



**GP-3000 DATA +**

**DIVE COMPUTER**

[www.istsports.com](http://www.istsports.com)



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## I. General information

IST GP-3000 DATA + is a smart, lightweight wrist-top dive computer that provides all the essential information a diver will need. Upon self-activation underwater, this sophisticated unit begins collecting data such as depth, temperature and dive time at a regular interval and by taking air / Nitrox level input by the diver into calculation, the advanced software automatically gives precise nitrogen saturation level in the body. Along with other diving and safety specific data (ascent rate, partial oxygen level, safety stop timer), all are displayed on a large, easy to read screen.

Data+ Dive Computer performs decompression diving calculations using algorithms developed by Mr. C. Randy Bohrer based on Swiss-model theory and research. It is intended for use by individuals who have completed a recognized scuba diving course.

Despite the complex design, DATA + is incredibly user friendly: its simple, 3-button interface lets the diver easily input information and change between 7 different primary functions, anytime before, during or after a dive.

Before using IST GP-3000 DATA +, it is imperative to read and understand the whole content in order to get the most benefits from using the dive computer, and to avoid risking any unnecessary injuries or even death.

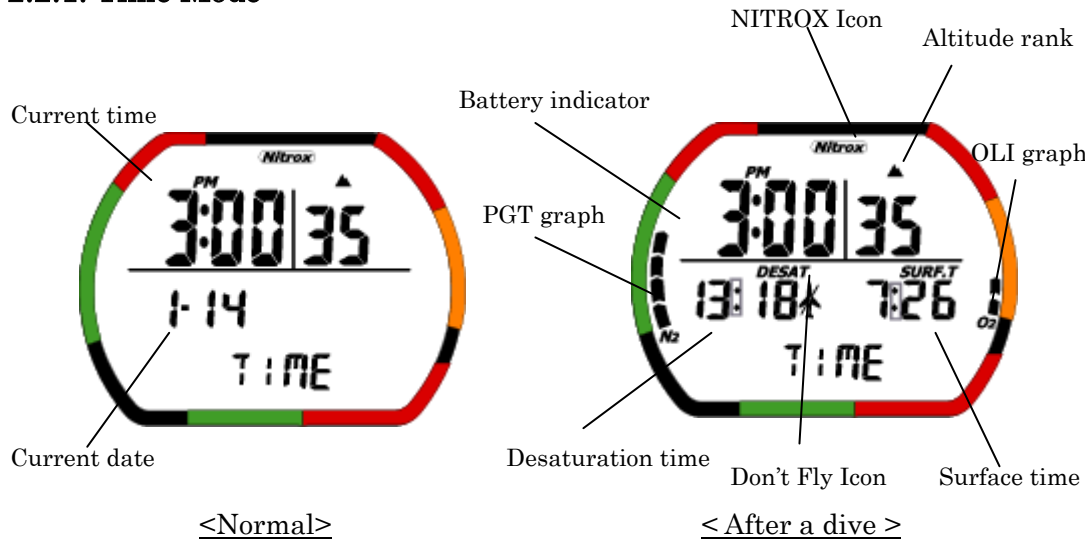
### Caution!

- Persons who have not taken scuba diving training or who are not aware of the risks of scuba diving should not use this unit.
- You can use Data+ for Nitrox diving where you may set the gas mixture in your tank. However, individuals who do not understand Nitrox diving or have not taken training in it should not use the NITROX function at all. Also, it is very dangerous to set the mixture on the dive computer at a different value than the mixture in the tank. Always reset each time you dive and never dive with the incorrect settings.
- Data+ is for recreational use and not for professional use.
- Data+ is designed with the assumption that you will be doing no-decompression diving. It also provides decompression diving data just in case, but this is dangerous and should be avoided.
- Standard settings in this dive computer assume the user is of average physical strength and in reasonable health. When diving with Data+, the diver should therefore dive responsibly and make a safe diving plan suited to him or herself.





### 2.2.1. Time Mode



#### Description of Functions: This mode is usually shown

- Current time: This is the current time.
- Current date: This is the current date.
- Battery indicator Icon: This displays the current battery voltage.
- PGT (Pressure Gas in Tissue) graph: This indicates the level of Nitrogen with nine level indicators.
- OLI (Oxygen Limited Indicator) graph: This indicates the level of Oxygen limit with eight level indicators.
- Nitrox Icon: This Icon is ON when NITROX has been set for MIX1 or MIX2. It blinks if the MIX1 and MIX2 setting is the default setting.
- Desaturation time (DESAT): This indicates the time remaining of nitrogen until the body's internal nitrogen is desaturated. The time is counted down to 0:00, it turns off after 1 minute.
- Surface time (SURF.T): This is interval time after dive. Surface time is counted starting from when the depth shown in Dive mode reaches 1.5 meters (5 feet) or less. If the depth changes back to 1.5 meters (5 feet) or more in less than 10 minutes, the previous dive mode is continued. Surface time is continued for 48 hours. After that, surface time is turned off after 1 minute.
- Mode: This is the display, which shows Time mode.
- Don't Fly Icon: While computer calculates desaturation time, this icon turned on at Time Mode. When the computer has finished calculating desaturation time and Time Mode is over 12 hours, this Icon is turned off.
- Gage mode Icon: In gage mode, the Icon is on.



#### <Battery indicator icon>

This displays the current battery power reserve status (in voltage).  
 When battery voltage is 2.8V or above, battery Icon is not shown.  
 When battery voltage is 2.6 to 2.7 V, battery Icon comes on and blinks.  
 When battery voltage is less than 2.6 V, battery Icon is on constantly.

You cannot go to dive mode while the battery indicator Icon is blinking or ON. This Icon can be displayed during all modes except dive mode.  
 Measurement of battery voltage is automatically performed during all modes except PC transfer mode and dive mode.

#### <Altitude rank>

Altitude rank	Altitude range
0	0-900m(0-2952ft)
1	600-1800m(1968-5904ft)
2	1500-2600m(4920-8528ft)
3	2300-6000m(7544-19680ft)
Err	Over 6000m(over 19680ft)

Altitude rank : The computer automatically measures and calculates the current location's altitude and displays the corresponding altitude rank. The relation between altitude rank levels and altitudes are shown below. A new altitude measurement and calculation is made once every ten minutes.

When the altitude is over 6000 meters (19680 feet), the Icons of altitude rank and 'Err' blink and the dive computer cannot be used until the altitude drops to a lower level (under 6000 meters (19680 feet)). The calculations of PGT, OLI and desaturation time are stopped when altitude is over 6000 meters (19680 feet), and 'Err' is displayed. But surface time is continued to be counted.

When the altitude is less than 6000 meters (19680 feet), the display shown before reaching that altitude is displayed again once the altitude drops to a lower level. The same displays and processing occur if the altitude cannot be measured for any reason.

Altitude measurements are made during all modes except dive mode and PC transfer mode. Display of the current altitude rank Icon occurs in Time Mode and Plan Mode (In dive log mode, a rank at a dive is displayed.)

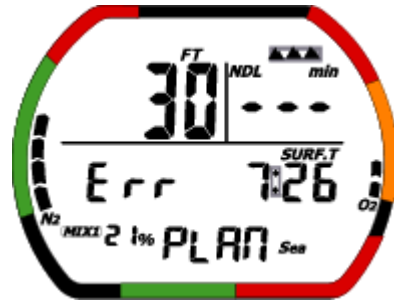


< Altitude Rank 0,1,2,3 >

< Altitude level Err over 6000 meters (19680 feet) >



Blink



**Caution!**

- Even when there is no PGT(=pressure of gas in tissue) graph, a change in the altitude rank will cause PGT graph to be displayed and desaturation time to be performed.
- Never touch the water detection switch or expose it to moisture when on an airplane or in any other environment where air pressure can change quickly.
- When the PGT graph is high, a change in the altitude rank may cause nine level indicators to appear for PGT. To prevent this, never use the dive computer when going to high-altitude locations, since it will disable dive mode as a safety precaution. Normal function of the dive computer will be restored when PGT graph drops to 8 or less level.
- Difference of one-minute may occur between when the PGT graph is turned off and when desaturation time is turned off.
- A battery indicator Icon is used to indicate battery life. Be sure to replace the battery when this battery Icon appears (ON or blinking).

**Button functions**

<Normal>

- A: EL back light is on from 4-5 seconds.
- B: Press this switch to move to dive set mode.
- C: EL back light is on from 4-5 seconds.
- D: When water is detected, the mode moves to dive mode.

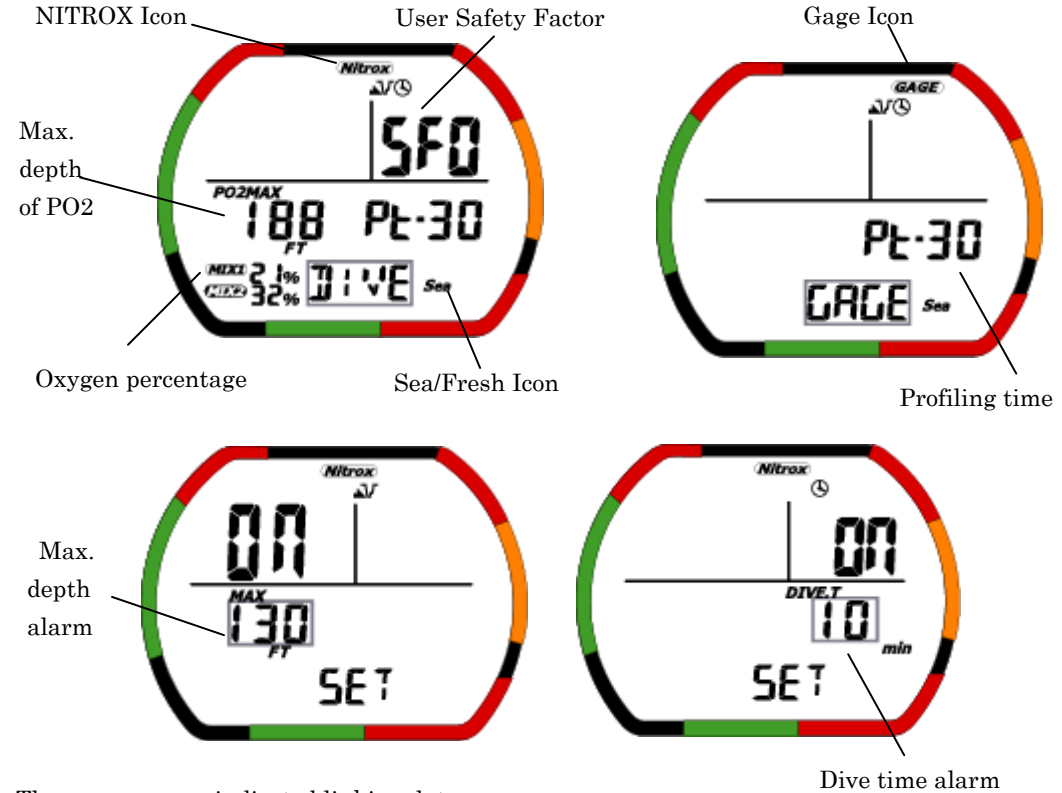
<Surface condition (after a dive)>

- A: EL back light is on from 4-5 seconds.
- B: Press this switch to move to dive set mode , but if surface time is less than 10 minutes, the mode moves to dive plan mode, not dive set mode. (In gage mode, move to gage dive set mode display, but if surface time is less than 10 minutes, the mode moves to dive log mode .)
- C: EL back light is on from 4-5 seconds.
- D: When water is detected, the mode moves to dive mode.



**2.2.2. Dive set mode (Gage dive set mode)**

If surface time is less than 10 minutes after dive, it cannot enter this mode.



The gray squares indicate blinking data

**Description of Functions**

- Fraction of oxygen (=FO<sub>2</sub>): This displays the current setting.  
MIX1 setting range: Fraction of oxygen 21-50%、'—'-%.  
MIX2 setting range: Fraction of oxygen 21-99%、'—'-%.
- Maximum depth of PO<sub>2</sub>: Based on the fraction of oxygen, this indicates the water depth where PO<sub>2</sub> (=pressure of oxygen) maximum reaches 1.4 (MIX1) or 1.6(MIX2).  
In the water depth rank which exceeded the maximum water depth, non-decompression limit become displayed '---'.
- User Safety Factor (=USF): When the level is "0" the usual algorithm is used for calculations. When the level is "1" and "2" the next higher altitude rank is used for calculations. The default setting is "0".
- Profiling time: It is the setting of sampling time. The setting range: either 15 or 30 seconds.
- Battery indicator Icon: This displays the current battery voltage.





- Maximum depth Alarm: The alarm generates to sound when it reaches setting depth. The setting range: 9-99meters (30-320ft),resolution:1 meter(10 feet).
- Dive time alarm: The alarm generates to sound when it reaches diving time. The setting range: 10-590 minutes, resolution: 10 minute.
- Nitrox Icon: This Icon is ON when NITROX has been set for MIX1 or MIX2.It blinks if the MIX1 and MIX2 setting is the default setting.
- Sea/Fresh Icon: This indicates the water setting (sea water/fresh water).
- Gage Mode Icon: In gage mode, the icon is on.
- Mode display: This shows Dive set mode.

**Caution!**

“--”% display: The setting switches to these values automatically at 24:00 on the day when the value is set all value, except the setting of Air (FO<sub>2</sub>: 21%).  
 If user forgets to set, alarm is generated when the mode moves to dive mode.  
 If MIX1 is set 21% and when MIX2 is set 21% or “--”%, The MIX1 setting is not changed.  
 The MIX2 setting is always changed to “--”% at 24:00 on the day.

**Button functions**

- A: Press this switch to select place you want to change.  
 GAGE SELECT→MIX1 FO<sub>2</sub> set→MIX2 FO<sub>2</sub> set→User Safety Factor→Profile time→Sea/Fresh→MAX DEPTH SET→MAX DEPTH ALARM ON/OFF→DIVE TIME SET→DIVE TIME ALARM ON/OFF→GAGE SELECT→.....

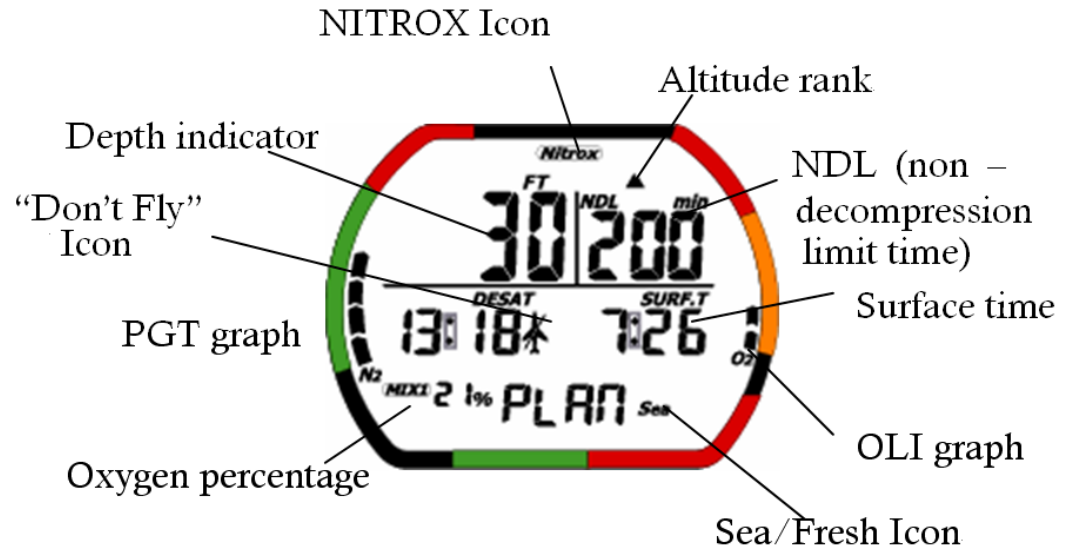
**Caution!**

In PGT, OLI, DESAT, the SURF.T count, it isn't possible to do GAGE SELECT choice. Also, when MIX1 isn't set ( the ‘--’% display ), it isn't possible to do the setting of MIX2.

- B: Press this switch to move to dive plan mode .  
 (In gage mode, press this switch to move to dive log mode.)
- C: Press this switch to change setting the contents.
- C: Press and hold this switch to change setting the contents fast scrolling.
- D: When water is detected, the mode moves to dive mode.
- Auto return: The display automatically returns to time mode when no switches are used for 2-3 minutes.
- B: Press and hold this switch for 1-2 seconds to move to time mode.



**2.2.3. Dive plan mode**



- The gray squares indicate blinking data

**Description of Functions** (Can not enter gage mode from here.)

- Depth rank and NDL (non-decompression limit): Use this function to set the planned dive depth and corresponding depth rank. There are 14 depth ranks, as shown below. The NDL corresponding to the current PGT graph is displayed. The displayed NDL is for when MIX1 is used. The maximum displayable NDL is 200 minutes.

9m (30ft)	12m (40ft)	15 m (50ft)	18m (60ft)	21m (70ft)	24m (80ft)	27m (90 ft)
30m (100ft)	33m (110ft)	36m (120ft)	39m (130ft)	42m (140ft)	45m (150ft)	48m (160 ft)

- Battery indicator Icon: This Icon the current battery voltage.
- PGT (Pressure Gas in Tissue) graph: This indicates the level of Nitrogen with nine level indicators.
- OLI (Oxygen Limited Indicator) graph: This indicates the level of Oxygen limit with eight level indicators.
- Fraction of oxygen: This displays only MIX1 the current setting.
- Sea/Fresh Icon: This indicates the water setting (sea water/fresh water).
- Altitude rank : The computer automatically measures and calculates the current location's



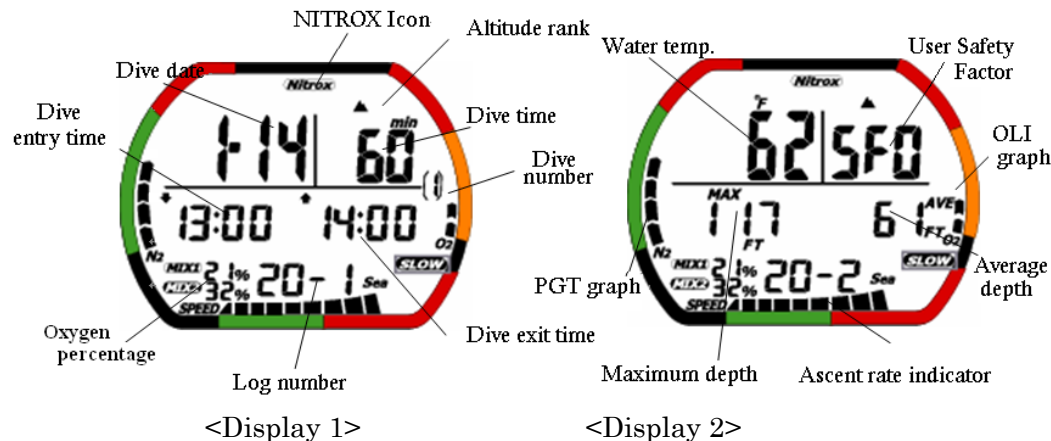
altitude and displays the corresponding altitude rank.

- Mode display: This shows Dive plan mode.
- Nitrox Icon: This Icon is ON when NITROX has been set for MIX1 or MIX2. It blinks if the MIX1 and MIX2 setting is the default setting.
- Don't Fly Icon: While computer calculates desaturation time, this icon turned on at Time Mode. When the computer has finished calculating desaturation time and Time Mode is over 12 hours, this Icon is turned off.
- Desaturation time: This indicates the time remaining of nitrogen until the body's internal nitrogen is desaturated. The time is counted down to 0:00, it turns off after 1 minute.
- Surface time: This is interval time after dive. Surface time is counted starting from when the depth shown in Dive mode reaches 1.5 meters (5 feet) or less. If the depth changes back to 1.5 meters (5 feet) or more in less than 10 minutes, the previous dive mode is continued. Surface time is continued for 48 hours. After that, surface time is turned off after 1 minute.

### Button functions

- A: Press this switch to decrease one to the depth rank.
- B: Press this switch to move to dive log mode.
- C: Press this switch to add one to the depth rank.
- D: When water is detected, the mode moves to dive mode.
- Auto return: The display automatically returns to time mode when no switches are used for 2-3 minutes.
- B: Press and hold this switch for 1-2 seconds to move to time mode.

### 2.2.4. Dive Log Mode



### Description of Functions

Dive log mode provides functions for recording various data during a dive when the dive depth



is at least 1.5 meters (5 feet) and the dive time is at least 3 minutes. Data is recorded during each successive dive, and the log data storage capacity is about 30 hours of dive time (when the profile's sampling time is set at 30 seconds), or up to 60 log data entries. If the logged dive time exceeds 30 hours or the number of log data entries exceeds 60, the oldest data is automatically deleted. (See the section describing profile mode for further description of log data and profile data.) The logged data is described below.

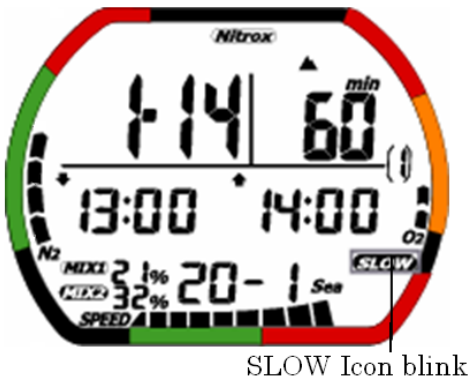
- Battery indicator Icon: This Icon the current battery voltage.
- Log number: This indicates the number of the log entry being recorded among the recorded logs
- Dive date/Dive entry time/ Dive exit time: This is diving information. Dive date is the date of the dive. Dive entry time is the time at the start of the dive. Dive exit time is the time at the end of the dive. Both Dive entry time and Dive exit time is 24 tense.
- PGT (Pressure Gas in Tissue) graph: This indicates the level of Nitrogen with nine level indicators at the end of the dive.
- OLI (Oxygen Limited Indicator) graph: This indicates the level of Oxygen limit with eight level indicators at the end of the dive.
- Altitude rank: This is the altitude rank during the dive.
- Nitrox Icon: This Icon is ON when NITROX has been set for MIX1 or MIX2 which was used while diving. It blinks if the MIX1 and MIX2 setting is the default setting.
- Fraction of oxygen(=FO<sub>2</sub>) :It displays the FO<sub>2</sub> which was used while diving.
- Dive time: This is the dive time.
- Water temperature:water temperature at maximum depth. The measurement range: -5.0 to 40.0°C(23-104° F). It display 'Lo' when water temperature is under -5°C(23° F). It display 'Hi' when water temperature is over 40.0°C(104° F).
- User Safety Factor(=USF): When the level is "0" the usual algorithm is used for calculations. When the level is "1" and "2" the next higher altitude rank is used for calculations. The default setting is "0".
- Average depth: It is diving average water depth. If depth is over 99.9m(328ft), this display is '---'. In Gage mode,if depth is over 199.9m(656ft), this display is '---'.
- Maximum depth: This is the maximum depth recorded during a dive. If depth is over 99.9m(328ft), this display is '---'. In Gage mode,If depth is over 199.9m(656ft), this display is '---'.
- Ascent rate indicator: This is the maximum Ascent rate recorded during a dive
- Sea/Fresh Icon: This indicates the water setting (sea water/fresh water).
- Gage mode Icon: In gage mode, the Icon is on.
- Mode display: This shows Dive log mode.

### Warnings!

These are warnings that can occur during a dive. For further description of these warnings see the 'dive mode' section.

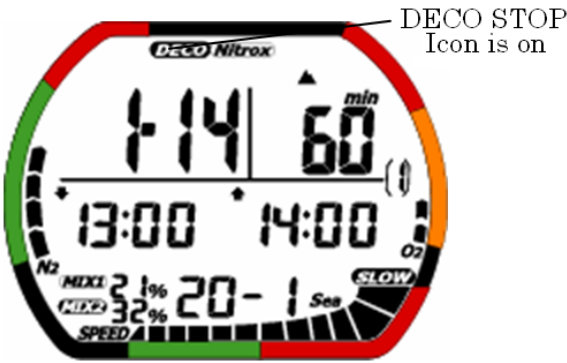


<Ascent rate warning>



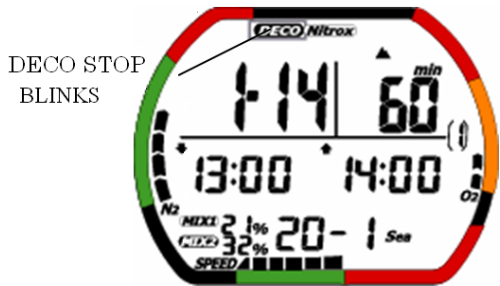
SLOW Icon blink

<Decompression dive>



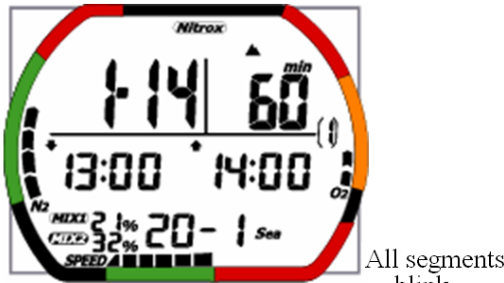
DECO STOP Icon is on

<Decompression stop violation>



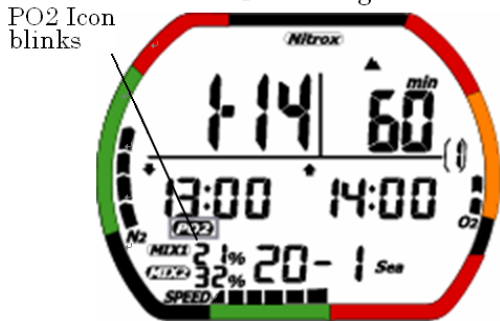
DECO STOP BLINKS

<Out of measurement range warning>



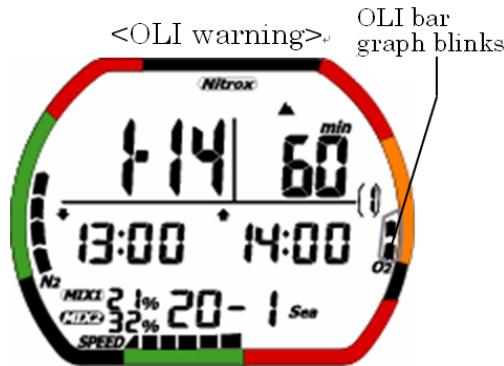
All segments blink

<PO<sub>2</sub> warning>



PO2 Icon blinks

<OLI warning>

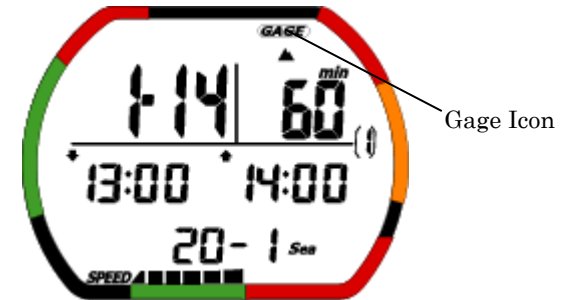


OLI bar graph blinks



Gage dive log mode provides functions for recording various data during a dive same dive log mode when the dive depth is at least 1.5 meters (5 feet) and the dive time is at least 3 minutes. Then, Gage Icon is on, and it shows to have dived in gage mode. The logged data is described below

<Gage log mode>



Gage Icon

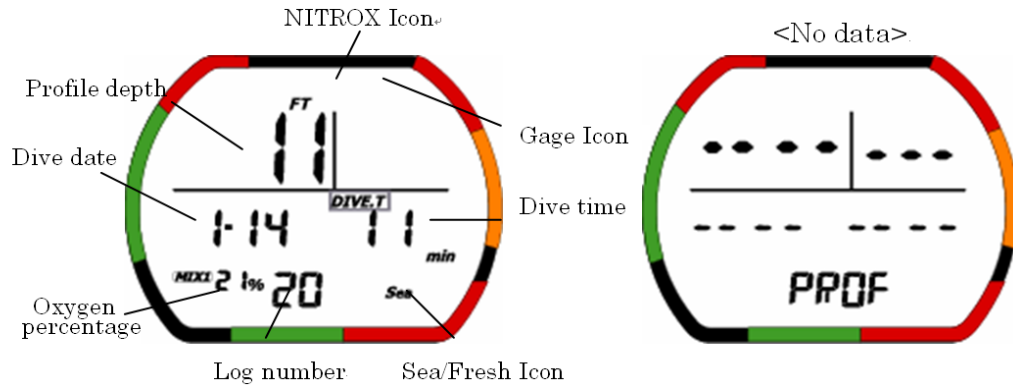
### Button functions

- A: Press this switch to change log number. (60-1→60-2→...→2-1→2-2→1-1→1-2)
- A: Press and hold this switch to change log number fast scrolling. The oldest data stop. (60-1→59-1→...→3-1→2-1→1-1)
- B: Press this switch to move to dive profile mode.
- C: Press this switch to change log number. (1-2→1-1→2-2→2-1→...→60-2→60-1)
- C: Press and hold this switch to change log number fast scrolling. The oldest data stop. (1-1→2-1→...→59-1→60-1)
- D: When water is detected, the mode moves to dive mode.
- Auto return: The display automatically returns to time mode when no switches are used for 2-3 minutes.
- B: Press and hold this switch for 1-2 seconds to move to time mode.





## 2.2.5. Dive profile mode



### Description of Functions

Dive log mode provides functions for recording various data during a dive when the dive depth is at least 1.5 meters (5 feet) and the dive time is at least 3 minutes. Data is recorded during each successive dive, and the log data storage capacity is about 30 hours of dive time (when the profile's sampling time is set at 30 seconds), or up to 60 log data entries. If the logged dive time exceeds 30 hours or the number of log data entries exceeds 60, the oldest data is automatically deleted. (See the section describing profile mode for further description of log data and profile data.) The logged data is described below.

- Dive date: Dive date is the date of the dive.
- Dive time: This is the dive time.
- Log number: This indicates the number of the currently displayed profile data among all of the currently recorded data entries.
- Fraction of oxygen: Mix value was used while diving.
- Sea/Fresh Icon: This indicates the water setting (sea water/fresh water).
- Gage mode Icon: In gage mode, the Icon is on.
- Mode display: This shows Dive profile mode.
- Battery indicator Icon: This displays the current battery voltage.
- Profile depth: This indicates a maximum water depth value every sampling time. If depth is over 99.9m(328ft), this display is '---'. In Gage mode, if depth is over 199.9m(656ft), this display is '---'.
- Nitrox Icon: This Icon is ON when NITROX has been set for MIX1 or MIX2 which was used while diving. It blinks if the MIX1 and MIX2 setting is the default setting.

### Button functions

- Auto count up dive time: The display automatically goes ahead dive time.
- A: Press and hold this switch to stop the auto rank increment function for profile data. The auto rank increment function will resume when you release Switch A. This setting is invalid

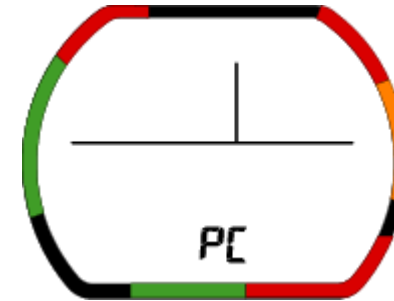


when the last profile data is being displayed.

- B: Press this switch to move to PC transfer mode, when there is no log and profile data, it moves to time set mode. but if surface time is less than 10 minutes, the mode moves to time mode, not PC transfer mode.
- C: Press this switch to change log number.  
(60→59→58→...→2→1→60→...)
- C: Press and hold this switch to change log number fast scrolling. The oldest data stop.  
(60→59→58→...→2→1→60→...)
- D: When water is detected, the mode moves to dive mode.
- Auto return: The display automatically returns to time mode when no switches are used for 2-3 minutes.
- B: Press and hold this switch for 1-2 seconds to move to time mode.

## 2.2.6. PC transfer mode

If surface time is less than 10 minutes, and when there is no log and profile data, it moves to time mode, it cannot enter this mode



### Description of Functions

- Battery indicator Icon: This displays the current battery voltage.
- Mode display: This shows PC transfer mode.

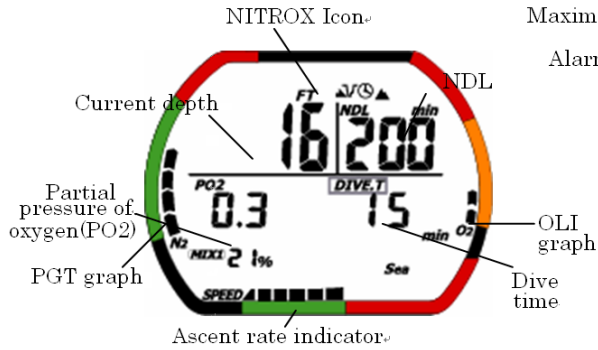
### Button functions

- A: No function
- B: Press this switch to move to time set mode.
- C: No function
- D: No function
- Enter the mode for 14-15 minutes: move to time mode
- B: Press and hold this switch for 1-2 seconds to move to time mode.
- It moves to time mode when the transmission ends.

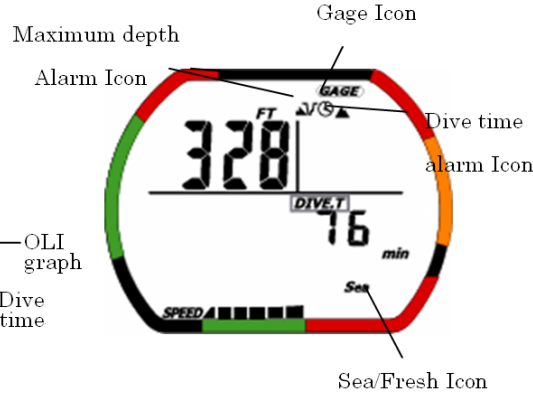




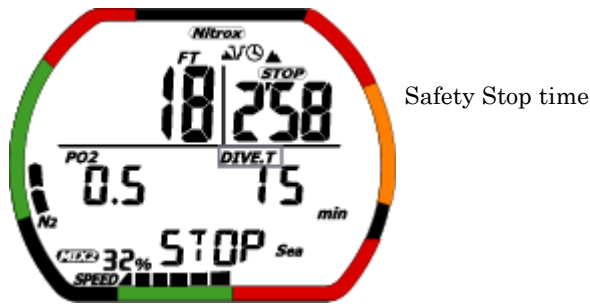
<Non-decompression>



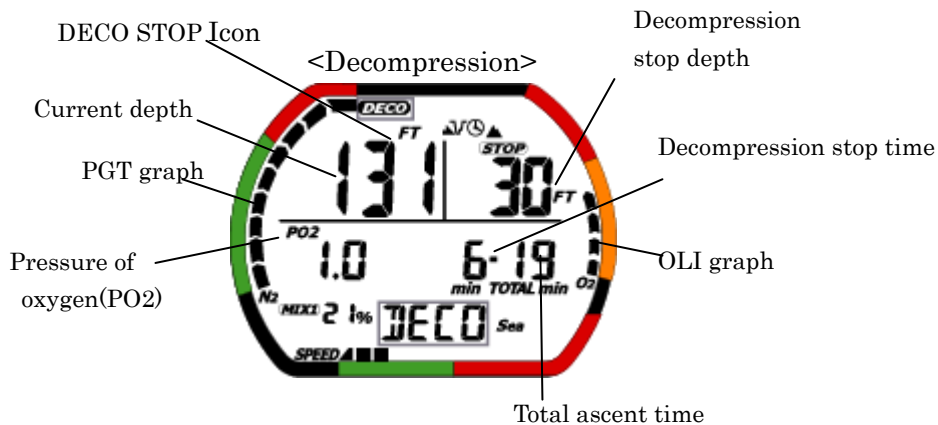
<Gage dive mode>



<Safety Stop>



<Decompression>



• The gray squares indicate blinking data



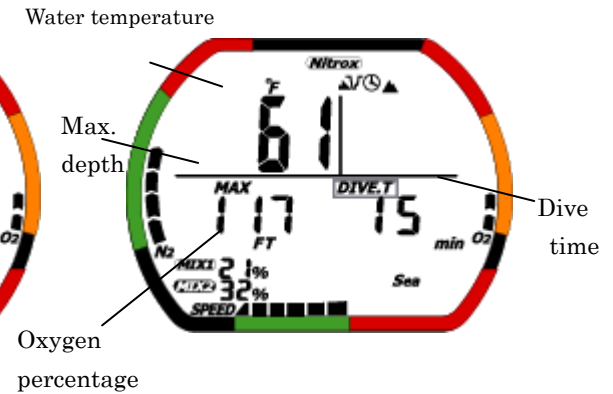
<Hold to push A switch>  
(MIX change)



MIX Icon blinks

• The gray square shows a blinking part.

<Hold to push C switch>



**Description of Functions**

The dive mode has some modes. There are non-decompression dive mode, decompression dive mode, safety stop condition, gauge dive mode, out of measurement range condition. The functions of each dive mode are described below.

**<Non-decompression mode>**

It is the dive in which the NDL is remained.

**<Gage mode>**

The only functions that can be performed in this mode are the depth calculation, water temperature measurement, and dive time measurement functions. Calculation functions, such as PGT and OLI etc, are not performed. If you use this mode when diving, it is the GAGE mode until 48 hours have elapsed. When diving by the gage mode, the safe stop isn't function.

**<Decompression mode>**

This mode is used for dives that last longer than the NDL. Until the advised depth is reached, warning will continue. If you go to the surface, then after 10 minutes of a surface time, the display will freeze and all calculation functions will stop. The mode will be automatically switched to time mode after 48 hours have elapsed. This information is recorded in the dive log. After calculations have stopped, you can switch only to log mode, profile mode, PC transfer mode.

**<Push A, B, C switch>**

EL back light is on from 4-5 seconds.

**<Safety Stop condition>**

This shows recommended safety stop time in dive mode. If user dives descent over 9.9m, then



user comes up to the depth 6m, this value appears instead of NDL. At first, safety stop time start from 3 minutes, later, safety stop time is counted down until safety stop time is 0 among from 6.0 m to 1.5 m. Then safety stop time disappears, and NDL appears at same place. It stops a count temporarily when becoming from 6.1 m to 8.0 m while counting. It stops a count temporarily when becoming equal to or more than 8.1 m while stopping a count temporarily, and the NDL display appears again. A count is reset when becoming equal to or more than 10 m. If user doesn't follow this stop, dive computer doesn't impose any penalty.

### <Out of measurement range condition>

When exceeding a measurement range, the exceeded parameter becomes '---' display and all display blink.

Case 1: the water depth exceeds 99.9m (328ft).

Case 2: the dive time exceeds for 599 minutes.

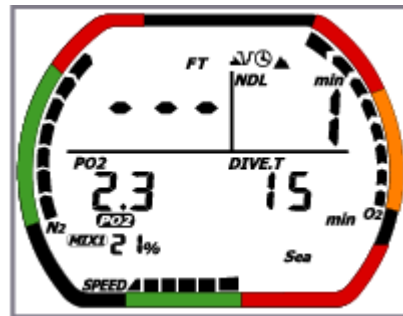
Case 3: decompression is required at a decompression stop depth greater than 30 meters (100 feet) .

Case 4: decompression stop time has exceeded 99 minutes

Case 5: total ascent time has exceeded 99 minutes

<Ex. water depth exceeded a measurement range>

Water depth is outside the measurement range of 99.9m (328ft).



• The gray square shows a blinking part.

### <Push and hold A switch (Mix change mode)>

It operates to change to the Mix gas that was set by the dive set mode.

MIX switching function: When Switch A is pressed, the PO<sub>2</sub> display changes to the currently set oxygen ratio, and blinks for 2 Hz. When Switch A is pressed and held for 3 or 4 seconds, the MIX setting is changed. Once this setting is changed, the back light goes on for 4-5 seconds and the modified oxygen ratio is displayed for 3-4 seconds. If the modified setting was for MIX1, then the display switches to MIX2, or if it was MIX2 the display switches to MIX1.

If the MIX value to change is equal to or more than PO<sub>2</sub>=1.6, it isn't possible to do changing. Also, if the MIX2 is '---', it is no function.



### <Push and hold C switch>

When user pushes and holds a switch C, it displays the temperature, the dive time, the maximum water depth and setting FO<sub>2</sub> value.

- Dive time: This is the dive time.
- Maximum depth: This is the maximum depth recorded during a dive. If depth is over 99.9m(328ft), this display is '---'. In Gage Mode, if depth is over 199.9m(656ft), this display is '---'.
- Pressure of oxygen (PO<sub>2</sub>): This indicates the PO<sub>2</sub> value at the current depth. This value is calculated based on fraction of oxygen and the current depth.
- PGT (Pressure Gas in Tissue) graph: This indicates the level of Nitrogen with nine level indicators.
- OLI (Oxygen Limited Indicator) graph: This indicates the level of Oxygen limit with eight level indicators.
- Maximum depth Alarm Icon: When it sets max depth alarm to on, this Icon is on.
- Dive time alarm Icon: When it sets dive time alarm to on, this Icon is on.
- Nitrox Icon: This Icon is ON when NITROX has been used for MIX1 or MIX2. It blinks if the MIX1 and MIX2 setting is the default setting.
- Gage mode Icon: In gage mode, the Icon is on.
- Safety Stop time: It displays stopping time. A count is downed from 3'00".
- Decompression stop depth(Ceiling): The decompression stop depths are calculated according to the dive mode settings. (3-99m/10-320ft)
- Decompression stop time(DECO STOP TIME): This is the amount of time to be spent at a decompression stop depth, which is calculated according to the dive mode settings. A countdown is shown during decompression.
- Total ascent time(TOTAL): This indicates the total amount of time required for ascent from the current depth to the surface, assuming that decompression stops are made
- DECO Icon: It is the Icon which informs to be in the decompression condition.
- Fraction of oxygen(=FO<sub>2</sub>) : It displays the FO<sub>2</sub> which was set in dive set mode.

### <Various warning>

- Ascent rate warning: When surfacing beyond the ascent rate according to the depth, it informs with the display and the alarm. It continues until it becomes the water depth which is shallower than 1.5 m (5 feet). This information is recorded in the dive log, when the second warning appears within 6 seconds after first warning.



<Ascent rate warning>



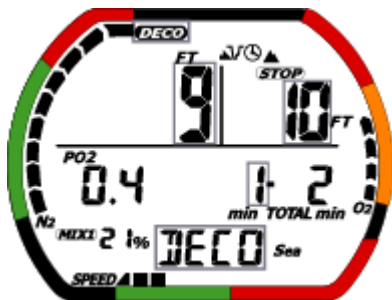
- Decompression dive warning: When the NDL is exceeded and the mode is changed to decompression dive mode, this warning generates. This information is recorded in the dive log.

<Decompression dive warning>



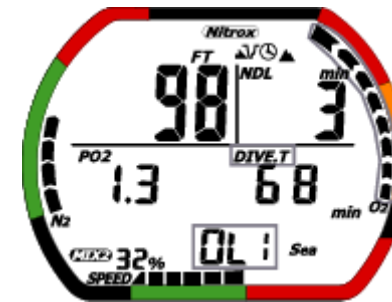
- Decompression stop violation warning: When current depth is shallower than the indicated decompression stop depth, it informs with the display and the alarm. If returning to the indicated water depth, the display blink stops. This information is recorded in the dive log.

<Decompression stop violation warning>



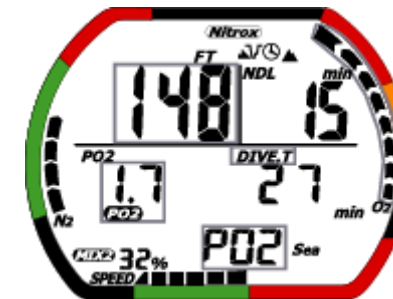
- OLI warning:
  - When the OLI graph reaches 7 or 8, it informs with the display and the alarm. There are two types of warnings, as described below.
    - Graph value = 7: It informs with the display and the alarm. This information is not recorded in the dive log.
    - Graph value = 8 it informs with the display and the alarm. The blinking display continues until the graph value reaches 7. This information is recorded in the dive log.

<OLI warning>



- PO<sub>2</sub> warning:
  - The Pressure of oxygen (PO<sub>2</sub>) value is determined based on the set oxygen ratio and the current depth. When the PO<sub>2</sub> value exceeds a certain value, the information is recorded in the dive log when the PO<sub>2</sub> warning occurs once. The types of settings and warnings are described below.
    - When PO<sub>2</sub>=1.4: The warning display blinks and alarm is sounded. (Case setting MIX1)
    - When PO<sub>2</sub>=1.6 or more: The warning display blinks and an alarm is sounded. The entire OLI graph blinks. (Case setting MIX1 and MIX2)

<PO<sub>2</sub> warning>

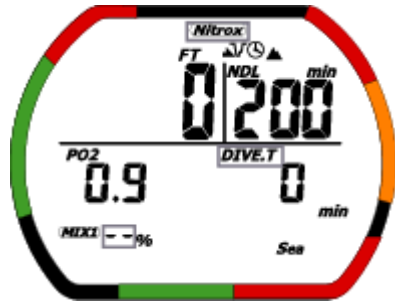






- Default warning: When the MIX1 is set at the default value, an alarm will sound when dive mode starts. It blinks even if it moves to dive mode until it sets MIX1, it continues to blink.

<Default warning>



## Button functions

### <Non-decompression>

- A: Press this switch to change to MIX from 3-4 seconds. And EL back light is on from 4-5 seconds.
- B: EL back light is on from 4-5 seconds.
- C: When user pushes and holds a switch C, it displays the temperature, the dive time, the maximum water depth and setting FO<sub>2</sub> value. And EL back light is on from 4-5 seconds.
- Less than 1.5 m water detection switch OFF: moves to time mode.

### <Decompression/Decompression stop violation>

- A: Press this switch to move to MIX change from 3-4 seconds. And EL back light is on from 4-5 seconds.
- B: EL back light is on from 4-5 seconds.
- C: When user pushes and holds a switch C, it displays the temperature, the dive time, the maximum water depth and setting FO<sub>2</sub> value. And EL back light is on from 4-5 seconds.
- Less than 1.5 m and after 10 minutes: moves to Decompression stop violation lock. The computer can't use for 48 hours. The mode will be automatically switched to time mode after 48 hours have elapsed.

### <Decompression stop violation lock>

This mode is locked until 48 hours have elapsed. It can't move to dive plan mode.

- A: Press this switch to select place you want to change. And when decompression stop violation lock display, EL back light is on from 4-5 seconds.
- B: This switch is mode select switch.  
decompression stop violation lock → Dive log mode → Dive profile mode → PC transfer mode → decompression stop violation lock → ……
- C: Press this switch to change setting the contents. And when decompression stop violation lock display, EL back light is on from 4-5 seconds.



Water detection switch: no function.

### <Out of measurement range condition>

All display segments blink.

- A: Press this switch to move to Mix change from 3-4 seconds. And EL back light is on from 4-5 seconds.
- B: EL back light is on from 4-5 seconds.
- C: When user pushes and holds a switch C, it displays the temperature, the dive time, the maximum water depth and setting FO<sub>2</sub> value. And EL back light is on from 4-5 seconds.
- Less than 1.5 m water detection switch OFF: moves to lock condition.

### <Out of measurement range lock>

This mode is locked until 48 hours have elapsed. All display segments blink in time mode. It can't move to dive plan mode, dive set mode time set mode.

- A: Press this switch to select place you want to change. In time mode, display, EL back light is on from 4-5 seconds.
- B: This switch is mode select switch.  
Time mode → Dive log mode → Dive profile mode → PC transfer mode → Time mode → ……
- C: Press this switch to change setting the contents. In time mode, EL back light is on from 4-5 seconds.
- Water detection switch: no function.

### <Gage dive mode>

- A: EL back light is on from 4-5 seconds.
- B: EL back light is on from 4-5 seconds.
- C: When user pushes and holds a switch C, it displays the temperature, the dive time, the maximum water depth. And EL back light is on from 4-5 seconds.
- Hold switch C: When user pushes and holds a switch C, it displays the temperature, the dive time, the maximum water depth.
- Less than 1.5 m water detection switch OFF: moves to time mode.

## 2.2.9. Gage Mode

The only functions that can be performed in this mode are the depth calculation, water temperature measurement, and dive time measurement functions. Calculation functions (such as calculation of PGT, OLI etc.) are not performed. If you dive in this mode for 3 minutes or longer, this information will be recorded in the dive log and profile mode.



**Display**

<Time Mode>



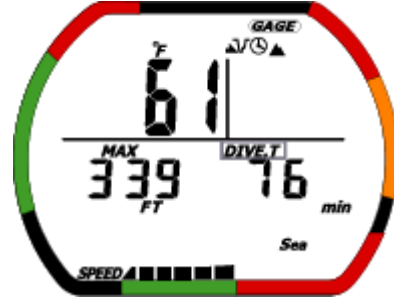
<Dive set Mode>



<Dive Mode>



<Hold switch C>



When diving by the gage mode, GAGE Icon is displayed in dive log mode. PC transfer mode, time set mode are same as usual mode.

**Operation of switches**

The mode which it is possible to move is except the plan mode.

B: This switch is mode select switch.

Time mode→Dive set mode→Dive log mode→Dive profile mode→PC transfer mode→Time set mode→Time mode→……

- It is different from usual mode.

Gage dive set mode

GAGE SELECT→Profile time→Sea/Fresh→MAX DEPTH SET→MAX DEPTH ALARM ON/OFF→DIVE TIME SET→DIVE TIME ALARM ON/OFF→GAGE SELECT→……

**Caution!**

In the surface time count, it can not be moved to GAGE select.

**III. Technical Specifications**

**Accuracy**

- Time: average monthly variance ±30 seconds
- Depth: ±3%+0.5m(±3%+2ft)
- Temperature : ±2.0°C(±4° F)

**Measurement range**

- Depth: 0.0-99.9m(0.0-328ft) /In gage mode, 0.0-199.9m(0.0-656ft)  
(Uses saltwater as standard)
- Dive time: 0-599 minutes
- Altitude: 0-6000m(0-19680ft)
- Measurement interval of 10 minute  
(It excludes dive mode, time set mode, PC transfer mode.)
- Temperature: -5~+40°C(23~104° F)
- Measurement interval of 1 minute (measures only in Dive mode)

**Operating temperature**

- Operating temperature: -5~+40°C(23~104° F)  
(At cold temperature, the display will be somewhat dim)

**NITROX setting**

- MIX1 FO<sub>2</sub>:21-50%, setting step: 1%
- MIX2 FO<sub>2</sub>:21-99%, setting step: 1%

**Waterproof ability**

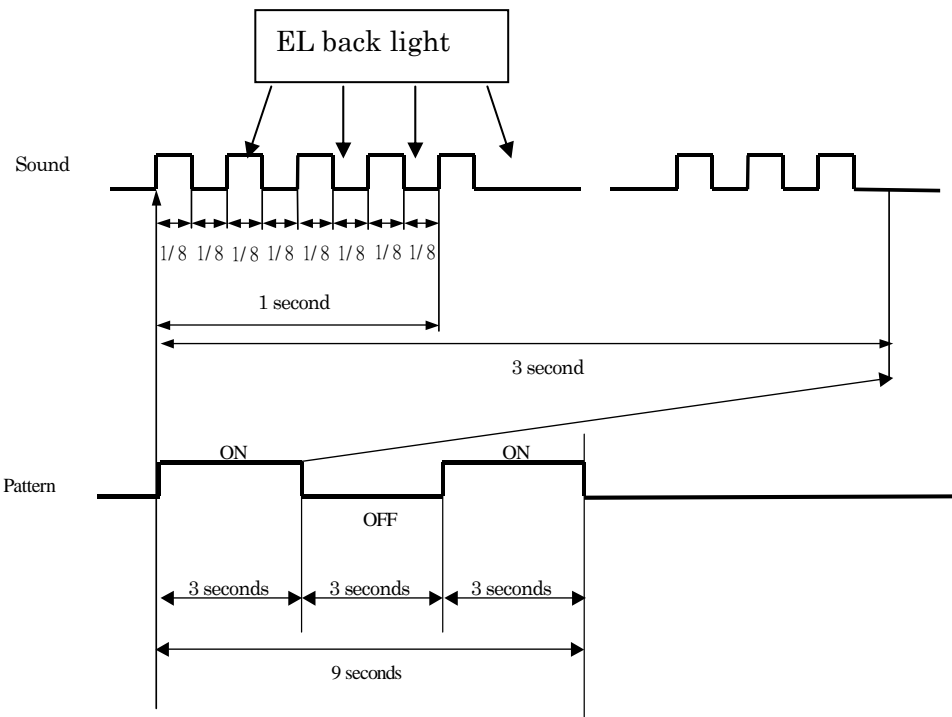
- The waterproof ability: to 99.9m(328ft)

**Battery life**

- Battery life: about 3 years (uses battery CR2032) under conditions as follows:  
The computer is used for 50 one-hour dives in a year, with the alarm sounding for 10 seconds per a dive, with the EL backlight for 10 seconds per a dive.

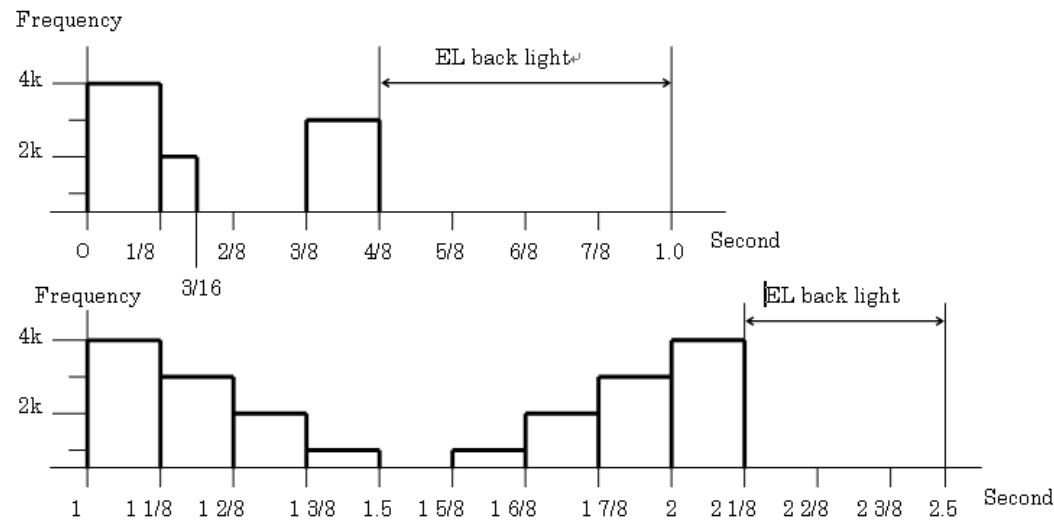
**Sound pattern**

<Warning sound>



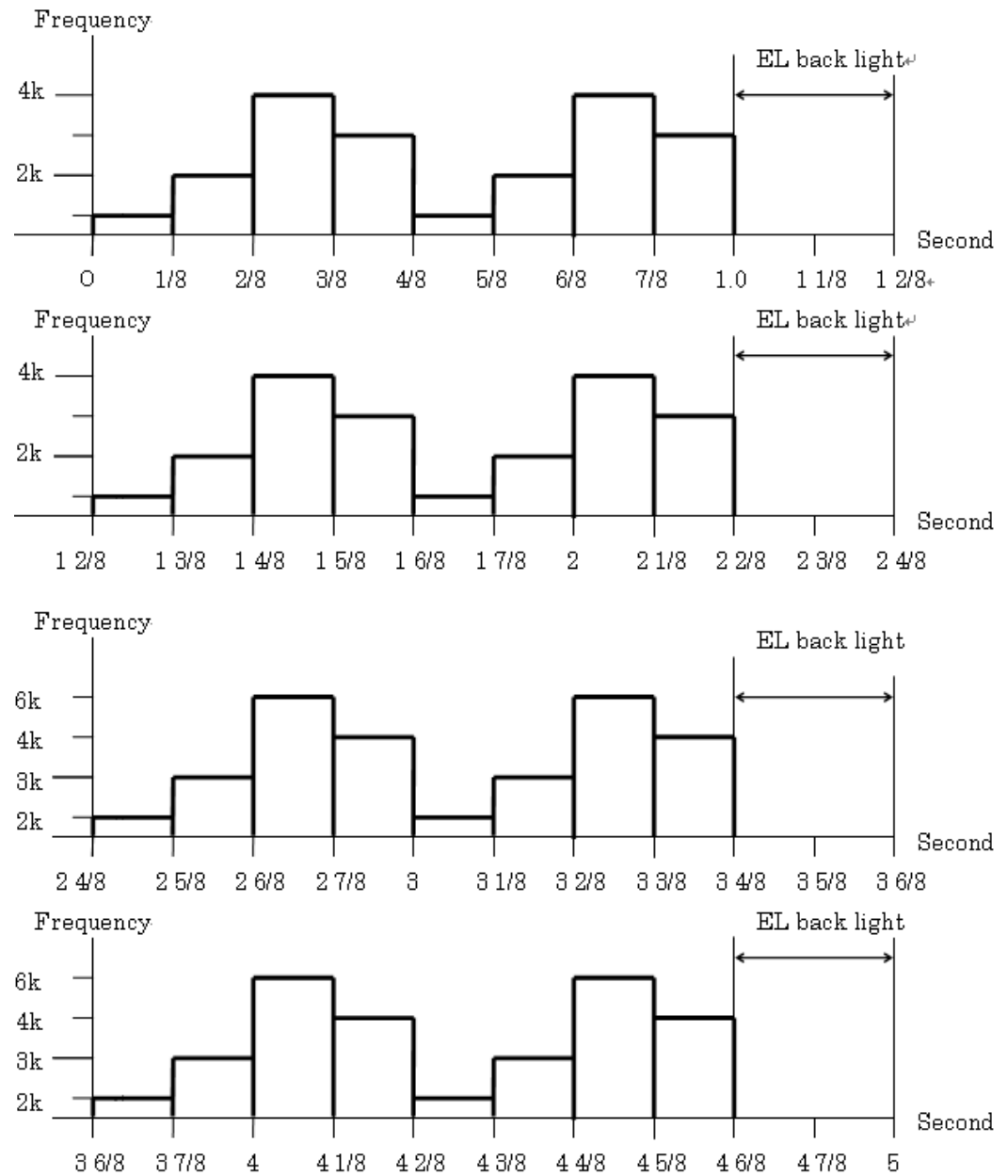
<Maximum depth Alarm>

sounds for 5 seconds.



<Dive time alarm>

sounds for 5 seconds.





## 2-5. Units of Measurement

- You can change the units of water depth and temperature by the switches of this product

① Changing water depth units from meter to feet.

The display will show 0-328ft(0-99.9m).

② Changing temperature units from Centigrade to Fahrenheit.

The display will show 23~104° F(-5~+40°C).

These numerals are based on meter and °C and calculated to the new units.

- Operating method: In dive set mode, hold down switches A + C for 6 or more seconds. When you do this, the buzzer will sound to tell you that the unit system has changed.

## 2-6. Caution points for User

### 2-6-1. Caution related product handling

- Before using this product, read the manual and be sure you understand it thoroughly.
- Do not store or leave this product in a hot or moist place. Doing so could damage its performance. The pressure sensor is particularly susceptible and could give incorrect displays of altitude rank and water depth. If the computer becomes overheated, put it in water to cool it down.
- Leaving the computer in a hot place could cause the liquid crystal display to turn black, but it will return to normal when it cools down.  
This situation should still be avoided since it can shorten the life of the panel.
- You should be aware that the computer may give an incorrect altitude rank because of weather-related changes in air pressure.
- Do not subject the computer to pressure chamber tests such as with air or gas. This could affect sensor precision.
- Never take apart the product. This will void the guarantee.

### 2-6-2. Battery

- When the battery mark is illuminated or blinking, record the data in your log and promptly change the battery.
- A low battery left for a long period of time could lead to leakage, so change promptly.
- Have the battery changed by manufacturer, which has technicians trained to do this.
- When changing the battery, be careful of scratches on the back cover's O-ring and make sure that no foreign matter sticks to it. If you discover scratches or other problems with the O-ring, replace the O-ring with a new one.

### 2-6-3. Diving

- Always check the battery's power when you go diving. If the battery mark is illuminated or flashing, it will not change to Dive mode.

- Before you dive, always check the FO<sub>2</sub> and FHe in dive set mode. You will not be able to set the FO<sub>2</sub> and FHe when you are in the water.
- You should dive so that you have plenty of margins to stay on no-decompression diving. Always make a safety stop at three to six meters if you dive to 15 meters or deeper. We also recommend that if the computer tells you to make a decompression stop, you should stop for longer than the time directed. In this case, you should check the air's residual pressure.
- This product does not manage your supply of air. You should therefore be aware of your own air supply.
- You should use backup instruments (such as another dive computer, a depth meter, diver's watch, etc.) in addition to this product.
- After your dive you should calculate decompression based on the altitude rank. Sudden changes in altitude rank are very dangerous. You must therefore not move anywhere that would cause significant changes in altitude rank after your dive.
- This dive computer has a lockout function that will not let it work in a dive for 48 hours if you dive in a dangerous way. This lockout function can be forcibly released for factory in process inspections. Even if the lockout is accidentally released, you should still refrain from diving for 48 hours.

### 2-6-4. User care and maintenance

- After diving, clean your dive computer in pure water. Do not, however, leave the unit in the water for long periods, since this can shorten battery life. Wipe away any soiling or mineral deposits from the water with a soft cloth.
- Solvents such as alcohol and gasoline, sprays such as cosmetics cleaning liquids, adhesive and paints will stick to the computer, while alkali, aromatic hydrocarbons, hydrocarbon halide etc can change its quality. Use proper care, because this can cause the dive computer to lose its waterproofing.
- Keep the dive computer in a cool, dry place. Dry it well after diving and do not keep it with wet items. Do not leave it in the direct sun or on a car dashboard, which could cause the unit to overheat. Also avoid putting the dive computer in extremely cold places. If for some reason the dive computer is exposed to hot or cold temperatures, leave it in water that is close to ordinary temperature until the product returns to normal temperature. Exposure to extreme heat or cold can not only cause the computer to measure water depth, altitude rank and water temperature less precisely, but could also cause it to be damaged, so avoid these conditions.
- If you believe the watch has sustained damage, do not use it but rather bring it promptly to the manufacturer for repair.

### 2-7. Troubleshooting

The following list will help you make the proper diagnosis when you believe the product is working abnormally. Consult with the manufacturer if any problems occur that are not on this list.

Status	Cause, prevention, response
The DECO mark, the decompression stop depth and decompression stop time are blinking while at the surface	<ul style="list-style-type: none"> <li>• There has been a decompression stop direction violation. If it has been less than 10 minutes have, return to the indicated depth.</li> <li>• If more than 10 minutes have elapsed, the dive computer will not work for 48 hours and then will recover automatically.</li> </ul>
Entire display is blinking while a surface.	<ul style="list-style-type: none"> <li>• The dive computer has gone beyond measurement range.</li> <li>• The dive computer will not work for 48 hours and then will recover automatically.</li> </ul>
The altitude rank mark is blinking while at an altitude that should allow usage.	<ul style="list-style-type: none"> <li>• The product is damaged. Return to manufacturer for repair.</li> </ul>
The altitude rank is shift.	<ul style="list-style-type: none"> <li>• This can occur when you are close to the altitude rank boundary. It is not a problem in this case.</li> <li>• This can occur under very hot conditions. Cool the unit down, such as by putting it in water.</li> <li>• In other cases, this could indicate damage. Return to manufacturer for repair.</li> </ul>
There is data in the Dive Log mode when you begin using the dive computer.	<ul style="list-style-type: none"> <li>• The manufacturer inspects quality at the time of factory shipping by conducting chamber tests. The data is left over from the test.</li> </ul>
You can see a rainbow on the display.	<ul style="list-style-type: none"> <li>• This is caused by tension of the glass from temperature differences. It is not a problem.</li> </ul>
Display is very dim.	<ul style="list-style-type: none"> <li>• The display dims at low temperature. It will recover when the temperature returns to normal.</li> <li>• The battery could be wearing down. Have the manufacturer change the battery.</li> </ul>
Computer will not go into Dive mode.	<ul style="list-style-type: none"> <li>• This occurs when there has been a Decompression Stop Direction Violation Warning or Out-of-Range Warning. It will recover after 48hours.</li> <li>• This occurs when the battery is near the end of its life and the battery mark is blinking or illuminated. Have the battery changed.</li> </ul>

	<ul style="list-style-type: none"> <li>• This occurs when the altitude rank is over 6000m and the altitude mark blinking. It will recover when you return to a lower altitude.</li> <li>• In other cases, this may indicate damage. Return to manufacturer for repair.</li> </ul>
The computer does not return to surface mode after diving.	<ul style="list-style-type: none"> <li>• The water sensor switch is still wet. Wipe with a dry, soft cloth.</li> </ul>
Although you are not diving, the computer goes into time mode and desaturation time is displayed.	<ul style="list-style-type: none"> <li>• This is caused by a change in altitude rank. When there has been a change in air pressure, the computer automatically calculates residual nitrogen. You should use this information in your diving plan.</li> </ul>
Operaing switches do not make the computer change mode.	<ul style="list-style-type: none"> <li>• This occurs when the water sensor switch is wet after finishing a dive. Wipe the unit well and try input again.</li> <li>• In other situations, this may indicate damage. Bring the unit to the manufacturer for repair.</li> </ul>
The no-decompression limit in the dive plan shows only a bar.	<ul style="list-style-type: none"> <li>• This occurs when altitude rank is over 6000m and the altitude mark blinking. It will recover when the unit returns to a lower altitude.</li> <li>• This occurs when FO<sub>2</sub> of MIX1 is left ta default.</li> <li>• And this occurs when the depth rank is over the maximum PO<sub>2</sub> depth in dive set mode.</li> </ul>
Battery does not last 3 years.	<ul style="list-style-type: none"> <li>• In some cases, the battery put in at factory shipping is a monitor battery so it will not last 3 years from the time of purchase. Also, the 3 years life span is based on 50 one-hour dives per year with the alarm sounding and EL backlight for 10 seconds per dive. Battery life will be shorter if you use the computer more than this.</li> </ul>
Computer goes into dive mode while in the open air.	<ul style="list-style-type: none"> <li>• This can occur when there is a sudden air pressure change, such as on an airplane, and when the water sensor switch is touched or gets wet. Therefore, never touch the switch or get it wet in such a place. In case this does occur, wipe off the water sensor switch and then press A+C for 15 seconds. This will return the computer to time mode. (Do not tell the customer about pushing A+C for 15 seconds.)</li> </ul>



The display does not show anything.

- The battery is dead; you should have it changed. If there is still no display after changing the battery, there may be some damage, so bring to the manufacturer for repair.

Note: Be sure to reset the system after changing the battery.

## Storage

Avoid impact, static electricity, high temperature, and high humidity.

Temperature ranges Long term: 0°C ~ 50°C(32° F ~ 122° F)

Short term: -10°C ~ 60°C(14° F ~ 140° F)

## Product defects

Any product in which a defect is ascertained within 12 months of delivery can be returned as a defective product to the relevant department as Seiko Epson in exchange for a replacement product.

In the event that a defective product is discovered, your company will promptly contact Seiko Epson concerning the product and, after mutual agreement is reached concerning the defect in question and the investigation of its causes, Seiko Epson will promptly implement corrective measures.

common CR2032 button battery is used and is user replaceable; dive log stored in the computer (up to 60 dives) can be simply retrieved into a personal computer through a specially made PC interface and a software (available separately).



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