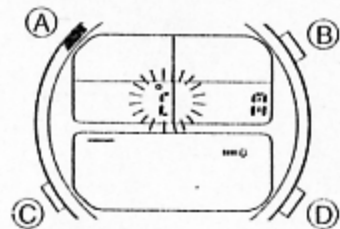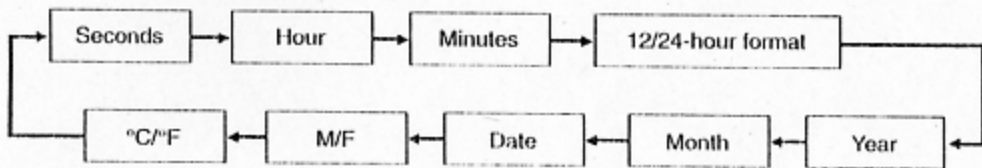### About the temperature display

< Time/Calendar Mode >

Current temperature

- The temperature is constantly displayed while it is being measured. In the Log Data Recall Mode, the water temperature at the maximum depth appears in place of the current temperature.
- Whenever a measured temperature is outside the allowable measurement range, the temperature reading shows −.−°C (or °F). The display returns to normal as soon as the measured temperature falls within the allowable range.

Switching Between Celsius and Fahrenheit

1. Press the Ⓐ button while in the Time/Calendar Mode. The seconds flash because they are *selected*.
2. Press the Ⓒ button to change the selection in the following sequence.

3. Press the Ⓒ button until °C/°F is selected (°C or °F is flashing).
4. Press the Ⓓ button to select either celsius "°C" or fahrenheit "°F".
5. After you select the celusius or fahrenheit press the Ⓐ button **twice** to return to the Time/Calendar Mode.

- The setting reverts to "°C" whenever you have the battery of the watch replaced.

Adjusting the Temperature Measurement

The temperature sensor of this watch is calibrated at the factory before shipment and further adjustment is normally not required. If noticeable error is found in the temperature readings produced by the watch, you can adjust it to correct the error.

Important

Incorrectly adjusting the temperature measurement of this watch can result in incorrect readings. Carefully read the following before doing anything.
- Compare the readings produced by the watch with those of another reliable, 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.
- Perform the temperature adjustment procedure as quickly as possible to avoid the temperature of the watch being affected by your body temperature.
- You can also perform temperature adjustment underwater, if the water temperature is stable.

To adjust the temperature

1. Press the Ⓐ button while in the Time/Calendar Mode. The seconds flash because they are *selected*.
2. Press the Ⓐ button again and the current temperature digits flash.

3. Each press of the Ⓓ button increase the displayed temperature by 0.1°C, and pressing the Ⓑ button decreases it by 0.1°C. Holding down either button changes the value at high speed.
- If you have selected Fahrenheit as your unit of measurement, the above operations change the reading by 0.2°F.

4. After adjusting the temperature, press the Ⓐ button to return to the Time/Calendar Mode.
- If you do not operate any button for a few minutes while the temperature digits are flashing, the flashing stops and the watch goes back to the Time/Calendar Mode automatically.

To reset the temperature adjustment

The following operation returns the temperature adjustment to the factory setting.
1. Press the Ⓐ button **twice** while in the Time/Calendar Mode and the current temperature digits flash.
2. Press the Ⓒ button to reset the temperature adjustment.
3. Press the Ⓐ button to return to the Time/Calendar Mode.

Measurement formats and ranges

- Measurement Range: −10.0°C to 60.0°C (14.0°F to 140.0°F)
- Display Units: 0.1°C/0.2°F
- Precision: ±2.0°C/±3.6°F

10 | Diving Functions

1. About the Diving Functions

The pressure and temperature sensors of this watch provide a wealth of useful diving data. Besides automatically measuring depths in the Diving Mode, the watch also stores depth and temperature data into a log memory for later recall.

Measurement formats and ranges

- **Pressure Sensor**
  - Dive Time : measured in 1-second increments
    Display range: up to 11 hours, 59 minutes and 59 seconds
  - Depth : measured in 0.1-meter (1-ft) increments
    Display range: between 0.0 and 80.0 meters (0 and 263 ft)
    Note that depths between 0.0 and 1.0 meter (0 and 4 ft) are registered as "0.0 M (0 F)". Display shows "dEEp" when 80.0 meters (263 ft) is exceeded.
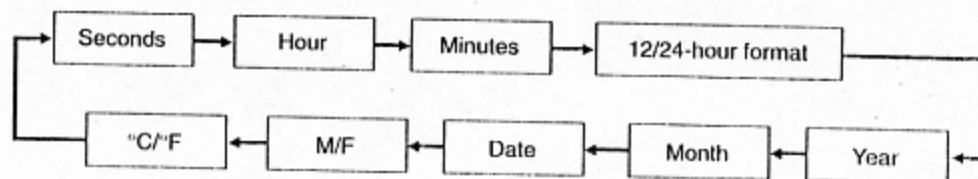   Reading frequency: every 3 seconds
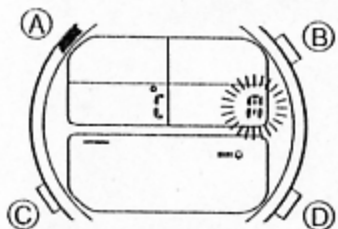- **Temperature Sensor**
  - Water Temperature Measurement
    Display Unit: 0.1°C/0.2°F
    Display Range: −10.0°C to 60.0°C (14.0°F to 140.0°F)
  - Measurement Interval : Approximately 20 seconds

Basic Diving Operations

Switching between meters and feet

1. Press the Ⓐ button while in the Time/Calendar Mode. The seconds flash because they are *selected*.
2. Press the Ⓒ button to change the selection in the following sequence.

Seconds → Hour → Minutes → 12/24-hour format → Year → Month → Date → M/F → "C/"F → (loops back to Seconds)

3. Press the Ⓒ button until M/F is selected (**M** or **F** is flashing).
4. Press the Ⓓ button to select either meters "**M**" or feet "**F**".
5. After you select the meters or feet press the Ⓐ button **twice** to return to the Time/Calendar Mode.

- The setting reverts to "**M**" whenever you have the battery of the watch replaced.

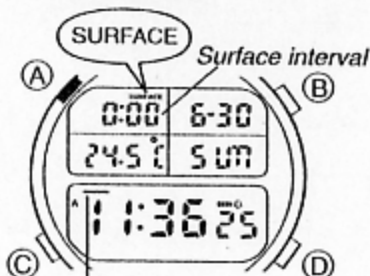Switch to the Diving Mode by holding down the Ⓒ button for at least two seconds.

- Once set to the Diving Mode, the Diving Function will automatically make diving time, depth and water temperature calculations.

Mode indicator

After diving

Switch back to the Time/Calendar Mode by holding down the Ⓒ button for at least two seconds.

- Immediately after you switch back to the Time/Calendar Mode, the surface interval (see page E-20) is shown on the display.

Surface interval

Mode indicator

For repetitive dives

After surfacing and switching to the Time/Calendar Mode, be sure to switch back to the Diving Mode before starting your next dive. If you do not switch back, your second dive will be considered a continuation of the first dive, with the data being added on accordingly.

2. How to Use the Diving Function
Switching to the Diving Mode
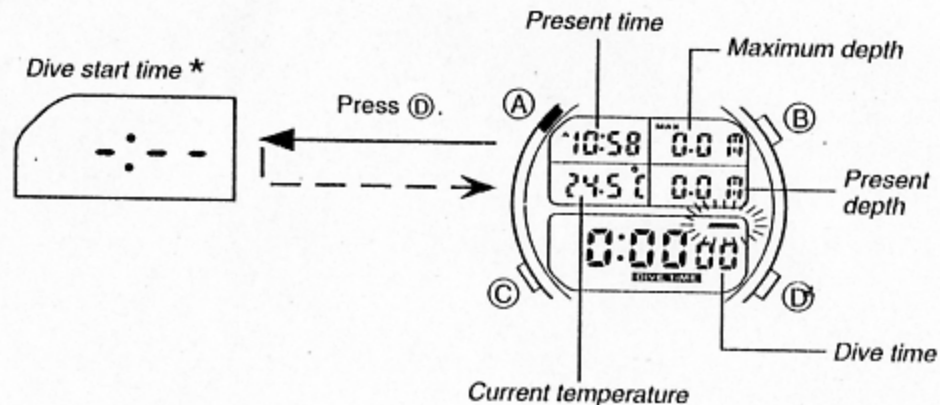
To switch to the Diving Mode while in any mode, hold down the Ⓒ button for at least two seconds.
- Holding down the Ⓓ button while in the Diving Mode replace the present time display with the dive start time.
- When you surface after a dive, hold the Ⓒ button down for at least two seconds to return to the Time/Calendar Mode.

Important
While underwater (at a depth of at least 1.0 meter/4 ft) operation will not revert to the Time/Calendar Mode even if you press the Ⓒ button (prevents inadvertent operational errors).

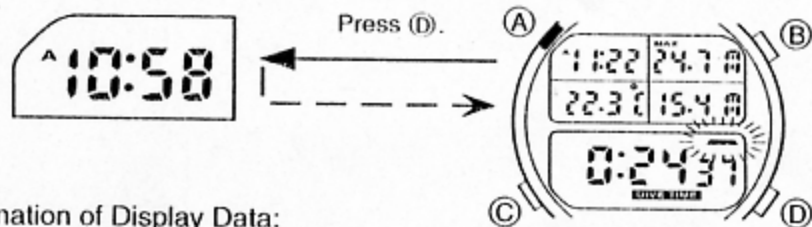< **Diving Mode (on the surface)** >

Dive start time *

Present time

Maximum depth

Press Ⓓ.

Present depth

Dive time

Current temperature

* Dive start time display appears as "– : – –" until a depth of at least 1.0 meter (4 ft) is reached.

Automatic calculation of dive start time and memory function

When a depth of at least 1.0 meter (4 ft) is reached, the diving timer automatically begins counting the dive time. The time when this timer starts is known as the "dive start time".
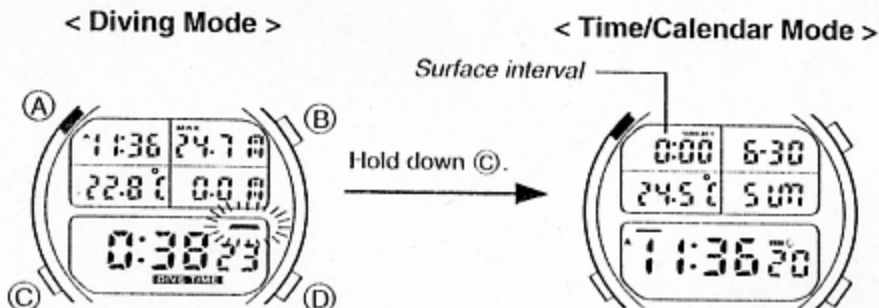
< Diving Mode (Submerged) >

Press ⓓ.

Explanation of Display Data:
Maximum depth = 24.7 meters
Present depth = 15.4 meters
Dive start time = 10:58 AM
Present time = 11:22 AM
Current temperature = 22.3°C
Dive time = 24 minutes and 37 seconds

When you press the ⓒ button to switch to the Time/Calendar Mode after completing a dive (which is at least 1.0 meter (4 ft) deep and 3 minutes in duration), the log data is automatically input into memory (see page E-27 for further details).

Calculation of surface interval

As soon as you come to the surface after completing a dive, the "surface timer" begins to count the time you spend resting on the surface, counting up to 24 hours or until you begin your next dive. To display the surface interval, simply hold down the ⓒ button for at least two seconds while in the Diving Mode.

< Diving Mode >   < Time/Calendar Mode >

Surface interval

Hold down ⓒ.

Automatic switching to Time/Calendar Mode

- If you remain on the surface (depth of "0") for one hour or more without switching back to the Time/Calendar Mode, operation will revert automatically.
- If you decide to dive again after remaining on the surface for an extended period, always be sure to switch back to the Diving Mode before diving.
- When the expired dive time exceeds 12 hours, operation automatically switches back to the Time/Calendar Mode. Data up to this point is held in memory.

3. Log Data Memory
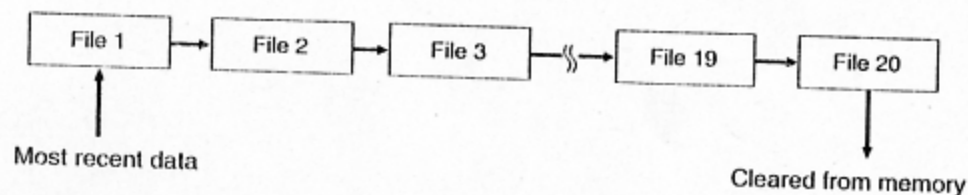
About the log memory

After finishing a dive, log data for a single dive is put into memory when operation is switched to the Time/Calendar Mode. The built-in memory is capable of holding log data for up to 20 dives. The following data is stored in memory for each dive:

① Dive date .... Month and date
② Dive number .... Indicates the number of dives for the day.
③ Dive start time ..... Hr. (AM/PM)/Min. (Seconds rounded down)
④ Dive end time ...... Hr. (AM/PM)/Min. (Seconds rounded up)
⑤ Dive time .... Hr./Min. (Seconds rounded up)
⑥ Maximum depth
⑦ Average depth .... Total measured depth divided by total number of measurements
⑧ Water temperature at maximum depth

The above data can be recalled in the Log Data Recall Mode (see page E-22).

Automatic Log Memory

Up to 20 log data files can be stored in memory. Once memory is full, memory is update by recording the newest data and deleting the oldest file.

File 1 → File 2 → File 3 ⤳ File 19 → File 20

Most recent data

Cleared from memory

- Using this filing system, the "oldest" dive data is cleared from memory automatically so there is no need to clear the memory manually. If you want to clear unnecessary data, however, enter the Log Data Recall Mode and hold down the Ⓐ button for at least two seconds. The log data you specify is cleared from memory (see page E-35).
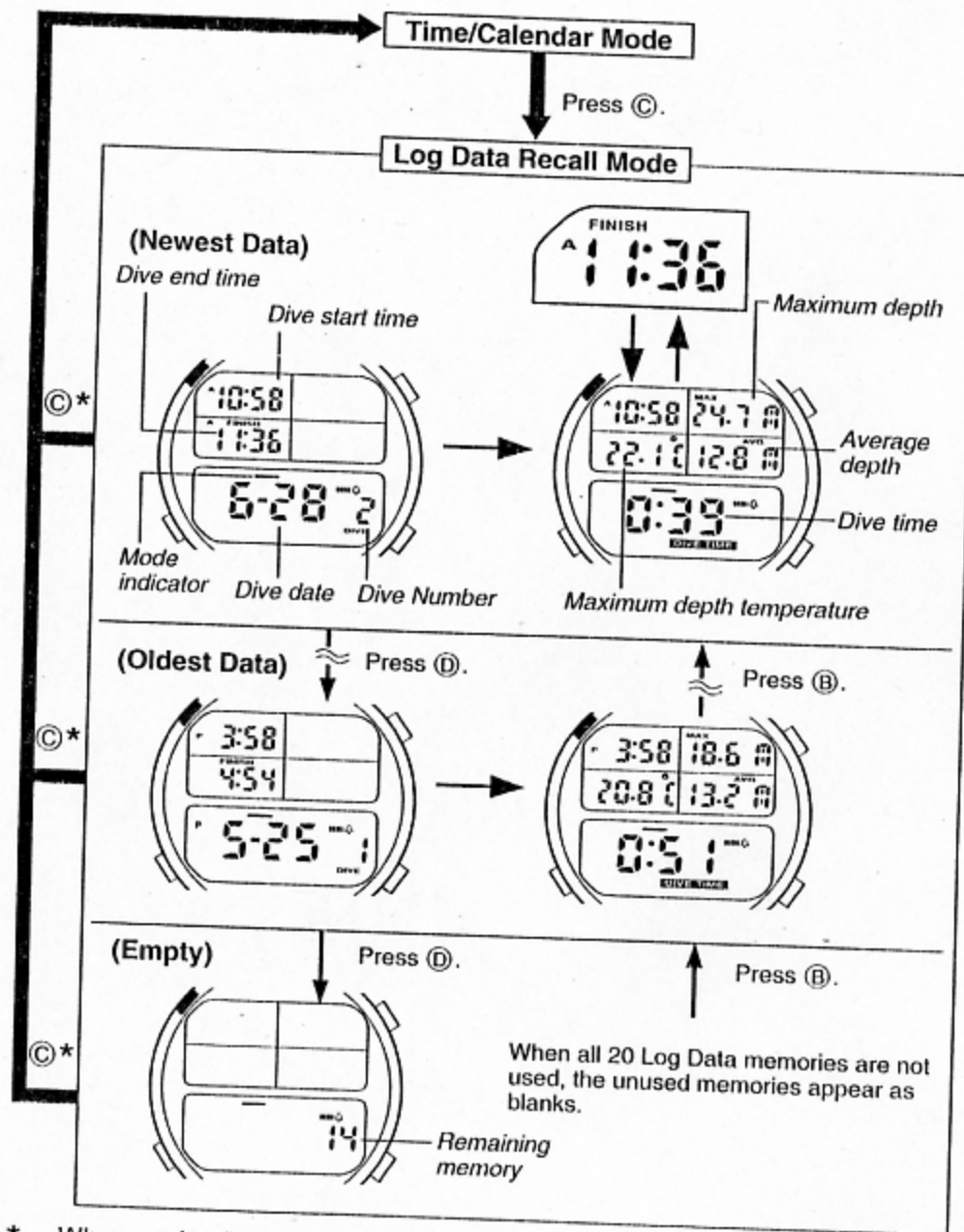
To review log data

You can review log data in the Log Data Recall Mode. The first data to appear is the newest data (File 1), and each press of the Ⓓ button advances to the next set of data (File 2, File 3, etc.). Pressing button Ⓑ displays data in reverse sequence.

- Holding down either button scrolls through the data at high speed.
- Pressing the Ⓓ and Ⓑ buttons at the same time in the Log Data Recall Mode jumps to the newest data (File 1).

Note

For explanatory purposes, data on a single dive has been programmed in the log memory. To clear this data, hold down the Ⓐ button for at least 2 seconds while in the Log Data Recall Mode.

Time/Calendar Mode

Press Ⓒ.

Log Data Recall Mode

(Newest Data)

Dive end time

Dive start time

Maximum depth

Average depth

Dive time

Mode indicator   Dive date   Dive Number

Maximum depth temperature

(Oldest Data) ≈ Press Ⓓ.   Press Ⓑ.

(Empty)   Press Ⓓ.   Press Ⓑ.

When all 20 Log Data memories are not used, the unused memories appear as blanks.

Remaining memory

* When you've finished reviewing log data, press the Ⓒ button **three times** to return operation to Time/Calendar Mode.

When utilizing log data with dive tables

1. Make sure you have a clear understanding of dive tables and their use. Before using this watch, make sure you have undergone a thorough diving training program.
2. Make sure you have a clear understanding of the special characteristics of all the log data provided by this watch (dive time, maximum depth, dive start time, dive end time, average depth, maximum depth temperature).
3. Always remember that depth readings provided by this watch are not guaranteed for 100% accuracy.
4. Any log data accompanied by a warning mark (✹) should not be used. For details, see page E-41 of this manual, titled "**What To Do When a Warning Mark Appears**".
5. Always obey the basic rules of safe diving.
* It is recommended to dive within the limits of the no-decompression limit. Also, be sure to make "safety stops" every 3.0 to 6.0 meters (10 to 20 ft).
* It is dangerous to dive near the no-decompression limit. Dive 1 to 2 ranks within your actual limitations.
* No dive table is 100% accurate. In addition, always take into account individual physical differences, your physical condition, water temperature, etc.
* Note that high altitude/fresh water diving requires the use of special dive tables and calculations. Be sure to receive appropriate training before attempting high altitude or fresh water diving.

Calculation of average air consumption using average depth data

Average depth data is calculated by adding all depth readings at depths greater than 1.0 meter (4 ft) and dividing by the number of readings taken. Because of this, readings at less than 1.0 meter (4 ft) are not considered. If tank air is consumed while on the surface, it will be impossible to utilize the average depth log data in calculating average air consumption. Note also that the time which elapses while you are on the surface is not included in the "dive time".

11 │ How the Diving Function Works

About depth and water pressure

Water pressure increases with depth. In the case of sea water (specific gravity = 1.025), water pressure increases by 1 ATM (1.03 kg/cm²) with each 10.0 meters (33 ft) of depth.
This watch makes use of the relationship between pressure and depth, using a pressure sensor to calculate the water pressure and then converting this data into depth readings.

Operation of pressure sensor and "0.0 M (0 F)" reset

When the Diving Mode is entered, the built-in sensor immediately begins to operate. When you begin a dive, the sensor will automatically begin making depth readings and trigger the dive timer to measure dive time. Note also that the atmospheric pressure is set to "0.0 M (0 F)" when the Diving Mode is entered.
Normally, you should select the Diving Mode immediately before beginning a dive.

Present depth reading (Diving Mode)

The present depth reading shows your dive depth in real time. New readings are shown every 3 seconds.
When using this reading to monitor ascending speed, it is recommended to ascend at a rate of approximately 10.0 meters (33 ft) per minute (0.5m/2 ft every 3 seconds).

Maximum depth reading (Diving Mode/Log Data Recall Mode)

In Diving Mode: shows maximum depth reached since start of dive.
In Log Data Recall Mode: shows maximum depth reached for each dive.

Average depth reading (Log Data Recall Mode)

Shows average depth reached during each dive.
Calculation method: sum of depth readings divided by number of depth readings taken.
* Depth readings on surface (at depth of less than 1.0 meter/4 ft) are not considered. If tank air is consumed while on the surface, it will be impossible to utilize the average depth log data in calculating average air consumption (see page E-24).

Depth Reading

Display range: between 0.0 and 80.0 meters (0 and 263 ft)
(Note that depths between 0.0 and 1.0 meter (0 and 4ft) are registered as "0.0 M (0 F)". Display shows "dEEp" when 80.0 meters (263 ft) is exceeded)
Reading frequency: every 3 seconds

Water Temperature Reading

- Display range: −10.0°C to 60.0°C (14.0°F to 140.0°F)
- Display units: 0.1°C/0.2°F
- Reading frequency: every 20 seconds
- Current water temperature (Diving Mode)
  This reading is updated every 20 seconds.
- Maximum depth temperature (Log Data Recall Mode)
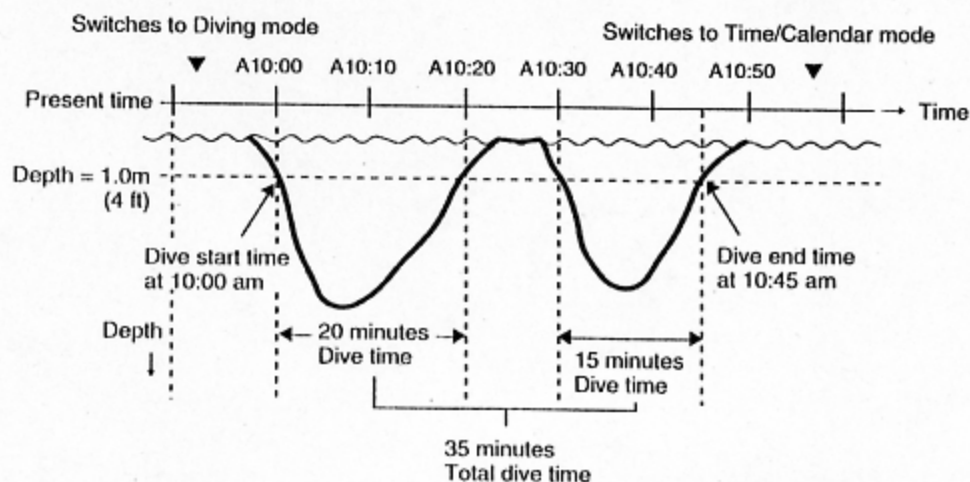 Water temperature at maximum depth reached during a dive.
  Note
  In the case of radical temperature change, the watch takes about five minutes to reach the new temperature.

Dive Time Calculation

Maximum dive time — 11 hours 59 minutes and 59 seconds

When a dive time of 12 hours is reached, operation automatically switches to the Time/Calendar Mode. Log data up to this point is held in memory.

Example:

Switches to Diving mode

Switches to Time/Calendar mode

A10:00 A10:10 A10:20 A10:30 A10:40 A10:50

Present time — Time

Depth = 1.0m (4 ft)

Dive start time at 10:00 am

Dive end time at 10:45 am

Depth ↓

20 minutes Dive time

15 minutes Dive time

35 minutes Total dive time

Dive start

With the watch set to the Diving Mode, the diving timer will start automatically when a depth of 1.0 meter (4 ft) is reached. (Dive start time calculated by rounding seconds down to the nearest minute.)

Dive end

With the watch set to the Diving Mode, the diving timer will stop automatically when you surface to a depth of less than 1.0 meter (4 ft). (Dive end time calculated by rounding seconds up to the nearest minute).
Dive end time can be reviewed in the Log Data Recall Mode.

Elapsed dive time

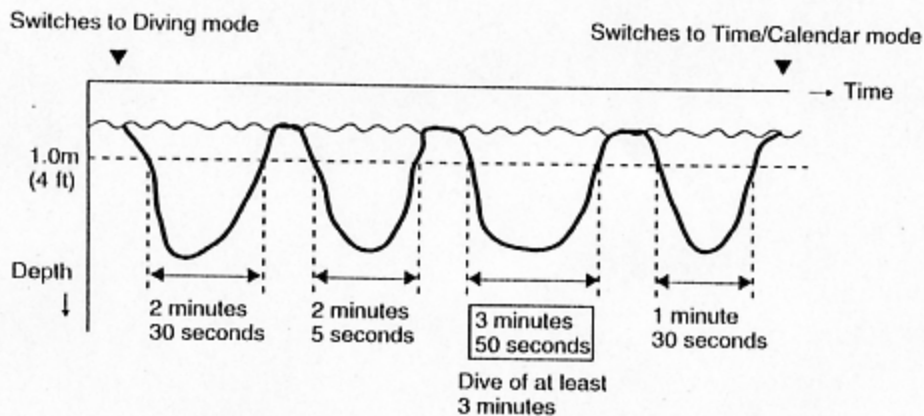Shows the total time elapsed at depths of 1.0 meter (4 ft) or more.

Note
- After surfacing and switching to the Time/Calendar Mode, be sure to switch back to the Diving Mode before starting your next dive. If you do not switch back, your second dive will be considered a continuation of the first dive, with the data being added on accordingly.
- Note that the "dive time" will not necessarily equal the difference between the "dive start" time and the "dive end" time, as the dive timer stops counting when you ascend to a depth above 1.0 meter (4 ft) (for rests, etc.). The "dive time" shows only the time spent underwater at a depth greater than 1.0 meter (4 ft).

Registered Dives (Valid Dives) and Non-Registered Dives (Invalid Dives)

Often times, a single "dive" may actually consist of several short dives, with the diver returning to the surface frequently. If, however, the dive does not contain at least one "leg" where the diver stays submersed at least 3 minutes, the dive will not be registered in the log memory.

Registered dive (Valid dive)

Example: Dive registered in log memory

Switches to Diving mode ▼

Switches to Time/Calendar mode ▼ → Time

1.0m
(4 ft)

Depth
↓

| 2 minutes 30 seconds | 2 minutes 5 seconds | 3 minutes 50 seconds | 1 minute 30 seconds |

Dive of at least
3 minutes

In the above case, at least one of the "legs" in this dive exceeded 3 minutes. The timer will register the total elapsed dive time of 10 minutes in this case.
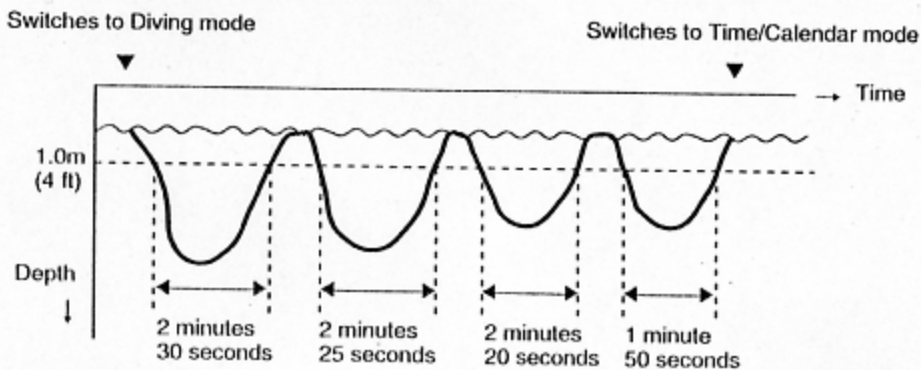
2 minutes 30 seconds + 2 minutes 5 seconds + 3 minutes 50 seconds + 1 minute 30 seconds = 9 minutes 55 seconds

(Seconds rounded up)
↓
10 minutes

Non-Registered Dive (Invalid dive)

Example: Dive NOT registered in log memory

Switches to Diving mode ▼

Switches to Time/Calendar mode ▼ → Time

1.0m
(4 ft)

Depth
↓

| 2 minutes 30 seconds | 2 minutes 25 seconds | 2 minutes 20 seconds | 1 minute 50 seconds |

- In this case, none of the "legs" exceeded 3 minutes. Because of this, the dive is not registered in the log memory.
- Since one leg must be at 3 minutes long to register data in log memory, you may not be able to use this function for snorkeling.
- Note that non-registered dives made during "surface interval" will not affect the surface interval reading.
- Dive Profile data is recorded regardless of whether the dive is valid or invalid.

Surface Interval Calculation

The timer begins counting the "surface interval" (time spent on the surface between two dives) immediately after you ascend to a depth of less than 1.0 meter (4 ft). This timer does not operate after non-registered dives. In addition, non-registered dives made during "surface interval" will not affect the surface interval reading.
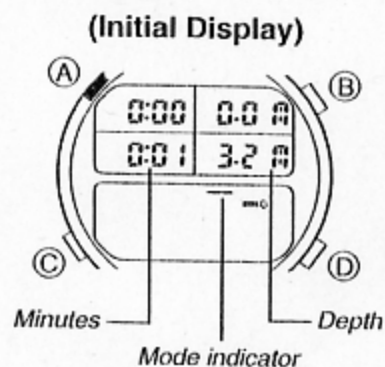
Range of Dive Timer

Elapsed dive time can be measured up to 11 hours 59 minutes and 59 seconds. When a dive time of 12 hours is reached, operation automatically switches to the Time/Calendar Mode. Log data up to this point is held in memory and a count of the surface interval begins.

12 | Dive Profile Function

Regardless of whether a dive is valid or invalid (see page E-27), Dive Profile data is measured and stored in memory during the dive. Dive Profile data is the maximum depth reached during each minute of the dive, and up to 60 values can be stored in memory. Starting a new dive erases the previous dive's Dive Profile data.

- If a dive is longer than 60 minutes, the Dive Profile memory contains data for the final 60 minutes of the dive only. This means that if a dive take 1 hour 20 minutes, the Dive Profile memory contains data starting from 20 minutes into the dive up to the end of the dive.

Recalling Dive Profile Data

(Initial Display)

Minutes ——— ——— Depth
——— Mode indicator

1. While in the Time/Calendar Mode, press the © button **twice** to display the initial Dive Profile Mode display.

- If you do not press any button for about one hour in the Dive Profile mode, the display returns to the Time/Calendar Mode automatically.

2. Press the ⓓ button to scroll forward minute-by-minute through the data, or the ⓑ button to scroll back. Holding down either button scrolls through the data at high speed.

- Pressing the ⓓ and ⓑ buttons at the same time returns to the initial display.

The indicator "MAX" indicates the maximum depth for the entire dive.
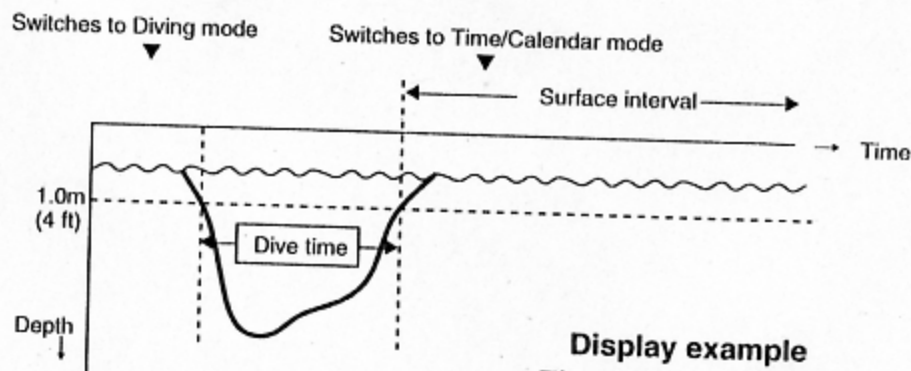
Clearing Dive Profile Data

Existing Dive Profile data is cleared automatically any time you start a new dive. You can also manually clear all Dive Profile data by holding down the ⓐ button for about two seconds.
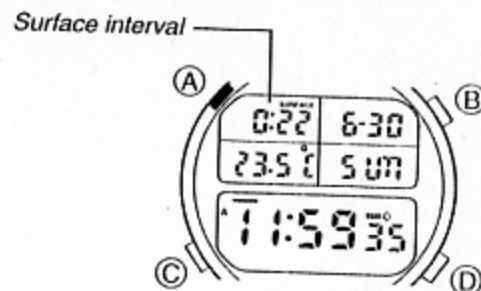
13 | Measurement of Surface Interval

This watch is equipped with a function that lets you automatically measure the surface interval (since the current depth registered 0.0 M (0 F) on the display). The surface interval can be measured up to 24 hours, and the count of the time is terminated when you begin the next dive. At the end of the next dive, the count for the surface interval restarts from zero.

- Remember that a dive is considered to be valid only if it is below a depth of 1.0 meter (4 ft) for more than 3 minutes. If you make a dive that does not meet these conditions, the count of surface interval is not terminated and it continues from the end of the last valid dive (below a depth of 1.0 meter (4 ft) for more than 3 minutes).
- The count for the surface interval continues no matter what Mode the watch is in, but the display of the count (hours and minutes only) is shown only in the Time/Calendar Mode.

Example:

Display example
< Time/Calendar Mode >

Surface interval ———

- Note that surface interval is rounded down to the nearest minute for safety reasons.
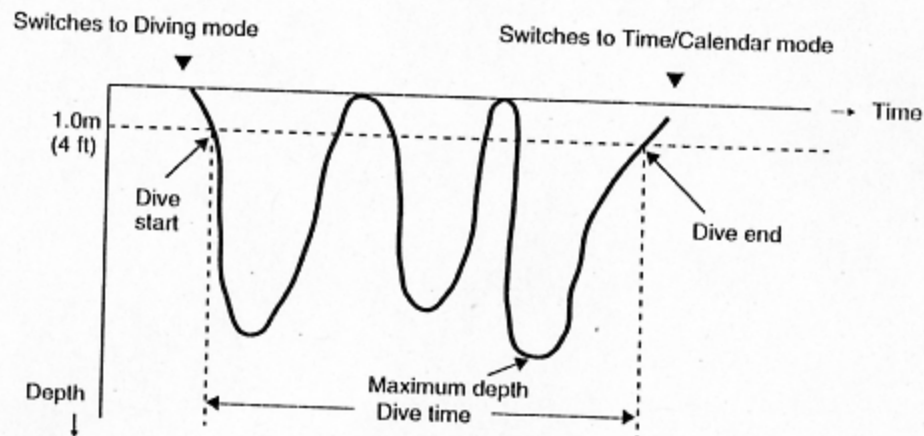
Important

The following two conditions will disable the count of the surface time.
- Holding down the Ⓐ button in the Log Data Recall Mode for approximately two seconds to clear the newest log data.
- Even though a valid dive is completed, a count of the surface time is not performed if all four buttons are pressed to force an exit from the Diving Mode to the Time/Calendar Mode. For further details on forcing an exit from the Diving Mode to the Time/Calendar Mode, see page E-36 of this manual.

14 | Snorkel Diving Use

In addition to scuba diving, this watch can also serve as a handy tool for snorkel diving. Since the duration of dives when snorkel diving is comparatively short, however, they are not registered in the log memory. Also note that if you snorkel dive during a count of surface interval (see page E-31), the snorkel dive will not terminate the count of surface interval unless the snorkel dive meets the conditions required to be a valid dive (below a depth of 1.0 meter (4 ft) for more than 3 minutes).

- The data for this dive is cleared from the display when you enter the Time/Calendar Mode. Data is not recorded into log memory, but Dive Profile data (page E-30) is recorded.

15 | Helpful Hints on Dive Function Operation

"0.0 M (0 F)" Reset Function
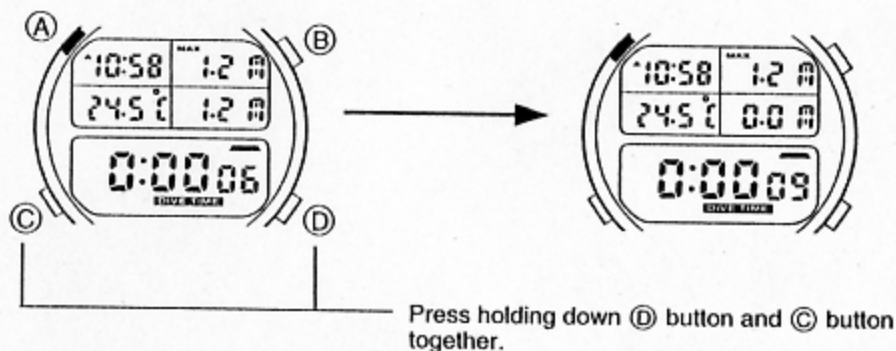
Automatic "0.0 M (0 F)" reset

When the Diving Mode is entered, the present depth reading is set at "0.0 M (0 F)" (even if you are underwater at a different pressure). Because of this, avoid switching to the Diving Mode while underwater.

Manual "0.0 M (0 F)" reset

By pressing holding down the Ⓓ button and Ⓒ button together for at least 1 second, the pressure reading can be reset to "0.0 M (0 F)".

In some cases, such as when the sensor is exposed to wide changes in temperature, the display may show a depth of greater than 1.0 M (4 F) even when you are at the surface. In this case, it is necessary to reset the pressure to "0.0 M (0 F)" while on the surface.

< Diving mode >

Press holding down Ⓓ button and Ⓒ button together.

Underwater "0.0 M (0 F)" reset

This watch is equipped with a special function which compares a standard value of the sensor value to provide an absolute pressure reading in cases where you have made one of the following operational errors:

— entered the Diving Mode while underwater (automatic reset).
— held down the Ⓓ and Ⓒ buttons for at least one second while underwater (manual reset).

Calculation of standard value and absolute value

Whenever the sensor value exceeds the standard values listed below during a dive, operation automatically switches to show the absolute water pressure:

> Standard value: 1.24kg/cm² (bars absolute) at 25.0°C (77.0°F)
> Bars absolute 2.0 meters (7 ft) below the surface of the sea water (gravity 1.025) with standard atmosphere at 25.0°C (77.0°F)
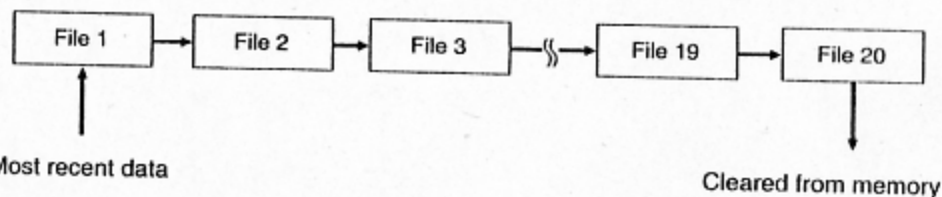> Absolute water pressure: Depth of 0.0 meters (0 ft) measured at 25.0°C (77.0°F) with a bars absolute of 1.033kg/cm².

- At this time, a single warning mark (✦) appears on the display.
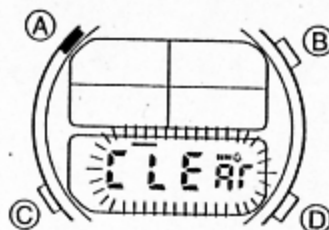
Clearing Log Data

Auto-clear

Up to 20 log data files can be stored in memory. Once memory is full, memory is update by recording the newest data and deleting the oldest file.

Most recent data

Cleared from memory

Clearing a specific log data file

Use the following procedure to clear a specific log data file.

1. Press the Ⓓ button or the Ⓑ button to display the data you wish to clear from memory.
2. Hold down the Ⓐ button for at least two seconds, until the "CLEAr" message appears. The data will be cleared from memory.

- If the Ⓐ button is not held down for at least two seconds, data will not be cleared from memory.

The cleared file will be empty, however the other files are held in memory without being altered.

Note

If the newest log data is cleared during the surface interval, calculation of the surface interval will be automatically stop.

Forced Exit from Diving Mode

When the depth display shows a depth of 1.0m (4 ft) or more, operation cannot be switched from the Diving Mode to the Time/Calendar Mode by pressing the Ⓒ button. If, however, it becomes necessary to switch to the Time/Calendar Mode during a dive for one of the reasons listed below, you can do so by holding down the Ⓐ, Ⓑ, Ⓒ and Ⓓ buttons together for at least 2 seconds.

— when watch is used in recompression chambers or other high-pressure environments.
— when watch is used in environments where temperature varies widely from suggested operating temperature range.

Notes
- When this operation is performed, log data and dive profile data are not registered. In addition, "surface interval" is not calculated.
- Avoid forcing an exit from the Diving Mode under normal conditions.
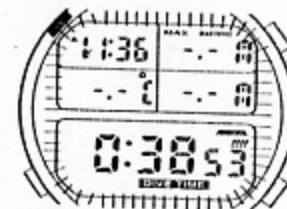
16 | Weak Battery Power

The message "BATTERY" appears on the display to let you know that the battery is getting weak. While this message is displayed, backlight and sensor measurements are not operational, so be sure to have the battery replaced as soon as possible.

In order to avoid possible problems due to a weak battery, we suggest that you have it replaced (regardless of the low battery message status) if you plan to engage in intensive diving.

< Time/Calendar mode >   < Diving mode >

Display flashes

Notes
- No Diving Mode measurement, backlight, or temperature measurement operation is available while the low battery message is shown on the display.
- Operating the backlight at low temperatures (around 0.0°C/32.0°F) can cause the low battery message to appear, but the display will clear when normal temperature is attained. Avoid using the backlight as much as possible at temperatures outside the guaranteed operating temperature range (0.0°C/32.0°F to 40.0°C/104.0°F).
- Be sure to have the battery replaced at least once every two years. If the light is used frequently, it may cease to function and the battery should be replaced as soon as possible.
- If you dive more than 100 times or so a year, be sure to have your watch serviced at least once a year (or once per 100 dives).

Battery replacement should be performed only by an Authorized CASIO Service Point. When replacing battery, the Authorized CASIO Service Point will also perform a full overhaul, replacing the sealing material which is vital to the water resistance of your watch. Be sure to request such servicing through an Authorized CASIO Dealer/Distributor.

17 | Measurement Errors

Depth Reading Errors

In some cases, due to operational errors or abnormal environmental conditions, the display may indicate incorrect depth readings (such as –1.0 meter (–4 ft), etc.).
These readings may occur when:

— the watch is exposed to abnormal changes in temperature (such as when it is suddenly submerged after being exposed to direct sunlight for an extended period) or air pressure.
— the depth reading is inadvertently set to "0.0 M (0 F)" while underwater (depth = 1.0 to 2.0 meters/4 to 7 ft)

In such cases, a depth measurement error occurs and the message "Err" appears on the display for three seconds, followed by a flashing double warning mark (♪♪). Most of the time, depth errors occur on the surface, and so the reading is automatically reset to 0.0 M after the error display.
Note that appearance of the double warning mark indicates a large error in the displayed data, and so such data should be disregarded.

Note
Depth reading errors are not caused by malfunction, and normal depth measurement can be carried out after resetting the depth to 0.0 M (0 F). The related data, however, should not be relied on. Because of this, always switch first to the Time/Calendar Mode and then back to the Diving Mode before continuing your dive if a depth reading error occurs.

Depth reading error message indicates that log data is incorrect.

< Depth reading error message >   < Auto-reset to 0 meters >

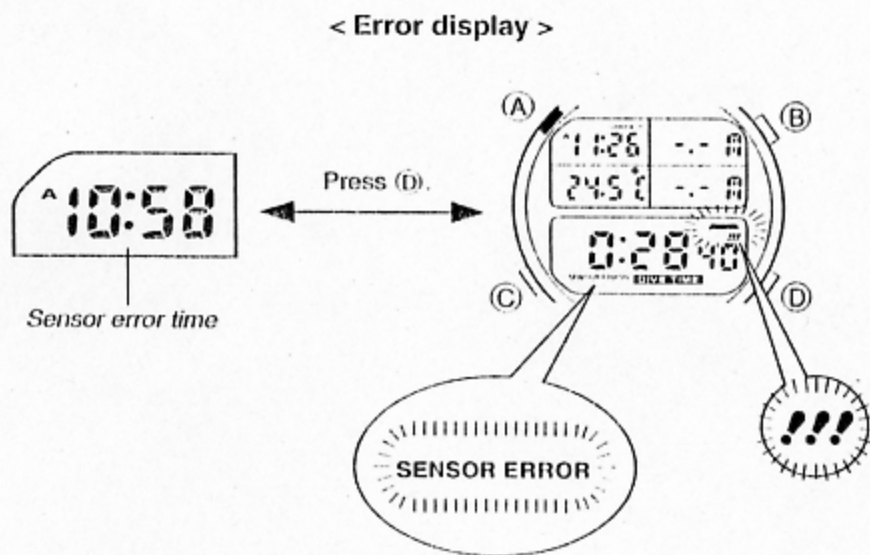Flashes   Warning mark flashes

Automatic 0 reset is performed even after the appearance of a depth reading error message. Measurements and log data storage into memory are performed normally, but the ** mark continues to flash.

Sensor Error Detection

If your watch is subjected to extremely strong impact, the sensor may malfunction in the Diving Mode. In this case, a "SENSOR ERROR" message will appear along with the warning mark *** indicating incorrect data.

• At this time, each press of the ⓓ button switches between display to the current time and the time when the sensor error occurred.

< Error display >

Press ⓓ.

Sensor error time

SENSOR ERROR

If a sensor error occurs, do not use your watch during diving. Consult with an Authorized CASIO dealer/Distributor as soon as possible to arrange for servicing by an Authorized CASIO Service Point listed on the Warranty Certificate.

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18 | What To Do When a Warning Mark Appears

Warning marks indicate some abnormality was detected during Diving Mode measurements. The warning marks also appear when the corresponding data is recalled from the log memory. Note that warning marks indicate serious error in the data, and so such data should not be used for dive planning, etc.

The following table describes the meanings of the warning marks.

Warning Mark	Meaning	Possible Cause	See Page
*	Absolute Depth	• Entry into Diving Mode while submersed. • Incorrect 0.0 M reset. • Measured water temperature lower than –5.0°C/23.0°F or greater than 42.0°C/108.0°F.	E-35
**	Depth Error	• Large temperature or pressure change. • Impossible depth (such as negative value) measured.	E-39
***	Sensor Error	• Measurement impossible due to sensor malfunction.	E-40
****	Low Battery Warning	• Low battery power. Backlight and sensor measurement operation disabled.	E-37
* **	Absolute Depth + Depth Error		

• When more than one error condition occurs at the same time, the condition with the greater number of warning marks is given priority.
• Frequent appearance of warning marks indicates malfunction. In such a case, be sure to consult with an Authorized CASIO Dealer/Distributor as soon as possible to arrange for repair by an Authorized CASIO Service Point.

1. Temperature measurement precautions

• **Air Temperature**

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

• **Water Temperature Measurements**

Water temperature measurements are almost unaffected by wearing the watch on your wrist. Note however that it takes about five minutes for the watch temperature to match the water temperature.

2. Wide variations in temperature

In some cases, when this watch is exposed to widely varying temperatures, correct pressure measurement may become impossible.

Examples:

1. Watch is exposed to direct sunlight for an extended period.
2. Watch is stored in an automobile exposed to direct sunlight for an extended period.

If the watch has been exposed to high temperatures, cool it at water temperature for 2 to 3 minutes before using it.

If the watch is subjected to large temperature variations, the display may show a depth of 1.0 meter (4 ft) or greater even at sea level, or other depth measurement errors may be generated.

3. Wide variations in depth

As depth readings are made every three seconds, the depth reading may differ from the actual depth in cases where sudden changes in depth are made. Note, however, that it is recommended to dive/surface at a rate of no more than 10.0 meters (33 ft) per minute.

4. High-altitude diving/Fresh-water diving

The depth reading is automatically reset to "0.0 M (0 F)" whenever the Diving Mode is entered, so you can use this watch for diving at altitudes. Note, however, that malfunctions occur when diving at altitudes greater than approximately 4,000 meters (13,000 ft). In addition, as this watch bases its calculations on sea water, which has a specific gravity of 1.025, readings will be incorrect during fresh-water diving. During fresh-water dives, you must assume that you are approximately 2.5% deeper than the depth shown on the display.

Example: When displayed depth is 20.0 meters, actual depth is
$20.0 \times 1.025 = 20.5$ meters.

In all cases, be sure to receive appropriate training before attempting high altitude or fresh water diving.

Notes on log data memory

1. Data on "short" dives (less than 3 minutes at a depth greater than 1.0 meter /4 ft) are not held in the log data memory. Because of this, the log data memory function is not applicable to snorkel diving.
2. Log data accompanied by a warning mark is incorrect and should not be utilized as references for planning dives, etc.
3. When batteries are replaced or when your watch is serviced, all log data will be cleared from memory. Be sure to transfer data to a log book before having your watch serviced.

Related information

• This watch is not designed to make decompression calculations. It is intended for use only as a backup depth gauge.
• When diving, always use the "buddy system" — never dive alone.

1. Problem: Depth gauge is not accurate.

• Did you select the Diving Mode before diving?
When the Diving Mode is entered, the depth reading is automatically reset to "0.0 M (0 F)". If the Mode is switched while underwater, it will be necessary to reset the reading while on the surface once again (see page E-34).

• Has the watch been exposed to sudden, extreme temperature change?
Incorrect measurement readings can be caused by sudden, extreme temperature change, such as that which occurs when the watch is exposed to direct sunlight (especially in the summer) before entering the Diving Mode and beginning a dive. To avoid such problems, immerse the watch in the water for about two or three minutes before entering the Diving Mode.

• Did you drop the watch or subject it to strong impact?
If the watch is subjected to abnormally strong impact, it may malfunction or cease to operate. In this case, consult with an Authorized CASIO Dealer/ Distributor to arrange for repair by an Authorized CASIO Service Point.

• Are you diving in fresh water?
As this watch bases its calculations on the characteristics of sea water, which has a specific gravity of 1.025, readings will be incorrect during fresh water diving. During fresh water dives, you should assume that you are approximately 2.5% deeper than the depth shown on the display.

2. Problem: Temperature measurement not accurate.

Since the temperature sensor is built into the watch, the value produced on the display represents the temperature of the watch itself.

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

• Water temperature measurements are almost unaffected by wearing the watch on your wrist. Note however that it takes about five minutes for the watch temperature to match the water temperature.

• Compare the readings produced by the watch with those of another reliable, accurate thermometer. If you find large error, you can adjust the reading by using the procedure described in the section of this manual titled "9. Temperature Function".

3. Problem: Log data not held in memory.

• Have your dives been unusually short?
Often times, a single "dive" may actually consist of several short dives, with the diver returning to the surface frequently. If, however, the dive does not contain at least one "leg" where the diver stays submerged for at least 3 minutes, the dive will not be registered in the log memory (see page E-28).

• Did "BATTERY" message or sensor error occur while you were diving?
If the battery grows weak or if a sensor error occurs during a dive, the maximum depth, average depth data and maximum depth water temperature are not held in memory (see pages E-37 and E-40). In either case, consult with an Authorized CASIO Dealer/Distributor as soon as possible to arrange for servicing by an Authorized CASIO Service Point.

• Did you force an exit from the Diving Mode?
By holding down the Ⓐ, Ⓑ, Ⓒ and Ⓓ buttons together for at least 2 seconds during a dive, Diving Mode operations are cancelled and the Time/ Calendar Mode is automatically entered. When this operation is performed, log data is not registered (see page E-36).

4. Problem: Display shows depth greater than 1.0 M (4 F) even though you are on the surface.

In some cases, such as when the sensor is exposed to wide changes in temperature, the display may show a depth of greater than 1.0 M (4 F) even when you are at the surface. In this case, it is necessary to reset the pressure to "0.0 M (0 F)" while on the surface (see page E-34).

Note that in extremely cold water, the display may not return to "0.0 M (0 F)" even if you hold down the Ⓓ and Ⓒ buttons. In this case, hold all four buttons down simultaneously for at least two seconds to return to the Time/Calendar Mode.

Avoid using this watch in extremely cold environments.

5. Problem: Dive time shown in the Log Data displayed in the Recall Mode does not match the difference between dive start time and end time.

Dive time counts only the time you spend at a depth greater than 1.0 meter (4 ft). If you surface during a dive, the time you spend above 1.0 meter (4 ft) will not be counted. In addition, the time is "rounded" to the nearest minute, so a 1-minute difference may result.

Dive time: time spent at a depth greater than 1.0 meter (4 ft).

Dive start time: time when you exceed a depth of 1.0 meter (4 ft) (for the first time during a dive, rounded down).

Dive end time: last time you surface (rounded up).

• Note that dive time and dive end time are rounded up, otherwise dive start time is rounded down in Log Data memory (up to 1 minute) for safety reasons.

6. Problem: Alarm, hourly time signal do not sound.

The alarm and hourly time signal do not sound while the watch is in the Diving Mode.

7. Problem: Backlight does not operate.

- Have you used the light frequently?
  If the backlight is used too frequently, it may go out before the "BATTERY" message appears. In this case, have the batteries replaced.
- Did you drop the watch or subject it to strong impact ?
  If so, consult with an Authorized CASIO Dealer/Distributor as soon as possible to arrange for repair by an Authorized CASIO Service Point.
- Does this happen when you are diving?
  The backlight temporarily goes out in the Diving Mode if a depth measurement is taken during the 3 or 4 seconds that the light is lit.
- Is the measured temperature below –5.0°C/23.0°F?
  The backlight does not operate at very low temperatures. Normal light operation should returns after the temperature rises above –5.0°C/23.0°F.

21 | Helpful Information

1. About warning marks (♪)

If the warning mark appears, it indicates that the related data is incorrect for some reason. When this data is reviewed in the Log Data Recall Mode, the warning mark will appear along with the abnormal data.

Abnormal data may be caused by:
- operational error (such as switching to Diving Mode while underwater, which causes incorrect "0.0 M (0 F) reset", etc.). See page E-34.
- abnormal changes in temperature (such as when it is suddenly submerged after being exposed to direct sunlight for an extended period). See page E-39.
- sensor errors (accompanied by "SENSOR ERROR" message). See page E-40.
- a dead battery. See page E-37.

2. What to do if the battery grow weak during a dive

When battery power weakens, a "BATTERY" message will appear in the display, indicating it is time to replace the battery. Do not use this watch for diving until the batteries have been replaced. Be sure to consult with an Authorized CASIO Dealer/Distributor as soon as possible to arrange for battery replacement by an Authorized CASIO Service Point.

3. Diving timer started even when you just entered the water

When initially entering the water, especially when jumping in from a relatively high position, the pressure produced by impact with the surface of the water can cause the pressure sensor to generate erroneous data. To make sure that the data for your dive is correct, switch to the Time/Calendar Mode and then back to the Diving Mode to perform 0 reset on the surface.

4. Log data is already programmed in memory

For explanatory purposes, data on a single dive has already been programmed in the log memory. To clear this data, press the Ⓐ button while in the log data recall Mode.

5. Maximum measurable depth

This watch is designed to measure depths between 0.0 and 80.0 meters (0 and 263 ft).
Exceeding a depth of 80.0 meters (263 ft) stores the following data into memory.

Maximum Depth: dEEp
Average Depth: −.− M (− − F)

The above are produced on the display when such Log Data is recalled (in the Recall Mode).
Remember, however, that for recreational diving, it is recommended to dive no deeper than approximately 30.0 meters (99 ft).

6. Temperature measurement range

If a temperature measurement falls outside the range of −10.0°C (14.0°F) to 60.0°C (140.0°F), the display shows −.−°C (−.−°F).

7. Maximum dive time

This watch is designed to measure dives of up to 11 hours 59 minutes and 59 seconds. When a dive time of 12 hours is reached, operation automatically switches to the Time/Calendar Mode (data held in log memory).

8. About "rest" time

Note that a dive is not ended until the watch is switched to the Time/Calendar Mode while at the surface of the water (depth = 0.0 M/0 F). This means that if you dive, return to the surface, and then dive again, it is regarded as the same dive. To end a dive and start a new one, return to the surface, switch from the Diving Mode to the Time/Calendar Mode and then back to the Diving Mode, and then dive again.

9. Using buttons underwater

The buttons on your watch can be used underwater without harming the watch. Press the Ⓑ button to illuminate the display light. Pressing the Ⓓ button switches between display of the dive start time and the current time.

10. If you forget to switch to the Diving Mode before starting a dive

If you switch to the Diving Mode while underwater (at a depth of approximately 2.0 meters/7 ft), the depth will be reset to "0" incorrectly, and the watch will automatically display the absolute pressure (see page E-35). Note that resulting data will be accompanied by the warning mark (♪) in the log memory, indicating that the data may be incorrect.

11. What happens to log data and surface interval if you adjust the hours/minutes display and calendar

Log data and surface interval are not affected when you adjust the hours/minutes and calendar display after completing a dive.

12. To extend battery life and calendar

Your diving watch uses the most battery power when its pressure sensor is in operation. Because of this, it is best to switch to the Time/Calendar Mode immediately after completing a dive in order to preserve battery power. The number of dives you make is directly related to the life of the batteries, as shown below. Also note that battery life is affected by how much you use the light.

Number of dives per year	Battery life
50	Approximately 2 years
100	Approximately 1 year, 6 months
200	Approximately 1 year
300	Approximately 9 months

Based on 45 minutes per dive.

Note

Be sure to have the battery replaced at least once every 2 years, regardless of the number of dives.
When replacing the battery, the Authorized CASIO Service Point will also perform a full overhaul, replacing the sealing material which is vital to the water resistance of your watch.

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13. About altitude diving

Because the depth reading is automatically reset to "0.0 M (0 F)" whenever the Diving Mode is entered, this watch can be used for diving at altitudes such as in mountain lakes of up to approximately 4,000 meters (13,000 ft). Note, however, that as this watch bases its calculations on sea water, which has a specific gravity of 1.025, depth readings will be incorrect during fresh-water diving. During fresh water dives, you must assume that you are approximately 2.5% deeper than the depth shown on the display.

Example: When displayed depth is 20.0 meters, actual depth is
$20.0 \times 1.025 = 20.5$ meters.

In all cases, be sure to receive appropriate training before attempting high altitude or fresh water diving.

14. When taking your watch on an airplane

Although there are no problems with taking your watch on an airplane, you should note that if you select the Diving Mode while in the air, it will be impossible to revert to the Time/Calendar Mode by pressing the Ⓒ button. In this case, first hold down the Ⓓ button and Ⓒ button simultaneously, for at least 1 second to reset the depth reading to 0.0 meters (0 ft) and then hold down the Ⓒ button for at least two seconds to re-enter the Time/Calendar Mode.

15. About repressurizing environments

This watch can be used in environments with up to 20 atmospheres, however it should never be used in helium environments or other high-pressure environments as it may be damaged during decompression. Also, if it becomes necessary to switch to the Time/Calendar Mode while in a high-pressure environment, you can do so by holding down the Ⓐ, Ⓑ, Ⓒ and Ⓓ buttons together for at least 2 seconds.
Note that this operation should be avoided during diving, except under extraordinary conditions.

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22 | Specifications

Frequency: 32,768Hz
Precision: ±15 seconds per month (at normal temperatures)
Display method: FE-type liquid crystal digital display
Basic functions:
   Hour, Minute, Second, AM(A)/PM(P), Year, Month, Day, Day of week
   (Full-auto calendar; 1995 to 2039)
Diving function: Dive time — 1 sec. increments, up to 11:59:59.
   Depth reading —Display range = 0.0 M to 80.0 M (0 F to 263 F), 0.1 M
                    (1 F) increments (depths less than 1.0m = 0.0 M (4 ft =
                    0 F), depths greater than 80.0m (263 ft) = "dEEp"),
                    reading frequency = every 3 seconds
   Temperature (Water Temperature) Measurement
                  —Display range = −10.0°C to 60.0°C (14.0°F to 140.0°F),
                    0.1°C/0.2°F, reading frequency = every 20 seconds
   Present time, dive start time, present depth, maximum depth, maximum
   depth temperature, surface interval

Depth gauge accuracy: −(2.0% of display value + 0.3m) to + (3.5% of
                           display value + 0.3m)
   Example 1: Displayed depth = 30.0 M (99 F)
                  Actual depth between 29.1 and 31.35 meters (97 and 104 ft)
   Example 2: Displayed depth = 60.0 M (197 F)
                  Actual depth between 58.5 and 62.4 meters (192 and 206 ft)
   • Depth readings based on specific gravity of sea water 1.025.
   • Accuracy guaranteed when used within suggested operating
     temperature range of 0.0°C to 40.0°C (32.0°F to 104.0°F) when used
     outside this range, accuracy may be adversely affected.
   • 10.0°C (50.0°F) temperature change generates measurement error of
     ±0.5 m (2 ft).

Water temperature measurement precision:
   ±2.0°C (±3.6°F) in the range of −10.0°C to 60.0°C (14.0°F to 140.0°F)

Log data memory:

Dive date — month and day of dive

Dive number — number of dives for the day

Dive start time — Hr. (AM/PM), Min. (seconds rounded down)

Dive end time — Hr. (AM/PM), Min. (seconds rounded up)

Dive time — Hr., Min. (seconds rounded up)

Maximum depth

Average depth — total measured depth divided by total number of measurements

Maximum depth temperature — water temperature at maximum depth

Empty memory file display

Dive profile function: Record of the maximum depth reached during each minute of the dive.

Alarm function: Daily alarm, hourly time signal

Other functions: Time/Calendar auto display function, 12/24-hour clock, temperature adjustment function

Main components:

Quartz oscillator, one-chip C/MOS-LSI, semiconductor pressure sensor

Battery: CR2025

Battery life:

Approximately 2 years (using backlight for approximately 3 seconds per day in the Time/Calendar Mode, and using for approximately 50 dives (45 minutes per dive) per year with light used for 3 seconds per dive)

Note that battery life is directly related to the number of dives, as shown below:

Number of dives per year	Battery life
50 dives	Approximately 2 years
100 dives	Approximately 1 year, 6 months
200 dives	Approximately 1 year
300 dives	Approximately 9 months