OCEANIC®

DATA PLUS™

owner's guide

R3

RESPONSIBLE COMPUTER DIVING

- **Always Plan Each Dive**
- **Always Limit Your Dive to the Level of Your Training and Experience**
- **Always Make Your Deepest Dive First**
- **Always Make The Deepest Part Of Every Dive First**
- **Check Your Computer Often During the Dive**
- **Do A Safety Stop On Every Dive**
- **Allow Adequate Surface Interval Between Each Dive**
- **Allow Adequate Surface Interval Between Each Day Of Diving (12 Hours Or Until Your Computer Clears)**

Read And Understand This Owner's Guide Thoroughly <u>Before</u> Using the DataPlus.

Pay special attention to items marked with this Warning symbol. ⚠

⚠ WARNINGS:

- **The DataPlus is intended for use by recreational divers who have successfully completed a nationally recognized course in scuba diving, and diving with enriched nitrogen-oxygen (nitrox) mixtures.**
- **It is intended only for no decompression diving, NOT intentional decompression diving.**
- **It must not be used by untrained persons who may not have knowledge of the potential risks and hazards of scuba diving, and diving with enriched nitrogen-oxygen (nitrox) mixtures.**
- **You must obtain scuba certification, and certification in diving with enriched nitrogen-oxygen mixtures (nitrox) before using the DataPlus if you have not already done so.**
- **It is NOT for use by military and commercial divers.**
- **It should NOT be utilized for any competitive, or repetitive square wave or decompression diving, as it is intended solely for recreational use and no decompression multilevel diving.**
- **As with all underwater life support equipment, improper use or misuse of this product can cause serious injury or death.**
- **Never participate in sharing or swapping of a dive computer.**
- **Conduct your dives in such a manner so as to insure that you continuously check the computer's proper function.**
- **Read and understand this owner's guide completely before diving with the DataPlus.**
- **If you do not fully understand how to use this dive computer, or if you have any questions, you should seek instruction in its use from your authorized Oceanic dealer before you utilize this product.**

LIMITED TWO-YEAR WARRANTY

Oceanic guarantees, to the original purchaser only, that the DataPlus will be free of defects in materials and/or craftsmanship under normal recreational multilevel scuba use for two years from date of purchase, provided proper care and annual service are performed as described within this owner's guide. Should your DataPlus prove to be defective for any reason (other than those listed in the limitations section below) it will be repaired or replaced (at Oceanic's discretion) free of charge excluding shipping and handling charges.

This warranty will be considered void if the registration card is not filled out completely at the time of purchase and mailed to Oceanic within 30 days of purchase, and/or if the annual inspection is not done according to this owner's guide. This warranty is non-transferrable and applies to the original purchaser only. All correspondence concerning this warranty must be accompanied by a copy of the original sales receipt and a copy of the owner's portion of the warranty registration card including the annual inspection record.

Once each year you must return the DataPlus to an Authorized Oceanic Dealer within 30 days of the original purchase date anniversary to keep the two year limited warranty in force. Annual inspection includes verification of depth accuracy and proper general function. Labor charges for the annual inspection are not covered by the warranty. You must provide a copy of the original sales receipt and a copy of the owner's portion of the warranty registration card including the annual service record to obtain warranty service.

Statement of Limitations - General:

Warranty does not cover damage from accident, abuse, battery leakage, tampering, lack of proper care and maintenance and/or proper annual servicing, or improper use of the DataPlus. Modifications or repair by anyone other than an Oceanic Sales & Service Center authorized to service the DataPlus will void the warranty. Oceanic will not be responsible for recovery or replacement of the product in the event of loss or theft. Oceanic, its distributors, and retailers make no warranties, either expressed or implied, with respect to this product or its owner's guide except those stated in the preceding paragraphs. **In consideration of the sale of the DataPlus to you, you agree and understand that in no event will Oceanic, its distributors or retailers, be held liable for any personal injuries resulting from its operation, or for any other damages whether direct, indirect, incidental, or consequential even if Oceanic is advised of such damages.**

Some states do not allow the exclusion or limitation of implied warranties or liabilities for incidental or consequential damages, so the above limitation may not apply to you.

Warranty does not extend to plastic gauge face, o-rings, batteries, or damage due to accident, abuse, modification, or tampering.

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510/562-0500

TRADEMARK NOTICE

PATENT NOTICE

U.S. Patents have been issued, or applied for, to protect the following design features:
Graphic Diver Interface, Pre Dive Planning Sequence, Data Sensing and Processing Device (U.S. Patent no. 4,882,678), Tissue Loading Bar Graph (U.S. Patent no. 4,882,687), and Variable Ascent Rate Indicator Bar Graph (U.S. Patent no. 5,156,055).

DECOMPRESSION MODEL

The programs within the DataPlus simulate the absorption of nitrogen into the body by using a mathematical model. This model is merely a way to apply a limited set of data to a large range of experiences. The DataPlus dive computer model is based upon the latest research and experiments in decompression theory. **Still, using the DataPlus, just as using the U.S. Navy (or other) No Decompression Tables, is no guarantee of avoiding decompression sickness, i.e. "the bends."** Every diver's physiology is different, and can even vary from day to day. No machine can predict how your body will react to a particular dive profile.

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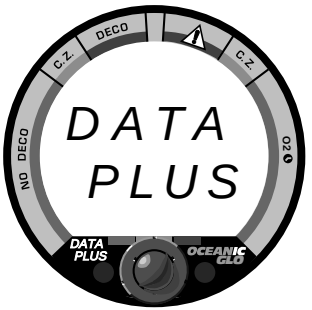
INTRODUCTION

Welcome to Oceanic and thank you for choosing the DataPlus!

Your new DataPlus presents the information that you need before, during, and after your air (or nitrox) dives using Oceanic's intuitive combination of easy to read digital displays and unique identification icons.

Tissue loading of nitrogen, accumulation of oxygen, and ascent rate are presented as segmented bar graphs alongside color coded reference indicators that bring quick focus to these important status displays.



As you progress through this instructional guide, you will become familiar with all of the unique functions and features available and see examples of the displays that you could expect to see in the DataPlus' various operational modes.

The initial time that you invest becoming acquainted with your new DataPlus will be returned as you enjoy your underwater activities with the comfort that your familiarization affords.

The DataPlus' wide array of features are described in detail throughout the pages that follow. Due to the importance that they be understood thoroughly prior to using the DataPlus, information will be expanded upon and some refreshed as you proceed. Relax and read through the complete guide.

It is extremely important that you:

- **Read this owner's guide in sequence and understand it completely before attempting to use the DataPlus.**
- **Check the DataPlus frequently during your dive.**
- You must also be a trained diver, certified by a recognized training agency in Scuba diving.
- Prior to using the oxygen related features of the DataPlus, you must also be trained and certified for diving with enriched nitrogen-oxygen (nitrox) mixtures by a recognized agency.

Remember that the rules you learned in your basic scuba certification course still apply to the diving you will do while using a dive computer - some will become even more important. Technology is no substitute for common sense, and a dive computer only provides the person using it with data, not the knowledge to use it.

Be a -
RESPONSIBLE DIVER
at all times.

WARNING: Inspect your DataPlus prior to every dive, checking for any signs of the entrance of moisture, damage to the button membrane, or damage to the LCD display. If any signs of damage are found, return the unit to an Authorized Oceanic Dealer. DO NOT attempt to use it until it has received factory service.

REGULATOR ATTACHMENT

If you have purchased the DataPlus in a console version, you will need to have it attached to your regulator first stage by an Authorized Oceanic Dealer.

ACTIVATING THE DISPLAY

You activate the DataPlus by pressing and releasing the **control button** located below the display (Fig. 1a). Depressing and holding the control button for 8 seconds will allow you to enter the External Access Mode used when you down-load (copy) dive data from the DataPlus to the OceanLink™ PC software logging program that is available separately. Depressing the button during the Dive Mode will activate the unit's temperature and Oceanglo® backlight features. R3

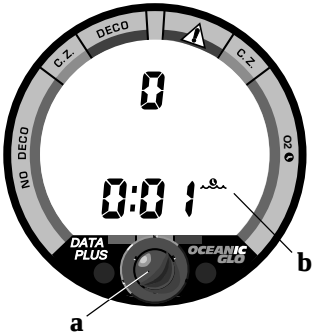


Fig. 1 - Surface Mode

After a diagnostic check that lasts several seconds, the DataPlus advances through a sequence of displays, called the Surface Sequence, that will repeat continually until a dive is made, or until the unit shuts off automatically. First to appear will be Surface Mode, followed by FO2, then PO2 (if FO2 is 'set'), and the Pre Dive Planning Sequence. After a dive is made, Time to Fly will appear prior to FO2. These displays will all be explained as you read through this guide.

The 'pre dive' **Surface Mode** identified by the Surface Mode icon (Fig. 1b) and the number "0" indicating that no dive has been made since activation. The

Surface Time display will start counting up from 0:00. If no dive is made within 2 hours (2:00) after activation, the unit will automatically shut off.

After displaying the Surface Mode for several seconds, the DataPlus advances to the display **FO2** and **Air** for 5 seconds (Fig. 2) during which time **percentage O2** for that dive's nitrox mix can be programmed (set) by pressing and holding the control button. If you set FO2 for a value other than 'Air', the DataPlus will advance to the **PO2** display (Fig. 3) that shows the Maximum Depth that can be achieved with an oxygen partial pressure of 1.60 BAR for the FO2 value set. If FO2 is set for 'Air', the PO2 display will not appear.

Next the DataPlus advances to a Plan Mode (Fig. 4) referred to as the Pre Dive Planning Sequence or **PDPS** signified by the PDPS icon (Fig. 4a). The PDPS displays a sequence of depths from 30 to 160 feet (9 to 48 meters) in 10 foot (3 meter) increments. Each depth is displayed with its corresponding available adjusted no decompression limit for 3 seconds.

After completing the PDPS, the Surface Sequence will repeat over and over again until you dive.

WARNING: The DataPlus must be manually activated and be in the Surface Mode or PDPS Mode prior to start of a dive. The unit will not activate automatically by immersion in water.

Fig. 2 - FO2

Fig. 3 - PO2

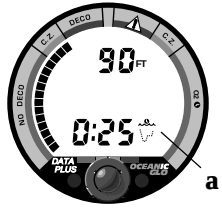


Fig. 4 - PDPS

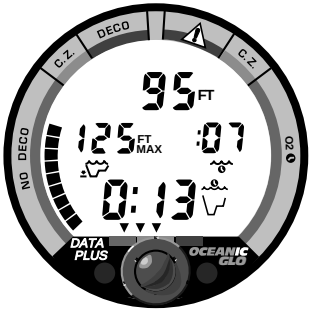


Fig. 5 - No Decompression Dive Mode (Air)

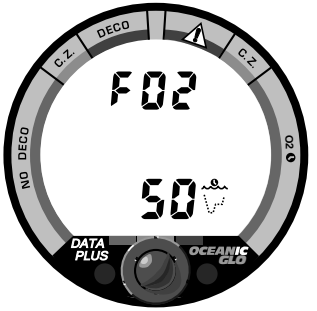


Fig. 6 - FO2 = 50%

PROGRAMMING NITROX MIXES

WARNING: FO2 must be set 'before each' nitrox dive.

The DataPlus can be used either as an Air computer or a Nitrox computer. To program the percentage O2, press and hold the control button when 'FO2' - 'Air' appears during the Surface Sequence. The percentage O2 will advance 1% per second from 21 to 50 (%) and display 'Air', then repeat until you release the button.

If you are using Air as your breathing gas, set FO2 for 'Air', or leave it set for 'Air' after activation. When set with an FO2 value of 'Air', the DataPlus will perform calculations the same as if FO2 were set for 21% O2, internally accounting for oxygen loading for any subsequent Nitrox dives. Oxygen related displays, warnings, and the O2 bar graph will not appear on the LCD display for that dive (Fig. 5), or subsequent dives, unless FO2 is set for a numerical value (21 to 50).

You can program the DataPlus for enriched nitrogen-oxygen (nitrox) mixtures of 21% to 50% oxygen (O2) before each nitrox dive. If FO2 is set at a value of 21%, the unit will remain set as a '21% Nitrox computer' for subsequent nitrox dives until FO2 is set to a higher value. Once FO2 is set to a value 'greater than' 21% for a nitrox dive, the FO2 value displayed during the post dive Surface Sequence that appears 10 minutes after that dive will be 50 (Fig. 6).

FO2 must be reset for each repetitive nitrox dive, or the value will automatically be 50 and the dives will be calculated based on 50% O2 for oxygen calculations and 21% O2 (79% nitrogen) for nitrogen calculations. Once a dive is made with the DataPlus set as a nitrox computer (FO2 set for a numerical value), the unit cannot be programmed to operate as an 'Air' computer until 24 hours after the last dive. 'Air' will not be displayed as an option when FO2 appears.

MAKING A DIVE

Once you enter the water and descend to a depth below 5 feet (1.5 m)., the DataPlus changes to the **No Decompression Dive Mode** (Fig. 7) signified by the No Decompression icon (Fig. 7a). Displayed are current depth, elapsed dive time (and the Elapsed Dive Time icon), no decompression dive time remaining, maximum depth reached during the dive (and the Max Depth icon), nitrogen loading (as the Tissue Loading Bar Graph), oxygen accumulation (as the O2 bar graph), and ascent rate (as the Variable Ascent Rate Indicator bar graph).

To make it easy to check your dive status on the DataPlus, a color coded system of graphic displays is used for representation of tissue nitrogen loading, oxygen accumulation, and ascent rate. This **Graphic Diver Interface™** (Fig. 8) consists of three segmented bar graphs appearing alongside green, yellow and red perimeter sections that signify normal, caution, and danger zones, respectively.

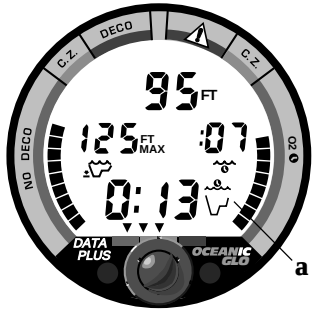


Fig. 7- No Decompression Dive Mode

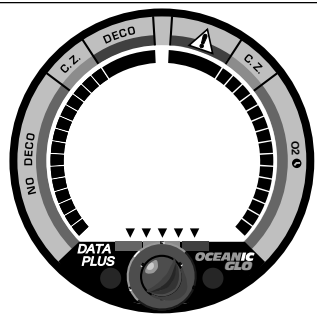


Fig. 8- Graphic Diver Interface

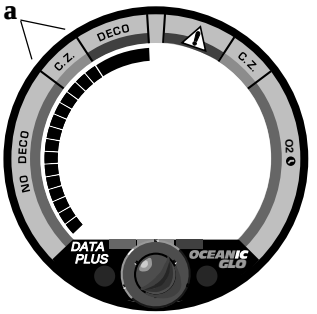


Fig. 9 - Tissue Loading Bar Graph (TLBG)

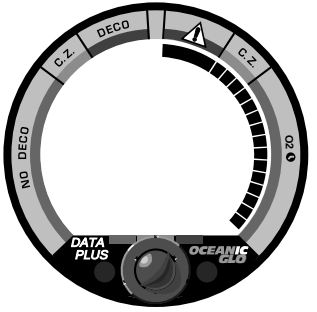


Fig. 10 - O2 Bar Graph

When underwater, you can quickly focus on the three bar graphs to make sure that they are **in the green**. You can quickly verify that you're not getting too close to the no decompression limit, or the oxygen tolerance limit, or ascending too fast.

The **Tissue Loading Bar Graph®** (Fig 9) represents nitrogen loading, showing your relative no decompression or decompression status. As your depth and elapsed dive time increase, segments will fill the graph to form an arc along the left perimeter of the LCD. As you ascend to shallower depths, this bar graph will begin to recede, indicating that additional no decompression time is allowed for multilevel diving. The TLBG also assists you with managing decompression by filling a large red 'ceiling stop required' segment. This is explained in detail in the Handling the Extremes section.

The TLBG gives a visual representation of just how close you are to the no decompression limit with a yellow Caution (**C.Z.**) Zone. This Caution Zone portion of the TLBG (Fig. 9a) allows you to make a decision regarding safety stop duration or necessity. While you cannot provide a guarantee against the occurrence of decompression sickness, you may choose your own personal zone of caution based on age, physique, excessive weight, etc., to reduce the statistical risk.

The **Oxygen Accumulation (O2) Bar Graph** (Fig. 10) represents oxygen loading, your relative oxygen tolerance dosage (OTU), showing the maximum of

either per dive allowable O2 or 24 hour period allowable O2. As your exposure, oxygen tolerance dose (OTU), increases during the dive, segments will fill the graph to form an arc along the right perimeter of the LCD. As your OTU level decreases, the bar graph will begin to recede, indicating that additional exposure is allowed for the dive, or 24 hour period.

The O2 bar graph also assists you with managing high PO2 levels. When partial pressure of oxygen reaches a value of 1.40 BAR (ATA), the PO2 level will appear as a digital display on the LCD. Once the partial pressure of oxygen reaches the maximum allowable limit of 1.60 BAR (ATA), the O2 bar graph's large red Danger Zone will be displayed (Fig.11a), flashing as a warning until PO2 decreases below 1.60 BAR. If additional O2 'exposure' is still allowed for that dive, or 24 hour period, a gap (Fig. 11b) will be present between those bar graph segments (Fig. 11c) and the red segment. This is explained in more detail on page 23 and in the Handling the Extremes section.

When rising towards the surface, the **Variable Ascent Rate Indicator**™ (Fig. 12) shows how fast you are ascending. The Variable Ascent Rate Indicator (VARI) will alert you with flashing segments if you enter the red zone, which represents ascent rates faster than 60 feet (18 meters) per minute. Immediately slow your ascent when you see the 5 segments flashing.

Even if you have not entered decompression, a safety stop made between 15-20 feet (5-6 meters) is strongly recommended as a standard procedure before

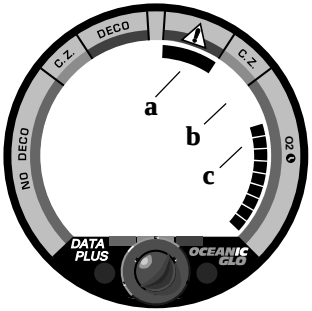


Fig. 11 - O2 Bar Graph

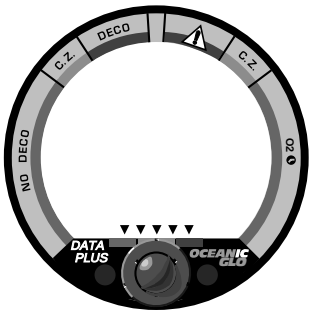


Fig. 12 - Variable Ascent Rate Indicator™ (VARI)

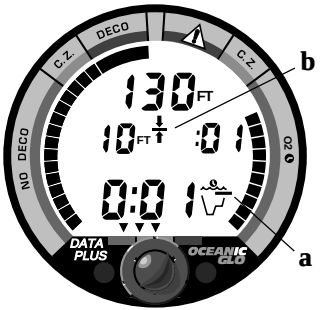


Fig. 13 - Decompression Dive Mode

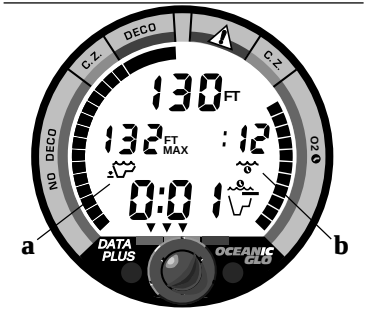


Fig. 14 - Decompression Dive Mode (Alternate Display)

completing your ascent. Many divers do this to provide a wider zone of caution from the no decompression limit.

If your depth or elapsed dive time are such that the TLBG enters the red decompression (DECO) zone, the DataPlus will switch to the **Decompression Dive Mode** (Fig. 13) signified with the flashing Decompression Dive Mode icon (Fig. 13a). A decompression stop ceiling will be indicated by the TLBG, and the Stop Ceiling icon (Fig. 13b). Digital displays are current depth, current required decompression stop depth and time for that stop depth, and total required ascent time to the surface (that includes required decompression stop times and vertical ascent time calculated for a rate of 60 feet (18 meters) per minute).

You must stay at, or slightly below, the ceiling stop depth indicated on the digital display until the next shallower required ceiling stop depth appears before ascending any further, or you will increase your risk of decompression sickness.

After displaying the Decompression Dive Mode for 12 seconds an **Alternate Display** (Fig. 14) appears automatically for 3 seconds. The alternate display replaces required stop depth and time information with maximum depth and elapsed dive time. Also, the Stop Ceiling icon is replaced by the Max Depth (Fig. 14a) and Elapsed Dive Time icons (Fig. 14b). The two displays will continue to alternate while you are in the Decompression Dive Mode.

AFTER THE DIVE

After reaching 3 feet (1 meter) upon ascent, the **Surface Mode** display (Fig. 15) will replace the Dive Mode display for 10 minutes. After 10 minutes, the DataPlus advances through the sequence of surface displays - Time to Fly, FO2, PO2, PDPS, then back to Surface Mode.

Time to Fly shows a 24 hour countdown for your reference. FO2 will show the FO2 set point. PO2 will show the maximum depth allowed for the FO2 set point and your 24 hour O2 dosage. PDPS will show 'adjusted' no decompression limits based on the nitrogen calculated to have been absorbed during your last dive.

If the DataPlus was set for FO2 of 'Air' or 21% prior to the dive, it will stay set for 'Air' or 21%, respectively, unless set to a higher value prior to the next dive. If it was set for a value of FO2 greater than 21% prior to the dive, the FO2 value displayed will be '50' and subsequent dives will be calculated based on 50% O2 for oxygen calculations and 21% O2 (79% nitrogen) for nitrogen calculations, unless you set FO2 for another value. You must set the FO2 to match the specific nitrox mix for each dive.

Calculated dive times and the maximum allowed depth displayed by the PDPS will increase as the real time surface interval increases after completion of a dive. The PDPS will only scroll to the maximum depth allowed by the nitrogen or oxygen limit, whichever is in control. If the DataPlus is basing its calcula-

Fig. 15 - Surface Mode (< 10 min after a dive)

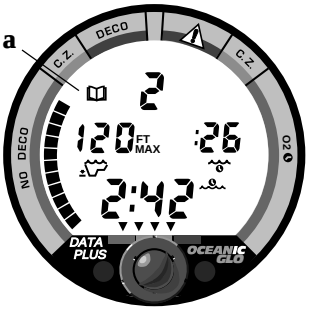


Fig. 16 - Nitrogen Log

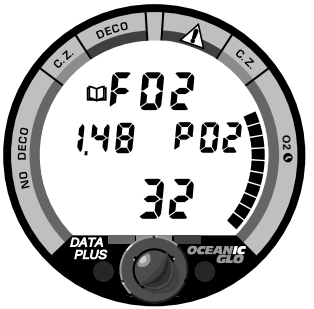


Fig. 17 - Oxygen Log

tions on nitrogen loading, only the TLBG will be displayed, or if calculations are based upon oxygen loading, only the O2 bar graph will be displayed.

Immediately after a dive, various information is stored in the DataPlus' memory and can be viewed by accessing the **Dive Log Mode**. This gives you a opportunity to record data in your log book before it is eventually overwritten by subsequent data. Your latest 12 dives are stored and can be viewed by pressing the control button.

Dive Log Mode signified by the Dive Log icon (Fig. 16a) will automatically scroll through the latest 12 dives, starting with the most recent dive first. Two screens are displayed for each dive, one showing data associated with nitrogen and the other showing data associated with oxygen.

The **Nitrogen Log** (Fig. 16) displays the dive number (#), surface interval prior to the dive (and Surface mode icon), maximum depth (and Max Depth icon), elapsed dive time (and Elapsed Dive Time icon), maximum ascent rate (VARI) attained at any time during the dive, and end of dive tissue loading (TLBG). The **Oxygen Log** (Fig. 17) displays 'FO2', the FO2 value set prior to the dive, and the maximum level of oxygen loading reached during the dive as the O2 bar graph.

If you have acquired the OceanLink™ PC interface software package, you will be able to download (copy) dive data from the DataPlus to your personal dive log that you established in your PC.

KNOWING WHEN TO FLY

Due to the present lack of a complete data set derived from actual human testing, there are different recommendations cited by various scientific organizations for the amount of time a diver should wait before flying after diving. The DataPlus follows one of the more conservative of these, cited by Divers Alert Network (DAN); that divers wait at least 12 hours before flying in pressurized commercial aircraft, and at least 24, or more, hours if your profiles included repetitive multi-day or decompression dives. More about flying after diving and DAN's guidelines is presented on page 76 in the Reference section.

The DataPlus tracks how much surface time has elapsed since you surfaced from your latest dive. The **Time to Fly Mode** begins a 24 hour countdown that starts 10 seconds after a dive (Fig. 18). During the first 12 hours, the countdown appears for several seconds after the Surface Mode during the Surface Sequence.

During the second 12 hours of the countdown, only the word 'FLY' and the counter will be displayed (Fig. 19). During this second period, depressing the control button will reactivate the DataPlus, replacing the Time to Fly countdown with the Surface Display and scrolling Surface Sequence.

WARNING: Battery removal and replacement will clear the Time to Fly countdown.

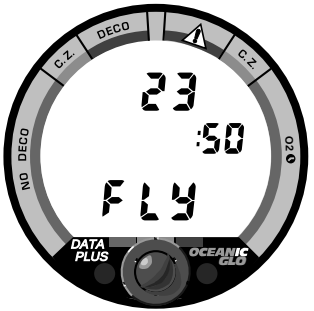


Fig. 18 - Time to Fly Mode (first 12 hours)

Fig. 19 - Time to Fly Mode (second 12 hours)

ALTITUDE DIVING

The mathematical model within the DataPlus accounts for the reduced No Decompression time available at higher elevations based on NOAA (National Oceanic and Atmospheric Administration) guidelines. When diving in high altitude lakes or rivers from 2,000 to 14,000 feet (610 to 4,268 meters), the DataPlus will adjust automatically, providing corrected depth and reduced No Decompression times.

Also, when above 2,000 feet (610 meters), depth calibration of the unit is automatically changed to read in feet of freshwater rather than feet of seawater. The DataPlus will not activate at altitudes above 14,000 feet (4,268 meters).

More about altitude diving and NOAA guidelines is presented on page 77 in the Reference section.

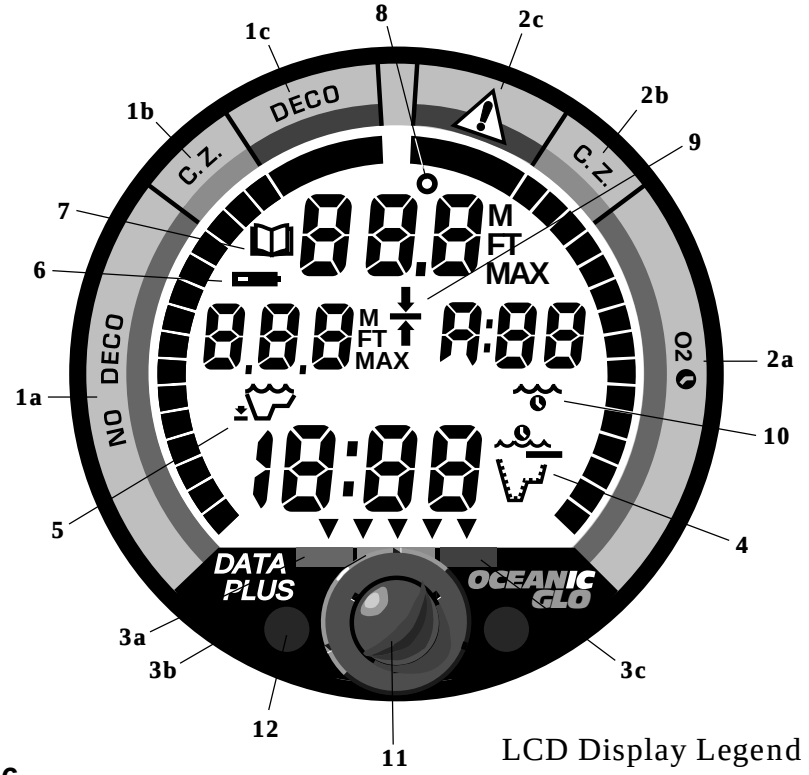
Be a -
RESPONSIBLE DIVER
at all times.

WARNING: Until it has shut itself off, you must not use the DataPlus at a different altitude than the altitude where it was originally activated. Doing so will result in an error equal to the difference in barometric pressure, and possibly a false dive mode with erroneous data.

SHARING THE DATAPLUS

WARNING: Never participate in sharing or swapping of a dive computer. Doing so may result in injury or death.

The DataPlus provides information based upon a diver's personal dive profile, and therefore **must not be "shared" between divers**. You should never, under any circumstances, swap your computer with another unit between dives, or share your computer with another diver underwater. It is impossible for two divers to stay precisely together underwater, and your computer's dive **profile tracking of previous dives will be pertinent to you only**. Nitrogen loading of a second user may be significantly different and thus swapping dive computers could lead to inaccurate and potentially dangerous predictions of decompression status. This rule applies to the use of all dive computers, but is especially important when using the DataPlus, due to the personal information it provides.



LCD Display Legend

1a. TLBG - (Green - No Decompression zone)
1b. TLBG - (Yellow - Caution zone)
1c. TLBG - (Red - Decompression zone)
2a. O2 Bar Graph - (Green - safe O2 zone)
2b. O2 Bar Graph - (Yellow - Caution zone)
2c. O2 Bar Graph - (Red - Danger zone)
3a. VARI - (Green - rate/speed normal/safe)
3b. VARI - (Yellow - rate/speed excessive)
3c. VARI - (Red - rate/speed 'Too Fast')
4. Icon - Operating Mode - (See Detail A)
5. Icon - Maximum Depth
6. Icon - Low Battery
7. Icon - Log Mode
8. Icon - Temperature
9. Icon - Deco Stop Ceiling
10. Icon - Elapsed Dive Time
11. Control Button
12. Infrared Interface Ports (PC download)

Detail 'A' - Operating Mode Icons			
Surface	PDPS	No Deco Dive	Deco Dive

DETAILED OPERATIONS

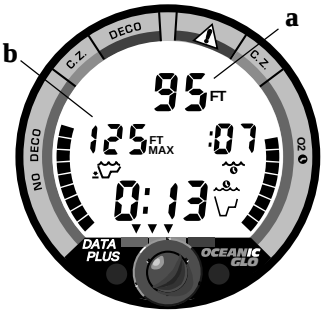


Fig. 20 - Depth Displays

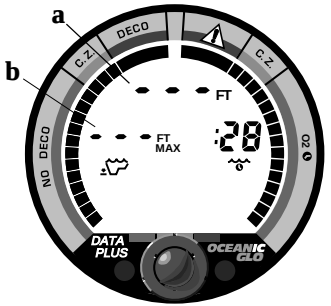


Fig. 21 - Depth Displays
(out of range - 3 dashes)

INFORMATIONAL DISPLAYS

Each DataPlus numeric or graphic display represents a unique piece of information. It is imperative that you understand the formats, ranges, and values of the information represented by the DataPlus' displays to avoid any possible misunderstanding that could result in error. This section describes each display in detail.

NOTE: Displays associated with oxygen and the O2 bar graph will only appear if FO2 has been set at a value other than 'Air'.

Depth Display

During a dive, the **Current Depth** display, located in the upper portion of the LCD (Fig. 20a), indicates depths from 0 to 330 feet (99.5 meters) in 1 foot (.5 meter) increments. In the event that you descend deeper than 330 feet (99.5 meters), this display will show three dashes (Fig. 21a) to indicate, until you ascend to 330 feet (99.5 meters) or shallower, that you have gone 'out of range'. When the control button is depressed during a dive, current Temperature will be displayed in place of current Depth for 2 seconds. Other displays that utilize these segments of the LCD include - dive number, 'FO2', time to fly hours (during the first 12 hours), and 'FLY' (during the second 12 hours).

A second depth display located in the center left portion of the LCD (Fig. 20b)

indicates the **Maximum Depth** reached during that dive. In the event that you descend deeper than 330 feet (99.5 meters), this display will only show three dashes (Fig. 21b, page 18) for the remainder of that dive, and as the Max Depth in the Dive Log for that dive. Other displays that utilize these segments of the LCD include - level of PO2 (if greater than 1.40 BAR), and required decompression ceiling stop depth.

During a Decompression Dive the required **Ceiling Stop Depth** (Fig. 24a, page 20) replaces the Maximum Depth display. However, Maximum Depth will appear for 3 seconds when the screen toggles to the Alternate display once every 15 seconds while in the Decompression Mode.

During a nitrox dive, if the value of PO2 reaches 1.40 BAR, the **PO2 value** will remain on display (Fig. 22a) until the level decreases below 1.40 BAR. Max Depth and Bottom Time (or Stop Depth and Stop Time) will not be displayed until the PO2 value decreases below 1.40 BAR.

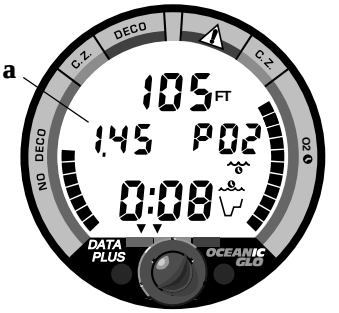


Fig. 22 - High PO2

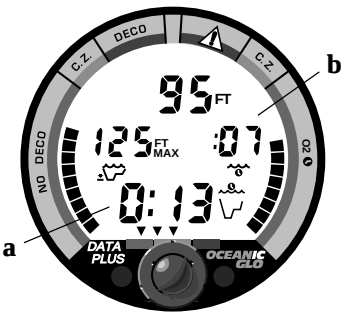


Fig. 23 - Time Displays

TIME DISPLAY

The **Main Time** display, located in the lower portion of the LCD (Fig. 23a), indicates elapsed Surface Time, theoretical Dive Time Available during the PDPS, No Decompression (or O2 tolerance) Dive Time Remaining, Total Ascent Time required, or time to fly (during the second 12 hours) depending on the mode that the DataPlus is in at the time. Other displays that utilize these

segments of the LCD include - FO2 set point value, 'EA' (External Access), and 'FLY' (during the first 12 hours).

A second time display, located in the center right portion of the LCD (Fig. 23b, page 19), indicates Elapsed Dive Time, or Decompression Stop Time required (Fig.24b) for the current stop ceiling indicated, as identified by the Elapsed Dive Time and Ceiling Stop icons, respectively. Other displays that utilize these segments of the LCD include - 'FO2', 'PO2', 'O2', and time to fly minutes (during the first 12 hours).

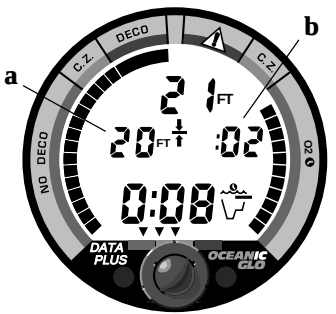


Fig. 24 - Decompression Stop Depth / Time

Note that the maximum value of Elapsed Dive Time that will be displayed is **1:59** (hr:min). When Elapsed Dive Time exceeds 1 hour and 59 minutes, the display will show **1: - -** for the remainder of that dive and in the log for that dive.

Time displays are shown in hour:minute format (i.e. 1:06 represents one hour and six minutes, not 106 minutes!). The colon that separates hours and minutes blinks once per second when the display is indicating real time such as elapsed Surface Time or Dive (bottom) Time. Dive Time Available, No Decompression Dive Time Remaining, Total Ascent Time required, or Time to Fly are calculated projections of time and use a solid (non-blinking) colon to indicate that they are counting down, rather than counting up.

GRAPHIC DIVER INTERFACE™

NOTE: Displays associated with oxygen and the O2 bar graph will only appear if FO2 has been set at a value other than 'Air'.

Three bar graphs referred to as the Graphic Diver Interface™ are located around the perimeter of the DataPlus' LCD (Fig. 25). They are color coded green, yellow, and red to denote normal, caution and danger zones, respectively. The Graphic Diver Interface allows you to make quick status checks underwater of your no decompression status, oxygen loading status, and ascent rate. Keeping these bar graphs **in the green** at all times will reduce your exposure to decompression sickness, oxygen toxicity, and the effects of an excessive ascent rate.

TISSUE LOADING BAR GRAPH® (TLBG)

The Tissue Loading Bar Graph® (TLBG) represents nitrogen loading, showing your relative no decompression or decompression status. As your depth and bottom time increase, segments will add to the graph in an arc beginning from the lower left. As you ascend to shallower depths, the TLBG will begin to recede, indicating that additional no decompression time is allowed for multilevel diving. The TLBG also assists you with managing decompression by filling a large red 'ceiling stop required' segment, which is explained in more detail in the Handling the Extremes section.

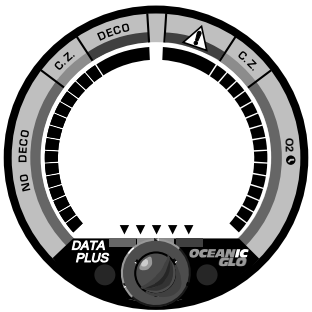


Fig. 25 - Bar Graphs
(Graphic Diver Interface™)

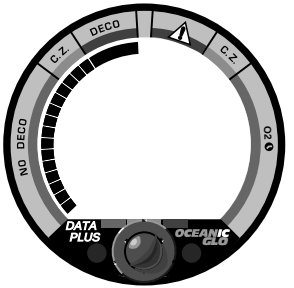


Fig. 26 - TLBG

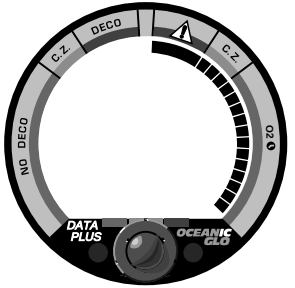


Fig. 27 - O2 Bar Graph

The TLBG, located around the left perimeter of the LCD (Fig. 26), monitors 12 different nitrogen compartments simultaneously and displays the one that is in control of your dive. It is divided into a green No Decompression zone (NO DECO), a yellow Caution zone (C.Z.), and a red Decompression zone (DECO). The large red DECO zone alerts you to focus your attention on current required Decompression stop 'ceiling' depth and time shown as digital displays across the center of the LCD. Stop depths will be 10FT (3M), 20FT (6M), 30FT (9M), 40FT (12M), 50FT (15M), or 60FT (18M), as calculated for your current decompression situation.

Prior to a repetitive nitrox dive, if all segments of the TLBG are displayed during the Pre Dive Planning Sequence™ (PDPS), and no segments of the O2 bar graph are displayed, that next dive is calculated to be controlled by nitrogen loading.

WARNING: Oceanic advocates responsible diving practices consistent with your individual level of formal training and experience, and does not recommend decompression diving or diving below 130 feet (39 m).

OXYGEN ACCUMULATION (O2) BAR GRAPH

The Oxygen Accumulation (O2) Bar Graph (Fig. 27) represents oxygen loading, showing the maximum of either per dive allowable O2, or 24 hour period allowable O2. As oxygen loading (oxygen tolerance dose or OTU) increases during the

dive, or 24 hour period, segments will add to the graph in an arc beginning from the lower right. As oxygen loading decreases, the bar graph will begin to recede, indicating that additional oxygen accumulation is allowed for that dive and a subsequent dive during that 24 hour period.

The O2 bar graph also assists you with managing high partial pressure of O2 by flashing the large red Danger zone segment as a warning when the level of PO2 exceeds the maximum allowed limit of 1.60 BAR (ATA).

If the partial pressure of O2 becomes greater than 1.60 BAR, the large red bar graph segment and the 'PO2' and PO2 value digital displays will flash (Fig. 28) as a warning until the partial pressure of O2 decreases below 1.60 BAR. 'PO2' and the PO2 value will continue to appear as digital displays until the partial pressure of O2 decreases below a value of 1.40 BAR.

During the time that PO2 is greater than 1.60 BAR and the red segment of the O2 bar graph is flashing as a warning, the green and yellow segments of the O2 bar graph will continue to provide you with a graphic representation of oxygen accumulation for that dive, or 24 hour period, whichever is greater.

Prior to a repetitive nitrox dive, if the segments of the O2 bar graph are displayed during the Pre Dive Planning Sequence™ (PDPS), and no segments of the TLBG are displayed, that next dive is calculated to be controlled by oxygen loading.

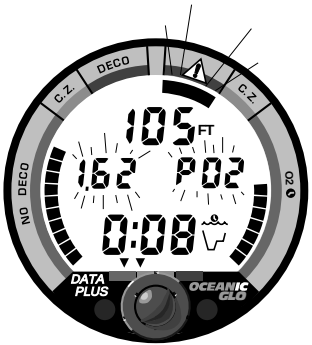


Fig. 28 - PO2 Danger (>1.6)

VARIABLE ASCENT RATE INDICATOR™ (VARI)

Segments = Speed (rate)
0 = 0 - 20 fpm (0 - 6 mpm)
1 = 21 - 30 fpm (6.5 - 9 mpm)
2 = 31 - 40 fpm (9.5 - 12 mpm)
3 = 41 - 50 fpm (12.5 - 15 mpm)
4 = 51 - 60 fpm (15.5 - 18 mpm)
5 = 61+ fpm (18.5+ mpm)
(when 5, all will flash)

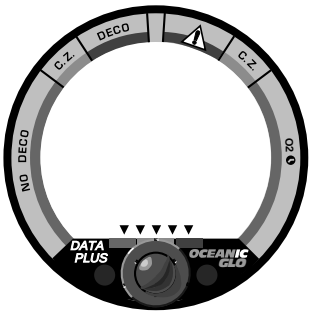


Fig. 29 - VARI (Variable Ascent Rate Indicator™)

The Variable Ascent Rate Indicator™ (VARI), located along the bottom of the LCD screen (Fig. 29), is provided to help you to avoid excessive ascent rates by providing a visual representation of ascent speed, rather than just showing that you are ascending too fast.

The LCD displays 5 triangular segments above a green, yellow, and red reference zones. The segments appear beginning from the left side and may be considered an ascent rate speedometer. Green is a 'normal' rate, yellow is a 'caution' rate, and red is 'Too Fast'. When your ascent rate exceeds the maximum recommended rate of 60 feet (18 meters) per minute, the VARI segments will enter the red zone and flash once per second until your ascent speed is slowed. The actual speeds that the VARI segments represent are shown above Fig. 29.

Ensure that you are familiar with all displays and bar graphs prior to using your DataPlus.

OPERATIONAL MODES

NOTE: Displays associated with oxygen and the O2 bar graph will only appear if FO2 has been set at a value other than 'Air'.

The different operating modes of the DataPlus are easy to tell apart. Each is clearly identified with unique graphic mode icons (Fig. 30) that provide quick visual reference during the various modes of operation. Become familiar with all modes and icons so that you understand exactly what information the DataPlus is providing you at any specific time.

Above water modes include - Diagnostic Mode, Pre Dive Planning Sequence™ (PDPS), Surface Mode, Dive Log Mode, Time to Fly Mode, and External Access (EA) Mode. Diagnostic, Dive Log, and EA Modes are accessed by pressing the control button.

Underwater modes include the No Decompression Dive Mode, Temperature Mode, Decompression Dive Mode and Alternate Decompression Dive Mode, High PO2 Dive Mode, Violation Mode, and Gauge Mode. You will not see Decompression Dive, High PO2 Dive, Violation, or Gauge Modes unless you dive to extremes. Temperature Mode can be accessed and the Oceanglo® backlight illuminated by pressing the control button.

R3

Icon
a - Maximum Depth
b - Low Battery warning
c - Dive Log mode
d - Temperature
e - Ceiling (Deco Stop)
f - Elapsed Dive Time
g - Operating (Dive) mode

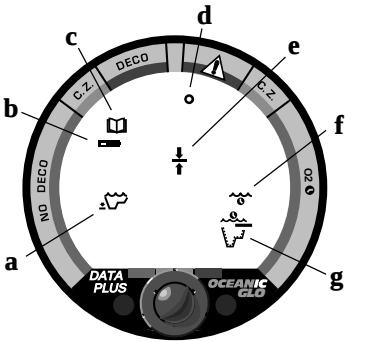


Fig. 30 - Mode Icons

ACTIVATION AND DIAGNOSTIC MODE

WARNING: Never activate the DataPlus underwater. This may result in inaccurate depth and no decompression time displays. Activation is not possible deeper than 4 feet (1.5 meters) underwater, or at elevations higher than 14,000 feet (4,267 meters).

For **Activation**, refer to the explanation given on page 4.

Diagnostic Mode is displayed immediately following activation. After pressing and releasing the control button, the Diagnostic Mode will display all "8's" followed by dashes, and then a countdown from 9 to 0 (Fig. 31). During the countdown, the DataPlus checks its display functions and battery voltage to ensure everything is working properly, then changes to the Surface Mode.

Fig. 31 - Diagnostic Mode

If battery voltage is below the level sufficient for a day's operation, the Battery icon will be displayed, flashing. Below 15% of rated voltage, all graphic displays will shut off except the Battery icon that will flash 16 final times prior to shutdown of the DataPlus. See page 69 for more information regarding Low Battery.

WARNING: If a Low Battery condition is indicated immediately upon activation, Oceanic strongly recommends that you DO NOT dive until batteries are replaced.

If a dive is not made within 2 hours after activation, the DataPlus will shut off automatically to save battery power. **Always check your DataPlus before entering the water to ensure that it has been activated.**

SURFACE MODE

Surface Mode (Fig. 32), identified by the Surface Mode icon to the right of the Surface Time display, immediately follows Diagnostic Mode after initial activation. Information provided includes, the number of the most recent dive made ('0' if no dive has been made since activation), elapsed Surface Time with the colon flashing, tissue nitrogen loading (if any) as the TLBG, and oxygen loading as the O2 bar graph (if the previous dive was a nitrox dive).

Fig. 32 - Surface Mode (after activation)

At the end of a dive, when you ascend to 3 feet (1 meter) or shallower, the DataPlus will automatically enter Surface Mode (Fig 33) and begin counting your Surface Interval (SI). This first 10 minutes is in affect, a transition period:

- The main Time display will start to count Surface Interval with the colon flashing.
- The Dive Mode icon will be replaced by the Surface Mode icon that will flash indicating post dive Surface Mode transition.
- The previous Dive Number will appear near the top of the LCD display.
- The TLBG will indicate current nitrogen loading.
- The O2 bar graph will indicate current oxygen loading (if the previous dive

Fig. 33 - Surface Mode (after dive <10 min SI)

was a nitrox dive).

If you descend during that first 10 minute transition period, time underwater will be considered a continuation of that dive. The time at the surface (if less than 10 minutes) will not be added as elapsed dive time. During the 10 minute transition period, the Log Mode is accessible and will display that dive's data, however, data will not be stored in the unit's memory until the 10 minute period is completed. The PDPS will not appear until after the first 10 minutes.

Once 10 minutes have elapsed, the Surface Mode icon stops flashing (Fig. 34), and the dive number will advance to show the number of the next dive. The Surface Sequence will advance screens from Surface Mode., to Time to Fly, to FO2, to PO2, to PDPS, and repeat once per minute until the next dive is made, or until the unit enters Fly Mode after 12 hours. Also, that dive is entered into the memory of the Dive Log, and a subsequent descent will be considered a new dive. If the TLBG is displayed during the PDPS, limits are being controlled by nitrogen. If the O2 bar graph is displayed, limits are being controlled by oxygen.

Remember!! <u>FO2 must be set prior to descending on each nitrox dive</u>.

Fig. 34 - Surface Mode
(after dive >10 min SI)

PRE DIVE PLANNING SEQUENCE™ (PDPS)

Prior to every dive, Oceanic strongly recommends that you view the PDPS to review the no decompression limits that will help you plan your dive as required to avoid decompression or oxygen toxicity. This is especially important for repetitive dives, when the PDPS (Fig. 35) will indicate for you the adjusted no decompression bottom times that are available to you on your next dive, based on any residual nitrogen or oxygen accumulation (whichever is in control) following your last dive and surface interval.

WARNING: The PDPS predicts only no decompression times for subsequent dives. Depending on cylinder size, breathing gas consumption, and oxygen accumulation, you may have *less time available* than shown in the PDPS because of breathing gas quantity or other limitations.

As you will recall from page 5, after activation and diagnostics, the unit will enter the Surface Mode for several seconds, then display FO2, then the maximum depth that can be achieved with a PO2 of 1.60 BAR, then automatically commence the PDPS, identified by the PDPS icon (Fig. 35a). At that time and once each minute afterward, the PDPS will sequentially show depths from 30 feet (9 m) to 160 feet (48 m) in 10 foot (3 m) increments, which takes about 42 seconds.

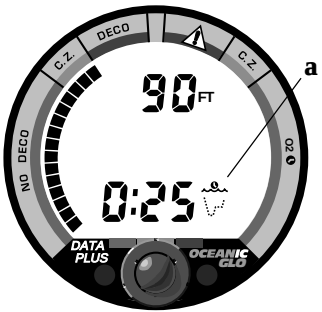
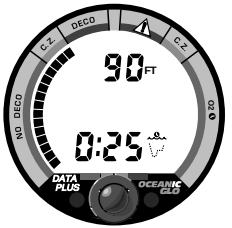


Fig. 35 - PDPS



Depth feet (meters)	NDL-hr:min Eng (Metric)
30 (9)	4:20 (4:43)
40 (12)	2:17 (2:24)
50 (15)	1:20 (1:24)
60 (18)	0:57 (0:58)
70 (21)	0:40 (0:41)
80 (24)	0:31 (0:31)
90 (27)	0:24 (0:26)
100 (30)	0:19 (0:20)
110 (33)	0:16 (0:16)
120 (36)	0:13 (0:13)
130 (39)	0:10 (0:11)
140 (42)	0:09 (0:09)
150 (45)	0:08 (0:08)
160 (48)	0:07 (0:07)

Fig. 36 - No Decompression Limits

With each depth display you will see either 'predicted' no decompression limits based upon your previous dive profiles (if calculated to be nitrogen controlled), or 'predicted' oxygen tolerance limits based upon either a single dive OTU or your 24 hour accumulation of oxygen (if calculated to be oxygen controlled).

The DataPlus will then return to the Surface mode, continuing the sequence for the first 12 hours after surfacing. The no decompression limits for a “clean” dive (no dives in the previous 24 hours) are those listed in Figure 36.

Information displayed (Fig. 36) includes Depth in increments of 10FT (3M), No Decompression Limit (Dive Time) available at that depth (which includes descent time at a rate of 120 ft/min), the PDPS mode icon, and the loaded TLBG (if nitrogen controlled) or the loaded O2 bar graph and 'O2' symbol (if O2 controlled). No Decompression times are only displayed for depths where there are at least 3 minutes of dive time available at the depth, taking into account a descent rate of 120 feet (36 meters) per minute. Depths greater than the maximum depth that can be achieved with a PO2 of 1.60 BAR will not be displayed.

WARNING: The DataPlus must be manually activated and be in the Surface Mode or PDPS Mode prior to start of a dive. The unit will not activate automatically by immersion in water. Also, FO2 must be set prior to commencing each nitrox dive.

NO DECOMPRESSION DIVE MODE

Upon descending deeper than 5 feet (1.5 meters), the DataPlus will enter the **No Decompression Dive Mode** (Fig. 37), identified by the No Decompression Dive icon (Fig. 37b) located to the right of the Main Time display.

Information provided includes Current Depth, Maximum Depth for that dive (and Max Depth icon), Elapsed Dive Time (and Elapsed Dive Time icon), and No Decompression Dive Time Remaining for that depth. The Graphic Diver Interface is also active, displaying nitrogen loading (TLBG), ascent rate (VARI), and oxygen loading (O2 bar graph) if FO2 was set to a value other than 'Air'.

No Decompression Dive Time Remaining is the maximum amount of time you can stay at your current depth before entering a decompression situation. The No Decompression Time is calculated based on the amount of nitrogen absorbed by 12 hypothetical tissue compartments. The rates each of these compartments absorb and release nitrogen is mathematically modeled and compared against a maximum allowable nitrogen level. Whichever one of the 12 is closest to this maximum level is the controlling compartment for that depth. Its resulting value is displayed numerically (Fig. 37a) along with the No Decompression Dive icon (Fig.37b), and graphically as the TLBG (Fig. 37c).

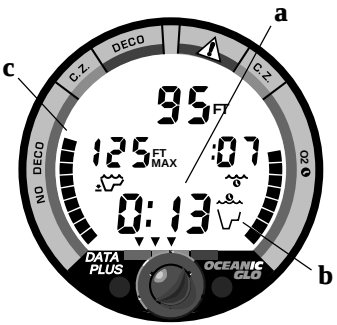


Fig. 37 - No Decompression Dive Mode

As you ascend from depth following a dive that has approached the no

decompression limit, the TLBG will diminish as control shifts to slower compartments. This is a feature of the decompression model that is the basis for multilevel diving, one of the most important advantages the DataPlus offers. (See page 80 in the Reference section for more information pertaining to tissue tracking.)

The no decompression algorithm is based upon Haldane's theory using maximum allowable nitrogen levels developed by Merrill Spencer. Repetitive diving control is based upon experiments designed and conducted by Dr. Ray Rogers and Dr. Michael Powell in 1987. Diving Science and Technology® (DSAT), a corporate affiliate of PADI®, commissioned these experiments and now uses the findings in the Recreational Dive Planner™ distributed by PADI.

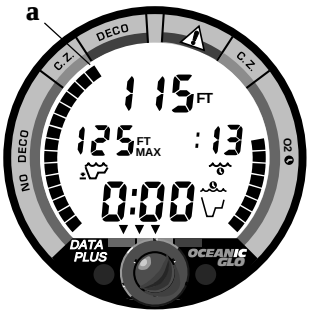


Fig. 38 - TLBG Caution Zone

As your depth and bottom time increase, the TLBG will fill with segments in a clockwise direction from the lower left toward the upper left to represent the absorption of nitrogen. If the TLBG passes the yellow caution (C.Z.) zone (Fig. 38a), you will have exceeded the No Decompression Limit and the DataPlus will enter Decompression Mode. Upon ascent to shallower depths, the bar graph will begin to recede in a counter clockwise direction, indicating that additional no decompression time is available through multilevel diving. **In the event that this occurs, you must serve your decompression obligation as required, then further reduce the TLBG with a safety stop.**

DECOMPRESSION DIVE MODE

The DataPlus will help you to avoid and manage decompression.

WARNING: Oceanic recommends the application of responsible diving practices and does not recommend decompression diving, or diving deeper than 130 feet (39 meters), as these practices will greatly increase your risk of decompression sickness.

Decompression Dive Mode, identified by the Decompression Dive icon (Fig. 39a) located to the right of the Main Time Display, activates when the theoretical no decompression dive limits are exceeded causing the TLBG to pass the yellow caution (C.Z.) zone and enter the red decompression (DECO) zone (Fig. 39b).

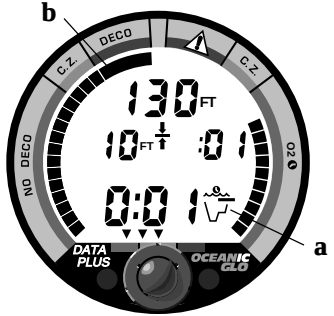


Fig. 39 - Entering Decompression Dive Mode

Once every 15 seconds while in the Decompression Dive Mode, an alternate display (Fig. 40) will appear on screen for 3 seconds displaying Maximum Depth and Elapsed Dive Time for that dive.

During a dive in which you inadvertently enter decompression, you must focus on reducing your tissue nitrogen loading as much as possible - by spending as much time as you can at your final safety stop.

Decompression Dive Mode is more fully described beginning on page 47 in the Handling the Extremes section.

Fig. 40 - Decompression Dive Mode (Alternate display)

HIGH PO2 DIVE MODE

The DataPlus enters the High PO2 Dive Mode (Fig. 41) when partial pressure of oxygen becomes equal to or greater than 1.40 BAR as indicated by the digital display.

In the event that this does occur, the value of PO2 (Fig. 41a), and the symbol 'PO2' (Fig. 41b), will be displayed in place of Max Depth and Elapsed Dive Time (if in the No Deco Dive Mode), or the required Stop Depth and Time (if in the Deco Dive Mode). The PO2 value will remain on display until the partial pressure of oxygen decreases below a value of 1.40 BAR.

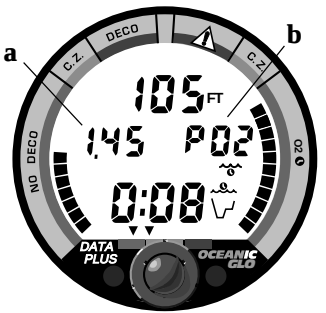


Fig. 41 - High PO2 Dive Mode

In the event that you enter High PO2 Dive Mode, you must focus on reducing the partial pressure of oxygen by slowly ascending to a shallower depth at a safe rate. Oxygen Exposure, High O2, and High PO2 Dive Mode are more fully described beginning on page 57 in the Handling the Extremes section.

VIOLATION MODES

The DataPlus enters one of three different Violation Modes (Conditional, Delayed, or Immediate) when you exceed its ability to predict an ascent procedure.

Violation Modes are more fully described beginning on page 50 in the Handling the Extremes section.

GAUGE MODE

If the DataPlus totally exceeds its capacity to predict an ascent procedure, it enters a Permanent Violation Mode and will operate in Gauge Mode for the remainder of that dive and on subsequent dives, only displaying depth and time (Fig. 42). The DataPlus removes calculated displays that no longer provide correct information because of the violation. For the DataPlus to reset itself, no dives must be made for 24 hours after surfacing from that dive.

Gauge Mode is more fully described on page 55 in the Handling the Extremes section.

Fig. 42 - Gauge Mode (underwater)

ASCENDING TO THE SURFACE

While ascending to shallower depths , the segments that have filled up the TLBG (Fig. 43) will begin to recede in a counter clockwise direction, offering a graphic representation of your multilevel diving capability. If you entered the Decompression Mode, you must not complete your ascent until the TLBG is at least inside the yellow Caution zone. **If you have not entered the Decompression Mode, a safety stop made between 15-20 feet is strongly recommended as a standard procedure before completing your ascent.**

Providing that your supply of breathing gas is sufficient, you should make every effort to complete all of your ascents with the TLBG inside the green zone.

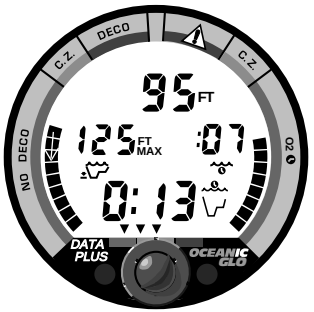


Fig. 43 - Ascending

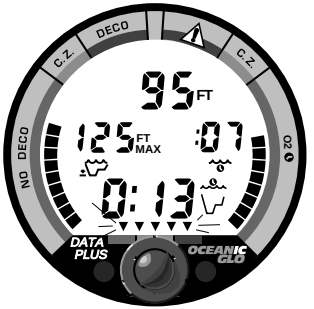


Fig. 44 - VARI (Too Fast)

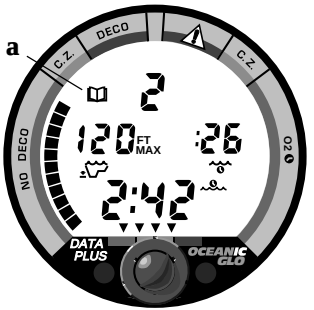


Fig. 45 - Dive Log Mode

While you cannot provide a guarantee against the occurrence of decompression sickness, you may choose your own personal zone of caution based upon your individual age, physique, excessive weight, training, experience, etc. to reduce the statistical risk.

The Ascent Rate Indicator shows how fast you are ascending. When you exceed the maximum recommended ascent rate of 60 feet per minute (18 meters per minute), the bar graph segments will enter the red (Too Fast) zone and you will be alerted by all segments flashing (Fig. 44) until ascent rate is slowed. Rates as they correspond with the bar graph are: 0 segments = 0 to 20 fpm (0 to 6 mpm), 1 segment = 21 to 30 fpm (6.5 to 9 mpm), 2 segments = 31 to 40 fpm (9.5 to 12 mpm), 3 segments = 41 to 50 fpm (12.5 to 15 mpm), 4 segments = 51 to 60 fpm (15.5 to 18 mpm), and 5 flashing segments = 61+ fpm (18+ mpm).

DIVE LOG MODE

Dive Log Mode, identified by the Dive Log icon (Fig. 45a), located in the upper left portion of the LCD, can be accessed while on the surface using the button on the front of the module. Information from your 12 latest dives is stored in the log for view. After 12 dives are accumulated, each subsequent dive will overwrite the oldest dive that exists in the log, i.e. the DataPlus will add the most recent dive while deleting the oldest. Information is not lost when batteries are removed from the unit.

Dives are displayed in a sequence that starts with the dive most recently recorded scrolling back to the oldest of the 12 stored for viewing. Thus, your most recent dive will always be the first shown in the log sequence, the second most recent will appear next, etc.

Each dive has two log screens, one that displays Nitrogen related data and one that displays Oxygen related data. If FO2 was set for 'Air' for that dive, the O2 screen will only display 'FO2' and 'Air'.

You can choose to either press and release, or press and hold, the button. Momentarily pressing and releasing the button initiates the Automatic Dive Log Sequence, that shows the Nitrogen log screen then the Oxygen log screen for each dive for approximately 4 seconds before scrolling to the previous dive's log screens.

To freeze the information on the display while writing it down in your logbook, press and hold the control button in. To view the next screen, momentarily release the button, then depress and hold it in again.

Information provided for each dive's **Nitrogen Log** includes (Fig. 46):

- Log Mode icon
- Dive Number - each time the unit is activated the first dive conducted during that 'activation period will be #1. Example:
  - Last Saturday you conducted 3 dives and the unit automatically shut off.

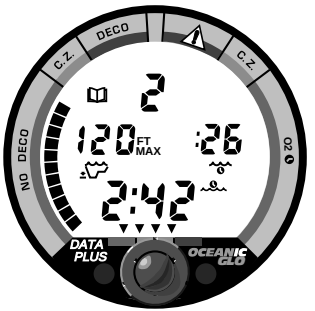


Fig. 46 - Nitrogen Log

- Today you conducted 2 dives.
- Your log sequence would be #2, #1, #3, #2, #1.
- This relates to #2 (today' most recent dive), #1 (today's first dive), #3 (Last Saturday's last dive), #2 (Last Saturday's second dive), #1 (Last Saturday's first dive), etc.

- Surface Interval - prior to that dive (and Surface Mode icon)
- Maximum Depth - reached during that dive (and Max Depth icon)
- Elapsed Dive Time (and Elapsed Dive Time icon)
- VARI - maximum ascent rate at any time during that dive
- TLBG - tissue nitrogen loading at the time you surfaced from the dive

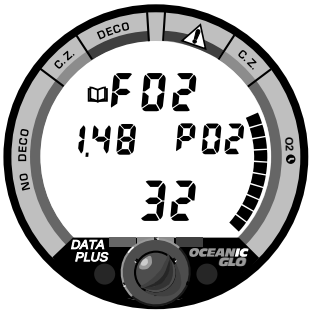


Fig. 47 - Oxygen Log

Information provided for each dive's **Oxygen Log** includes (Fig. 47):

- Log Mode icon
- FO2 value - set for the dive (and 'FO2' symbol)
- Maximum PO2 level - reached during that dive (and PO2 symbol)
- O2 bar graph - oxygen loading at the time you surfaced from the dive

TIME TO FLY MODE

As you should be aware from your own training, the longer you wait to fly (or travel to higher elevations) after diving, the more you will reduce your exposure to decompression sickness.

The Time to Fly counter begins counting down 10 minutes after the last dive has

ended to assist you with deciding when enough surface time has elapsed to fly. It appears once per minute for several seconds during the Surface Sequence showing the word FLY below a countdown display (Fig. 48) that starts at 23:50 (hr : min) and counts down to 12:00 (hr:min).

Twelve hours after the last dive, the Surface Sequence (Surface Mode / FO2 / PO2 / PDPS) will be replaced with the Fly Mode (Fig. 49). The word FLY will be displayed continuously, with the final 12 hour countdown from 11:59 to 0:00.

WARNING: During the final 12 hours (the period between 12 and 24 hours after a dive), the DataPlus is in a countdown mode only and must be reactivated prior to commencing a dive. (Remember that FO2 must be 'set' prior to any nitrox dive).

After a surface interval of 12 hours, you may choose to fly (or travel to higher elevations), provided that your dive profile(s) did not enter decompression. If your diving involved required decompression, or a repetitive multi day profile, it is strongly recommended that you wait a full 24 hours after your last dive to add a greater degree of protection. See page 76 in the Reference section for More About Flying After Diving, and DAN's guidelines.

Fig. 48 - Time to Fly (first 12 hours)

Fig. 49 - Time to Fly (second 12 hours)

EXTERNAL ACCESS (EA) MODE

Using special infrared linking hardware and a unique PC software program, data from your dives can be downloaded (copied) from your DataPlus into an IBM compatible personal computer program running on a Windows® 3.X or Windows® 95 operating system. Instructions for performing the interface and download are provided with the hardware and software package that is available separately at your Authorized Oceanic Dealer. Ask for OceanLink™ for DataPlus.

The OceanLink™ program provides dive profiles, nitrogen and oxygen loading throughout the dive, and a unique interactive DataPlus Simulator that enables you to view all of the displays and operating modes being described.

Fig. 50 - External Access (EA) Mode

External Access Mode, signified by EA (Fig. 50), may be entered when the control button is depressed and held in for more than 8 seconds while in the Surface Mode or during the PDPS. The letters EA appear in the lower portion of the LCD display with a count down from '6' to '0' appearing at the right. After counting down to '0', the DataPlus will revert back to the Surface Mode.

WARNING: Entering the External Access Mode when a Low Battery condition is indicated after activation will cause the flashing Low Battery icon to disappear implying that battery voltage is satisfactory. DO NOT dive until batteries are replaced.

BACKLIGHT FEATURE

In addition to using a high contrast LCD for easy readability in low light conditions, the DataPlus' Oceanglo® backlight feature evenly and easily illuminates the full display (Fig. 51). This means that on night dives, in caves, or any other low light situation, you illuminate the display when you wish to view it with the touch of a button.

R3

To activate the Oceanglo® backlight during the Dive mode, simply press and hold the control button. Oceanglo will remain illuminated as long as the button is depressed, plus 10 seconds after being released. Ambient temperature will be displayed for the first 2 seconds after the button is depressed.

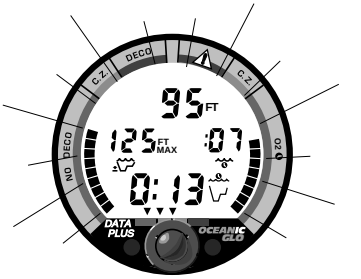


Fig. 51 - Oceanglo® (backlight feature)

Oceanic recommends that you always carry primary and backup dive lights when conducting dives that could include low light situations.

AMBIENT TEMPERATURE DISPLAY

When the control button is depressed during a dive, ambient temperature will replace the current depth on display for the 2 seconds (Fig. 52a). To observe the value again, you must release the control button and depress it again. Remember that depressing the button during a dive also toggles the backlight feature, so during a night dive it may be necessary to depress the button twice to observe the temperature value as the backlight is turned back on.

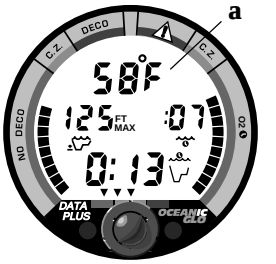


Fig. 52 - Ambient Temperature

OPERATING TEMPERATURE

The DataPlus will operate in almost any temperature diving environment in the world (Fig. 53) between 32 and 140 °F (0 and 60 °C). At extremely low temperatures, the LCD may become sluggish, but this will not affect it's accuracy. If stored or transported in extremely low temperature areas (below freezing), you should warm the module and its batteries with body heat before diving.
Even though the DataPlus will operate in this wide range of temperatures, **it is possible to damage the electronics if left exposed to direct sunlight, or in a hot confined space (like a car trunk).** After the dive, cover the DataPlus and **keep it out of the sun**. If inadvertently left in the direct sunlight, the LCD display may become totally black. If this occurs, immediately immerse the DataPlus in water. The display should recover its normal appearance after a few minutes. **Damage from excess heat, or cold, is not covered by the DataPlus two year limited warranty.**

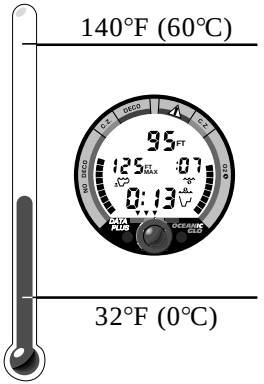


Fig. 53 - Operating Temperature Range

Be a -
RESPONSIBLE DIVER
at all times.

HANDLING THE EXTREMES

EMERGENCY DECOMPRESSION

DECOMPRESSION RULES ARE NOT MEANT TO BE BENT

There are few legitimate excuses for making unplanned Decompression dives, and the consequences of this type of diving can be severe. Decompression diving requires special training. **The DataPlus is intended for use by recreational divers not engaged in intentional decompression diving. Decompression features are provided only for emergency situations.** By entering decompression, you automatically impose a "ceiling" above you which you cannot immediately ascend beyond, denying you free access to the surface.

Professional military and commercial divers plan ahead for this situation by ensuring that they have complete surface support, including a redundant air supply for emergencies. They also navigate very carefully throughout their dive to ensure that they begin and complete their ascent while maintaining contact with a rope or a line to the surface. This is necessary for making a well controlled ascent. **The DataPlus is not intended for use by military or commercial divers.**

By making an unplanned Decompression dive without the necessary **preparation and training**, you will have placed yourself in an unnecessarily dangerous situation. You may also find yourself drifting long distances in an ocean current before you can surface, due to the lack of an ascent line. Your buddy may be unable to provide assistance without also risking decompression sickness. It is

easy to see how this one mistake can quickly be compounded by several others. The DataPlus is a sophisticated instrument designed with capabilities that go beyond the range of recreational diving with compressed air. **It should not be considered, however, that these built-in capabilities provide any implied approval or consent from Oceanic for individuals to exceed the defined limits of recreational dive profiles, as agreed on by all internationally recognized training agencies.**

Decompression diving should therefore be strictly avoided. The DataPlus is designed to help you by providing a complete representation of how close you are to entering decompression. In the event that you do inadvertently enter decompression, the red zone of the TLBG (Fig. 54), the DataPlus can provide you with limited information to help you ascend to the surface, if you follow the instructions given in this section.

Oceanic strongly recommends that you avoid entering decompression, and reminds you that decompression diving requires special training.

The DataPlus cannot provide you with a backup breathing gas supply for emergencies or the ascent line you will need, and decompression diving greatly increases your risk of decompression sickness.

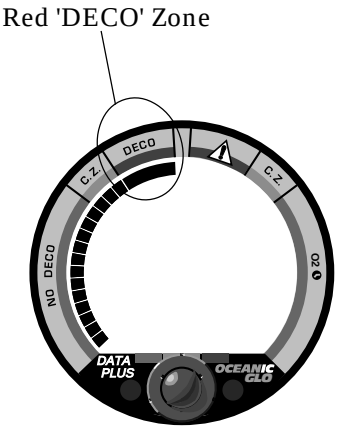


Fig. 54 - TLBG
Decompression Zone

WARNING: Existing data for making planned decompression dives is extremely limited, and virtually nonexistent for repetitive decompression diving. You must therefore avoid decompression diving and allow a surface interval of at least 24 hours before reentering the water in the event a dive requiring decompression is made.

If you're not careful, it is possible to enter decompression rapidly, whether at deep depths or during repetitive dives.

Upon entering decompression, the TLBG will immediately fill the red decompression stop zone. Once you've entered decompression, it is imperative that you immediately change the focus of your activities and begin a safe ascent toward the required decompression ceiling stop depth. **If you continue the dive at a depth more than a few feet deeper than the required ceiling stop depth, your exposure to decompression sickness will increase, and you will risk entering violation mode and losing the information needed to ascend properly.**

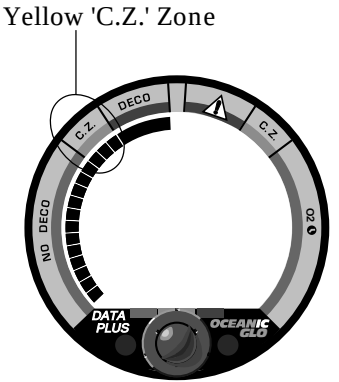


Fig. 55 - TLBG Caution Zone

CAUTION ZONE (TLBG)

Your dive training taught you not to get too close to the No Decompression limits. The yellow caution (C.Z.) zone of the TLBG (Fig. 55) offers you a conve-

nient way to consistently monitor how close you are coming to the No Decompression limit. Oceanic suggests always leaving the water with the TLBG **in the green** No Decompression (NO DECO) zone.

WARNING: Never exit the water with the TLBG in the red Decompression (DECO) zone. Doing so greatly increases the risk of decompression sickness, and may result in injury or death.

Body metabolism varies from person to person, and even from day to day. If you are feeling less than 100%, or you are in less than perfect physical shape, **use the Caution (C.Z.) zone as a visual reference to place a wider margin of protection between you and the No Decompression limit.**

DECOMPRESSION DIVE MODE

The DataPlus will help you to avoid and manage decompression.

WARNING: Oceanic recommends the application of responsible diving practices and does not recommend decompression diving, or diving deeper than 130 feet (39 meters), as these practices will greatly increase your risk of decompression sickness.

Decompression Dive Mode (Fig. 56), identified by the Decompression Dive icon located to the right of the Main Time Display, activates when the theoretical no

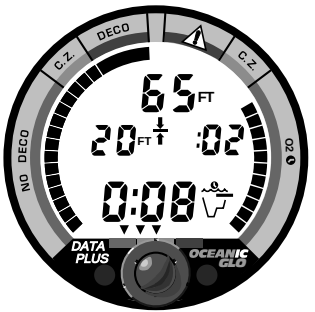


Fig. 56 - Decompression Dive Mode

decompression dive time/depth limits are exceeded causing the TLBG to pass the yellow caution (C.Z.) zone and enter the red decompression (DECO) zone. Information provided includes current depth, current required decompression ceiling stop depth and time (and Ceiling Stop icon), and total ascent time that includes stop time at all ceilings and vertical ascent time calculated at 60 feet (18 meters) per minute.

Once every 15 seconds while in the Decompression Dive Mode, an alternate display (Fig. 57) will appear on screen for 3 seconds. Information provided includes current depth, total ascent time, maximum depth for that dive (and Max Depth icon), and elapsed dive time (and Elapsed Dive Time icon).

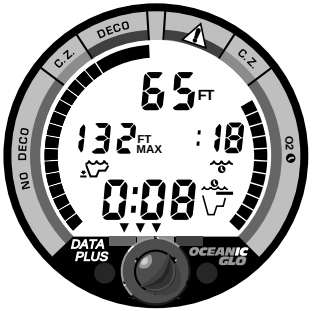


Fig. 57 - Decompression Mode (Alternate display)

The Graphic Diver Interface will continue to display the O2 bar graph (if a nitrox dive), the VARI bar graph and the TLBG, that now acts as a Decompression 'alert', warning that you must stay below the ceiling stop depth that appears as a digital display.

Upon entering decompression, you must immediately change the focus of your dive to getting safely back to the surface. Upon seeing the TLBG enter the red decompression (DECO) zone, you should immediately begin a safe controlled ascent, 60 feet (18 meters) per minute or slower, to a depth slightly deeper than or equal to the ceiling stop depth indicated.

You must stay at, or slightly below, the ceiling stop depth indicated until the next shallower required ceiling stop depth appears before

ascending any further, or you will increase your risk of decompression sickness.

The amount of decompression credit time you receive is dependent on depth, with slightly less credit given the deeper you are. **Still, you must never ascend shallower than your decompression ceiling.** Doing so will **greatly increase your risk of decompression sickness** and place the DataPlus into a Conditional Violation Mode described later. When coping with surge and swell, it may be difficult to stay at an exact depth. You should stay slightly deeper (Fig. 58a) than the required stop depth indicated (Fig. 58b) until the next shallower stop depth appears. Then, you can ascend to, but not shallower than, that indicated ceiling stop depth.

Once you have performed the required decompression, the DataPlus will switch to No Decompression Dive Mode, allowing additional time underwater. Though more time is theoretically available, it is strongly recommended that you spend the remainder of the dive continuing to decompress at a safety stop slightly deeper than or equal to 10 feet (3 meters). This will let the TLBG recede further into the yellow caution (C.Z.) zone or green no decompression (NO DECO) zone.

During a dive in which you inadvertently enter decompression, you must focus on reducing your tissue nitrogen loading as much as possible - by spending as much time as you can at your final safety stop.

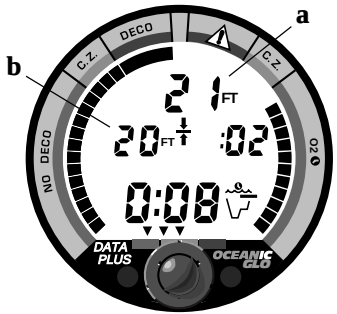


Fig. 58 - Decompression Stop

VIOLATION MODES

WARNING: If you exceed certain limits, the DataPlus will not be able to tell you how to get safely back to the surface. These situations will make the DataPlus enter 'violation modes' and must be avoided at all costs. They exceed tested limits and can result in loss of some DataPlus functions for 24 hours after the dive in which a violation occurred.

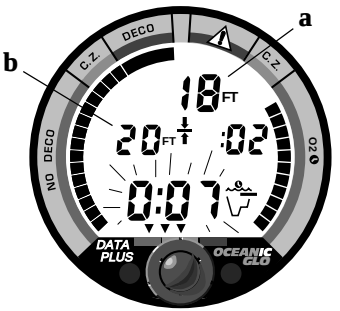


Fig. 59 - Conditional Violation Mode

The Violation Modes that the DataPlus can enter, depending on the situation, are termed “Conditional”, “Delayed”, and “Immediate”. It is important to understand each different Violation Mode that the DataPlus can enter and how to carry out decompression procedures in the event you enter one.

CONDITIONAL VIOLATION MODE

The DataPlus will enter the Conditional Violation Mode (Fig. 59) if you **ascend shallower (Fig. 59a) than the required decompression ceiling indicated** by the Required Stop Depth displayed (Fig. 59b). A momentary rise above the ceiling, such as with a surge or swell, will cause this to happen. Therefore you should stay slightly deeper than the exact ceiling stop depth, watching the DataPlus closely when managing decompression.

The DataPlus will alert you to the Conditional Violation by flashing the Total Ascent Time display until you descend below the required decompression stop ceiling. If you descend below the required decompression ceiling before 5 minutes have elapsed, the DataPlus will continue to function as if no violation had occurred. In this case, no off-gassing credit will be given, and for each minute above the ceiling, $1^{1}/_{2}$ minutes of penalty time is added to decompression stop time.

The added penalty decompression time will have to be 'worked off' first before obtaining off-gassing credit. Once the penalty time is worked-off, and off-gassing credit begins, required decompression stop depths and time will decrease toward zero and the TLBG will recede into the caution (C.Z.) zone. Upon entry into the caution (C.Z.) zone, the DataPlus will revert to the No Decompression Dive Mode.

If you stay above the required ceiling stop depth for more than 5 minutes, the TLBG segments will flash and the Delayed Violation Mode will be entered.

DELAYED VIOLATION MODE

Three conditions will cause the DataPlus to enter the Delayed Violation Mode:

1. You remain Above the Required Decompression Ceiling Stop Depth for more than 5 minutes (Fig. 60). As previously described, you

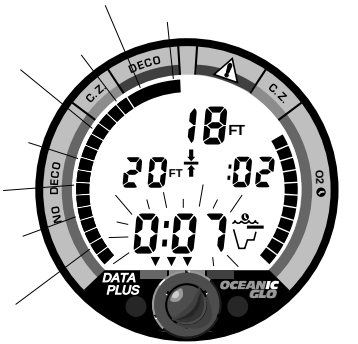


Fig. 60 - Delayed Violation (>5 min above stop ceiling)

would then need to follow the ceiling stop depths and time toward the surface until the TLBG recedes toward the caution (C.Z.) zone. Upon reaching zero Total Ascent Time remaining, you should continue decompressing until the TLBG segments are well inside of the **green** no decompression (NO DECO) zone.

2. Your necessary decompression requires a ceiling depth between 60 and 70 feet (18 and 21 meters).

In this situation, the information displayed will be the same as the Decompression Mode except that all segments of the TLBG will be flashing (Fig. 61). Total Ascent Time needed to get back to the surface will still be displayed numerically in the Main Time display.

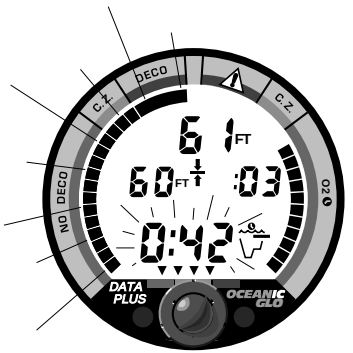


Fig. 61 - Delayed Violation (>60FT/18M Stop required)

To get back to the surface, you must safely ascend to just deeper than 60 feet (18 meters) staying as close to 60 feet (18 meters) as possible. After waiting until the required ceiling stop depth display indicates 50 FT/ 15 M , you can ascend to, but no shallower than 50 feet (15 meters) and continue decompressing. As the required ceiling stop depth display indicates 40 FT/ 12 M, 30 FT/ 9 M, 20 FT/ 6 M and then 10 FT/ 3 M, you can ascend to, but no shallower than the required ceiling stop depth indicated.

After Total Ascent Time reaches zero and the TLBG recedes into the yellow caution (C.Z.) zone, you can surface. **However, to add a greater margin of**

protection, Oceanic strongly recommends that you wait until the TLBG segments are well within the 'green' no decompression (NO DECO) zone, unless a low air condition requires you to surface.

3. You descend deeper than 330 feet (99.5 meters).

Oceanic reminds you that the DataPlus is intended for no decompression diving at depths within 130 feet (39 meters). Expanded capabilities of the DataPlus are provided as safety features to assist you with emergency situations.

Upon descending deeper than 330 feet (99.5 meters) the TLBG will flash and the Current Depth and Max Depth displays will only indicate three dashes (Fig. 62) until ascent is made to a depth shallower than 330 feet (99.5 meters), at which time the Current Depth display will be restored. Maximum Depth will continue to display 3 dashes.

Exceeding Maximum Operating Depth is more fully described on page 56 of this section.

Five minutes after reaching the surface from a dive in which a Delayed Violation occurred, the DataPlus will enter an Immediate Violation Mode and revert to Gauge Mode for 24 hours.

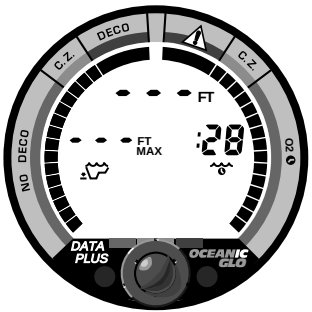


Fig. 62 - Delayed Violation (>330 ft / 99.5 m)

IMMEDIATE VIOLATION MODE

WARNING: The DataPlus enters Immediate Violation Mode when a situation totally exceeds its capacity to predict an ascent procedure. These dives represent gross excursions into decompression that are beyond the boundaries and spirit of the DataPlus design. If you are following these dive profiles, Oceanic advises you not to use a DataPlus dive computer.

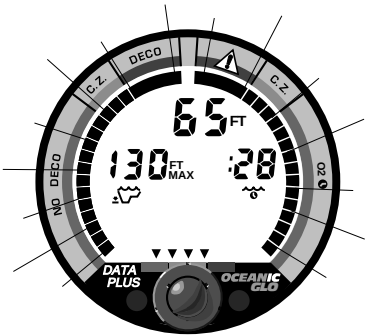


Fig. 63 - Immediate Violation

Immediate Violation Mode occurs when **a Decompression Stop depth *much greater than* 60 feet (18 meters) is required**. This situation would be preceded by entering the Delayed Violation Mode previously described.

The DataPlus cannot accurately calculate decompression times for depths much greater than 60 feet (18 meters) and offers no indication of how much time spent underwater would result in the need for greater than a 60 foot /18 meter decompression ceiling stop depth. If a ceiling *much greater* than 60 feet (18 meters) is required, an Immediate Violation Mode (Fig. 63)) will be entered. The DataPlus would operate with limited functions (current depth, max depth, and elapsed dive time) in Gauge Mode during the remainder of that dive and for 24 hours after surfacing.

GAUGE MODE

Underwater the Gauge Mode is a continuation of the Immediate Violation Mode that turns the DataPlus into a digital instrument without any decompression or oxygen monitoring functions (Fig. 64).

After surfacing, Gauge Mode does not provide the Time to Fly, FO2, PO2, and PDPS features. During the first 12 hour period, the full TLBG and O2 bar graphs will flash and the dive number, and Surface mode icon will be displayed with a Surface Time of '0:00' (Fig. 65). During the second 12 hour period a single dash will be displayed with a countdown timer beginning at 12:00 to inform you of the time remaining before normal DataPlus operation can resume with full features. If a dive is made during the 24 hour period that the DataPlus is in the Gauge Mode, only depth and elapsed dive time information will be displayed.

PERMANENT VIOLATION

Entering the Immediate Violation Mode, then Gauge Mode, will result in loss of all DataPlus decompression and oxygen monitoring and calculating functions for 24 hours after that dive. This condition is considered a Permanent Violation.

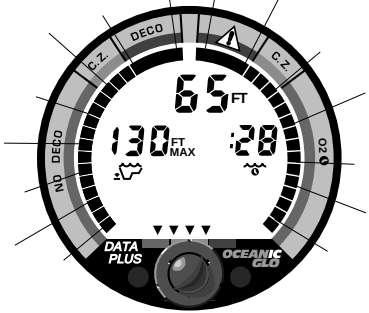


Fig. 64 - Gauge Mode (underwater)

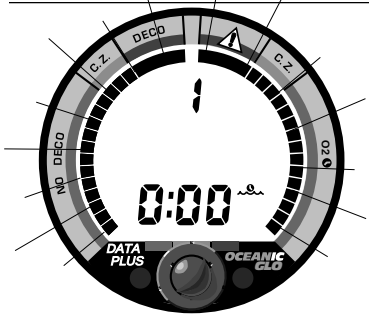


Fig. 65 - Gauge Mode (surface)

EXCEEDING MAXIMUM OPERATING DEPTH

Although the DataPlus will withstand the pressures found at 330 feet (99.5 meters), the depth that you can still use all of its features could be much shallower.

WARNING: The maximum recommended sport diving depth limit is 130 feet (39 meters). Any deeper dive should be avoided. Special training, equipment and support are necessary for this type of diving. Oceanic does not advocate diving to depths below 130 feet (39 meters), the basis for which is purely theoretical.

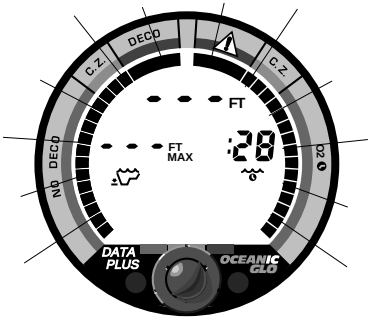


Fig. 66 - Out of Range
(>330 ft / 99.5 m)

The maximum depth that the DataPlus will display all of its features, is 330 feet (99.5 meters). Upon exceeding 330 feet (99.5 meters), the TLBG and O2 bar graph will flash, and Depth and Max Depth displays will only indicate three dashes "- - -" signifying that you are 'Out of Range' (Fig. 66).

The numeric depth display will not reappear until you ascend shallower than 330 feet (99.5 meters). You will also enter the Delayed Violation Mode, previously described on page 53. For the remainder of that dive, and in the log for that dive, only three dashes will be displayed as the value for Max Depth.

After a dive, the DataPlus will continue to calculate residual nitrogen for up to 24 hours. For a clean dive with no residual nitrogen remaining from previous

dives, the DataPlus will allow a maximum of 7 minutes no decompression dive time available at 160 feet (48 meters). Since part of the 7 minutes is used during descent, the actual time available upon reaching 160 feet (48 meters) can be a very short amount of time.

It is much more practical to stay within the 11 minutes of no decompression time allowed at 130 feet (39 meters). If you exceed 130 feet (39 meters), watch the DataPlus closely because you can enter decompression rapidly.

OXYGEN EXPOSURE

There are few legitimate excuses for exceeding the maximum limits for exposure to oxygen, and the consequences of CNS (Central Nervous System) oxygen toxicity can be severe, resulting in Gran Mal convulsions and drowning. Diving with enriched nitrogen-oxygen (nitrox) mixtures requires special training.

O2 LIMITS ARE NOT MEANT TO BE EXCEEDED

The oxygen features of the DataPlus are intended for use only by recreational divers trained for nitrox diving by an instructor certified by a recognized training agency to teach diving with nitrox. The DataPlus is not intended for use by military or commercial divers.

By making a nitrox dive without the necessary **training, preparation, and equipment**, you will have placed yourself in an unnecessarily dangerous situation. The DataPlus is a sophisticated instrument designed with capabilities that

go beyond the range of recreational diving with compressed air. **It should not be considered, however, that these built-in capabilities provide any implied approval or consent from Oceanic for individuals to exceed the defined limits of oxygen exposure, as agreed on by all internationally recognized nitrox training agencies.**

Nitrox diving should therefore be strictly controlled. The DataPlus is designed to help you by providing information of how close you are to oxygen exposure limits. In the event that you do inadvertently exceed the PO2 limit of 1.60 BAR (ATA), the large red Danger zone segment of the O2 Bar Graph flashes as a warning (Fig. 67), and the PO2 level is displayed while you reduce oxygen partial pressure according to your training.

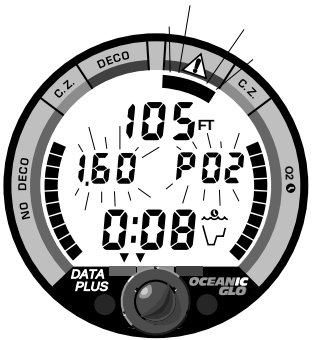


Fig. 67 - O2 Bar Graph (PO2 > 1.60 BAR)

Once you've exceeded the maximum PO2 limit (O2 Bar Graph red zone segment flashing), it is imperative that you immediately change the focus of your activities and begin a safe ascent to a shallower depth to reduce partial pressure of oxygen. **If you continue the dive at your current depth, your exposure to CNS oxygen toxicity will increase.**

It is also important that you understand that conducting repetitive dives using enriched nitrogen-oxygen (nitrox) mixtures can lead to OTU buildup and the risk of pulmonary oxygen toxicity. The O2 bar graph provides a visual representation of oxygen accumulation for either that dive or 24 hour period, whichever is greater. Always keep it **in the green** to help reduce your risk.

Oceanic strongly recommends that you avoid exceeding oxygen exposure limits, and reminds you that nitrox diving requires special training and understanding of the effects of oxygen toxicity.

WARNING: In the event that you exceed the maximum per dive allowable O2 exposure (dose), it is recommended that you allow a surface interval of at least 2 hours before reentering the water. If you exceed the maximum 24 hour period allowable O2 exposure (dose), you must allow a surface interval of at least 24 hours before reentering the water.

HIGH O2 ACCUMULATION

Your nitrox dive training taught you not to get too close to the oxygen tolerance limits. The O2 Bar Graph provides you with a convenient graphic representation of your oxygen accumulation, displaying the maximum of either O2 accumulated during that dive or O2 accumulated during your repetitive dives conducted during that 24 hour period.

In the event that your exposure exceeds the oxygen tolerance limit (Dive Time Remaining is 0:00), the O2 Bar Graph will enter the red danger zone and the full bar graph will flash as a warning (Fig. 68). You must immediately focus on making a safe ascent to the surface to prevent further exposure. As your accu-

Fig. 68 - High O2

mulation (dose) decreases during your surface interval, the bar graph will gradually receed into the yellow caution (C.Z.) zone and green (normal) zone. Oceanic suggests always keeping the O2 Bar Graph **in the green** (safe) zone.

WARNING: DO NOT allow the O2 Bar Graph to enter the red (Danger) zone. Doing so greatly increases the risk of CNS oxygen toxicity, and may result in serious injury or death.

Body metabolism varies from person to person, and even from day to day. If you are feeling less than 100%, or you are in less than perfect physical shape, **use the caution (C.Z.) zone as a visual reference to place a wider margin of protection between you and the O2 limits.**

Fig. 69 - High PO2 Dive Mode (PO2 ≥ 1.40)

HIGH PO2 DIVE MODE

The DataPlus enters the High PO2 Dive Mode (Fig. 69) when partial pressure of oxygen becomes equal to or greater than 1.40 BAR (ATA) as indicated by the PO2 value and the symbol 'PO2' being displayed in place of Max Depth and Elapsed Dive Time (if in the No Deco Dive Mode), or the required Stop Depth and Time (if in the Deco Dive Mode). They will remain on display until the partial pressure of oxygen decreases below a value of 1.40 BAR (ATA).

If partial pressure of oxygen continues to increase toward the maximum limit of 1.60 BAR (ATA), the value of PO2 displayed will increase from 1.40 to 1.60 BAR

in increments of '.01' BAR. When PO2 reaches 1.60 BAR, the large red bar graph segment, the PO2 value, and PO2 symbol will flash continuously as a warning (Fig. 70) until the level of PO2 decreases below 1.60 BAR.

In the event that you enter High PO2 Dive Mode, you must immediately focus on reducing the partial pressure of O2 by slowly ascending to a shallower depth at a safe rate in accordance with your nitrox training.

UNEXPECTED LOSS OF DISPLAYED INFORMATION

While No Decompression diving, if you find that any major piece of equipment is not functioning correctly, you must abort the dive immediately and surface slowly in a controlled manner. If your DataPlus stops working for any reason, it is important that you have anticipated this possibility and are prepared for it. **This is an important reason to avoid pushing the no decompression and oxygen tolerance limits, and a critical reason to avoid entering decompression.** Regardless of your diving habits, Oceanic advises you to dive with additional backup instrumentation that can provide the data necessary to properly surface if and when your primary instruments fail.

As with any other piece of equipment, unforeseen things can happen. By preparing ahead of time, you can spare yourself a great deal of frustration and disappointment. **If you dive in situations where your trip would be ruined or**

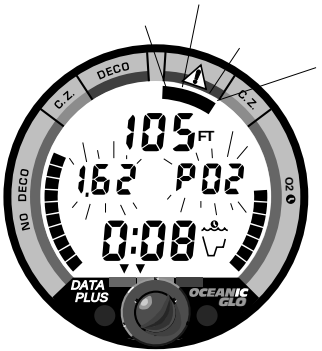


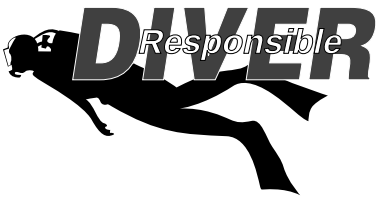
Fig. 70 - High PO2 Dive Mode (PO2 ≥ 1.60)

your safety would be jeopardized by losing the use of your DataPlus, an analog or digital backup system or use of standard air (or nitrox) tables is highly recommended.

A FINAL WORD CAUTION

Although the DataPlus represents the latest in user friendly dive computer technology, it cannot force you to understand how to use it. Before diving with the DataPlus, be sure you thoroughly understand its functions and displays. Contact your local Authorized Oceanic Dealer if you have a question. Above all remember, technology is not a replacement for training, experience, and common sense !

Be a Responsible Diver at all times !!



CARE & MAINTENANCE

CARE AND CLEANING

Lens Protector
(actually transparent)

The DataPlus is a sensitive electronic instrument. Although it has been designed to endure the rigors of diving, it still must be handled carefully to protect it from shock, excessive cold or heat, direct sunlight, chemical attack, neglect and tampering.

The console, wrist mount, or hose mount rubber boot that the module is carried in will help protect it from damage. Although the module housing is made of an impact resistant resin that is extremely shock resistant, it is susceptible to scratches and attack by strong chemicals. If the face does become scratched, Oceanic can replace it, although small scratches will naturally disappear underwater. For even more convenience and additional protection against scratches, place a transparent Oceanic Instrument Lens Protector on the gauge face. These, and other special accessories, can be purchased from your Authorized Oceanic Dealer for your DataPlus and for many other instruments.

⚠ CAUTION: Never spray aerosols of any kind on, or near, the DataPlus. The propellants may chemically attack the plastic.

If diving with a console version of the DataPlus, be careful not to leave it lying on a boat deck where it might be damaged or exposed to direct sunlight. Many dive computers (and dive trips) are ruined by encounters between carelessly tossed computers and weight belts or tanks. If your console is attached to a tank

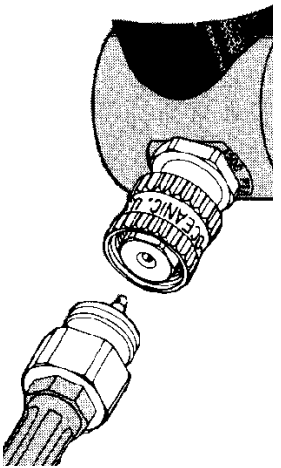
in a rack, tuck the console into a BC pocket, or between the waistband and the bladder of the BC. Keep it off the deck and protected from undue shock.

Better yet, if you have a console version, attach an Oceanic DataLink™ quick disconnect on the high pressure hose that connects your pressure gauge to your regulator first stage. This allows easy removal of the complete instrument console when not in use between dives. It also enables you to keep the DataPlus nearby for recording dives in your log book or planning the next dive.

During the dive, keep the DataPlus from dangling freely and keep it handy underwater by using the console retainers on your BC. This will also help prevent damage to delicate corals or marine life.

Soak the DataPlus in fresh water at the end of each day of diving, preferably after each dive. If possible, use lukewarm water to dissolve any salt crystals. Salt deposits can also be dissolved using a slightly acidic vinegar/water bath. Be sure to flush any holes or slots on the rear of the boot. Towel dry before storing, and transport your DataPlus cool, dry, and protected.

WARNING: Never, under any circumstances, poke any object through any slots or holes on the rear of the DataPlus. Doing so may damage the depth sensor, possibly resulting in erroneous depth and/or dive time remaining displays.



DataLink™

ANNUAL DEALER INSPECTIONS & FACTORY SERVICE

As with all Oceanic instrumentation, the DataPlus should be inspected annually by an Authorized Oceanic Dealer who will perform a factory prescribed function check and inspection for damage or wear.

To keep the two year limited warranty in effect, this annual inspection must be completed one year after purchase (± 30 days). Oceanic recommends that you continue to have this inspection performed even after the warranty period has expired to ensure your DataPlus is working properly.

A convenient service record is provided on page 94 in the Reference section. This should be signed by the Oceanic Dealer service technician after each inspection or factory service has been completed. The cost of annual service is not covered under the terms of the two year limited warranty.

Be a -
RESPONSIBLE DIVER
at all times.

⚠ **WARNING: If you are in doubt about the accuracy of your DataPlus' depth readings, DO NOT attempt to dive with it until it has been inspected by an Authorized Oceanic Dealer.**

The facility conducting the depth check must have a pressure test chamber that is capable of pressurizing the DataPlus to its maximum operating depth (330 feet / 99.5 meters). Also, the test gauge on the pressure test chamber must be as accurate as the depth sensor in the DataPlus (± 1% of full scale).

WARNING: Never pressure test the DataPlus in an air environment. Doing so may damage the depth sensor; possibly resulting in erroneous depth or time readings.

It is possible to damage the DataPlus depth sensor if it is not pressure tested properly. The DataPlus must be placed completely underwater when being pressure tested to protect the depth sensor.

OBTAINING FACTORY SERVICE

If your local Authorized Oceanic Dealer does not have the special tools or facilities to follow the procedures described above, have the dealer send your DataPlus directly to Oceanic, or an Oceanic regional distribution center for service (Fig. 71).

NOTE: Previous dive log will be erased whenever your DataPlus receives factory service. Copy all log information in your log book, or download stored data to your OceanLink™ PC program, before sending your DataPlus for factory service.

To obtain service from the Oceanic factory:

- Remove the DataPlus module from its boot (see instructions on page 69). Be sure to remove all accessories and send only the module.

OCEANIC CORPORATE H.Q., USA
San Leandro, California
Tel: 510-562-0500; Fax: 510-569-5404

OCEANIC HAWAII
Ewa Beach, Hawaii
Tel: 808-682-5488; Fax: 808-682-1068

OCEANIC EUROPE
Pomezia, Italy
Tel: 39-6-910-4148; Fax: 39-6-910-4163

OCEANIC SW, LTD
Devon, England
Tel: 44-884-84-0001; Fax: 44-884-84-1770

OCEANIC DIVING AUSTRALIA PTY LTD
Sorrento, Victoria, Australia
Tel: 61-59-84-4770; Fax: 61-59-84-4307

OCEANIC ASIA PACIFIC PTE LTD
Singapore
Tel: 65-779-3853; Fax: 65-779-3945

Fig. 71 - Oceanic Service

- Package the module carefully using a cushioning material.
- Include a legible note giving specific reason for return, your name, address, daytime phone number, module serial number, and copy of original sales receipt.
- Send prepaid and insured to the nearest Oceanic facility.
- If you have any questions regarding DataPlus service, call Oceanic's Parts & Service Department at (510) 562-0500.
- Allow two to four weeks for service, plus travel time to and from Oceanic, when estimating your down time.

BATTERY LIFE

The DataPlus' battery consumption rate varies throughout periods of operation, which begin upon activation and continue for 24 hours after surfacing from a dive. For this reason, the number of dives that you will obtain with a set of batteries is subject to the number conducted during each activation period. Other variables such as the climate and the type and age of batteries actually used will also affect the number of dives possible.

Tests and calculations indicate that a set of lithium cells will maintain unit operation for approximately 50 activation periods of 24 hours. Therefore, you could expect to obtain (Fig. 72) from 50 dives (if only 1 dive is conducted each time the unit is activated) to over 150 dives (if 3 dives are conducted each time the unit is activated).

50 Activation Periods

'Average' # Dives Each Period	Total # Dives To Expect
1	50
2	100
3	150

Fig. 72 - Battery Life

LOW BATTERY CONDITION

You will be alerted to a Low Battery condition by a flashing Battery icon located above the Max Depth display (Fig. 73). The DataPlus will only activate if there is enough battery power to complete one full day of diving. Consider too that remaining battery life can be suddenly shortened by a change in ambient temperature.

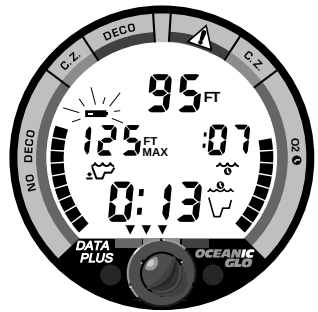
Oceanic strongly advises that you replace all of the batteries and DO NOT attempt to dive with the DataPlus when the Battery icon remains on display, and that you replace the batteries with new prior to any multi day dive trip that will include a profile of repetitive dives, such as multiple days on a live aboard vessel.

WARNING: Adjusted No Decompression Limits will be erased when the batteries are replaced between repetitive dives.

BATTERY REMOVAL

If the module is in a wrist boot, it will be necessary to peel the lips of the boot downward off the module while applying pressure from underneath, working it out slowly. If in a console, bend the rubber console boot back to expose the edge of the module. If the console boot is flexible enough to permit, you may bend it

(Surface Mode)



(Dive Mode)

Fig. 73 - Low Battery

back far enough to scoop the module out with your index finger. Otherwise, it may be necessary to insert a blunt screwdriver until the tip rests just underneath the module. DO NOT pry the module from the console! Slowly increase the pressure under the module by releasing the tension on the rubber boot. The module will slide up the screwdriver and exit the console.

WARNING: The following procedure must be closely adhered to. Damage due to improper battery replacement is not covered by the DataPlus' limited 2 year warranty.

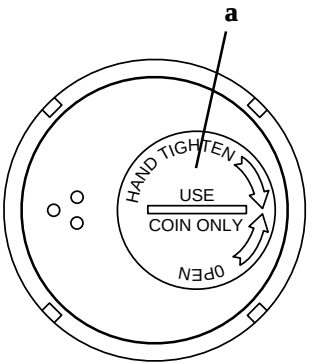


Fig. 74 - Battery Hatch

Examine the case back to find the battery hatch (Fig. 74a), and proceed as follows to remove the batteries:

- Apply a coin (not a screwdriver) to the recessed slot of the battery hatch, and turn the hatch out counterclockwise to remove it from the housing. The battery compartment should only be opened in a dry and clean environment, with extreme care taken to prevent the entrance of moisture or dust.
- Inspect the o-ring for any signs of deterioration. If found, remove the o-ring by pressing the sides with your fingertips to cause it to protrude slightly from the groove of the battery hatch and discard. DO NOT use tools to remove.
- Closely check the threads of the battery hatch and the housing for any signs of damage which might impair proper threading. If found, return your DataPlus to your Authorized Oceanic Dealer, and DO NOT attempt to use until it has received factory service.

WARNING: DO NOT attempt to remove the outer case ring (Fig. 75a). Doing so may cause a dangerous malfunction, resulting in possible injury or death. Indication of tampering with the ring will void the warranty.

- Turn the unit over to drop out the two 3 volt lithium batteries. Discard, regardless of age or amount of use.
- Closely check the metal contacts inside the battery compartment for any signs of stress (bending or breakage), and for any signs of corrosion indicating entrance of moisture into the unit. If found, return your DataPlus to an Authorized Oceanic Dealer, and DO NOT attempt to use the unit until it has received factory service.

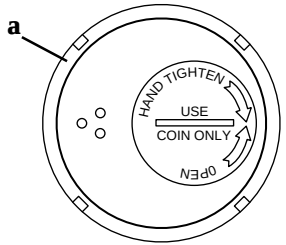


Fig. 75 - Outer Case Ring

BATTERY INSTALLATION

- Remove and check the battery hatch as previously described.
- If necessary to replace the battery hatch o-ring, lightly lubricate it with silicone grease and stretch it slightly to work it down over the slotted top of the hatch, DO NOT roll it over the threads.
- Install two new 3 volt lithium batteries (Duracell® DL2032, Radio Shack® 23-162, Maxell® CR2032, Panasonic® CR2032, or equivalent) into the battery compartment with the positive (+) side facing up (out of the battery compartment), with one directly on top of the other (Fig. 76). Avoid touching either the battery contacts or the flat surfaces of the batteries, as skin oil

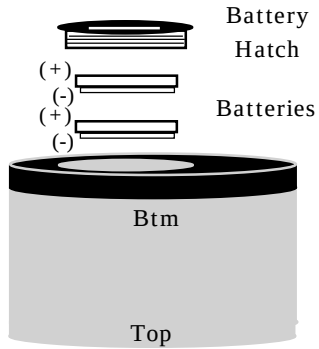


Fig. 76 - Installing Batteries

will impair correct contact.

- Lightly lubricate the battery hatch o-ring with silicon grease and install it onto the battery hatch. DO NOT roll the o-ring over the threads of the battery hatch. Instead, stretch it slightly to work it down over the slotted end of the battery hatch and into the groove at the base of the threads.

NOTE: This o-ring must be a genuine Oceanic Part that can be purchased from your Authorized Oceanic Dealer. Use of any other o-ring will void the warranty.

- Carefully insert the battery hatch into the housing and turn slowly clockwise by hand to ensure correct threading. Turn until snug, then apply a coin and tighten until secure, so the outer surface of the battery hatch is flush with the outer surface of the housing.

FLOODED BATTERY COMPARTMENT

If water or corrosion is found in the battery compartment, it is best to have your DataPlus inspected and cleaned by an Authorized Oceanic Dealer. If you are attempting a repair in the field, proceed as follows:

- Inspect the lens and case closely to ensure they are not cracked or damaged.
- Inspect the button covering to ensure it does not have cuts or holes.
- Remove the batteries, discard and DO NOT reuse.

- Check the battery hatch o-ring for damage (nicks, cuts, divots, etc.). If found, discard and replace with new.
- Before replacing the o-ring and batteries, flush the battery hatch and compartment with a solution of 50% white vinegar and 50% water. Rinse with fresh water, and dab with tissue paper until completely dry.
- Install the o-ring and batteries as previously described.

INSPECTION

- Activate the unit and watch carefully as it performs a full diagnostic and battery check and enters Surface Mode, followed by FO2 and the PDPS.
- If a Low Battery condition is indicated, return the unit to your Authorized Oceanic Dealer for a complete inspection before attempting to use it.
- Observe the LCD display to ensure it is consistently clear and sharp in contrast throughout the screen. If there are any portions of the display missing or appearing dim, return the unit to your Authorized Oceanic Dealer.

RETURNING THE MODULE TO ITS BOOT

- If previously removed, replace the rubber spacer into the boot.
- Orient the module over the opening in the boot, and dip the bottom edge into the opening while pressing the top edge with the palm of your hand. Stop pressing when the bottom edge of the module has just entered the rubber boot.

- Correct the alignment of the module as needed so that it is straight.
- Press the module completely into place with your thumbs, watching the alignment, until it snaps into place.

SUMMARY

Care and maintenance is simple and easy, and with a small investment of your time you will help keep your DataPlus in top condition for many years of diving enjoyment.

REFERENCE

MORE ABOUT FLYING AFTER DIVING

In 1990 the Undersea and Hyperbaric Medical Society (UHMS) published a set of guidelines aimed at minimizing the possibility of decompression sickness due to flying too soon after diving. The UHMS suggests* divers using standard air cylinders and exhibiting no symptoms of decompression sickness wait 24 hours after their last dive to fly in aircraft with cabin pressures up to 8,000 feet. (2,440 meters).

The two exceptions to this recommendation are:

- If a diver had less than 2 hours total accumulated dive time in the last 48 hours, then a 12 hour surface interval before flying is recommended.
- Following any dive that required a decompression stop, flying should be delayed for at least 24 hours, and if possible, for 48 hours.

Since the 1990 UHMS guidelines were introduced, data from the Diver's Alert Network (DAN) was introduced that resulted in DAN's position** that "A minimum surface interval of only 12 hours would be required in order to be reasonably assured a diver will remain symptom free upon ascent to altitude in a commercial jet airliner (altitude up to 8,000 ft/2440 m). Divers who plan to make daily, multiple dives for several days, or make dives that require decompression stops, should take special precautions and wait for an extended surface interval beyond 12 hours before flight".

Be a -
RESPONSIBLE DIVER
at all times.

* excerpted from "The UHMS Flying After Diving Workshop"

** excerpted from "DAN's Current Position on Recreational Flying After Diving"

Both the UHMS and DAN agree that "There can never be a flying after diving rule that is guaranteed to prevent decompression sickness completely. Rather, there can be a guideline that represents the best estimate for a conservative . . . surface interval for the vast majority of divers. There will always be an occasional diver whose physiological makeup or special diving circumstances will result in the bends".

To reduce the risk of developing decompression sickness after a single no decompression dive, current guidelines suggest waiting 12 hours prior to exposure to atmospheric pressures equivalent to 1000 feet (330 meters) above sea level, or greater. When repetitive dives are conducted during the same day, or period of days, it is suggested that the interval be increased to a minimum of 24 hours. Note that land travel to higher elevations after diving must also be considered as an exposure to altitude.

MORE ABOUT ALTITUDE DIVING

WARNING: Diving at high altitude requires special knowledge of the variations imposed upon divers, their activities, and their equipment by the decrease in atmospheric pressures. Oceanic recommends completion of a specialized Altitude training course by a recognized training agency prior to diving in high altitude lakes or rivers.

Atmospheric pressure decreases as altitude increases above sea level. Weather systems and ambient temperature also affect barometric pressures. Consequently, depth reading instruments that do not compensate for the decrease in pressure indicate depth readings shallower than the depth they are actually at.

The DataPlus automatically compensates for decreased ambient pressure when activated at high altitudes up to 14,000 feet (4,267 meters). Its program contains a high altitude algorithm that reduces no decompression limits to add a larger zone of caution.

Whenever the DataPlus is manually activated at altitudes higher than 2,000 feet (610 meters), it will automatically recalibrate itself to measure depth in feet of fresh water rather than feet of sea water. When returning to lower altitudes, diving should not be conducted until the DataPlus automatically clears of any residual nitrogen and resets to operate at the new altitude.

WARNING: Altitude compensation provided by the DataPlus takes place when the unit is activated. DO NOT dive at any different altitude until the DataPlus shuts off. It will recalibrate when reactivated at the new altitude.

MORE ABOUT NITROX DIVING

⚠ WARNING: Diving with enriched nitrogen-oxygen (nitrox) mixtures requires special knowledge of the variations imposed upon divers, their activities, and their equipment by the increase in percentage of oxygen. Oceanic recommends completion of a specialized Nitrox training course by a recognized training agency prior to diving with any enriched nitrogen-oxygen (nitrox) mixtures.

Both central nervous system (CNS) oxygen toxicity and pulmonary oxygen toxicity were taken into consideration when the current maximum limits (Fig. 77) for exposure to oxygen were published by NOAA in the October 1991 NOAA Diving Manual. Although CNS oxygen toxicity is considered the primary constraint for higher levels of PO2, there are circumstances in which pulmonary oxygen toxicity can limit exposures.

CNS oxygen toxicity is not considered likely at PO2 levels below 1.30 BAR. It is however related to diver's work level. Performing strenuous tasks could cause the symptoms of O2 poisoning to occur at PO2 levels lower than they normally would appear during normal casual recreational diving.

The nitrox features of the DataPlus are intended for use only by recreational divers trained for nitrox diving by an instructor certified by a

PO2 (BAR)	Maximum Exposure Time Per Dive (Min)	Maximum Exposure Time Per 24hr (Min)
0.60	720	720
0.70	570	570
0.80	450	450
0.90	360	360
1.00	300	300
1.10	240	270
1.20	210	240
1.30	180	210
1.40	150	180
1.50	120	180
1.60	45	150

Fig. 77 - PO2 Exposure Limits

recognized training agency to teach diving with nitrox. The DataPlus is not intended for use by military or commercial divers.

WARNING: In the event that you exceed the maximum per dive allowable O2 exposure (dose), it is recommended that you allow a surface interval of at least 2 hours before reentering the water. If you exceed the maximum 24 hour period allowable O2 exposure (dose), you should allow a surface interval of at least 24 hours before reentering the water.

MULTIPLE TISSUE TRACKING

The DataPlus tracks twelve tissue compartments with half times ranging from 5 to 480 minutes. The TLBG always displays the controlling compartment that is the only one important at that time. Think of the TLBG as twelve separate transparent displays laid on top of one another (Fig. 78, page 81). The tissue compartment that has filled up fastest is the only one the viewer can see from the top.

At any particular point, one tissue compartment may be absorbing nitrogen, while another that was previously higher may be 'off gassing'. Figure 79, page 81, illustrates the point at which one compartment “hands over” control to another at a different depth. This feature of the Decompression Model is the

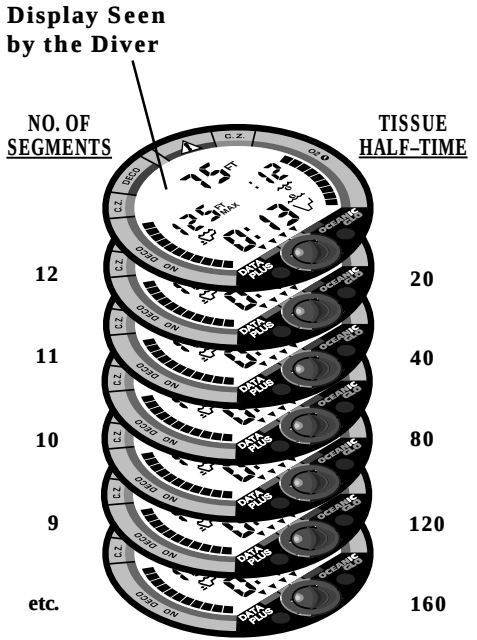


Fig. 78 - Tissue
Compartment Control

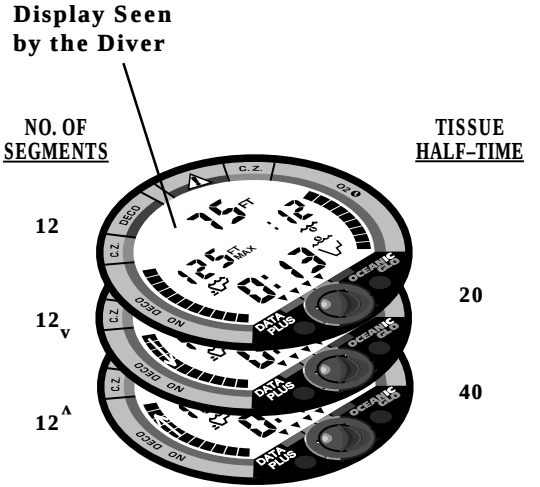


Fig. 79 - Tissue Compartment
Control Hand Over

R3

Depth feet (meters)	DataPlus NDL-mins. Eng (Metric)	U.S. Navy NDL -mins.
30 (9)	280 (283)	- - -
35	- - - - - -	310
40 (12)	137 (144)	200
50 (15)	80 (84)	100
60 (18)	57 (58)	60
70 (21)	40 (41)	50
80 (24)	30 (31)	40
90 (27)	24 (26)	30
100 (30)	19 (20)	25
110 (33)	16 (16)	20
120 (36)	13 (13)	15
130 (39)	10 (11)	10
140 (42)	9 (9)	10
150 (45)	8 (8)	5
160 (48)	7 (7)	5
170 (51)	* *	5
180 (54)	* *	5
190 (57)	* *	5

[* The DataPlus PDPS will not scroll past 160 feet (48 meters), or when projected bottom / descent time is less than one minute.]

Fig. 80 - No Decompression Limits

basis of multilevel diving, one of the most important contributions the DataPlus offers you. Take advantage of this feature and make all of your dives multilevel dives.

NO DECOMPRESSION LIMITS

Note how the No Decompression Limits for the DataPlus are contrasted with the U.S. Navy limits (Fig. 80). For most depths, the DataPlus provides somewhat less no decompression times than the U.S. Navy Tables. However, while the no decompression limits may be less, you will receive greatly increased allowable bottom times as you take advantage of the multilevel dive capabilities offered by the DataPlus. Notice also that the DataPlus' PDPS does not scroll past 160 feet (48 meters).

REPETITIVE DECOMPRESSION DIVING

The decompression model used by the DataPlus is based on the no decompression multilevel repetitive dive schedules successfully tested by Dr. Ray Rogers and Dr. Michael Powell. These tests did not include repetitive dives deeper than 90 feet (27 meters), or Decompression dives. Due to the present unavailability of statistical data, DataPlus decompression predictions are based on U.S.

Navy theory. Therefore, pay special attention to the following warnings:

WARNING: Oceanic advocates responsible diving practices and does not recommend decompression diving, or diving below 130 feet (39 meters). The decompression capabilities of the DataPlus are intended strictly for emergency use. Decompression diving is inherently hazardous and greatly increases your risk of decompression sickness - even when performed according to the computer's calculations. In the event that you must make an emergency decompression dive, you must not make another dive for at least 24 hours.

WARNING: Using the DataPlus, just as using the U.S. Navy (or other) No Decompression Tables, is no guarantee of avoiding decompression sickness, i.e. "the bends."

CONCLUSION

The DataPlus is only an informational tool whose entire worth depends on using it correctly. **Learn how to use it and use it wisely.** Have fun with the DataPlus, and **thank you for being a responsible diver!**

Be a -
RESPONSIBLE DIVER
at all times.

RESPONSIBLE COMPUTER DIVING

Since the advent of dive computers, it is a common mistake to assume that the old traditional rules of diving no longer apply, but the truth is just the opposite. Before you dive using your DataPlus, keep these rules in mind:

- **Plan each dive, and dive your plan** - Your computer was not designed to make decisions for you, only to provide you with the information you need to make responsible decisions for yourself. This begins with a dive plan that will help you avoid a low air or decompression situation.
- **Do not plan any dive that exceeds your training or experience level.**
- **Inspect your computer before every dive** - If it shows any signs of damage or abnormal function, DO NOT dive with it until it has received factory service.
- **Make your deepest dive first** - When making repetitive dives, it is imperative to ensure that each consecutive dive is shallower than the one before. This will allow your body's slower tissues to continue outgassing nitrogen.
- **Make the deepest part of your dive first, and gradually work your way to the surface using a "staircase" profile** - The ability to perform multilevel diving is one of the most important contributions of a dive computer, and you should take advantage of it. It will increase your bottom time and at the same time decrease your risk of decompression sickness.
- **Ascend slowly by following an ascent line whenever possible, or by ascending diagonally toward the surface -** Watch the Variable Ascent Rate Indicator while you ascend, and keep your ascent as slow as possible.
- **Make a safety stop at 15-20 feet (5-6.5 meters) at the end of every dive** - A safety stop of as little as 5 minutes has been shown to have a dramatic effect on the bubble formation in divers. **It's important. Don't forget it.**

SPECIFICATIONS

NO DECOMPRESSION MODEL

Basis:
- Modified Haldanean Algorithm
- 12 tissue compartments

Data Base:
- Diving Science and Technology (DSAT) - Rogers/Powell

Performance:
- Tissue compartment half times (in mins.) Spencer's "M" values 5, 10, 20, 40, 80, 120, 160, 200, 240, 320, 400, 480
- Reciprocal subsurface elimination
- 60 minute surface credit control for compartments faster than 60 minutes
- Tissue compartments tracked up to 24 hours after last dive

Decompression Capabilities:
- Decompression stop ceilings at 10, 20, 30, 40, 50, & 60 feet (3, 6, 9, 12, 15, & 18 meters)

Altitude Algorithm:
- Based on National Oceanic & Atmospheric Administration (NOAA) tables

Oxygen Partial Pressure (PO2) Limits:
- Based on National Oceanic & Atmospheric Administration (NOAA) tables

OPERATIONAL MODES & DISPLAY RANGE/RESOLUTION

Modes:
- Activation/Diagnostic
- Surface
- FO2 Set
- PO2 Max Depth
- Pre Dive Planning Sequence
- No Decompression Dive
- Decompression Dive
- Alternate Decompression Dive
- Violation (conditional, delayed, & immediate)
- Temperature (& backlight)
- Gauge
- High PO2 Dive
- Dive Log (nitrogen & oxygen)
- Time to Fly

Numeric Displays:

	Range	Resolution
• Dive #	0 - 9	1
• Depth	0 - 330 ft. (99.5 m)	1 ft. (.5 m)
• Maximum Depth	330 ft. (99.5 m)	1 ft. (.5 m)
• FO2 Set Point	21 - 50 %	1 %
• PO2 Value	1.40 - 9.99 BAR	.01 BAR
• No Decompression Time	0 - 9 hrs. 59 mins.	1 minute
• Decompression Time	0 - 9 hrs. 59 mins.	1 minute
• Elapsed Dive Time	0 - 1 hrs. 59 mins.	1 minute
• Surface Time	0 - 11 hrs. 59 mins.	1 minute
• Dive Log Surface Interval	0 - 11 hrs. 59 mins.	1 minute
• Time to Fly	23 hrs. 59 mins. - 0*	1 minute
	(* starting 10 sec. after the dive)	

SPECIFICATIONS (cont'd)

GRAPHIC DIVER INTERFACE

Tissue Loading Bar Graph (TLBG)

	segments
No Decompression zone (green)	12
Caution zone (yellow)	3
Decompression zone (red)	1

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Oxygen Accumulation (O2) Bar Graph

	segments
Normal zone (green)	12
Caution zone (yellow)	3
Danger zone (red)	1

Variable Ascent Rate Indicator (VARI)

	segments	feet/min.	meters/min.
Too Fast zone (red - flashing)	5	61+	18.5 +
Caution zone (yellow)	4	51 - 60	15.5 - 18
	3	41 - 50	12.5 - 15
	2	31 - 40	9.5 - 12
Normal zone (green)	1	21 - 30	6.5 - 9
	0	0 - 20	0 - 6

Special Displays:	Occurrence
• Diagnostic Display	Activation
• Out of Range	330+ feet (99.5+ meters)
• Gauge Mode Countdown Timer	12 - 24 hours after violation
• External Access (EA)	If control button is held for 8 sec during Surface or PDPS mode.

OPERATIONAL PERFORMANCE

Function:	**Accuracy:**
• Depth	± 1% of full scale
• Timers	1 second per day

Dive Counter:
- Displays Dives #1 - #9 then recycles to #1 (and continues #1 - #9)
- Resets to Dive #1, upon diving (after a 12 hour surface time)
- Cycles to next Dive # at 5 feet (1.5 meters) depth after a 10 minute surface interval

Dive Log Mode:
- Stores latest (most recent) 12 dives in memory for viewing
- After 12 dives, adds latest dive to memory, deletes oldest dive
- Each dive displays a Nitrogen Log & an Oxygen Log screen

Altitude:
- Altitude range 0 - 14,000 feet (4,267 m) above sea level
- Modes Full computer functions up to 14,000 feet (4,267 m)
- Activation not possible when higher than 14,000 feet (4,267 m).
- Recalibration of depth readings from 'feet of sea water' to 'feet of fresh water' when higher than 2,000 feet (610 m) elevation.

Power:
- Batteries Two 3 volt lithium cells, CR2032 or equivalent
- Life expectancy 50 - 24 hour periods of activation (approximate) (variable number of dives)
- Shelf life 2 to 5 yrs (see battery manufacturer's specs)
- Low Battery condition Replace both prior to diving

SPECIFICATIONS (cont'd)

OPERATIONAL PERFORMANCE (cont'd)

Activation:
- Manual activation is required (water immersion does not activate unit).
- Cannot be activated deeper than 4 feet (1.5 m)
- Cannot be activated at elevations higher than 14,000 feet (4,267 m)
- Needed before the first dive.
- Automatically shuts off if no dive is made within 120 minutes after initial activation.
- Cannot be shut off manually (will shut off if the batteries are removed). (Nitrogen calculation for repetitive dives would be lost).

Programming (setting) FO2:
- Set for 'Air' automatically upon initial activation.
- Remains set for 'Air' unless an FO2 value is programmed.
- Numerical set points from 21 to 50 %.
- If set for 21% - remains set for 21% unless manually changed.
- If set for >21% - reverts to 50% after dive, must manually changed.
- Must be set to match nitrox mix 'before each nitrox dive'.

External Access Mode:
- Not used for diving, used to download dive data to a PC log program.
- Accessed during the Surface or PDPS Mode when the control button is held in for more than 8 seconds.
- Activation when a Low Battery condition is indicated upon activation will cause the flashing Low Battery icon to disappear implying satisfactory voltage. (Batteries must be replaced prior to diving if Low Battery is displayed.)
- The letters 'EA' appear on the display with a numerical countdown from 6 to 0, followed by the Surface Sequence.

PARTS & ACCESSORIES

- P/N 04.9006 Battery Kit (with 2 batteries, o-ring, & grease)
- P/N 2.023 Battery hatch o-ring
- P/N 5057 Battery hatch
- P/N 819174 Boot shim (spacer)

- P/N 04.8120 Lens protector
- P/N 04.1200.1 DataLink™ - HP hose quick disconnect
- P/N 04.4540 OceanLink™ - PC Download Package

GLOSSARY

The following are diving terms that you should become familiar with. Some apply specifically to the DataPlus.

Air Dive - A dive conducted using air (approximately 21% oxygen & 79% nitrogen) as the breathing gas.
Algorithm - A step-by-step mathematical formula designed to accomplish a particular result (i.e. Dive Time Remaining in the DataPlus).
Altitude Dive - A dive made at an elevation above sea level where a different set of no decompression tables is used (higher than 2000 feet/610 meters with the DataPlus).
Ascent Rate - The speed that a diver moves vertically toward the surface.
Boot - A protective rubber covering that surrounds an instrument module.
C.Z. - Abbreviation for Caution Zone
Caution Zone - The yellow section of a bar graph that gives a visual warning of a diver's proximity to projected limits.
Ceiling - See decompression ceiling
Clean Dive - A dive preceded by 24 hours of no diving activity.
Compartment - A term applied to the hypothetical modeling of nitrogen absorption in the tissues (more accurate than the term 'tissue' because dive computer models have no direct relation to human tissues).
CNS - Abbreviation for the Central Nervous System of the body.
DataLink™ - A quick disconnect device that facilitates removal of the high pressure instrument hose (and instrument console) from the regulator first stage for protection, transport, or storage.
DCS - Abbreviation for decompression sickness, i.e. 'the bends'
DECO - Abbreviation for Decompression.

GLOSSARY (cont'd)

Decompression Ceiling - The shallowest depth a diver may reach upon ascent without risking decompression sickness (also see TLBG).
Decompression Stop - The depth(s) at which a diver must pause during ascent to allow absorbed nitrogen to escape naturally from the tissues.
Depth Sensor - An electromechanical device that converts water pressure into an electrical signal, that is converted to a visual depth display.
Diagnostic Mode - The first display seen on dive computers after initial activation during which time a self–check for internal faults and battery voltage is performed.
Display - A visual readout of information.
Dive Log Mode - A computer display of previous dive information.
Dive Time Remaining - A display of the time allowed before a diver must surface based on no decompression status or oxygen loading.
Elapsed Dive Time - The total time spent underwater during a dive between 5 feet (1.5 meters) on initial descent to 3 feet (1 meter) on final ascent.
FO2 - The fraction (percent / 100) of O2 in the breathing gas mixture.
Graphic Diver Interface™ - A feature of Oceanic dive computers. Easily understandable color coded bar graphs that indicate diver status; green = normal, yellow = caution, red = danger.
Icon - A small pictorial representation of an operational mode.
LCD - Abbreviation for liquid crystal display, an easily viewed low voltage display found on dive computers.
Maximum Depth - The deepest depth attained during a dive.
Mode - A specific set of functions in a dive computer.
Modular Dive Computer - A dive computer that is not connected to the diver's air supply.

Multiplexing Display - A display on an instrument that alternates to show different information.
Multilevel Dive - A type of dive profile where the diver spends various times at different depths (opposite of a Square Wave dive profile).
Nitrox - A nitrogen-oxygen breathing gas mixture that contains a higher fraction of oxygen than air.
Nitrox Dive - A dive conducted using nitrox (22 to 50 % O2) as the breathing gas.
NO DECO - Abbreviation for No Decompression
NO DECO Time Remaining - The amount of dive time remaining based on no decompression status.
No Decompression - Any part of a dive where the diver can surface without requiring a decompression stop.
O2 Bar Graph - A visual representation of oxygen accumlation on a dive computer display.
Oceanglo® - An Oceanic name for an instrument backlight feature. R3
OceanLink™ - An Oceanic name for a high pressure hose quick disconnect device.
OTU - Abbreviation for oxygen tolerance unit. A Hamilton's Repex method term for oxygen dose.
Out of Range - The point at which a dive computer can no longer supply correct dive information.
Oxygen Tolerance - Dose or exposure to the physiological affects of elevated levels of oxygen.
Oxygen Toxicity - The adverse physiological affects of exposure to elevated levels of oxygen.
Partial Pressure - The proportion of the total pressure contributed by a single gas in a mixture of gases.
PDPS - Abbreviation for Pre Dive Planning Sequence
PO2 - Partial pressure of oxygen. The proportion of total pressure of a gas mixture contributed by oxygen.
Pre Dive Planning Sequence™ - A sequence of displays indicating available dive times at 10 foot (3 meter) intervals from 30 to 160 feet (9 to 48 meters) used when dive planning.
Repetitive Dive - Any dive that takes place within 12 hours of a previous dive .

GLOSSARY (cont'd)

Safety Stop - A depth at which a diver may choose, but is not required, to pause during ascent to allow absorbed nitrogen to escape naturally from the tissues.
Square Wave Dive - A type of dive profile where the entire dive is spent at one depth between descent and ascent.
Surface Sequence - An Oceanic term for the sequence of information displayed during surface operation.
Tissue - See Compartment
Tissue Compartment - See Compartment
Tissue Loading Bar Graph™ - A graphic representtion of calculated nitrogen absorption displayed alongside a color coded indicator (part of the Graphic Diver Interface).
TLBG - Abbreviation for Tissue Loading Bar Graph
Transducer - An electromechanical device in a dive computer that acts as a depth or pressure sensor.
Transition Period - The first 10 minutes of surface time after ascending above 3 feet (1 meter) from a dive.
VARI - Abbreviation for Variable Ascent Rate Indicator
Variable Ascent Rate Indicator™ - A graphic representation of vertical ascent rate (speed) displayed alongside a color coded indicator (part of the Graphic Diver Interface).

INDEX

OCEANIC

THE CODE OF THE RESPONSIBLE DIVER

AS A RESPONSIBLE DIVER I UNDERSTAND AND ASSUME THE RISKS I MAY ENCOUNTER WHILE DIVING.

RESPONSIBLE DIVING BEGINS WITH:

- **DIVING WITHIN THE LIMITS OF MY ABILITY AND TRAINING**
- **EVALUATING THE CONDITIONS BEFORE EVERY DIVE AND MAKING SURE THEY FIT MY PERSONAL CAPABILITIES**
- **BEING FAMILIAR WITH AND CHECKING MY EQUIPMENT BEFORE AND DURING EVERY DIVE**
- **KNOWING MY BUDDY'S ABILITY LEVEL AS WELL AS MY OWN**
- **ACCEPTING THE RESPONSIBILITY FOR MY OWN SAFETY ON EVERY DIVE**

DATAPLUS SERVICE RECORD

Serial No. _____

Date of Purchase _____

Purchased from _____

To be filled in by Authorized Oceanic Dealer:

Date	Service Performed		Dealer / Technician

Doc. No. 12-1968,R3 (7/99)