SCUBAPRO®

Z1

User Manual

Welcome to the SCUBAPRO Z1 and thank you for purchasing the Z1. You are now the owner of an extraordinary partner for your dives. This manual provides you easy access to Z1's key features and functions.

·**Please fully charge and use**

· Please check the battery before using the computer for the first time.
Ref. Check the battery power level··· P.13

· **The Z1 does not conform to 100m diver watches stated in ISO6425 and JISB7023.**

·**Authentication standard**

R&TTE	EN 60950-1 EN 300 328 EN 301 489-1 EN 301 489-17 EN 62479
FCC	FCC Part 15

·The manually initiated dive mode is compliant with the European standard EN13319.

1.Z1 USER MANUAL

This is a dive computer to support no decompression diving safely. The solar panel generates electric power to run the Z1. The Z1 has multi-functions as a watch, alarm, timer, stopwatch, directional compass and angle, world time watch in the Watch Mode, and surface interval time and desaturation time [DESAT time] in surface interval. In the Dive Mode, information of water depth, water temperature, dive time, ascent speed and decompression are provided.

The Z1 is compatible with a mixture of four different Nitrox gases. Comprehensive accelerated decompression is possible because each fraction of oxygen [O_2 %] can be set from 21% to 100% in 1% increments.

The calculation model we use for the decompression program of the Z1 is based on the decompression theory of Dr. A. A. Buhlmann - Buhlmann ZHL16C Algorithm.

Before use you to need understand all warnings and cautions of the Z1 written in this Instruction Manual. To avoid any serious accidents, please make sure to read and fully understand the Z1. If you have any questions, please ask the shop where you purchased the Z1.

Whenever you go diving we recommend that you always have access to this manual as understanding and using the functions of the Z1 ensures safe and enjoyable diving.

2.Features of the Z1

The Z1 has the following functions.

· **Solar power to charge battery**
Generates electricity from the sun and other light sources.

· **Directional bearing**
You can check the direction and current position of selected target.

· **Alarm setting (in watch mode function)**
When the set time arrives, the Z1 will issue an alarm sound.

· **Can be used as a stopwatch**
You can measure elapsed time.

· **Can be used as a timer (in watch mode function)**
The Z1 counts set time.
The Z1 will inform you with time-up and notice sound when the scheduled time arrives.

· **You can see the world time (in watch mode function)**
You can display the time of 48 cities in the world.

· **You can communicate using Bluetooth SMART (Communication function)**
Log / profile data transmission is possible.

· **You can switch Gases**
Up to 4 types of gas can be set and switched.

3.Safety Precautions

On the display images in this manual and also on the product we use various marks to advise on operating the product safely and correctly, to prevent harm or damage to you and other people. The display and meaning are as follows.

⚠DANGER

If you ignore this indication and handle the product incorrectly, it indicates there is a risk of death or serious injury.

⚠WARNING

Ignoring this indication and handling the product incorrectly indicates there is a risk of death or serious injury.

⚠CAUTION

Ignoring this indication and handling the product incorrectly indicates situations that can cause injury to a person or situations that may cause physical damage.

⚠ DANGER

Make sure to completely understand, How to use, Warnings, and Cautions of the Z1 in this Instruction Manual before use. Confirm that you understand how to use the Z1 in closed water in a pool before using in open water.

When using the Z1 in scuba diving, you need to first take a dive training course both in learning rules and practical skills, and obtain a Certification card issued by internationally acknowledged dive training organizations. (You can use the Z1 in the training under the guidance of instructors of such organizations)

Before using the Z1 in Nitrox (EANx) dive, you need to take and complete a Nitrox (EANx) dive training course. Otherwise, do not use the Z1 in Nitrox (EANx) dive.
Ref. EANx:Enriched Air Nitrox (commonly called Nitrox)
      Mixed gas with higher O_2 % than normal compressed air (O_2 is 21%)

If "Decompression stop violation" warning and/or "Out of measurement range" warning are displayed, cancel dive immediately and pay attention to changes to your physical condition.

If the Z1 fails at any time during the dive, the dive must be terminated and appropriate surfacing procedures (including slow ascent and a 3 to 5 minute safety stop at 5 meters / 15 feet) should be initiated immediately.

When you notice abnormal conditions on the Z1, stop using it immediately and contact the shop where you purchased the Z1.

⚠ WARNING

· Check the battery power level is "H" before diving. If the power level gets low and a warning is displayed while diving, safely exit as soon as possible and recharge the Z1.
* Even if this warning is displayed during a dive, there is sufficient power for the remaining dive. Deal with the situation calmly and without panic.
Ref. Low Power Alarm···P.15

· Follow the displayed warnings and messages for cautions on the Z1 at once.

· When using the Z1, also use other devices as another dive computer, divers' watch, and/or depth indicator together as a backup device.

· The Z1 is to be used for recreational diving only. Do not use the Z1 for any other diving.

· Never lend or share the Z1 with anyone else if residual nitrogen still exists in the body after using the Z1.

· Make sure to set O_2 % in every dive. It is extremely dangerous if the O_2 % in tank and the Z1 don't match.

· Dot not disassemble, repair, modify, exchange the secondary battery or conduct pressure chamber test on the Z1 by yourself. This is extremely dangerous and may causes malfunction. Please see authorized center for any maintenance.

· The Z1 is designed for dives with compressed air (21% O2) and Nitrox (22% to 100% O2). The Z1 cannot be used with any other mixed gas.

· Each diver should be responsible for planning and conducting safe dives in accordance to each diver's condition.

· Please practice safe diving, do not exceed the displayed data in the Z1. The Z1 cannot prevent you from developing decompression illness completely.

· The Z1 does not measure, display and control the air pressure in the tank. Use a residual air pressure indicator to check and monitor tank pressure by yourself.

· If the secondary battery is removed from the Z1, be careful that small children do not swallow it. Put the battery out of reach of children. If swallowed, contact a doctor at once.

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⚠CAUTION

· Since the metal part of the main body and band may rust from dirt and contaminate the cuffs of clothing, please keep the Z1 clean at all times. Especially after immersion in seawater, wash thoroughly with fresh water to avoid any corrosive build up.

· Since the main body and the band are in direct contact with the skin, there is a risk of causing a rash, depending on how the Z1 is maintained and the conditions during use.
1. Allergy to metal and resin
2. Dirt, rust, sweat etc. of the main body of the product and the band
3. Physical condition etc.

· Tightening the band makes it easier to sweat and makes the path of air worse, so it becomes easier to get a rash. For everyday use, please use it with a loose fit.

· In the unlikely event that abnormality occurs, discontinue use and consult a doctor.

· Please ensure the contents of log data etc are stored and saved separately from this product by keeping written log or other means. A malfunction of this product, repair or battery exhaustion may cause stored contents to disappear.

· To prevent unexpected injuries and allergic rashes, please be careful to remove this product at bedtime.

· When you hold or touch an infant, please remove this product to prevent rashes caused by allergies or other medical conditions.

· When the product protection sticker is affixed to the main unit (including the back cover) or the band, please be sure to peel off before use. If you use it without peeling off the seal, dirt may adhere to the gap between "main body and band" and "seal", which may cause rust and skin irritation.

· If while wearing the Z1, the auto light operating condition is on or activated while driving a car etc, please stop it as it may hinder driving and be dangerous.

· Danger of explosion if battery is incorrectly replaced. Battery must be replaced with the same or equivalent type - see authorized service center.

· Do not expose to excessive heat such as sunshine, fire or the like.

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4. Things To Check Before Using the Z1

Before using the Z1, "charging" and "setting time and date" are required. Please fully charge and match the time and date display before use.

4-1. Check the battery power level.

Check the state of charge with [H] [M] [L] at the bottom of the screen.

[H] or [M] displayed.	The Z1 is charged sufficiently. Set the current time. See "Configuring Current Time and Date settings.
[LOW] is blinking on the display. [L] is blinking on the display. [CHG] is blinking on the display.	Power is low. Charge the Z1 by placing it in a location where it is exposed to light.

4-2. Charged with light (solar charge)

The Z1 operates with a battery (secondary battery) charged with electricity generated by a solar panel.
·The solar panel is integrated within the dial.
·When sufficient light hits the dial, it will charge the battery.
When using, please try to ensure light hits the dial (solar panel).

4-3. How to charge

Whenever you are not wearing the Z1, leave it in a location where it is exposed to light. Once every month, if you charge it against sunlight for half a day, you can use it in a more stable condition. When wearing the Z1, make sure that its face is not blocked from light by the sleeve of your clothing. If the dial (solar panel) is partially hidden, power generation efficiency will be reduced.

⚠CAUTION

Leaving the Z1 in bright light for charging may cause it to become quite hot. Take care when handling the Z1 to avoid burn injury. The Z1 can become particularly hot when exposed to the following conditions for long periods.
- On the dashboard of a car parked in direct sunlight
- Too close to an incandescent lamp
- Under direct sunlight

Allowing the Z1 to become too hot can cause its liquid crystal display to black out. The appearance of the LCD should become normal again when the Z1 returns to a lower temperature.

4-4. Insufficient Charge or out of Charge

You can get an idea of the Z1's power level by observing the battery power indicator [H][M][L] on the lower display.

·When the charge amount decreases, the functions that can be used are limited. When charging becomes insufficient, please charge by lighting the dial (solar panel).

	indication	Charge state	State of the Z1
1	H	Good	All functions enabled. [1]
2	M	Nearly good (Charging recommended)	All functions enabled. [2]
3	M CHG blinks	low battery (Charge level warning)	[CHG] blinks, and all other display is shown OK, the Z1 can be changed to Dive Mode for about 5 hours. After that, the Z1 cannot be changed to Dive Mode when [CHG] blinking disappear. Other functions can be used as usual. [3]
4	LOW or L blinks	low battery	[LOW] and/or [L] blinks, digital compass, illumination and beeper (alarm etc.) disabled and Mode cannot be changed to Dive Mode. [4]
5	CHG blinks (Other display disabled)	low battery	Only [CHG] blinks and other display disappears, all functions disabled. [H][M][L] and [CHG] blinks together, a part of functions enabled. (Current time display etc.) [5]
6	---	· out of charge	All functions disabled. [6]

IMPORTANT

· At out of charge, all functions are disabled and settings return to their initial factory defaults.

When making various settings such as time and date, please charge until the display at the bottom of the screen becomes [M] or [H].

Ref.

· Leaving the Z1 exposed to direct sunlight or some other very strong light source can cause the battery power indicator to show a reading temporarily that is higher than the actual battery level

· The correct battery level should be indicated after a few minutes.

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4-5. Charging Times

Please use the table below as a guideline for charging.

Recharging time

Condition [luminance]	Recharging hours needed for a dive from the time low power alarm is released.	Recharging hours needed to full charge from the time low power alarm is released.
Outdoor sunlight [50,000 lux]	1 hrs.	8 hrs.
Sunlight through a window [10,000 lux]	2 hrs.	30 hrs.
Daylight through a window on a cloudy day [5,000 lux]	4 hrs.	60 hrs.
Indoor fluorescent lighting [500 lux]	36 hrs.	' ' ' '

Ref.
·Actual exposure times depend on lighting conditions.

4-6. Low Power Alarm

For safe diving, when power becomes too low to dive, low power alarm is on with a message to urge divers to recharge the power. Since sensors of the Z1 would not function when power level becomes [L], dive is not allowed. Suppose you started dive with the power level [M], and it becomes [L] while dive, no information related to the dive is shown anymore. To avoid this dangerous situation, when power becomes too low to dive, you cannot dive until the power becomes high enough for dive.

Current mode	Displayed alarms
Watch mode or Surface Mode	[CHG] will blink
Dive Mode	[WARNING!!BATT] will scroll from right to left 5 times, and [M] on the lower side of the display will blink. Alarm will be on for 6 seconds. [WARNING!! BATT] will be re-shown every minute.

4-7. Power Saving

When turned on, Power Saving enters a sleep state automatically when the Z1 is left for a certain period in an area where it is dark from 10:00PM to 6:00AM.

·The table below shows how the Z1 functions are affected by Power Saving.

Saving level	Elapsed Time in Dark	Operation
level 1	60 to 70 minutes [display sleep] in an area where it is dark from 10:00PM to 6:00AM	Display is off and sensors are disabled.
level 2	6 or 7 days [function sleep]	All functions are disabled, but timekeeping for 6 or 7 days [function sleep] Blank is maintained.

Ref.
· To recover from the Sleep State.
  - Press any button
  - Move the Z1 to a well-lit area
  - Angle the Z1 towards your face for reading

Even when wearing the Z1, if the solar panel is hidden behind a sleeve or the like, it may enter power saving state.

· the Z1 will not enter a sleep state while it is in Dive Mode, Stopwatch Mode or Countdown Timer Mode.
· The Power Saving function can be set ON/OFF
  Set / cancel power saving [power saving function] · · · P.28
· Sensor operation will continue for 48 hours after diving even at power saving level 1.

5. Mode Reference Guide

The below shows mode types and how to switch them.

5-1. Mode Functions

Modes	Functions	Ref. page
Watch Mode and Surface Mode [TIME]	·To display current time, date, day ·To configure Home City and daylight saving time [DST] settings	P.33
Surface Mode [TIME]	·To display desaturation time [DESAT time] ·To display surface time	P.34
Dive Mode [DIVE]	·To display no decompression limit [NDL] ·To display safety stop ·To display decompression dive ·To display NDL warning ·Nitrox [EANx] dive	P.35
Free Diving Mode [FREE]	·To display dive time ·To display history ·To display session information	P.68
Log Mode [LOG]	·To display dive/free history ·To display dive/free log ·To display dive/free profile	P.43
Plan Mode [PLAN]	·To display dive plan ·To set safety factor [SF] ·To set O_2 %	P.52
Digital Compass [COMP]	·To determine your current bearing or the direction from your current location	P.58
Stopwatch [STW]	·To use the stopwatch to measure elapsed time	P.61
Countdown Timer [TMR]	·To use the countdown timer	P.62
Alarm [ALM]	·To set an alarm time ·To set an alarm ON/OFF ·To set an hourly time signal ON/OFF	P.63
World Time [WT]	·To view the current time in one of 48 cities [31 time zones] around the globe	P.65
Bluetooth data transfer Mode [BLE]	·Data / setting communication ·To display communication status ·To set communication	P.72

5-2.Button Operation and Switching Mode

The Z1 is operated with 4 buttons [ADJUST · MODE · LED/LOG ·PLAN]. Learning the role of each button enables integrated operation.

ADJUST button

It is used when changing the setting in each mode.

MODE button

Every time this button is pressed, it switches to:
Time[TIME] > Bluetooth Data Transfer[BLE] > Digital Compass[COMP] > Stopwatch[STW] > Timer[TMR] > Alarm[ALM] > World Time[WT]
Also, if you press and hold this button for anything other than clock display, you can return to the Watch Mode.

Ref.
· When the button operation sound is set, the sound will sound each time you press MODE button. When returning to Watch Mode, a high tone sounds.
Set / cancel button operation sound· · P.26

· No sound is heard when the charge is insufficient. When the button operation sound is set but no sound is heard, please charge it.
How to charge· · P.13

LIGHT/LOG button

When this button is pressed, LED light turns on. Press and hold from Watch Mode, to switch to log mode.

To display dive log· · · P.44
Automatically light up [Auto light] · · · P.67
Note: When set to auto light, the light turns on frequently and the capacity of the secondary battery decreases quickly.
· Since the LED light does not light up when the amount of charge is insufficient, in this case please charge it.
How to charge· · · P.13

*You can switch to dive mode manually by pressing and holding down the LED/LOG+PLAN button for about 2 seconds.· · · P.35
If you press and hold the LED/LOG+PLAN button for about 2 seconds again, you can switch to the free dive mode· · · P.68

PLAN button

Press this button to switch directly to Plan mode.

To display plan mode· · · P.52

6. How to Make Various Settings

1. In watch mode or surface mode, press and hold ADJUST button for about 2 seconds.
After [SET] and [Hold] flashes, release the finger after displaying [CITY] for about 1 second, so that the city code and city name will flow.
  Ref. To configure Home City and Daylight Saving Time Settings··· P.22

IMPORTANT
·Please do not make other settings before setting home city.

2. Press MODE button to select the item to set.
Each time you press MODE button, the setting items are switched in the following order.

Home city > 1. Summer time > 2.12 / 24 hour system > 3. Sec. > 4. Hour > 5. Minute > 6 year. 7 month. 8 day 9 > operation sound 10. Light backlight time 11. Power saving > 12 unit of use [UNIT] > 13.MMDD / DDMM > 14. Main display of dive mode > 15. Auto light

Ref.
· The numbers in the above figure indicate the number of times MODE button is pressed.
· If you set the unit of use [UNIT], MMDD / DDMM, and the home city is set, you will proceed to the main display of the dive mode.

Ref.   Setting Unit of Use [UNIT]··· P.29
    Set / cancel button operation sound··· P.26
    Switch on backlight time··· P.27
    Set / cancel power saving [power saving function]··· P.28
    Main display setting of dive mode··· P.31

3. Press LED / LOG or PLAN button to change the following settings.

Display(e.g.)	Change item	Operation
TYO	Change city code	Press PLAN or LED/LOG button
OFF	Switch between daylight savings time and standard time	Press PLAN button
12H	Toggle between 12-hour (12 H) and 24-hour (24 H)	Press PLAN button
50	Reset seconds to "00" In the case of 30 to 59 seconds, it will be advanced by 1 minute	Press PLAN button
10:58	Change of "hour" and "minute"	Press PLAN or LED/LOG button
2017	Change of "Year"	Press PLAN or LED/LOG button
6-30	Change of "month" "day"	Press PLAN or LED/LOG button
Key ♪	Change ON / OFF operation of sound	Press PLAN button
LIGHT	Setting backlight lighting time	Press PLAN button
POWER SAVING	Power saving ON / OFF	Press PLAN button
UINT	Setting unit of use	Press PLAN or LED/LOG button
MMDD	MMDD / DDMM display settings	Press PLAN button
DISP	Main display setting of dive mode	Press PLAN button
LT	Auto light setting	Press PLAN button

4. Press ADJUST button.
  The setting is completed.

6-1. To Configure Home City and Daylight Saving Time Settings

For home cities, from the 48 cities (31 time zones) of the city code list, set cities in the same time zone to use the Z1. Also, you can set the standard time or daylight saving time (DST) according to the country or region you are using.

Ref. UTC (Coordinated Universal Time) and time zone··· P.82
Ref. City code list··· P.83

IMPORTANT
Set the time zone and select city from list closest to your dive location.

Ref.
Daylight saving time is also called DST (Daylight Saving Time), is a daylight saving time system that can advance an hour from the normal time (standard time). The implementation period and the implementation area of daylight saving time vary from country to country. In addition, there are countries and regions not adopting daylight saving time system.

How to set
1. In the Watch Mode or Surface mode, hold down ADJUST for at least 2 seconds. After [SET] and [Hold] flashes, release the finger after displaying [CITY] for about 1 second, so that the city code and city name will flow.
·If you do not operate anything for 2 to 3 minutes, the setting screen will automatically end.

2. Use PLAN and LED/LOG to scroll through the available city codes.
· Keep scrolling PLAN or LED/LOG until the city code you want to select as your Home City is displayed.

3. Press MODE to display the DST setting screen.

4. Press PLAN to toggle the DST setting between Daylight Saving Time [ON] and standard time[OFF].
Press PLAN button to select the daylight saving time [DST] setting.
 Each time you press PLAN button, the setting will change as follows.
 DST OFF   Standard time is displayed.
 DST ON   Display daylight saving time

5. After all of the settings are the way you want, press ADJUST to exit the setting screen. Setting is completed.
· Daylight Saving Time is turned on when the DST indicator is on the display.

Ref.
· When home city is set to [UTC], summer time [DST] setting cannot be switched.

6-2. Select 12 Hour System or 24 Hour System

Select the 12-hour clock and 24-hour clock display.
When setting to the 12 hour system, [P] indicating afternoon will be lit from noon to 11:59 pm. In the case of the 24-hour system, [P] does not light up.

How to set

Open the 12-hour system, 24-hour system selection screen according to various settings (P. 20).

1. Since the characters 12H and 24H are switched and displayed each time PLAN button is pressed, select 12H for 12 hour display and 24H for 24 hour display.

2. Press ADJUST button to complete the setting and return to watch mode or surface mode. Also, press MODE button to move to the second setting of the clock.

6-3. Configuring Current Time and Date Settings

· The date setting corresponds to the difference in the number of days per month and the leap year. (~ 2099 full auto calendar)
· When you set the year, month, day, the day of the week is automatically set.
· When using it outside the home city, please reset the city that you stay as the home city as well.

How to set
Open the setting screen for "seconds" according to how to make various settings (P. 20). The current second blinks in the lower right of the screen.
1. Press PLAN button to reset to 00 seconds.
   * When it is 30 ~ 59 seconds, it goes up by 1 minute.
2. In the same way as above, you can set it by pressing MODE button and switching from hour > minute > year > month > day. To set hours, minutes, years, months, and days, press PLAN button to advance the number and press LED / LOG button to return the number. You can also fast-forward by pressing and holding both buttons.
3. In each setting screen, pressing ADJUST button completes the setting and returns to the watch mode or surface mode.

6-4. Set / Cancel Button Operation Sound

You can select the operation sound ON / OFF when the button is pressed.
The default is the operation sound ON.

How to set

1. In watch mode or surface mode, hold down ADJUST button for 2 seconds or longer.
After [SET] and [Hold] flashes, release the finger when the city code and the city name are displayed so that it will flow following the display of [CITY] for about 1 second.

2. Press MODE button 9 times.
The screen to select ON / OFF of operation sound will be displayed.
·[Key ♪] or [MUTE] is displayed.

3. Press PLAN button to select [key ♪] [with operation sound] or [MUTE] [no operation sound].

4. Press ADJUST button
When the setting is completed, it will return to watch mode or surface mode.

Ref.
· Alarm sound, time signal, timer sound, warning sound will sound even if you set the operation sound to off.

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6-5. Switch on Backlight Time

How to set

1. In watch mode or surface mode, hold down ADJUST button for 2 seconds or longer. After [SET] and [Hold] flashes, release the finger when the city code and the city name are displayed so that it will flow following the display of [CITY] for about 1 second.

2. Press MODE button 10 times.
·[LIGHT] is displayed on the screen.
·[1] or [3] flashes in the middle of the screen.

3. Press PLAN button to select [1] (lights for 1.5 seconds) or [3] (lights for 3 seconds).

4. Press ADJUST button
When the setting is completed, it will return to watch mode or surface mode.

6-6. Set / Cancel Power Saving (Power Saving Function)

How to set

1. In watch mode or surface mode, hold down ADJUST button for 2 seconds or longer. After [SET] and [Hold] flashes, release the finger when the city code and the city name are displayed so that it will flow following the display of [CITY] for about 1 second.

2. Press MODE button 11 times.
[POWER SAVING] appears on the screen as if it is flowing and [On] or [OFF] flashes in the middle of the screen.

3. Press PLAN button to select ON (set) or OFF (cancel).

4. Press ADJUST button
When the setting is completed, it will return to watch mode or surface mode.

6-7. Setting Unit of Use [UNIT]

Select the unit to be used. It can be set only when setting other than TYO [TOKYO] in home city setting.

How to set

1. In watch mode or surface mode, hold down ADJUST button for 2 seconds or longer. After [SET] and [Hold] flashes, release the finger when the city code and the city name are displayed so that it will flow following the display of [CITY] for about 1 second.

2. Press MODE button 12 times.
The unit setting m and ft. ° C and ° F is selected.
·[M] or [ft], [° C] or [° F] will blink.

3. Press PLAN button to select [m] or [ft].

4. Press LED / LOG button to select [° C] or [° F].

5. Press ADJUST button
When the setting is completed, it will return to watch mode or surface mode.

6-8. Setting of MMDD / DDMM Display

Choose either month - day or day - month display. It can be set only when setting other than TYO (TOKYO) in home city setting.

How to set

1. In watch mode or surface mode, hold down ADJUST button for 2 seconds or longer. After [SET] and [Hold] flashes, release the finger when the city code and the city name [English name] are displayed so that it will flow following the display of [CITY] for about 1 second.

2. Press MODE button 13 times.
MMDD or DDMM, and month-day or day-month blinking.

3. Press PLAN button to select MMDD or DDMM.

4. Press ADJUST button
When the setting is completed, it will return to watch mode or surface mode.

6-9. Main Display Setting of Dive Mode

It is possible to display by switching the main display in dive mode to either non-decompression diving time or water depth. The default is the depth indication of DEP (1).

How to set
1. In watch mode or surface mode, hold down ADJUST button for 2 seconds or longer. After [SET] and [Hold] flashes, release the finger when the city code and the city name [English name] are displayed so that it will flow following the display of [CITY] for about 1 second.

2. Press MODE button 14 times. [If you set TYO (TOKYO) in the home city setting, press it 12 times.]
DEP and 1 [blinking display], or NDL and 2 [blinking indication] are displayed. DEP is water depth indication, NDL is indication of no-decompression diving time.

3. Press PLAN button to select DEP and 1 or NDL and 2.

4. Press ADJUST button
When the setting is completed, it will return to watch mode or surface mode.

6-10. Set / Cancel Auto Light
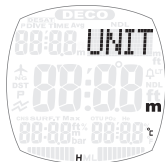
It is possible to set / cancel auto light. The default is OFF.

1. In watch mode or surface mode, hold down ADJUST button for 2 seconds or longer. After [SET] and [Hold] flashes, release the finger when the city code and the city name are displayed so that it will flow following the display of [CITY] for about 1 second.

2. Press MODE button 15 times. [If you set TYO (TOKYO) in the home city setting, press it 13 times.]
LT display and On or OFF blinking.

3. Press PLAN button to select On or Off. On is auto light setting.

4. Press ADJUST button
When the setting is completed, it will return to watch mode or surface mode.

7. Watch Mode / Surface Mode(TIME)

In watch mode / surface mode, set and display the current time and date.
Ref.
Surface mode is a mode to display when nitrogen remains in the body after diving.
Display in normal watch mode, in addition to the current time, date, and day of the week, the desaturation and the surface time are displayed.

Display contents of watch mode
In the watch mode, in addition to the current time, second, date, day of the week, world Watch Mode other than UTC are set, world time is displayed in 24 hour display. However, when the oxygen content of each gas is set to 22% or more in the plan mode, the maximum value of the oxygen % that is set is displayed by a blinking%. For world time and oxygen content, oxygen content display takes priority.

7-1. Displayed Contents of Surface Mode

Surface mode is a mode to display when nitrogen remains in the body after diving.

Display in normal watch mode In addition to the current time, date, and day of the week, the desaturation and the surface time are displayed. However, when the oxygen content of each gas is set to 22% or more in the plan mode, the maximum value of the oxygen content set is displayed alternately with surface time.

In the Surface mode, the following information is displayed.

NO FLY mark	DO NOT board airplanes while this shows.
tissue nitrogen indicator	Danger level of the amount of nitrogen accumulated in the body is displayed in 10 steps
oxygen uptake or ppO₂ indicator	Danger level of the amount of oxygen accumulated in the body is displayed in 10 steps

Ref.

· Even in the presence of nitrogen saturation and oxygen in the body, it changes automatically to watch mode 48 hours after your dive.
· The NO FLY mark will be released after 18 hours have elapsed. Even if nitrogen saturation or oxygen uptake is gone and it switches to watch mode, the NO FLY mark remains on until 18 hours have elapsed.
· The desaturation time varies with the change in atmospheric pressure. Therefore, it is not a countdown timer.

⚠WARNING

About boarding an airplane
In the following conditions, never board an airplane. The risk of suffering from decompression sickness is increased. Also, please do not go to a place (mountain road) which is considerably higher than sea level.
·When the NO FLY mark is lit
·When desaturation time (DESAT) remains

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8. Dive Mode (DIVE)

In the Dive Mode, important information for a scuba dive is shown.

8-1.How to Switch the Mode to Dive Mode

After entering the water, and within a max of 20 seconds of the dive and computer senses pressure of 1.6m depth, the mode will be changed to Dive Mode automatically. If you want to use Dive Mode sooner after entering the water, hold (2sec.) LED/LOG + PLAN together to switch the mode manually.

Ref.
· When you descend to 1.6m or deeper, the Z1 judges you started descending
· and starts count of dive time.
· Repeat the operation (hold LED/LOG + PLAN 2 seconds) manually to switch to Surface Mode via Free Diving mode (P.68). Also, if you do not start diving within 1 minute of switching to Dive Mode, the Z1 goes into Surface Mode.

During no decompression diving, the following information is displayed.

No decompression limit [NDL]	Time you can stay at the current depth without decompression. * Max. 200 minutes
Current depth	Current depth is shown per 0.1m after depth of 1.6m. * Max. 99.9m
Max. depth [MAX]	The max. depth in the current dive * Max 99.9m
Current water temperature	Displays current water temperature.
Current time	Displays current time with hour and minutes *In 12H display setting, no p mark
Dive time	Time elapsed from start of dive *Max 599 minutes
O_2 %	Display current O_2 %
N_2 indicator	Risk degree of nitrogen accumulated in the body is shown with 1 to 10 levels
ppO_2 or O_2 indicator	Risk degree of oxygen accumulated in the body is shown with 1 to 10 levels or current toxicity of oxygen accumulated in the body is shown with 1 to 10 levels * Higher level above will be shown.
Direction compass and angle	Refer to direction measurement··· P.58
Stopwatch	Display elapsed time up to 0.1 second increments. Ref.··· P.61

Ref.

O_2 % will display in dive mode for 10 seconds, then switch to water temperature display. Press and hold ADJUST button to check the O_2 % confirmation screen, then switch again by pressing ADJUST button. Maximum water depth, current time will also be switched. Switching display has three modes, 2 of fixed displays and automatic switching every 1 second.

8-3. Safety Stop

The Z1 has functions to urge divers to do [Safety stop].
After a dive of 10m or deeper, and ascending with no decompression stop, the 3 minutes count-down timer will turn on automatically at the depth of 6m. This will be on while you are at a depth of 1.6m to 6m. We recommend you not to ascend to the surface but stop for safety until 3-minutes count-down is finished.

1. At the depth of 6m, safety stop alarm "pi" will be on. STOP will be displayed.
2. Count-down timer displays [03:00], and 3-minutes timer will start.
3. After 3 minutes has passed, [↑ OK] will be displayed for 5 seconds. Then start ascending to the surface.

Operation change due to water depth during safety stop operation

Water depth	Count-down function	display
1.5m or shallower	end [reset]	Surface Mode
1.6m-6.0m	normal function	Safety stop
6.1m-9.9m	stop [data is saved]	Dive Mode
10m or deeper	end [reset]	Dive Mode

What Makes "Safety Stop Function" End
·when 3 minutes has passed.
·when you ascend to 1.5m or shallower from the surface.
·when you re-descend 10m or deeper.

8-4. Decompression Dive

The Below Information Is Shown In
Decompression Dive.

Reference diagram

Depth to stop for decompression	It is shown every 3m depending on the dive condition.
DECO	Decompression dive mark. It is shown when NDL is exceeded.
Current depth	Current depth is shown per 0.1m after depth of 1.6m. * Max. 99.9m
Dive time	Time elapsed from start of dive *Max 599 minutes.
N_2 indicator	Risk degree of nitrogen accumulated in the body is shown with 1 to 10 levels.
ppO_2 or O_2 indicator	Risk degree of oxygen accumulated in the body is shown with 1 to 10 levels or current toxicity of oxygen uptake in the body is shown with 1 to 10 levels * Higher level above will be shown.
Total ascent time [TOTAL]	Total ascending time from current depth to the surface with the proper ascending speed including decompression stop
Decompression time	The time required for decompression at the depth
Max. depth[MAX]	The max. depth in the current dive * Max 99.9m
Current water temperature	Displays current water temperature.
Current time	Displays current time with hour and minutes
O_2 %	Display current O_2 %
Direction compass and angle	Refer to direction measurement··· P.58
Stopwatch	Display elapsed time up to 0.1 second increments. Ref.··· P.61

Ref.
Display the total ascent time for 3 seconds and display the maximum water depth or current time for 3 seconds. Press ADJUST button to switch the maximum depth or current time. Likewise, the water temperature or O_2 % is switched by pressing ADJUST button, but to check the O_2 %, you need to press and hold ADJUST button.

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Ascent Rate

Ascending speed is monitored and warning is given when ascending speed exceeds the set speed.
The ascending speed set in the Z1 is 10m/minutes

· When ascending speed exceeds than 10m/minutes, warning of [SLO] is shown in the center of the main display and it will blink for 6 seconds. Alarm will be on for 6 seconds.
· If the warnings are released 2 times in a row, it will be recorded in the dive log.

Decompression Dive

When No decompression limit (NDL) is exceeded in a dive, the warning is given for you to stop for decompression.

· DECO will be on, and N_2 indicator will blink.
· Alarm will be on for 6 seconds.
· After that, decompression dive will be displayed automatically.
· When you stop for decompression at the indicated depth, DECO will be off, N_2 indicator will change from blinking to ON and dive will become No decompression dive.
· If the warning is given even 1 time, it will be recorded in the dive log.

Decompression Stop Violation

Warning is given when the decompression stop depth is shallower than the indicated depth.

Depth range for stop -0.5m < indicated decompression stop depth < +1m

· When current depth is shallower than the indicated depth for decompression stop, [↓ DOWN] warning is shown.
· DECO will blink and alarm will be on for 6 seconds.
· When you are back to the right depth for decompression stop, the warning will turn off, otherwise it will stay on.
· If the warning is given even 1 time, it will be recorded in the dive log.

Stop for decompression at the indicated depth. Do not stop at a shallower depth than indicated. If the sea conditions would not allow stopping at the indicated depth, try at 1 – 2 m deeper than the indicated depth and stop for 1-2 minutes longer than indicated time.

If you ascended and stayed in the water that was shallower than 1.6m for 10 minutes ignoring decompression stop warning, the risk of developing decompression illness will be increased. In this case, the Z1 cannot be used for diving for the next 48 hours. DECO and Current time will all blink indicating the functions are locked.

Out of Measurement Range

Warning is given in the following conditions.

1. When depth exceeds 99.9m
2. When dive time exceeds 599 minutes
3. When decompression stop is needed at 33m or deeper in decompression dive
4. When decompression stop time exceeds 99 minutes or when total ascending time exceeds 99 minutes in decompression dive.

· EEEE will be shown in 7-segment display area, and alarm will be on for 3 seconds
· The Z1 cannot be used for dive next 48 hours after the warning. [2. Except when dive time exceeds 599 minutes]
· If the warning is given even 1 time, it will be recorded in the dive log.
· The Z1 cannot be used for diving within 48 hours after mode becomes Surface Mode. During all that time, EEEE and Current time are shown in 7-segment display area in turn indicating the functions are locked.

O$_2$ Indicator and ppO$_2$

Warning is given when oxygen accumulated in the body exceeds the tolerance or warning given when ppO2 becomes 1.4 or more.
*Higher level above will be shown.
[Right Figure is ppO2]

· O$_2$ indicator and its ppO$_2$ indicator will blink.
· Alarm will be on for 6 seconds.
· Warning continues until Oxygen uptake inside the body or ppO$_2$ goes back within the tolerance. Move to the shallower area with proper speed at once.
· If the warning is given even 1 time, it will be recorded in the dive log.

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8-6. Gas O₂ % Confirmation / Gas Switch

Up to 4 gases with different O₂ % can be registered and switched during diving.
However, gas 1 is selected whenever diving is started.

How to confirm gas O₂ % / switch gas

1. During diving, press and hold ADJUST button for about 2 seconds to display the gas switching / confirmation screen. When setting multiple gases, gas No. and O₂ % are blinking, but if only gas 1 is set, it will not blink. It is only possible to check the current O₂ % of gas 1.

2. When multiple gases are set, the gas No. and O₂ % are blinking, so if you press PLAN button here, the gas No. will increase and if the gas is not set or the gas No. cannot be dived, will return to gas 1. A gas that cannot be dived is when the ppO₂ exceeds 1.6 bar depending on the current water depth and setting of the gas O₂ %. In addition, as a result of the descent, when the gas whose ppO₂ of the currently selected gas is higher than 1.6 bar is selected, the buzzer will sound and the gas number will be changed to low gas with low O₂ %, that can be switched automatically.

3. After gas switching, press ADJUST button to confirm the gas. If 2 to 3 minutes elapse without pressing ADJUST button, it will be automatically confirmed with the currently selected gas and you will return to the dive mode screen.

Operation of button during diving
1. Press MODE button to switch to the compass mode. Ref. P.58
2. Press MODE button again to enter stopwatch mode. Ref. P.61
3. Press MODE button again to return to the diving mode.
4. Every time you press ADJUST button, the display in the lower left will switch from the maximum water depth > the current time > the maximum water depth / the current time > the maximum water depth > ....
In addition, although the indication on the lower right is usually a water temperature display, once you have confirmed the O₂ % [Ref. P.42], it alternates between water temperature > O₂ % > water temperature / alternating O₂ % > water temperature > ...

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9. Log Mode (LOG)

It is available in Watch Mode and Surface Mode. Dive logs of the last 30 logs are shown in the latest to earliest order. Scuba diving log data and free diving log data mixed in chronological order. After 30 logs, next dive log will be added, and oldest (earliest) log will be deleted. You can see the depth variation over dive time on the simple dive profile. The dive history and the free diving history is shown at the end of dive log in which you can see the accumulated data.

Ref.

· Dive recorded in Log Mode is a dive for min. 3 minutes at a depth of 1.6m or deeper.

9-1.Confirm the Dive History

1. Change to Log Mode.

Hold LED/LOG (2 sec.) in Watch Mode or Surface Mode.

[LOG] appears on the screen and switches to log mode in about 1 second.

Ref. Mode types and how to switch them· · · P.18

When switching to log mode, the latest dive log is displayed.

2. Press LED / LOG button again.

[HIST] appears on the screen and the dive history [DHIST] is displayed about 1 second later.

Total number of dives	The display of total number of dives up to now
Total dive hours	The display of total time of diving up to now
Maximum water depth	The maximum water depth dived to up to now
Longest dive time	The longest dive time up to now [min]

9-2. Correction Function of Dive Number in Dive History

By matching the total dive number in dive history to your own experience dive number, it is possible to match the display of log number to your dive number. When you are viewing the dive history screen [DHIST], press ADJUST and LED/LOG at the same time, the total dive number flashes. Press LED/LOG or PLAN to increase or decrease the number of dives. Finally, press ADJUST and the update is complete.

Press LED/LOG, the free dive history [FHIST] displays.

Total number of dives	The display of total number of free dives up to now.
Total dive hours	The display of total time of free diving up to now
Maximum water depth	The maximum water depth free dived to up to now
Longest dive time	The longest free dive time up to now [min 'sec]

9-3.Check the Dive Log

The log consists of three screens of LOG, L - 1, L - 2.

Display information on the LOG screen

Log No.	Log number 1 to 9999 The latest dive log is displayed with a large number
Dive year/ month/date	Date you dived [year/month/day] Alternate display
DIVE/GAUGE	Diving Mode, Gauge Mode, Dive number of dives a day [See the circle in the LOG diagram, 2 dots in the figure = the second dive of the day]
Entry time	The time you started the dive
Exit time	The time you finished the dive
N_2 at exit time	Risk degree of nitrogen accumulated in the body is shown with 1 to 10 levels[*1]
Oxygen uptake at exit time or ppO_2	Risk degree of oxygen accumulated in the body is shown with 1 to 10 levels Or current hazardous level of oxygen is shown with 1 to 10 levels[*1]

LOG

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Display information on L - 1 Screen

Average water depth	The average diving depth
DIVE/WARNING/ GAUGE	Warnings released in the dive, Dive Mode, Gauge Mode
Dive Time	The time from the start to the end of the dive
Max. water depth	The max. depth during the dive
Water temperature at the deepest depth	The water temperature at the deepest depth during the diving
Max. N₂	Maximum amount of nitrogen in the body (10 levels) [* 1] in the diving
Max. ppO₂	The maximum ppO₂ (10 steps) [* 1] during the diving

L - 1

Display information on L - 2 Screen

Safety factor	Safety factor settings for that dive [*1]
O₂% /GAUGE	O₂% used in the tank for the dive [*1]
CNS	Ratio of limit value to prevent oxygen poisoning in the central nervous system [*1]
OTU	Ratio of limit value to prevent oxygen poisoning in the lungs [*1]

L - 1

[* 1] is not displayed in the gauge mode.

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The following information is displayed for free dive log.

Display Information on the LOG Screen

Session No.	Session NO. 1~9999 The latest session NO. are shown
Session starting year/month/date	Date you started session [year/month/day] Alternate display
FREE	Free dive mode
Session starting time	The time you started free diving session
Session end time	The time you finished free diving session·the number in the session Alternate display

LOG

Display Information on L - 1 Screen

Average water depth	The average depth in the session
DEEP	Title
Dive time at maximum water depth	The time from the start to the end of the session at maximum water depth
Max. water depth	The max. depth in the dive
Water temperature at max. water depth	Water temperature at max. water depth in the dive

L - 1

Display Information on L - 2 Screen

Total dive time	Total dive time in the session
LONG	Title
Longest dive time	The time from the start to the end in the longest dive
Water depth in the longest dive	Water depth in the longest dive
Water temperature in the longest dive	Water temperature in the longest dive

L - 2

1. Change to Log Mode.
Hold LED/LOG about 2 sec. in the Watch Mode or Surface Mode once to display [LOG] on the screen, and the Z1 switches to Log mode after about 1 sec.

Ref. Mode types and how to switch them· · · P.18

When you switch to Log mode, the latest dive log is displayed.
If FREE is displayed, the free diving log is displayed, otherwise the dive log is displayed.

2. Each time you press PLAN, a new dive log is called up in the order of new logs.
Each time you press LED/LOG, conversely, an older dive log is called up in the order of old logs.

Press and hold the PLAN or LED/LOG to fast forward.
  * The last dive log (the next to oldest and next to newest logs) are dive history data, and before that is the free diving history data.

Ref.
Display of dive history· · · P.43

3. Display the dive log whose details you want to check on the screen and press ADJUST button. [L - 1] is displayed on the screen and information about L - 1 is displayed about 1 second later. If you press ADJUST button again, [L - 2] is displayed on the screen and information about L - 2 is displayed about 1 second later.

4. When you press LED / LOG button or PLAN button, one new log or one old log is called. Press and hold MODE button (about 2 seconds) to return to watch mode or surface mode. After [SET] [Hold] [TIME] flashes, release [finger] when [TIME] is displayed.

These are the following seven types of warnings.

Ascent rate	↑ SLOW	When ascending speed exceeds more than 10m/minutes warnings are released 2 times in a row.
Decompression dive	DECO is ON	When No decompression limit (NDL) is exceeded in dive and you need to stop for decompression.
Decompression stop violation	↓ DOWN	When the decompression stop depth is shallower than the indicated depth.
ppO$_2$	!! PO2	When ppO$_2$ becomes 1.4 or more.
O$_2$	!! O2	When O$_2$ in the body exceeds the tolerance.
Out of measurement range	LIMIT	1. When the depth exceeds 99.9 m 2. When the dive time exceeds 599 minutes 3. When decompression stop is required at depth of 33 m or more at decompression diving 4. When decompression time exceeds 99 minutes at decompression diving or total ascent time exceeds 99 minutes
Maximum water depth warning	DEEP	When the warning water depth set in advance is exceeded

9-5. Setting the Dive Profile Sampling Rate

The sampling rate of the dive profile is the default 20 second interval, but you can select from 10/20/30/60 seconds. If the sampling time is shortened, the amount of data held every dive time will increase, so the profile time held by the computer will be shortened. The Z1 can hold profile data for about 80 hours at the sampling time of 20 seconds, but if you set it to 10 seconds the Z1 will be able to hold about half the data for about 40 hours.

To set, when dive log data is displayed, press and hold ADJUST button for about 2 seconds to switch to the sampling rate setting screen, then press LED/LOG button or PLAN button to change the setting. Press ADJUST button to update the setting.

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9-6. Oxygen Uptake/ppO₂ Profile Saving Setting

It is possible to select whether or not to store the oxygen uptake / ppO₂ data in the profile data. [Do not save default] Profile data commonly uses data of nitrogen uptake / warning / O₂ % at the time of gas switching, so when the setting of O₂ uptake / ppO₂ data is saving, N₂ uptake and O₂ uptake / ppO₂ data will be stored alternately, the amount of information about N₂ uptake will be half. [Parts without data are complemented and displayed]

To set, when dive log data is displayed, press and hold ADJUST button for about 2 seconds to switch to the sampling rate setting screen, press MODE button to switch the Oxygen uptake / ppO₂ profile saving display. Press PLAN button to change the setting. Press ADJUST button to update the setting.

9-7. Check the Dive Profile

Detailed profile information of the log can be displayed while displaying the dive log.

1. Change to Log Mode.
In watch mode or surface mode, press and hold LED / LOG button for about 2 seconds.
[LOG] appears on the screen and switches to log mode in about 1 second.
Ref. Mode types and how to switch them· · · P.18

When switching to log mode, the latest dive log is displayed.

2. Every time LED / LOG button is pressed, it is displayed from the new dive log in the newest order.
  Each time you press PLAN button, it is displayed from the old dive log in reverse order.
  Press and hold LED / LOG button or PLAN button to fast forward.

   * The end of the dive log [after the oldest log, before the latest log] is the dive history data.
  Ref. Display of dive history· · · P.43

3. To display the dive log which you want to check when the dive profile is on the screen, press MODE button.

[PROF] is displayed on the screen and the profile screen is displayed about 1 second later. It displays from diving start to end at every sampling rate at 1 second intervals.When the last water depth graph data is displayed, the graph is scroll-displayed.

When you press anything other than MODE button, the automatic display stops.

Elapsed time	Display elapsed time since diving start in minute' second
Depth graph	Display water depth trajectory of 7 minutes at 20 second intervals
Depth	Display water depth at the displayed elapsed time
Warning/ O_2 %	A warning is displayed when a warning occurs, and when the gas is switched, the switched O_2 % is displayed
Water temperature	Display the water temperature at the displayed elapsed time
N_2	Display the amount of nitrogen in the body at the displayed elapsed time in 10 steps
Oxygen uptake / ppO_2	Display oxygen uptake or ppO_2 at the displayed elapsed time in 10 steps. [No display by default]

Warning List

Ascent rate	SLO	When ascending speed exceeds more than 10m/minutes and warnings are released 2 times in a row.
Decompression stop violation	dn	When the decompression stop depth is shallower than the indicated depth.
ppO_2	PO2	When ppO2 becomes 1.4 or more.
O_2	O2	When O2 in the body exceeds the tolerance.
Maximum water depth warning	dEP	When the warning water depth set in advance is exceeded

4. Every time you press PLAN button, the sampling interval data is updated and the elapsed time advances. Every time you press LED / LOG button, the sampling interval data is updated and the elapsed time is returned. Press and hold PLAN button or LED / LOG button to fast forward.

5. Pressing MODE button will display [LOG] and exit from the dive profile display.

Confirm the Free Dive Log Profile

Free diving log shows information on free diving session. You can display individual information within that session.

1. Change to Log Mode.

In watch mode or surface mode, press and hold LED / LOG button for about 2 seconds.

[LOG] appears on the screen and switches to log mode in about 1 second.

Ref. Mode types and how to switch here··· P.18

When switching to log mode, the latest dive log is displayed.

2. Each time you press LED / LOG button, it will be displayed in order from the new dive log. Each time you press PLAN button, it will be displayed in the oldest order from the old dive log.

Press and hold LED / LOG button or PLAN button to fast forward.

* The end of the dive log [after the oldest log, before the latest log] is the dive history data.

Ref. Display of dive history··· P.43

3. Display the dive log you want to check in the free dive profile on the screen and press MODE button. [PROF] is displayed on the screen and the profile screen is displayed about 1 second later. It displays automatically from the first diving in the session in order of 1 second interval to the last dive. When you press anything other than MODE button, the automatic display stops.

Start time	Display diving start time
Log No.	Serial number of diving in session 1 to the total number of dives [two-digit display]
Dive time	Display dive time min 'sec
Max depth	Display maximum water depth
Max Temp	Display maximum temperature at deepest depth

4. Every time you press PLAN button, the sampling interval data is updated and the elapsed time advances. Every time you press LED / LOG button, the sampling interval data is updated and the elapsed time is returned. Press and hold PLAN button or LED / LOG button to fast forward.

5. Pressing MODE button will display [LOG] and exit from the dive profile display.

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10. Plan Mode(PLAN)

You can plan a dive applied to 3 types of safety factor; initial dive, repetitive dive, and Nitrox dive (EANx). No decompression limit at every 3 m from the depth of 9 m is shown.

10-1. O₂% Setting

1. Change to Plan Mode

In Watch Mode or Surface Mode, press PLAN once and the [PLAN] screen is displayed on the screen, and after about 1 sec. The Z1 switches to Plan Mode. [* The Z1 does not switch when Gauge Mode is ON.]
Ref. Mode types and how to switch them···P.18

2. Press and hold ADJUST for about 2 seconds. After [SET] [Hold] flashes, remove your finger when [GAS1] [21-100%] is displayed.

3. Press LED/LOG or PLAN and set the O₂% from 21% to 100%. * 22% to 100% are Nitrox settings.

⚠ CAUTION   · With a higher O₂% setting, the allowed diving depth is shallower.

Press and hold LED/LOG or PLAN to fast forward. The Z1 pauses at 21%, 32% and 50%.

4. For accelerated decompression in technical diving etc. press ADJUST to open the GAS2 screen and set the O₂% with the same procedure. When doing multi gas diving, gases 2 to 4 can be set in the same way. Press ADJUST button to set the gas 2. If you set OFF here and press ADJUST button, the O₂% setting changes to the safety factor setting.
Ref. O₂% setting can only be made so that the O₂% becomes gas 1 <gas 2 <gas 3 <gas 4.

5. Press and hold MODE for about 2 seconds to return to Watch Mode or Surface Mode. After [SET] [Hold] [TIME] flashes, remove your finger when [TIME] is displayed.

⚠CAUTION

· In Nitrox [EANx] diving, O_2% must be set for each dive.
· During the dive mode, it is possible to check the O_2% setting status and gas switching, but you cannot change the gas concentration setting.

10-2. Enriched Air Nitrox [EANx] Diving

Ref. EANx:Enriched Air Nitrox [Nitrox]
Mixed gas in which the proportion of oxygen is higher than the compressed air normally used [oxygen concentration 21%].

The Z1 can be use with compressed air with an O_2% of 21% and EANx with an O_2% of 22% to 100%. In diving using Nitrox [EANx], in addition to ordinary diving indication, oxygen influence on the body is monitored by O_2% and water depth considering oxygen poisoning due to an overdose of oxygen.

When diving using Nitrox[EANx], O_2% is blinking when in watch mode, and O_2% and surface time are displayed alternately when in surface mode.

Ref. Setting O_2%··· P.52
    Default function of O_2%··· P.53

10-3.Default Function of O_2%

If the date changes [goes past 0:00] with GAS1-GAS4 O_2% set in the range 22 to 100%, the O_2% returns to the default state [21% oxygen percentage: compressed air].

10-4. Set Safety Factor

You can select decompression schedule from the 3 dive types.
Table: Estimated Safety Factor and NDL [No Decompression Dive Time [Minutes]]

depth [m]	9	12	15	18	21	24	27	30	33	36	39	42	45	48
SF0	200	104	66	46	35	25	20	16	14	11	9	8	7	6
SF1	200	95	60	44	33	23	19	16	13	11	9	8	7	6
SF2	180	80	52	39	30	22	17	15	13	11	8	7	6	5

*NDL at atmospheric pressure 1013 mbar. It varies with atmospheric pressure.

⚠️ **CAUTION**
· Safety factor you select will be effective until changed. It will effect calculation on dive and after dive.

1. Change to Plan Mode.
Press PLAN once in Watch Mode or Surface Mode. [PLAN] is shown in the display, and the mode will be changed to Plan Mode about 1 second.
Ref. Mode types and how to switch them··· P.18

2. Press ADJUST for about 2 seconds.
When [GAS1] [21 - 100%] is shown after [SET] [Hold] are blinking, stop pressing the button. When the gauge mode is ON, gas setting is not possible.

3. Press ADJUST 2~4 times to make the display for Safety Factor setting.

4. Every time pressing PLAN or LED/LOG, SF is set as below. SF-0 [default] > SF-1 > SF-2

5. Press MODE for about 2 seconds to go back to Watch Mode or Surface Mode.
When [TIME] are shown after [SET][Hold] [TIME] blinks, stop pressing the button.

⚠️ **CAUTION**
· Safety factor setting cannot be checked, re-set, changed in Dive Mode.

10-5. Depth Interval Alarm setting

The Z1 features a Depth interval alarm function in normal Dive mode, Free diving mode and Gauge mode that gives a warning sound of three beeps for each set water depth during diving.

Setting of Depth Interval Alarm

1. Change to Plan Mode.
In Watch Mode or Surface mode, press PLAN once, [PLAN] appears on the screen, and after about 1 second the unit switches to plan mode.

2. Press and hold ADJUST for about 2 seconds.
After [SET][Hold] blinks, release your finger when you see [GAS1] [21 ~ 100%]. When the gauge mode is ON, it will switch to the interval alarm screen immediately, so please go to step 5.

3. Press ADJUST 2~4 times to make the display for Safety Factor setting.

4. Press ADJUST button to switch to the interval alarm setting screen.

5. Press PLAN to increase the water depth in increments of 1m or press LED/LOG to decrease the water depth. When using m[meters] as measurement units OFF/3/4/5…98/99m. When using ft. [feet] as measurement units OFF/10/15/20… 320/325ft.

6. Press MODE for about 2 seconds to go back to Watch Mode or Surface Mode.
When [TIME] is shown after [SET][Hold][TIME] blinks, stop pressing the button.

Alarm Function

· It will function when the water depth exceeds 3 m.
· An audible alarm sounds when the water depth of the set value is exceeded. There is no screen change.
· A buffer zone of 3 m is set in order to avoid frequent warning sounds when diving near the set water depth. Once it reaches a depth shallower than the buffer zone of the set depth, and you go to the set water depth again, a warning sound will be generated.
· Ref. If you go beyond multiple alarm points within the measuring water depth interval time, the buzzer will only sound once.

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10-6. Maximum Water Depth Warning Settings

The Z1 is equipped with a maximum water depth warning function that sounds when the set water depth is reached in normal Dive Mode, Free Diving Mode and Gauge Mode. The default setting is OFF.

Setting Method

1. Change to Plan Mode.
In Watch Mode or Surface Mode, press PLAN once and the [PLAN] screen is displayed, and after about 1 second the Z1 switches to Plan Mode.

2. Press and hold ADJUST for about 2 seconds.
When [GAS1] [21 - 100%] are shown after [SET] [Hold] blink, stop pressing the button. When the gauge mode is ON, it will switch to the interval alarm screen immediately, so please go to step 5.

3. Press ADJUST 2~4 times to make the display for Safety Factor setting.

4. Press ADJUST button to switch to the interval alarm setting screen.

5. Press ADJUST button to switch to the Maximum Water Depth Warning Settings.

6. Press PLAN to increase the water depth in increments of 1m or press LED/LOG to decrease the water depth. When using m (meters) as measurement units OFF/3/4/5...98/99m. When using ft. (feet) as measurement units OFF/10/15/20... 320/325ft.

7. Press MODE for about 2 seconds to go back to Watch Mode or Surface Mode.
When [TIME] is shown after [SET][Hold][TIME] are blinking, stop pressing the button.

Alarm Function

· An alarm will sound if the set depth is exceeded. It blinks when the water depth is above the set water depth.
· Once it reaches the set water depth, it will be subject to log preservation. (Only for normal diving mode)

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10-7. Plan Diving

1. Change to Plan Mode.

Press PLAN button once in watch mode or surface mode.

[PLAN] appears on the screen and switches to plan mode in about 1 second.

Ref.　Mode types and how to switch them···P.18

No Decompression Limit[NDL]	Time allowed to stay at the expected water depth *Max 200 min
Planned Depth	It can be changed every 3 m from 9 m to 48 m

2. Press PLAN button or LED / LOG button to set the expected water depth "9 to 48 m". The planned water depth is displayed at intervals of 3 m and the non-decompression limit calculated at that depth is displayed.

3. Press and hold MODE button (about 2 seconds) to return to watch mode or surface mode.

After [SET] [Hold] [TIME] flashes, release finger when [TIME] is displayed.

Ref. Display the no decompression limit when O_2% of gas 1 is used. Also, when the ppO_2 exceeds 1.4 bar, 0 minute indication is displayed.

10-8. Display the Oxygen Toxicity Unit[OTU[UPTD]]

As a measure of prevention of pulmonary oxygen poisoning, display the proportion of the case where 600 is taken as 100% of the total day of OTU [UPTD] and the ratio when 2500 is taken as 100% as one week integrated.

How to display

1. Change to Plan Mode.

Press PLAN button once in watch mode or surface mode.

[PLAN] appears on the screen and switches to plan mode in about 1 second.

2. When ADJUST button is pressed, the integration for one day is displayed.

3. If you press ADJUST button again, the accumulated amount for one week will be displayed.

4. Press and hold MODE button (about 2 seconds) to return to watch mode or surface mode.

11. Compass(COMP)

Can be used in watch mode, surface mode and dive mode (including gauge and free dive). The measured bearing (4 directions of east, west, north and south) is displayed. It displays abbreviation of bearing and angle value.

· The Digital Compass Mode uses a built-in direction sensor to take direction readings and display the results.
· For information about what you can do to improve digital compass reading accuracy, see "Calibrating the Bearing Sensor"(P.58) and "Digital Compass Precautions". (P.60)

11-1. To Take a Direction Reading

1. Change to Compass Mode.
In Watch Mode or Surface Mode, press MODE twice and the [COMP] screen is displayed.
Ref. Mode types and how to switch them··P.18

2. Point the 12 o' clock position of the Z1 in the direction whose reading you want to take.

3. Press PLAN button while keeping the Z1 horizontal.
About one second later, abbreviations of bearing and angle value are displayed.

·After the first reading is obtained, the Z1 will continue to take digital compass readings automatically each second for up to 60 seconds.
  When the reading is finished, abbreviations of bearing and angle value will change to [- - -].

11-2. Calibrate the Bearing

Please calibrate the bearing by the following method to improve measurement accuracy.
Method of calibration
Compare with an accurate direction indicator, please use in the case where the direction has deviated, or in preparation before diving.

IMPORTANT

· During calibration, please do not move the Z1 horizontally.
· It may not calibrate correctly in places where there are strong magnetic forces, such as household appliances, OA equipment, mobile phones, etc.
· Please make exactly 180 degrees opposite direction for the 2 points to be set.

Calibration

1. In the Digital Compass Mode, hold down ADJUST button for at least 2 seconds. [SET][Hold] will blink on the display. After [CALIBRATION] [- 1 -] is displayed, release your finger. [CALIBRATION] will be displayed as if it flows.

2. Press LED/LOG button.
Start calibration of the first point.
· [- - -] is displayed during calibration.
· When calibration is successful, [Turn 180°] is displayed. [CALIBRATION] [- 2 -] will be displayed after 1 second.
  If [ERR] [- 1 -] is displayed, press LED / LOG button again and measure again.

3. Rotate the Z1 180 °.

4. Press LED/LOG button.
Start calibration of the second point.
· [- - -] is displayed during calibration.
· When calibration is successful, [OK] is displayed, and switches to the Digital Compass Mode. Calibration is completed.
  If [ERR] [- 1 -] is displayed, repeat the procedure from step 2.

· If you do not operate anything for 2 to 3 minutes, the display of abbreviation of bearing and angle value changes to [---], and after 2 or 3 minutes it automatically ends the calibration display and returns to the watch mode, surface mode or dive mode.

IMPORTANT
· Calibration cannot be done during diving.

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11-3. Digital Compass Precautions

Magnetic North and True North

The northerly direction can be expressed either as magnetic north or true north, which are different from each other.

Magnetic north is the north that is indicated by the needle of a compass. True north, which is the location of the North Pole of the Earth's axis, it is the north that is normally indicated on maps.

Location

Taking a direction reading when you are near a source of strong magnetism can cause large errors in readings. Because of this, you should avoid taking direction readings while in the vicinity of the following types of objects: permanent magnets [magnetic necklaces, etc.], concentrations of metal [metal doors, lockers, etc.], high tension wires, aerial wires, household appliances [TVs, personal computers, washing machines, freezers, etc.].

·Accurate direction readings are impossible while in a train, boat, air plane, etc.

·Accurate readings are also impossible indoors, especially inside ferro-concrete structures.

Storage

The precision of the bearing sensor may deteriorate if the Z1 becomes magnetized. Because of this, you should store the Z1 away from magnets or any other sources of strong magnetism, including: permanent magnets [magnetic necklaces, etc.] and household appliances [TVs, personal computers, washing machines, freezers, etc.]. Whenever you suspect that the Z1 may have become magnetized, perform the procedure under "To perform bidirectional calibration"

Behavior during Digital Compass Mode

· Auto light will not lite for 60 seconds during calibration.
· If an alarm sounds during calibration or when light is lit by pressing LED / LOG button, calibration will be temporarily stopped and calibration will resume after the alarm is stopped or after the light is turned off.
· Atmospheric pressure and temperature will be measured up to every 20 seconds because Digital Compass direction reading is prioritized.

12. Stopwatch[STW]

Can be used in watch mode or surface mode.
The Stopwatch Mode can indicate elapsed time
up to 999 hours, 59 minutes, 59.9 seconds.
If it exceeds the measurement range, it will
return to 0 and continue measurement.

12-1. Stopwatch Mode

In Watch Mode or Surface Mode, press MODE 3 times to select the
Stopwatch Mode [STW], [STW] appears on the display, and after about 1
second switches to Stopwatch Mode.
Ref.   Mode types and how to switch them··· P.18

12-2. Measure

The button operations are as follows.

·To Perform an Elapsed Time Operation

PLAN Start	>	PLAN Stop	>	PLAN Restart	>	PLAN Stop	>	ADJUST Reset

·To pause at a split time

PLAN Start	>	ADJUST Split	>	ADJUST Split release	>	PLAN Stop	>	ADJUST Reset

·To measure two finishes

PLAN Start	>	ADJUST Split First runner finishes. [Display time of first runner]	>	PLAN Stop Second runner finishes [Display time of second runner]	>	ADJUST Split release	>	ADJUST Reset

Ref.

· Once started, stopwatch timing continues until you press ADJUST to
stop it, even if you exit the Stopwatch Mode to another mode and even
if timing reaches the stopwatch limit defined above. ADJUST paused
timing operation will remain paused until you press ADJUST to restart it.
· Exiting the Stopwatch Mode while a split time is frozen on the display
clears the split time and returns to elapsed time measurement.

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13. Timer(TMR)

Can be used in watch mode or surface mode.
The timer can be set from 1 minute to 24 hours.
The time-up sound will be heard for 10 seconds when the time is up.

13-1. To Enter the Countdown Timer Mode

Press MODE button 4 times in watch mode or surface mode to select the Countdown Timer Mode (TMR). About 1 second after TMR appears on the display, the display will change to show the countdown time hours.

Ref.   Mode types and how to switch them···P.18

13-2. Set Timer

1. Enter the Countdown Timer Mode.
· If a countdown is in progress, press PLAN to stop it and then press ADJUST to reset to the current countdown start time.
· If a countdown is paused, press ADJUST to reset to the current countdown start time.

2. Hold down ADJUST for at least two seconds.
After [SET] [Hold] flashes, release the finger when the "hour" indication on the timer flashes.

3. Press MODE to move the blinking between the hour and minute settings. The one you selected will be blinking.

4. Use PLAN and LED/LOG to change the blinking item.
· Press and hold PLAN or LED / LOG button to fast-forward.
· To set the starting value of the countdown time to 24 hours, set 0H 00'00.

5. Press ADJUST to exit the setting screen.
· If you do not operate anything for 2 to 3 minutes, it automatically ends the setting screen.

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13-3. Measure

The button operation of the timer measurement is as follows.

PLAN		PLAN		PLAN		PLAN		ADJUST
Start	>	Stop	>	[Restart]	>	Stop	>	Reset
				[Stop]				

Ref.

· An alarm sounds for ten seconds when the end of the countdown is reached. This alarm will sound in all modes. The countdown time is reset to its starting value automatically when the alarm sounds.

13-4. To Stop the Alarm

Press any button.

14. Using the Alarm(ALM)

You can set five independent daily alarms. When an alarm is turned on, an alarm will sound for about 10 seconds each day when the time in the Watch Mode reaches the preset alarm time. This is true even if the Z1 is not in the Watch Mode. One of the daily alarms is a snooze alarm. The other four are one-time alarms. The snooze alarm will sound every five minutes up to seven times or until it is turned off. You can also turn on an Hourly Time Signal, which will cause the Z1 to beep twice every hour on the hour.

14-1. Select Alarm Mode

Press MODE 5 times to select the Alarm Mode [ALM] in watch mode or surface mode.

About 1 second after [ALM] appears on the display, the display will change to show an alarm name [[AL-1] ~ [AL-4],[SNZ]]or the [SIG] indicator.

Ref.   Mode types and how to switch them··· P.18

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14-2. To Set an Alarm Time

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

AL-1	PLAN →	AL-2	PLAN →	AL-3
↑				PLAN
PLAN				↓
SIG	← PLAN	SNZ	← PLAN	AL-4
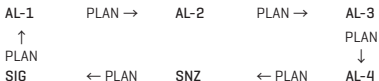
· There is no time setting for the hourly time signal.

2. Hold down ADJUST until SET Hold appears on the display and then the current settings starts to blink.

3. Press MODE to move the blinking between the hour and minute settings.

4. Use PLAN and LED/LOG to change it.
· Press and hold PLAN or LED / LOG button to fast-forward.
· When setting the alarm time using the 12-hour format, take care to set the time correctly as a.m. (no indicator) or p.m. (P indicator).

5. Press ADJUST to exit the setting screen.
· Setting an alarm time causes that alarm to turn on automatically. If you do not operate anything for 2 to 3 minutes on the setting screen, the setting screen will automatically end. In this case as well, the alarm that was set is turned on.

14-3. To Turn an Alarm and The Hourly Time Signal On and Off

1. In the Alarm Mode, use PLAN to select an alarm or the Hourly Time Signal.

2. When the alarm or the Hourly Time Signal you want is selected, press ADJUST to turn it on and off. When one or more of the four alarms are turned on, alarm mark lights up.
The mark will not be lit if the snooze alarm and hourly report are turned on.

14-4. To Stop the Alarm

Press any button.
Ref.
- Even if you switch to another mode, such as dive mode, an alarm sounds.
- The snooze alarm sounds up to seven times at intervals of about five minutes.
- The snooze alarm will be canceled when any of the following occurs while the SNZ indicator is blinking on the display.
- - If you turn off the snooze alarm
  - If you display the snooze alarm setting screen
  - If you display the Watch Mode or setting screen
    Ref.   How to set the city and clock ··· P. 25

- If your Home City and World Time City are the same city, and you use the World Watch Mode to change the summer time setting of your Home City.

15. World Time(WT)
You can use the World Watch Mode to view the current time in one of 31 time zones (48 cities) around the globe. The city that is currently selected in the World Watch Mode is called the "World Time City".

15-1. To Enter the World Watch Mode

Press MODE 6 times in watch mode or surface mode to select the World Watch Mode (WT).
1 second after WT appears on the display, the city code of the currently selected World Time City will scroll once in the upper right display.
After that, the World Time City's city code will be displayed in the upper right display.
Ref. Mode types and how to switch them ··· P.18

15-2. To View the Time in Another Time Zone

In the World Watch Mode, press PLAN to select city codes.
- Display current time of the selected city.
- Press and hold PLAN button to fast-forward.

15-3. To Specify Standard Time or Daylight Saving Time (DST)for a City

1. In the World Watch Mode, press PLAN to select city codes.
2. Hold down ADJUST for at least 2 seconds.
· The setting is changed when [DST][Hold][ON] or [DST][Hold][OFF] blinks.

[DST][Hold][ON] means that summer time is enabled, and that the current time is advanced accordingly.

[DST][Hold][OFF] means that summer time is disabled, and that the current time shows standard time.

When the display time is set to daylight saving time, [DST] is displayed.

Ref.
· Daylight saving time is also called DST (Daylight Saving Time), which is a daylight saving time system that can advance an hour from the normal time (standard time). The implementation period and the implementation area of daylight saving time vary from country to country. In addition, there are countries and regions not adopting daylight saving time system.
· You cannot switch between standard time/daylight saving time (DST) while UTC is selected as the World Time City.
· The standard time/daylight saving time (DST) setting affects only the currently selected time zone. Other time zones DST indicator's are not affected.
· When setting a city other than UTC in World Watch Mode, the world time of the selected city is displayed in the lower left corner of the watch mode in 24 hour display. (Except when setting Nx)

16. Illumination

The display of the Z1 is illuminated for easy reading in the dark.
You can also set the auto light function to light the backlight by the inclination of the Z1 in a dark place.

16-1. To Turn on Illumination Manually

When LED / LOG button is pressed in watch mode, surface mode, and a TOP screen mode is switched with the MODE button, the light will be lit. (Including dive mode)

Ref.
·Will turn off when an alarm sounds while the light is on.
·Illumination is disabled while configuring sensor measurement mode settings.

16-2. Automatically Light Up (Auto light)

When auto light function is set, the light turns on when the Z1 is tilted more than 40 °. Also, when setting, the LT mark is lit.

Ref.
· It does not light up in bright places.
· The auto light function does not operate under the following conditions.
  -When the alarm tone is ringing
  -When calibrating the bearing sensor.
· The auto light function operates after measuring the sensor (depending on the timing, there may be a delay before lighting).

Auto light setting / Cancel   Ref.· · · P.32

Notes on auto light
· If the Z1 is inclined more than 15 degrees from the horizontal state, it will be difficult to light up.
· If the Z1 is hidden behind a sleeve or the like, the light will not be constantly lit and the charge will decrease.
· Auto light may not work due to static electricity or magnetism. In that case, please tilt the Z1 horizontally once again.
· When the Z1 is tilted, there may be a case where sounds is emitted from the inside. This is the operation sound of the auto light switch, it is not a malfunction.

17. Free Diving Mode

The computer features a Free Diving Mode for use during skin diving and free diving. Because nitrogen gas fluctuation is not calculated as during normal diving mode, the bar graph of the amount of nitrogen gas in the tissues (N_2 indicator) is not displayed. Also, displays such as no-decompression dive time and various warnings, such as ascent rate warning, are not shown.

17-1. Switch to Free Diving Mode

In watch mode or surface mode, hold down LED / LOG button and press PLAN button twice to switch to free diving mode through the manual diving mode. However, if a desaturation time remains after scuba diving, or the unit is in 48 hours locked state, or Gauge Mode, or if the charged amount of the battery is insufficient, it is not possible to switch to Free Diving Mode.

17-2. End of Free Diving Mode

Hold down LED / LOG button and PLAN button to switch to watch mode or surface mode. Furthermore, free diving is automatically terminated even if it does not dive for more than 60 minutes at a depth of 1 m.

However, pressing PLAN button while pressing LED / LOG button in the state where the dive is more than 1m in depth, free diving mode does not end, but if it continues for more than 1m in depth for 99 minutes, it will automatically end free diving mode.

Ref. When diving is done from the start to end of free diving mode, it is saved as one log as one session. For as many logs as the profile, data will remain for the number of dive of more than 1 m.

17-3. Free Diving Functions

If you switch to Free Diving Mode and dive to 1 m or more, the Z1 switches to the free diving (underwater) screen. When underwater, the display alternates every second between the basic screen and the number of dives in the session.

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17-4. Button Operation(Free Diving Mode)

1. Press MODE, switch to compass mode.
Ref. P.58

2. Press MODE when in compass mode, to switch to Stopwatch Mode.
Ref. P.61

3. Press MODE when in Stopwatch MODE, to switch to Diving Mode.

4. Press ADJUST, display the history of current session.

5. Press ADJUST when displaying the history of current session view, to display the maximum depth of current session.

6. Press ADJUST when displaying the maximum depth of current session, to display the longest dive of current session.

7. Press ADJUST when displaying the longest dive of current session, to return to free diving mode display.

18. Gauge Mode

In Gauge mode, the unit does not calculate non-decompression dive time or decompression dive time, but only displays water depth and diving time information etc. as a simple gauge. General users must not use this mode.

18-1. Setting of Gauge Mode

1. Change to Plan Mode.
In Watch Mode or Surface mode, press PLAN once.
[PLAN] appears on the screen, and after 1 second the unit switches to Plan mode.
In the case of the display of GAUGE ON, it is already set to the gauge mode, so it is not necessary to set it. Normally it will be the display of water depth and NDL.

2. Press and hold ADJUST for about 2 seconds.
After [SET][Hold] blinks, release your finger when you see [GAS1][21~100%]

3. Press and hold ADJUST for about 2 seconds again.
After [SET][Hold] blinks, release your finger when you see [GAUGE][OFF]
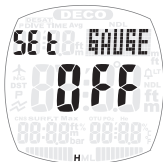
4. Press PLAN to choose ON.

5. By pressing and holding MODE for about 2 seconds. The unit is going to be fixed to Gauge mode and displays.

Ref.
Gauge mode is not set to ON in the nitrogen accumulation state. When you select Gauge mode and dive for 3 minutes or more, the unit is fixed to Gauge mode for 48 hours after the dive ends and you cannot switch to Dive mode (computer function) or Free diving mode.
If Gauge mode is turned ON, the user safety factor, O_2% are not displayed.

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18-2. Gauge Mode Diving

Diving in Gauge mode is the same as normal diving start method. [Ref. P.35]

Display

Dive time	Time elapsed from diving start *Max. 599 min
GAUGE	Title
Depth	Current depth Displays in 0.1m increments *Max. 99.9m
Max depth [MAX]	Maximum water depth in the dive *Max. 99.9m
Water temperature	Display current water temperature
Bearing and Angle value	Ref. Digital compass··· P.58
Stopwatch	Display elapsed time up to 0.1 second increments··· P.61

Button Operation

1. Press MODE button to enter the Compass Mode.
2. Press MODE button again to enter Stopwatch Mode.
3. Press MODE button again to return to Gauge Mode Diving.

19. Bluetooth Data Transfer Mode(BLE)

By setting the Z1 to Bluetooth data transfer mode, you can make various data communication and change the Z1 settings. [Please prepare a corresponding smartphone application separately.] Please search "Z dive log" on the application store or install from QR code below.

GET IT ON
Google Play

Download on the
App Store

Operation

1. Press MODE button from the watch mode or surface mode.

2. Press PLAN button to turn it ON.

When it changes to the communication state of the smartphone application here, it switches to the display shown here. If it does not communicate with the application of the smartphone it turns off automatically in about 30 seconds.

3. When communication is completed, press PLAN button to turn it OFF. OFF blinks for about 5 seconds immediately after turning it OFF. Even if you press PLAN button during this time it will not turn ON. Please turn ON after the flashing ends.

4. Pressing MODE button shifts to the compass mode. Press and hold MODE button to return to watch mode or surface mode.

Ref. When there is no data transmission / reception in the communication state with the smartphone application, it turns off automatically in about 10 minutes.

Depending on the smartphone, it may not be possible to find the Z1 from the application. In this case, you can connect by changing the interval time. [4 types]

1. Press MODE button from watch mode or surface mode.

2. Press and hold ADJUST button [about 2 seconds]. [Set] [hold] will blink and display [INT], release your finger.

3. Change the interval time with PLAN button or LED / LOG button.

4. Press ADJUST button to enter the Bluetooth data transfer mode.

20. Troubleshooting

<Diving>

Situation	Cause and Remedy
Display is too light	Display may become light in low temperatures. Please wait for a while. If situation does not change, please contact the shop where you purchased the Z1.
Dive log is already installed in a newly purchased Z1	Test data is installed for quality checking at the factory before shipping. It is not a malfunction.
DECO and current time are blinking on the surface.	Decompression stop violation warning is displayed. If you descend to the requested depth again for decompression stop within 10 minutes after the warning is shown, the warning will be canceled. If 10 minutes passes, the Z1 cannot be used within the next 48 hours for diving.
EEEE and current time are shown in turn	Out of measurement range warning is displayed. the Z1 cannot be used within the next 48 hours for diving.
The number of O_2 (%) is blinking in watch mode	When O_2 % was set between 22 to 100% in Nitrox gas (EANx gas), the number of O_2 (%) is blinking on the display. When you dive with Nitrox gas, be sure to reset the O_2 %. Set O_2 %· · · P.52
Cannot enter Dive Mode	·Either Decompression stop violation or Out of measurement range warning is displayed. The Z1 cannot be used for 48 hours after the warning is displayed, the mode will then go back to the normal mode automatically. ·The altitude is detected as approx. 6,000m. Please wait for a while or move to place of lower altitude. ·Power level becomes low. Check the power level. Ref. Confirm charge amount· · · P.13 If none of above applies, sensor might be a problem. Please contact the shop where you purchased the Z1.
During flight or while moving to a high altitude the Z1 got into dive mode	This happens when there is a sudden change in atmospheric pressure. This is not a malfunction. Press and hold LED / LOG + PLAN button once or twice to enter the watch mode.

<Time setting>

Situation	Cause and Remedy
The current time setting is off by hours	Your Home City setting may be wrong. Check your Home City setting and correct if necessary. Ref. Set home city, daylight saving time.· · · P.22
Display of current time is deviated by one hour	It is necessary to set the time corresponding to the current daylight saving time. Ref. Set home city, daylight saving time.· · · P.22

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<Sensor>

Situation	Cause and Remedy
[ERR] appears on the display while using a sensor	Subjecting the Z1 to strong impact can cause sensor malfunction or improper contact of internal circuitry. When this happens, ERR [error] will appear on the display and sensor operations will be disabled. ·If ERR appears while a reading operation is being performed in Digital Compass Mode, restart the operation. If ERR appears on the display again, it can mean there is something wrong with the sensor. ·If ERR keeps appearing during a reading operation, it could mean there is a problem with the applicable sensor. Please contact the shop where you purchased the Z1.

<Digital Compass>

Situation	Cause and Remedy
ERR appears on the display after performed bidirectional calibration	If [---] appears and then changes to [ERR][error] on the calibration screen, it means that there is something wrong with the sensor. ·If [ERR] disappears after about 1 second, try performing the calibration. ·If [ERR] keeps appearing, contact the shop where you purchased the Z1.
What causes incorrect direction readings?	·Incorrect calibration. Ref. Calibration··· P.58 ·Nearby source of strong magnetism, such as a household appliance, a large steel bridge, a steel beam, overhead wires, etc., or an attempt to take direction readings on a train, boat, etc. Move away from large metal objects and try again. Note that digital compass operation cannot be performed inside a train, boat, etc. Ref. Digital Compass Precautions··P.60
What causes different direction readings to produce different results at the same location?	Magnetism generated by nearby high-tension wires is interfering with detection of terrestrial magnetism. Move away from the high-tension wires and try again.
Why am I having problems taking direction readings indoors?	A TV, personal computer, speakers, or some other object is interfering with terrestrial magnetism readings. Move away from the object causing the interference or take the direction reading outdoors. Indoor direction readings are particularly difficult inside ferro-concrete structures. Remember that you will not be able to take direction readings inside of trains, airplanes, etc.

<World Watch Mode>

Situation	Cause and Remedy
The time for my World Time City is off in the World Watch Mode	This could be due to incorrect switching between standard time and daylight saving time. Ref. Setting Daylight Saving Time [DST]··· P.66

<Charging>

Situation	Cause and Remedy
All [H][M][L] are blinking	When in the Power Recovery Mode. Battery power will recover in about 15 minutes. Exposing the Z1 to bright light makes recovery sooner. Ref. ·Performing multiple operations during a short period runs down battery power rapidly, and mode will change to Power 100 Recovery Mode. In this mode, all of the battery power indicators [H][M][L] will be blinking. It is the same situation as [Low power] and available functions will be limited. After recovery, the functions are enabled again. Ref. Insufficient charge or out of charge.··· P.14 ·If all of the battery power indicators [H][M][L] are blinking with [CHG], it means the battery level is very low. Expose the Z1 to bright light as soon as possible.
Need to recharge battery soon after last recharging by being exposed to light	Battery [secondary battery] is recharged by receiving light on the solar panel, and you don't need to replace the battery regularly. However, battery quality deteriorates with long periods of repeate recharging and discharging. If having trouble with use, we recommend you replace the battery. Please contact the shop where you purchased the Z1.

21.Specification

Accuracy at normal temperature	±15 seconds a month
Timekeeping, Calendar system	Hour, minutes, seconds, year, month, day, day of the week, p.m. (P), /Time format: 12-hour and 24-hour, Full Auto-calendar pre-programmed from the year 2000 to 2099
Sensor Accuracy	·Direction sensor accuracy ±10 ° guaranteed in the temperature range of -10-60℃ ·Temperature sensor accuracy ±2 ° guaranteed in the temperature range of -10-60℃ ·Pressure sensor accuracy ±1%+0.5m guaranteed in the temperature range of -5-40℃
Measuring interval	water depth every 1 second (every 0.5 second in free diving) water temperature every 1 second (every 0.5 second in free diving) air pressure every 20 seconds
Measuring range	water depth 1.6m to 99.9m dive time 0 to 599 minutes altitude 0 to 6000m temperature -10~ 60℃(Dive related display is displayed up to 40 ° C)
O$_2$ %	21% (compressed air) to 100% in every 1%
Water proof	100m
Max. dive log	30 dives
Digital Compass	Angle value 0° to 359°, Calibration (bidirectional)
Stopwatch	Measuring unit 1/10 second Measuring capacity 999:59' 59.9" Measuring accuracy ±0.0006% Measuring modes Elapsed time, split time, two finishes
Alarms	4 one-time alarms 1 snooze alarm unit hour·minute Alarm sound time 10 seconds Hourly time signal notify by electronic sound twice every hour
Other	LED light, Selectable illumination duration, Auto Light Switch, Power saving, Battery power indicator, Button operation tone on/off
Battery	rechargeable battery
Battery (secondary battery) duration	About 1 month from full charge state (diving condition 60 minutes once / 1 day)

22. Precautions for Use

Waterproof

· In order to maintain waterproofness, it is recommended to replace the O rings periodically during maintenance.
· Waterproof inspection will be carried out when replacing the batteries, so please be sure to tell the dealer when you purchased.
· When the Z1 becomes extremely cold quickly, the inside of the glass may become cloudy, however there is no problem as long as cloudiness disappears soon. If cloudiness does not disappear or if there is water in the inside, stop using it immediately and consult your Dealer.

Band

· If you tighten the band, it will make it easier to sweat and the flow of air will be worse, making it easy to get a rash. When used on land daily, please allow a margin of one finger to enter between wrist and strap.
· Please stop using it if the band loses its elasticity, cracks, discoloration occurs, or loosening of band junction pin. Please check with your Dealer for inspection / repair.

Temperature

· Please do not leave it in high temperatures such as near automobile dashboard and heating equipment. Also, please do not leave it in cold places for a long time. Delay, advancement may occur, stoppage, or malfunction may result.
· Please note that heat may interfere with the liquid crystal panel if left for a long time at + 60 ° C or higher. The liquid crystal display, may become difficult to see at 0 ° C or less, or + 40 ° C or more.

Shock

· Dropping or hitting it strongly may cause failure.

Magnetism

· Although it does not affect the operation, please be careful as it affects accuracy if the product itself is magnetized. Please note that extremely strong magnetism [medical equipment, etc.] may malfunction or damage electronic components.

Static electricity

· Incorrect information may be displayed due to static electricity. Also, extremely strong static electricity can damage electronic parts.
· Static electricity may temporarily blur the part of the liquid crystal that is not lit.

Chemicals

· Please be aware that damage to the resin case, resin band, etc. may occur when thinner, gasoline, various solvents, fats and oils or cleaners containing these, adhesives, paints, chemicals, cosmetics etc. adhere to the product.

Storage

· When you do not use for a long time, please wipe away dirt, sweat, moisture, etc. Please keep away from hot and humid places.

About resin parts

· If you keep the Z1 in close contact with other products for a long time or keep it wet with other products, the product may transfer color to other products or the color of other products may shift to plastic parts. When wet, please wipe off moisture immediately and do not keep it in close contact with other products.
· Z1 color may fade if it is exposed to direct sunlight (ultraviolet rays) for a long time, or leave stains.
· Painted parts may wear out or discolor due to usage (excessive external force, continuous rubbing, impact, etc.).

About liquid crystal display

· Depending on the viewing direction, liquid crystal display may be difficult to see.

About data protection

· In the case of battery replacement and troubleshooting, please be aware that all data contents may disappear. In addition, we are not responsible for any damage or lost profit due to the loss of data caused by breakdown, repair, battery replacement, etc. Please be aware in advance. Please save important data by communication or please keep a copy in notes etc.

About sensor

· Since the sensor of the Z1 is a precision machine, please never disassemble. Also, be careful not to pierce the sensor part with a thin rod, this may cause dust to enter. In addition, please be sure to rinse with fresh water after using it in seawater.

In the unlikely event of failure, we are not responsible for any damages caused by, lost profits or any claims from third parties.

23.About Care

How to care

Dive computers are wearable, like clothing. For long-term use, wipe away dirt, sweat, moisture etc. frequently with a soft cloth etc., please use always in a clean state.

· In case of use in sea water or mud, rinse thoroughly with fresh water. After diving in sea water especially, please rinse thoroughly after soaking in fresh water for a while.
· For metal parts of metal band and resin band, please scrub with soft toothbrush with neutral detergent diluted with water or soapy water. Then rinse off the detergent ingredients well with water and wipe off moisture with a soft hygroscopic cloth.
· Wash the resin band with water and wipe off moisture with a soft cloth. In addition, there may be a spot-like pattern on the surface of the resin band, but there is no effect on the human body and clothing. Please wipe off with a cloth etc.
· If you do not operate the buttons for a long time, the movement may become stiff come. From time to time, please press the buttons.

If you do not care

<Rust>

· Metal used in the Z1 is rust resistant, but rust will be caused by dirt. *When oxygen is cut off due to dirt, the oxide film on the surface cannot be maintained and rust occurs.
· If rust occurs, a sharp point may be formed in the metal part, or the pin of the joint part may pop out or drop off. If you notice abnormality, please stop using and tell the Dealer where you purchased for repair.
· Even if the surface seems clean, dirt and rust which adhere in gaps may come out, soiling the sleeve of clothing, cause a skin rash, or deteriorate the performance of the Z1.

<Deterioration>

· Leaving wet with moisture such as sweat, or leaving it in a humid place, resin bands and resin bezel may deteriorate over time, causing it to tear or break more easily.
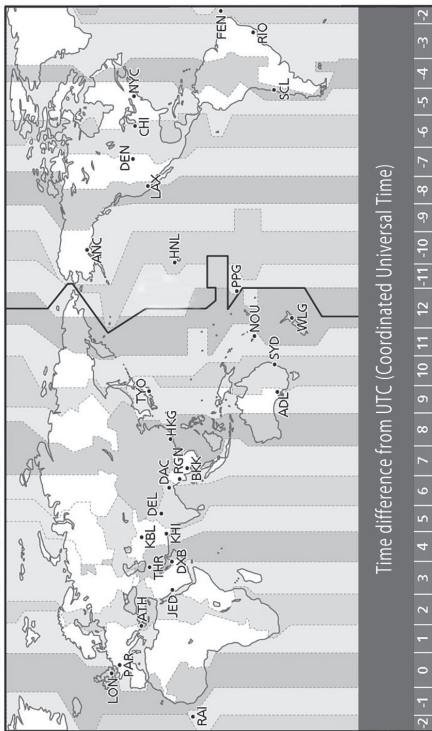
<Rash>

· Depending on the skin or physical condition, the band may cause a rash. Especially if you are using a resin band, please use care maintenance frequently. If you get a rash, stop wearing that band and consult a dermatologist.

About batteries used in the Z1

· As the Z1 uses a dedicated secondary battery, please do not remove the battery yourself. If you insert a battery other than a dedicated rechargeable battery, it may cause damage.
· Battery (secondary battery) is recharged by receiving light on the solar panel, therefore you don't need to replace the battery regularly. However, the battery quality will deteriorate after long periods of repeated recharging and discharging. If you are having trouble during use, we recommend you to replace battery. Please contact the shop where you purchased the Z1.

Please check the time zone of the destination from the map.

Time difference from UTC (Coordinated Universal Time)

| -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 |

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24.UTC (Coordinated Universal Time) and Time Zone

Please check the time zone of the destination from the map on the left page.

25.City Code List

City	Code	Time Zone
UTC (Coordinated Universal Time)		0
LISBON	LIS	0
LONDON	LON	0
MADRID	MAD	+1
PARIS	PAR	+1
ROME	ROM	+1
BERLIN	BER	+1
STOCKHOLM	STO	+1
ATHENS	ATH	+2
CAIRO	CAI	+2
JERUSALEM	JRS	+2
MOSCOW	MOW	+3
JEDDAH	JED	+3
TEHRAN	THR	+3.5
DUBAI	DXB	+4
KABUL	KBL	+4.5
KARACHI	KHI	+5
DELHI	DEL	+5.5
KATHMANDU	KTM	+5.75
DAHKA	DAC	+6
YANGON	RGN	+6.5
BANGKOK	BKK	+7
SINGAPORE	SIN	+8
HONGKONG	HKG	+8
BEIJING	BJS	+8
TAIPEI	TPE	+8
SEOUL	SEL	+9

City	Code	Time Zone
TOKYO	TYO	+9
ADELAIDE	ADL	+9.5
GUAM	GUM	+10
SYDNEY	SYD	+10
NOUMEA	NOU	+11
WELLINGTON	WLG	+12
PAGO PAGO	PPG	-11
HONOLULU	HNL	-10
ANCHORAGE	ANC	-9
VANCOUVER	YVR	-8
LOS ANGELES	LAX	-8
EDMONTON	YEA	-7
DENVER	DEN	-7
MEXICO CITY	MEX	-6
CHICAGO	CHI	-6
NEW YORK	NYC	-5
SANTIAGO	SCL	-4
HALIFAX	YHZ	-4
SAINT JOHN'S	YYT	-3.5
RIO DE JANEIRO	RIO	-3
F.DENORONHA	FEN	-2
PRAIA	RAI	-1

Ref.
· As of December 2012, the time difference in Moscow has been changed to "+4", but the Z1 does not correspond. Please set daylight saving time and advance by 1 hour.
· This table is the city code list of the Z1.
· If you do not know the city code to set, check the time difference of the place of use and select the city code with the same time difference.
· The time difference is based on Coordinated Universal Time (UTC).

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