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1. Introduction - CYANO-RF

CYANO-RF is wristwatch-type dive computer especially designed so various information which is needed for diving be read easily.



CYANO-RF is a wristwatch-style dive computer which has intuitive UI for easy check out of essential data while diving, and it has compact and smooth design for stylish lifestyle. Also, CYANO-RF is a recreational dive computer with digital compass and nitrox dive function that loaded 1.54" ISP LCD panel to provide wider and more vivid view for high readability in deep sea.

It is installed with bluetooth 4.1 to be connected with exclusive smart-phone app to manage dive log, share SNS, and adjust device settings as well.


Furthermore, its wireless charging system makes provide convenience of charging and leakage accident prevention caused while replacing battery.


slide-type strap changing method improves compatibility and varies your choice of style.


This manual covers with important and essential information to understand CYANO-RF's diverse functions.

Please make sure to have clear understanding regarding to instructions, displayed information, functional limitation. Thus, please read this user manual carefully and thoroughly.

2. Definition of Warning, Caution, and Note

 Warning is a sign that related to cause of serious injuries or deadly situation.

 Caution is a sign related to cause of trouble in the device.

 Note is a sign related to important information

 Warning

Please read this manual thoroughly!

Dive computer users must be informed with displayed information and instruction.

Inappropriate use of the device may cause damage to the device or lead serious injuries to deadly situation.

 Warning

Please do not use the device for commercial or technical diving!

This device is designed for recreational purpose.

Commercial or Technical diving is highly exposed to danger of decompression illness, or can exceed acceptable critical water depth. For these reasons, CYANO advise not to use the gear for commercial or technical diving

 Warning

Only trained divers should use this device.

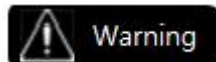
Not any dive computer can replace the need for proper dive training

Inappropriate diving may cause serious injuries to deadly situation.

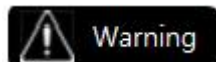
 Warning

Whether diving plan shows on dive computer or dive table is followed while diving or not, danger of decompression illness always can be faced. Procedures provided from dive computer or dive table cannot prevent decompression illness or oxygen intoxication.

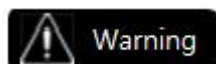
It is highly recommended to check own physical status, and have enough rest.



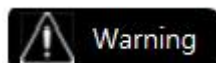
CYANO calculation of sport diving maximum of depth is based on O₂% and set from 1.4bar of maximum oxygen partial pressure (PO₂) set point, and it is also strongly advised to restrict to dive within 40m of depth that is calculated from dive computer.



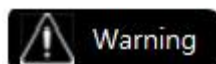
It is advised to quit diving when decompression stop is needed. when display shows decompression stop, ascent should be started immediately and also decompression stop has to be done as directed.



Use BACK-UP gauge. Ensure that you use depth gauge, submersible pressure gauge, timer or watch, and have access to decompression tables whenever diving with the dive computer.



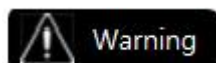
PERFORM PRE-CHECKS! Always activate and check the device before diving in order to ensure that all LCD segments are completely displayed, the device has not run out of battery power, and that the oxygen, altitude, personal, and other functional settings state.



It is strongly recommend you to charge the dive computer when you dive again after the previous diving.
When battery has been discharged, decompression information of repetitive diving and previous diving, and other data remain and optimal algorithm cannot be applied. This problem possibly lead to the danger of providing inaccurate decompression information, and so prohibit to follow the information shown on dive computer.



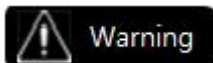
Please check out no-fly time before boarding on airplane after diving. Travelling high altitude or flying after diving and while no-flying symbol is still on the display can increase the risk of decompression illness. If no-flying related regulation is violated, risk of occurring decompression illness cannot be fully prevented.



THE DIVE COMPUTER SHOULD NEVER BE TRADED OR SHARED BETWEEN USERS WHILE IT IS IN OPERATION! Its decompression information the computer calculate while diving will not apply to someone who has not been wearing it throughout a dive or sequence of repetitive dives. if you dive without wearing dive computer within 4 days, the dive computer will give inaccurate information for subsequent; thus, following the data on dive computer is prohibited. User of dive computer must be restricted to one person and use the dive computer every time diving.



Do not round up fractional percentages of oxygen concentration! For example, 31.8% oxygen should be entered as 31%. Rounding up will cause nitrogen percentages to be understated and will affect decompression calculations. If there is a desire to adjust the computer to provide more conservative calculations, use the personal adjustment feature to affect decompression calculations.

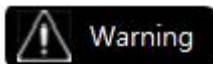


Set the accurate personal statement! If it is considered there are factors tend to increase the possibility of decompression illness, making calculations more conservative by using this option is recommended. Failure to set personal adjustment will cause erroneous dive and planning data.



This device used Li-Polymer battery. Li-Polymer is a rechargeable battery that is thinner and less dangerous from explosion than Li-ion. It is more stable, lighter, less dangerous from explosion than Li-Ion and convenient because there are only low chance of electrolyte lachrymal fluid, natural discharge, and memory effect.

Replacement of battery must be done only through exclusive service centre.



CYANO limits depth of water you can dive for sport diving not more than 40m. Diving under 40m increase the risk of decompression illness and oxygen intoxication.



The purpose of this device is not for free diving. Please use the free diving modle. Free diving without proper training or safety guarantee is prohibited. If not so, it can cause serious injuries to deadly situation.

3. Getting Started

Do not use CYANO dive computer before without understanding each mode, and way to adjust settings, and that functions.

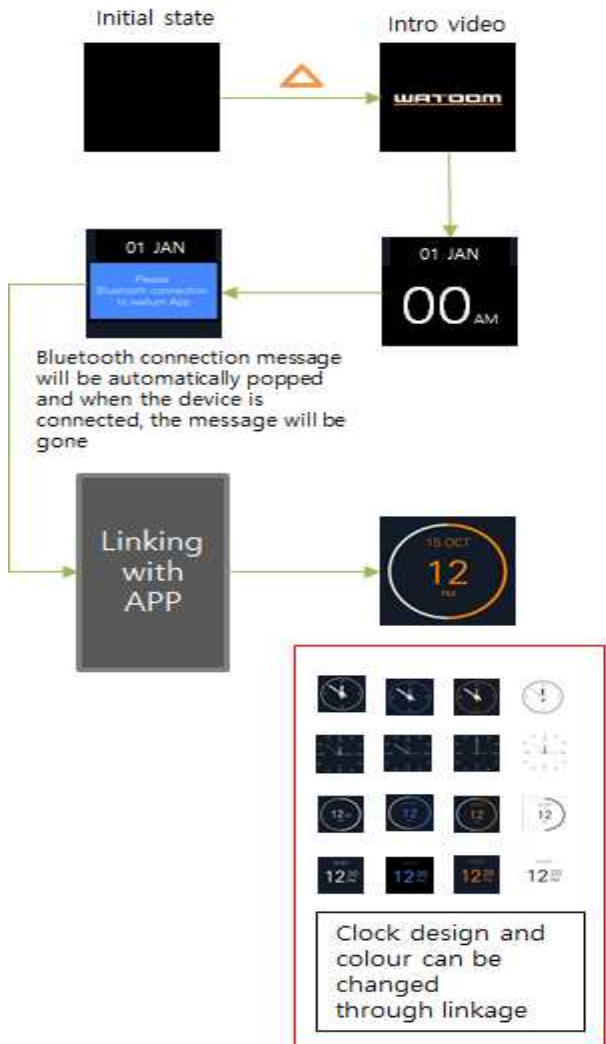
3.1 FlowChart

3.1.1 Power ON/OFF

CYANO dive computer is shipped with power off, so after open the box please turn on the power.

If the power doesn't turn on, the device is not the defected, but the battery is discharged, so please turn it on after charge the battery.(refer charging method 3.2.1)

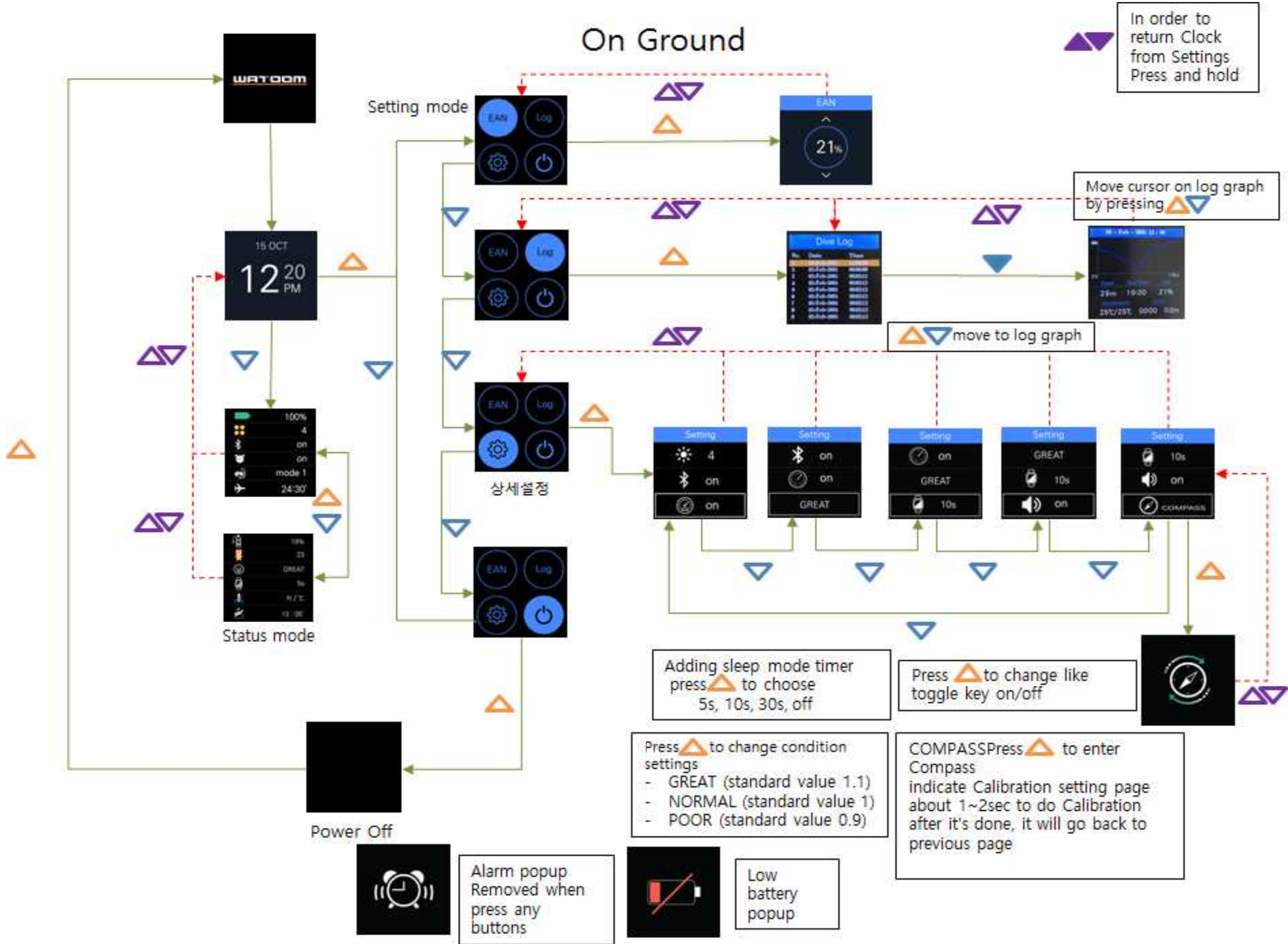
Factory Initial State



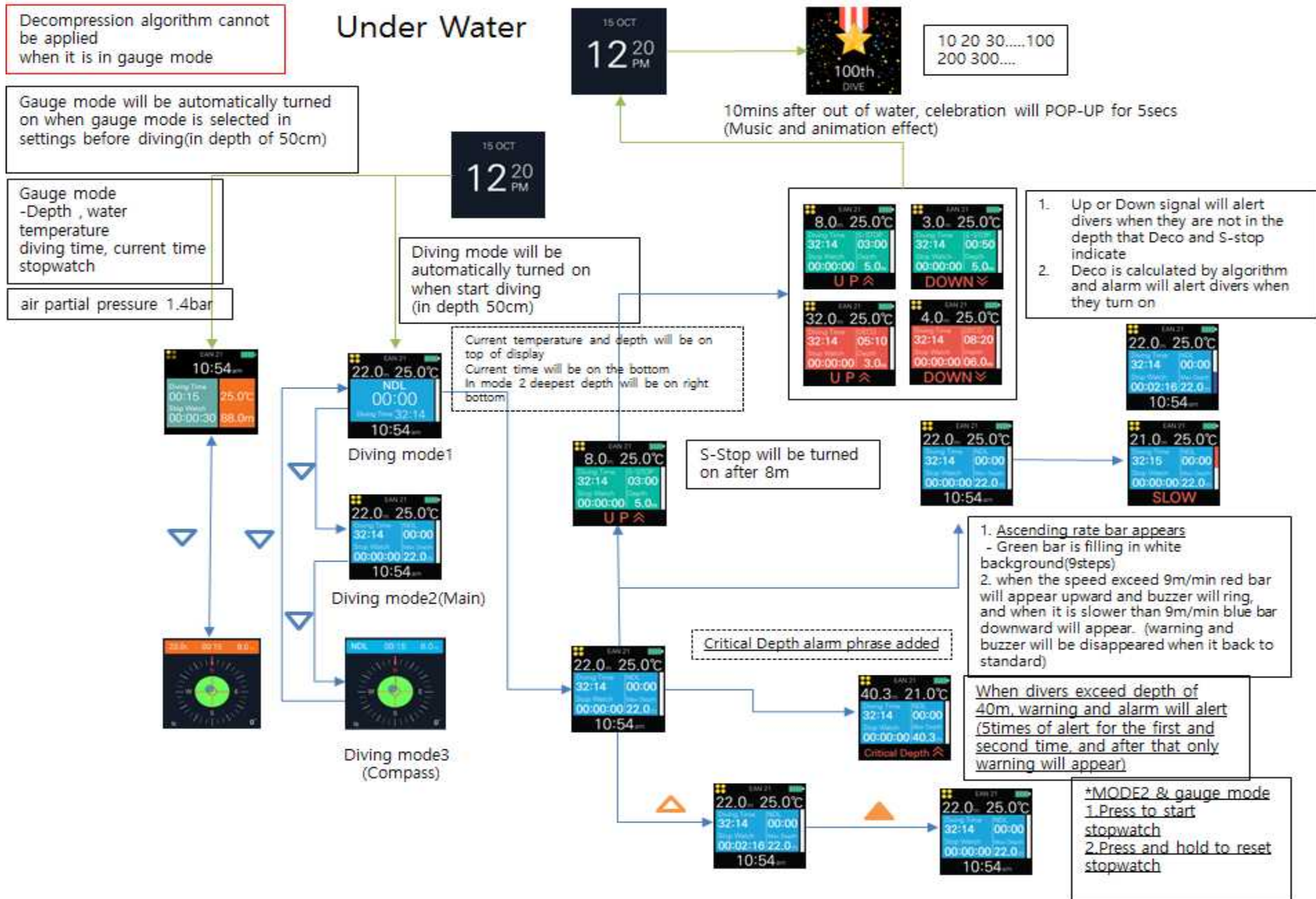
Buttons Indication	
Buttons	Figures
DN	
UP	
holding DN	
Holding UP	
BOTH	
Holding BOTH	

3.1.2 Function and button flow I

On Ground



3.1.3 Function and button flow II



3.1.4 Function and button flow III

Diving mode1



Warning buzzer after display switched

Diving mode 2(Main)



Buzzer will ring after changing display

Compass mode



Warnings
(Applied same in both Diving mode 1&2)

1	Display changing	When decompression stop occurs	Display changing /buzzer will ring
2	Display changing	When safety stop occurs	Display changing /buzzer will ring
3	SLOW	When ascending faster than 9m/min	Constantly when it is out of standard range (blink/alarm)
4	Critical Depth	Diving under 40m depth	<u>5secs blinking/alarming for the first and second times</u> Only warning appears after that
5	UP	Safety stopping/ Deep stopping	Constantly when it is out of standard range of depth (blink/alarm)
	DOWN		

3.2 Settings

3.2.1 Charging

Charging is started when you put the device on the wireless charging pad.

Estimate time for charging - within 1hour 40mins

you must charge at least 20mins

Operating duration - Diving mode(maximum 10hours)

Clock mode(at least 48hours)

Standby mode(at least 15days)

3.3 Setting from APP

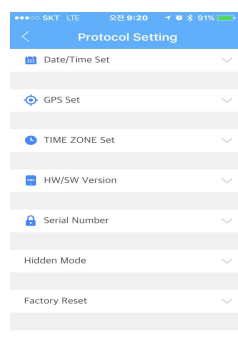
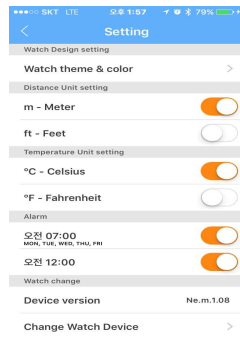
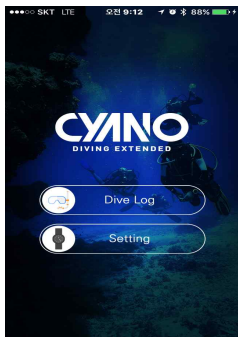
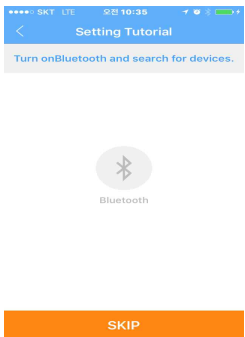
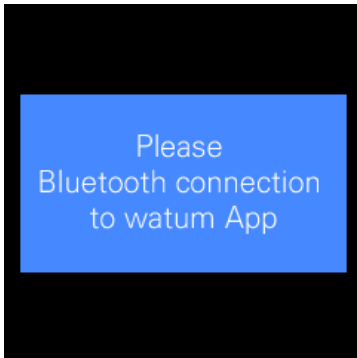
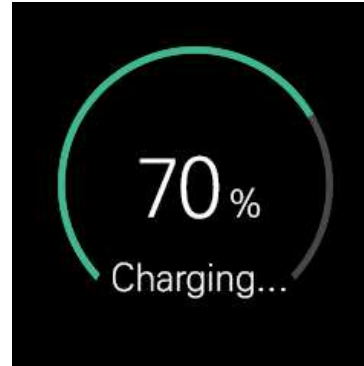
3.3.1 Connecting bluetooth

CYANO APP is available both on IOS / Android

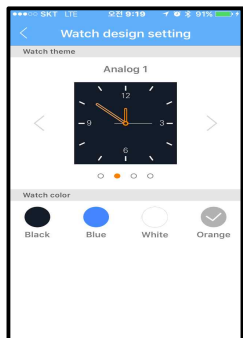
Download from: apple Store, Google Play

When the bluetooth has been connected, you can find Divelog and change the settings as pictures below.

After the first bluetooth connection set Protocol setting to make bluetooth connection popup to be disappeared.

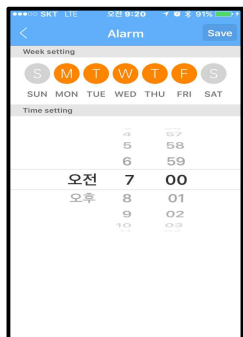


3.3.2 Setting up TIME mode

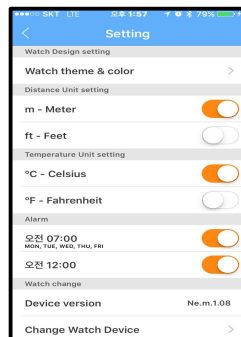


It is how display shows Time mode. It has analog & digital mode with in 4 different colours.

3.3.3 Setting up alarm

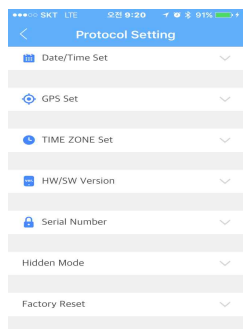


3.3.4 Setting up distance / temperature unit



When bluetooth is connected you can change alarm and distance / temperature units settings at setting menu in the App.

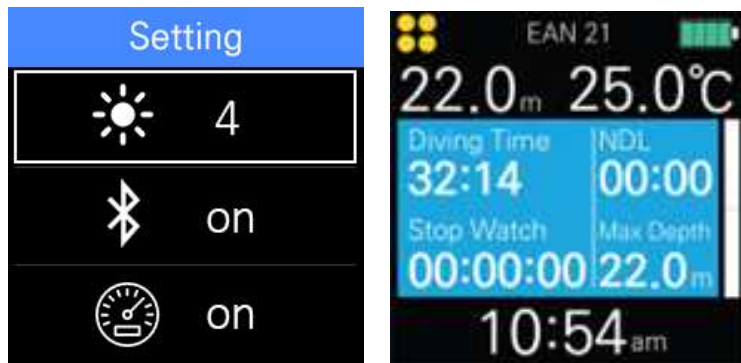
3.3.5 Setting up Current time and GPS



You can change current time and GPS settings on Protocol setting at setting menu in the App.

3.3.6 Setting up Display brightness

(adjust in the device)



Brightness adjusted through setting on time mode and through buttons on dive mode

On time mode, you can check

On time mode it can be changed with 1 to 4tier and on dive mode, it is see it through number of icons on top-left of display.

3.3.7 Bluetooth on/off

(adjust in the device)



You turn bluetooth On/Off on setting menu, and when it turned off battery would be saved.

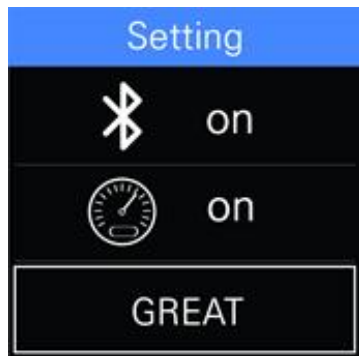
However, note that it is still on the list of bluetooth connection, it will not work properly.

3.3.8 Gauge On/Off (adjust in the device)



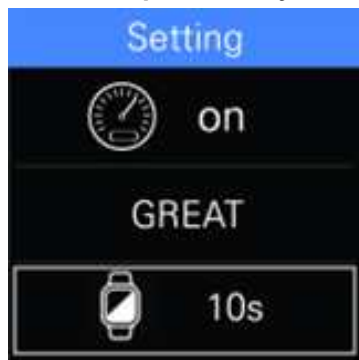
If it is set as gauge mode before start diving, it will automatically enter gauge mode, and warning phrase and buzzer will not ring, as well algorithm also won't be applied.

3.3.9 Setting up Condition (adjust in the device)



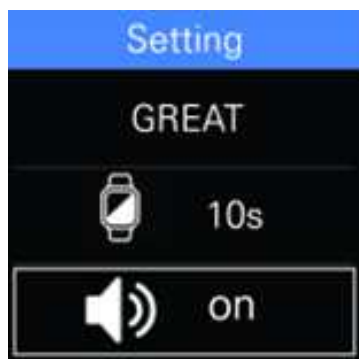
On the settings there are 3 set points; Great, Normal, Pool, and it can be changed by pressing top button. According to what condition you have set, level of conservatism changes, too.

3.3.10 Sleep Time (adjust in the device)



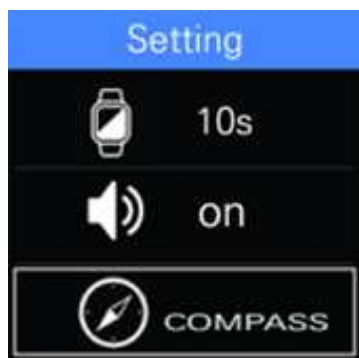
You can set Sleep Time(time for display to go sleep) 5sec, 10sec, 30sec, or off, and it will help you to manage battery.

3.3.11 Buzzer On/Off (adjust in the device)



You set Buzzer On/Off, and as the results, all buzzers include alert in diving mode and others can be turned off. It will help you to manage battery.

3.3.12 Comps Calibration (adjust in the device)



You can do the compass Calibration on COMPASS in the setting menu. For more information about this please refer to 4.8.1 Compass Calibration.

4. Before diving

Please read this manual thoroughly and understand meanings of what displayed information are and that functions before using the device. Ensure that user has all the responsibilities for own safety. Proper use of dive computer makes itself a fine tool. However, no dive computer can replace authorized and proper trainings include basic decompression training.

Nitrox diving may cause more risks including serious injuries and death to divers
Divers who have not acquired qualification from authorized agencies must not use mixed gases other than O₂ when diving.

4.1 Bühlmann(ZH-L16C) Algorithm

CYANO uses ZH-L16C, which shows most outstanding performance among the existing algorithm.

The **Bühlmann decompression algorithm** is a mathematical model (algorithm) of the way in which inert gases enter and leave the human body as the ambient pressure changes. Various versions, Bühlmann created with his successors, are used to create **Bühlmann decompression tables** and to compute, in personal dive computers, no-decompression limits and decompression schedules for dives in real-time. These decompression tables allow divers to plan the depth and duration for dives and the required decompression stops.

The model assumes perfusion limited gas exchange and multiple parallel tissue compartments and uses an inverse exponential model for in-gassing and out-gassing, both of which are assumed to occur in the dissolved phase (without bubble formation).

Bühlmann(ZH-L16C) especially is the 16 compartment algorithm with further modification to the middle and faster "a" values, intended for use in dive computers as a "package". It can be used with almost all low-level processor units but it is less flexible compared to the ZHL16B.

Table of ZH-L16A Half-times with "a" and "b" values for nitrogen and helium.^[8]

Compartment	Half-time N ₂ (minutes)	N ₂ 'a' value	N ₂ 'b' value	Half-time He (minutes)	He 'a' value	He 'b' value
1	4	1.2599	0.5050	1.5	1.7435	0.1911
2	8	1.0000	0.6514	3.0	1.3838	0.4295
3	12.5	0.8618	0.7222	4.7	1.1925	0.5446
4	18.5	0.7562	0.7725	7.0	1.0465	0.6265
5	27	0.6667	0.8125	10.2	0.9226	0.6917
6	38.3	0.5933	0.8434	14.5	0.8211	0.7420
7	54.3	0.5282	0.8693	20.5	0.7309	0.7841
8	77	0.4701	0.8910	29.1	0.6506	0.8195
9	109	0.4187	0.9092	41.1	0.5794	0.8491
10	146	0.3798	0.9222	55.1	0.5256	0.8703
11	187	0.3497	0.9319	70.6	0.4840	0.8860
12	239	0.3223	0.9403	90.2	0.4460	0.8997
13	305	0.2971	0.9477	115.1	0.4112	0.9118
14	390	0.2737	0.9544	147.2	0.3788	0.9226
15	498	0.2523	0.9602	187.9	0.3492	0.9321
16	635	0.2327	0.9653	239.6	0.3220	0.9404

4.2 Emergency ascent

If the emergency situation like breakdown of dive computer happens, please practice the following direction provided by authorized diving center

- STEP1: Immediately ascent calmly higher than 18m of depth.
- STEP2: Slow down ascent rate by 9m/min after pass 18m of depth.
- STEP3: For the best safety, stay still in the depth of deep stop until the air is fully consumed.

After all, Never dive again before you spend 24hours on land.

4.3 limitations of Dive computer

Even though current dive computer provides all the information of decompression, divers must be aware that dive computer cannot catch the divers' physical changes for each divers have different tendency.

4.4 Nitrox

Nitrox diving decreases risk of decompression illness by reducing nitrogen among mixed gas. However, as amount of air increases relatively, risk of oxygen intoxication increases. To prevent this, divers should analyse gaseous components and set oxygen percentage in dive computer by own.

4.5 Free diving

This device(CYANO-RF) is not free diving model. Please use free diving model when free dive.

Dive both scuba dive and free dive is not proved and may be exposed to possible unpredicted risks. In any case of breath hold diving could cause Shallow Water Blackout(SWB). In general, breath hold diving may nitrogen to be built-up in blood and tissues. Thus, free diving after scuba diving within 2hours is prohibited. and vice versa

4.6 Audible & visual alarms

The alarm system will automatically work for important notice when diving. Alarm works both in audible(deep sound) and visual(warning phrase, flickering), and the alarm works differently case by case.

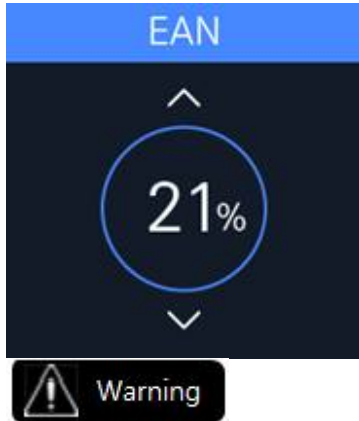


4.7 Activating diving mode

When it reaches 0.5m under water, the dive computer will automatically start diving mode.

However, it is recommended to check out Oxygen percentage(O2%), personal settings, and battery condition before diving.

4.7.1 Setting up NITROX mode



Nitrox can be set up at EAN in setting menu before diving.

CYANO limits maximum depth for sport diving to within 40m. Diving exceeding over 40m increases the exposure of Decompression illness and oxygen intoxication.

4.8 pre-checks

- List below should be checked out

Is it suitable mode to dive? (Air/Nitrox/Gauge mode)

Is there enough remained battery?

Have compass Calibration done?

Is the unit correct? (m/ft) - check on App

Are personal adjustment, settings correct? (condition, EAN, and etc)

4.8.1 Compass

Because of the compass works differently in every region and altitude, please do the compass calibration before diving to get accurate results. In the detailed setting, enter the compass menu and spin the device around within 2secs to complete Calibration correctly, before diving. After 2 secs, it will be back to previous menu before.



4.8.2 Battery power indication

Battery condition is affected by oxidation inside the battery. If dive computer is neglected for long time, battery warning can be appeared, no matter the amount of battery remainder. At the similar aspect, if the dive computer is exposed to low temperature battery warning can be appeared, too. When battery is low as it showed in picture below, battery should be started charging immediately.



4.8.3 Diving at high altitude

It is recommended not to travel high altitude area after diving at ground level for amount of nitrogen in body may be changed. Also, If you want to dive at high altitude, you should stay at least 3 hour at the level where you've done the previous diving. in case of high altitude diving, decompression time may be shorten depends on the altitude value

4.8.4 Personal settings

Set points are divided by 3 as shown chart below depend on personal physical condition and diving experience.

Mathematical calculation of the dive computer will depend on the set points, and decompression diving time will be shortened when it set as POOL.

- **NORMAL** - Basic set point.
- **POOL** - Set point for when it is somewhat dangerous or it has possible danger of decompression illness.
- **GREAT** - Set point for when both atmosphere and your condition are best.

4.8.5 Outbreking conditions of decompression illness

Conditions list below differ person by person

- Diving at below 20degree
- When physical condition is weakened than ordinary people
- When fatigue
- When dehydrated
- When experienced decompression illness
- When stressed
- Obesity
- When suffering from Patent Foramen Ovale (PFO)
- When exercise strenuously before and after diving

4.9 Safety Stop (S-STOP)

Safety Stop is a good habitation for recreation divers. Safety Stop prevents decompression illness, microbubble formation, and helps controlling ascending rate

This device will activate mandatory safety stop for 3 mins after diving more than 10 mins.

4.9.1 Mandatory Safety Stop

When it reaches range of 8m depth, the mode switches to

Deep Stop mode, and Up/Down signal will appear.

Divers must stop until the Deep Stop mode disappear.

When Deep Stop mode is activated, divers should not ascend over 5m depth. If divers ascend over directed depth, downward arrow(picture 1. shown on the right side) will appear and constant

alarm will ring. On the same extend, if divers didn't reach the directed depth, upward arrow(picture 2. show on the right side) will

appear and constant alarm will ring. Divers should ascend or descent to the range of depth for Deep Stop. When it is followed properly, decompression affection comes while re-diving will be vanished. However, when it is violated, next diving may be prohibited based of calculation by algorithm. It is recommended to have enough surface interval



4.10 Decompression Stop (DECO)



According to this please refer to chapter6 "Decompression diving".

5. Diving

This chapter explains about how to activate dive computer and displayed signals meaning.

5.1 Dive with the air mode (Dive Air)

- This Chapter shows information of Air mode. Mode for diving can be changed in diving mode.



□ This device will automatically switch to diving mode when it reaches over 0.5m of depth.

5.1.1 Basic dive data

Dive data appeared while decompression diving(refer to the picture below)



5.1.2 Ascent rate indicator

Ascend rate is shown on the right side of display as bar graph. Bar graph will extend in length and colour will change as a warning if divers exceed the maximum speed allowance(9m/min). When divers ignore this warning, and don't slow down nor stop, SLOW signal will be appeared.



Do not exceed the maximum speed for ascend(9m/min). Danger of exceeding the maximum speed is to cause serious injuries or deadly situation.

5.1.3 Stopwatch (Timer)

Stopwatch can be used anytime divers wanted to while diving.

START & STOP: Press up button

RESET : Press and hold UP button



6. Decompression Dives

6.1.1 What is decompression dives?

Decompression dive is when divers dive exceeding limit time for no-decompression. In general, it is restrict for sport divers to dive exceeding limit time for no-decompression to protect the divers' safety.

- Mode will be changed to DECO mode when limit time for decompression displayed on left middle of screen turns to 0, and show decompression information.
- Dive computer shows directed depth and time according to decompression information.
- Directed decompressing depth(Ceiling) : Indicated depth where divers need to be reached for decompressing



Do not ever ascend over directed decompressing depth(Ceiling).

Doing so increase danger of decompression illness jighly.

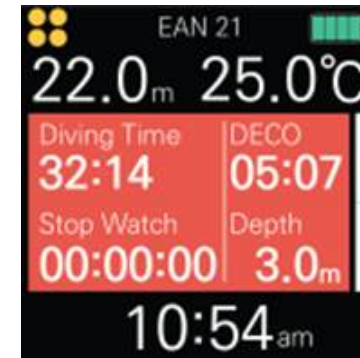
Moverover, Safety stop is very needed after decompression stop, and ascend again when safety stop is over.

When safety stop is over, mode switches to NDL. This means that 3 mins for safety stop is fulfilled.

■ Indication of decompression stop area(Ceiling Zone)

If divers ascend over ceiling zone, downward signal and alarm will appear, and if diver don't reach the ceiling zone , upward signal and alarm will appear.

When divers violate decompression stop direction, dive computer will turn to error status, and divers prohibit to dive again at least 48hours after error status has shown.



6.2 Dive with Nitrox mode(Dive Nitrox)

6.2.1 Cautions before starting dive nitrox

Because dive computer decompression calculation differs depending on ratio of oxygen and nitrogen, divers should input accurate oxygen percentage. Do not round up fractional percentages of oxygen concentration! For example, 31.8% oxygen should be entered as 31%. Rounding up the percentage of oxygen makes nitrogen percentages to be understated, and this may cause decompression illness. In the opposite way, input lower than actual percentage will cause oxygen intoxication.

Diving plan on dive computer also calculated based on oxygen ratio.

■ Basic nitrox setting

- CYANO-RF is basically set oxygen percentage as 21%. Divers can adjust oxygen percentage 2% to 99%.

6.3 Dive with Gauge mode (Dive Gauge)

In the gauge mode, Dive Time with minute and second is shown on left side of screen, and current depth and time also. Stopwatch will operate when you press up button on left-bottom of screen.

Limit time for no-decompression may be less than usual when diver dive with normal dive mode right after dive with gauge mode for gauge mode data are applied to.



Gauge mode doesn't provide information about decompression and ascend rate(decompression algorithm do not apply)

7. After Diving

7.1 Surface Interval

7.2 Diving Frequency

7.3 Flying after diving

No Fly time is shown beside airplane symbol in status indicating mode.

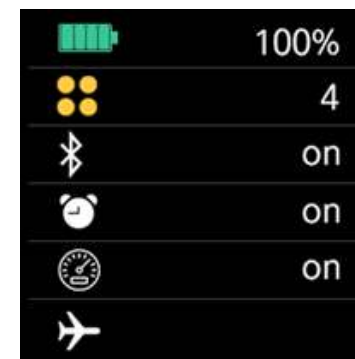
It is better not to go on board or travel high altitude places while No Fly time is on.

Minimum of No Fly time is 6hours and it may increase according to diving frequency, how deep you dive, existence of DECO.

Exceptionally, in cases of error mode is on when divers have violated decompression stop and dived with gauge mode, No Fly time is 36hours..

- DAN(Divers Alert Network) recommend divers to follow No Fly time as listed below.

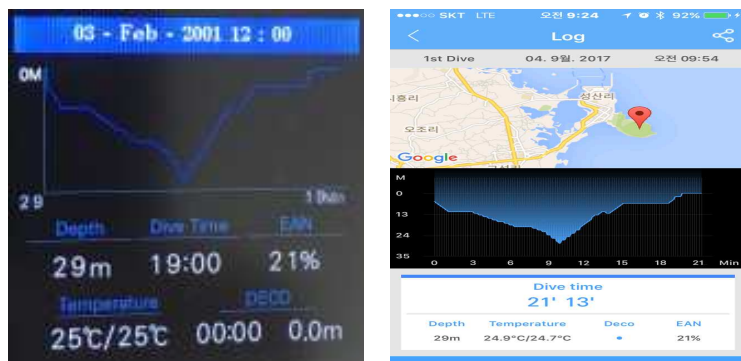
- Considering usual airplanes fly over 2400m above, divers are needed to sleep at least 12hours.
- If divers dive several times every day, or decompression diving, it is needed to wait 12hours before boarding an airplane.
UHMS recommend divers to wait 24 hours if they dived decompression needed diving.
- If divers dived more than 2 hours in 48hours, it is recommended to wait 12hours.
- If decompression needed diving was done, it is better to wait 24hours at least, 48hours if possible.
- CYANO recommend divers to observe No Fly time that according to recommendation of DAN and UHMS.



7.4 LOG MODE

Divers can check diving date, time, and detailed data of each section on Log mode.

Also, after connecting CYANO exclusive App through bluetooth, you can transfer logbook into the app, and upload and share on SNS.



Memory can hold at least 50 times of diving data. After memory is full, oldest data is deleted automatically.

Saved data will still remain, even after replacing the battery.

Moreover, Diving log data can be saved on CYANO server with no loss through the App.

7.5 Exclusive APP for CYANO

CYANO exclusive APP is available both on IOS/ANDROID, and through bluetooth, saved log data can be transferred to smart-phone APP from dive computer. Also, divers can manage location data from GPS in the phone on the log book by connecting APP and dive computer before diving.

Moreover, we built our own server for semipermanent saving and managing, and it is easy to share on SNS, too.

CYANO APP is not only able of simple log book management, but also capable to change various settings of dive computer.

- Time mode(digital, analog)

-Colour of clock(black, blue, white, orange)

-Alarms

-Temperature(Celsius, Fahrenheit)/ Unit(m/ft) orthography setting

DIVE LOG DATA







- Diving profile
- Each diving duration
- Diving No.
- Diving started time (year, month, day, time)
- Oxygen percentage(nitrox)
- Water temperature
- Depth of water
- Log book function

7.6 No Dive mode

If divers didn't practice as the dive computer indicate, No Dive mode is entered, and divers will be able to dive again after 48hours.

For the first few times, pop-up appear with 3 times of flicker and it will disappear when divers manipulate buttons.

In When No Dive mode is entered, you can find time beside No Dive icon the on status display.

	21%
	23
	GREAT
	5s
	ft / °C
	13 : 00'

8. CARE AND MAINTENANCE

CYANO dive computer is designed strong enough for use of scuba diving; however, it needs to pay special attentions to store and maintain.

8.1 Buttons

If buttons are tighten or loosen than it was used first time, it needs to be replaced. Because of defected buttons may cause leakage, it needs to be checked regularly.

8.2 Maintaining dive computer

- Do not ever try to disassemble the dive computer. Damages from disassembling cannot be compensated.
- Every 100 times of diving or 2 years, the dive computer must be checked at CYANO exclusive A/S centre. This inspection includes ordinary checkups, battery replacement, waterproof checkup, and others, and these checkups needs special skills and instrument to be done; therefore, visiting exclusive A/S centre is mandatory.
- If moisture appear inside case or surface of glass, please call CYANO A/S centre.
- When there is scratch or crack on device or device is not working properly, please visit CYANO A/S centre and ask for help.
CYANO-RF should use proper protector.
- When you problem with straps or buckles, Please replace it from distributors.
- Please clean with fresh water after each use.
- Be careful with shock, high temperature, direct light, and contacting with chemical substances. Dive computer cannot stand shock from heavy materials like scuba tank or gasoline, solvent, spray, glue, paint, acetone, alcohol, and other chemical substances.O ring damages caused by chemical substances may have problem with device damages and leakage.
- Please store the device in a dry place when it is not in use.
- Do not fasten wristband too much. Commonly, it's better to leave some space about an inch between wrist and dive computer.

8.3 Maintenance

- CYANO dive computer needs to be checked up from exclusive A/S centre every at least 2 years.



Replacing surface glass cost lot of money. Please use protect cover or scratch guard on the device when you are diving. In case the glass replacement is needed, LCD panel also has to be replaced with the glass, and it makes price of replacing higher. Please be aware of this and careful to use.



Caution

The device has to be soaked and washed in fresh water and fully dried after each use. Washing all the salt crystals away is important. However, in case of discovering any moisture in dive computer while washing it, visit CYANO A/S centre immediately and make this problem solved.



Caution

Never use any kind of air pressure water-jet toward the dive computer. Cleaners such as solvent may cause problems. Do not expose the dive computer to compressed air in cylinder.

8.4 Waterproof test

Waterproof test is process done in exclusive service centre after A/S or inspection. Waterproof test must be pass after the inspection. Exclusive service centre will issue a confirmation to divers after the waterproof test is done. In case of a diver didn't get the confirmation or leakage caused because of inspection done by unauthorized places, you cannot have compensation.

9. Battery replacement

Considering the waterproof problem, battery replacement must be done in exclusive CYANO A/S centre.



Note

Leakage problem caused by users' inappropriate battery replacement is out of CYANO warranty bound.



Note

Exist settings will be initialized after battery is replaced. Important articles such as logbook memory, personal settings, and etc will remain, but current time, user set alarms and some others will be initialized.

10. Technical Data

10.1 Technical Specifications

■ Size & Weight

width 39.92mm * length 48.07mm * thickness 16mm

weight : 105g

■ Display

1.54" IPS LCD pannel

■ Glass material

K1glass

■ Body material

SUS316L Stainless Steel

■ Cover material

PC+GF20%

■ Strap material

silicon

■ Strap changing method

Slide-type changing method

■ Depth gauge

Temperature compensated pressure sensor

Maximum depth of operation : 100 m [328 ft]

Accuracy : $\pm 1\%$ of full scale or better from 0 ~ 100 m/328 ft at 20°C/68°F

Depth display range : 0 ~ 130 m [426 ft]

Resolution : 0.1m, 0 ~ 100m [1 ft, 0 ~ 328 ft]

■ Temperature display

Resolution : 0.1°C

Accuracy : 20°C ± 0.8

-20°C ~ 45°C ± 6

■ Clock

Accuracy : maximum $\pm 1.7\text{s/day}$ (at 20°C/68°F)

■ Display only in Nitrox mode

Oxygen% : 21~99

Oxygen partial pressure display : 1.4 bar

■ Log/Dive profile memory

Memory capacity : 50~100 times

Sampling period : 10s

■ Operating conditions

Working voltage for device : over 3V

Operating temperature: 0°C ~ 40°C

Storage temperature: -20°C ~ 45°C It is recommended to be stored in a dry place

*Do not leave the dive computer leave in direct sunlight

■ Battery

■ Li-Polymer

■ *3.8v 350mAh

■ Wireless charging (Qi)

- Estimate time for charging : within 1hour 40mins
- Operating duration : Diving mode(Maximum 10hours)
 Clock mode(at least 48hours) - with Display off
 Standby mode(at least 15 days)
- Wireless charger pad
 - Maximum input 5V-2A
 - Maximum output 5V-1A

Following situations may affect the hours of battery use.

- Diving duration
- Storing temperature
- Brightness of backlight
- Use of compass
- Buzzer used frequency
- Bluetooth ON or OFF

■Algorithm

- Buhlmann(ZH-L16C) algorithm - refer to 4.1

11. Copyright, Trademark, Patent, KC registration of conformity, Guarantee

11.1 Copyright : This user manual is property of CYANO and no portion of this manual may be used, distributed, delivered, disclosed, copied, nor reproduced without prior written consent.

11.2 Trademark : Trademarks such as CYANO, WATOOM are protected by trademark laws

11.3 Patent : This product is protected by the Korean Intellectual Property Office

11.4 Conformity Authentication

KC : 000-000-000-000-000

CE : 000-000-000-000-000

FCC :

ROHS

WEEE :

SRRC :

BLUETOOTH :

TELEC :

This is a radio equipment that may cause spread confusion; therefore, it is not allowed to use for services that related to human life safety.

FCC

Class B Digital Device

Note : This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment in to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Part 15C

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received.

Including interference that may cause undesired operation.

FCC Caution

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with RF exposure requirement.

CE-RED

This device can be operated in at least one Member State without infringing applicable requirements on the use of radio spectrum."

- RF Range: 2402 ~ 2480MHz
- Max Output Power: dBm e.i.r.p

11.5 Limited warranty for CYANO wristwatch-style computer and parts.

-Effective date : 2008. Mar. 01

-The terms of warranty: 1year from the date of purchase

CYANO exclusive service centre provide limited warranty to purchased CYANO wristwatch-style computer and parts as followed below.

- a) Repair of the device and/or the parts
- b) Replacement of the device and/or the parts

c) Refund or free exchange of new device when it has any manufacturing defects
This warranty only valid when the device is sold in purpose of selling at the country.

11.6 Exclusions and Limitations :

In case of following below, the warranty is not applied.

- Normal wear and tear
- Defects caused by rough handling (by sharp object, by bending, giving pressure on it, or dropping, and etc)
- Any defects caused by using device against the rules that CYANO provide (for example user manual, guideline on guidebook) and using it improperly.
- Any device and parts that is not manufactured and supplied by CYANO and if the device is not used for original purpose of use.
- Replaceable straps, accessories, and other expendables
- If the device is opened to fix or remodel it not by the person in charge in CYANO or official service centre.
- If serial number of the product has been deleted, removed, or illegally refomated. : these particulars decided by CYANO's exclusive judgment.
- If the device is exposed to chemicals such as mosquito repellents and etc

11.7 Other important notice

Wireless charger pad is optional product you can buy separately.

While repairing or replacing the device, some data and contents may possibly be lost; therefore, please make a backup file before having the device repaired or replaced. CYANO or its official service centre do not have any responsibilities on losing contents and data by consumers' negligence while repairing or replacing the device.

12. Glossary

- NDL (No-Decompression Limit)
- UHMS (Undersea and Hyperbaric Medical Society)
- Altitude dive : Dive at over 300m altitude above the sea
- Ascent rate : Divers' rising speed towards the water surface
- Compartment : Organizational classification of respectively having different half-time period.
- DAN : Divers Alert Network.
- Decompression : Stopping for time needed to naturally release nitrogen from tissues before ascend to the water surface.
- Decompression sickness : It writes as "bends", "DCI" in general, and it occurs various diseases because of built up nitrogen in blood and tissues by inappropriate diving.
- Dive time : Elapsed time between leaving the surface to descend, and returning to the surface at the end of a dive.
- EAN : It stands for 'Enriched air nitrox.'
- Enriched Air Nitrox : More oxygen enriched air. Can be written as EANx.
The standard mixtur ration is EAN32 (NOAA Nitrox I = NNI) and EAN36 (NOAA Nitrox II = NNII).

- Equivalent Air Depth : It is equivalent depth that applies when dive nitrox and normal air
- Floor : Maximum depth of water before occurring decompression.
- Half-time : It means the time for diving to reduce built up nitrogen in body to half.
- NITROX : Nitrogen-oxygen mixture ratio in standard air.
- NO DEC TIME (No-decompression time) : Maximum time that can be dived in the depth where compression stop is not needed.
- No-decompression dive : Diving that do not need to exercise compression stop while ascending.
- OEA=EAN=EANx : IT stands for Oxygen Enriched Air Nitrox
- O2% : Oxygen Percentage of partial pressure of air in breathing gas. The standard air contains 21% oxygen.
- Repetitive dive : Diving while in limit time of decompression which affected by leftover nitrogen from previous diving.
- Residual nitrogen : Amount of left over nitrogen saturation in divers' body after one or more diving
- Surface interval time : Time that from reaching surface after diving to descending into water to dive again.
- Tissue group : Theoretical concept of body tissue modeling for decompression table and decompression calculation.