OCEANIC®

Data 100®

owner's guide

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 Data100.

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

⚠ **WARNINGS:**

- **The Data100 is intended for use only by recreational divers who have successfully completed a nationally recognized course in scuba diving.**
- **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.**
- **You must obtain scuba certification before using the Data100 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 Data100.**
- **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 Data100 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 Data100 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 Data100 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 Data100. Modifications or repair by anyone other than an Oceanic Sales & Service Center authorized to service the Data100 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 Data100 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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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), and Variable Ascent Rate Indicator Bar Graph (U.S. Patent no. 5,156,055).

DECOMPRESSION MODEL

The programs within the Data100 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 Data100 dive computer model is based upon the latest research and experiments in decompression theory. **Still, using the Data100, 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.

* The blank Oceanic DiveLog in the Reference section may be duplicated for personal use only, not for resale.

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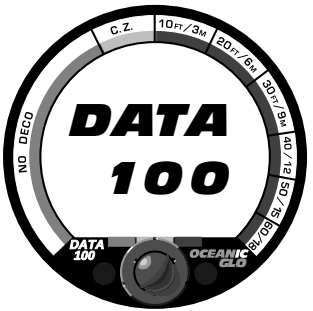
THE DATA100 IS EASY TO USE

INTRODUCTION

Welcome to Oceanic and thank you for choosing the Data100!

Your new Data100 presents the information that you need before, during, and after your dives using Oceanic's intuitive combination of easy to read digital displays and unique identification icons.



Tissue loading of nitrogen and ascent rate are presented as segmented bar graphs alongside color coded reference indicators that bring quick focus to these two 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 Data100's various operational modes.

The initial time that you invest becoming acquainted with your new Data100 will be returned as you enjoy your underwater activities with the comfort that your familiarization affords.

The Data100's 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 Data100, some information will be refreshed as you proceed. Relax and read through the complete guide. **Know your Data100!**

It is extremely important that you:

- **Read this owner's guide in sequence and understand it completely before attempting to use the Data100.**
- **Check the Data100 frequently during your dive.**
- You must also be a trained diver, certified by a recognized training 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 Data100 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 these or other signs of damage are found, return the unit to an Authorized Oceanic Dealer or Oceanic Parts & Service. DO NOT attempt to use until it has received factory service.

Fig. 1 - Surface Mode

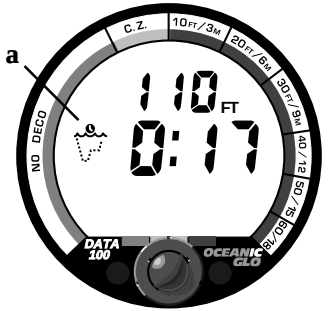


Fig. 2 - Pre Dive Planning Sequence

REGULATOR ATTACHMENT

If you have purchased the Data100 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 Data100 by pressing and releasing the **control button** located below the display (Fig. 1a). Depressing the button during the Dive Mode will activate the display's Oceanglo™ backlight. After a diagnostic check that lasts about 10 seconds, it enters the pre dive **Surface Mode** signified by the Surface Mode icon (Fig. 1b). Also displayed will be 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), the unit will automatically shut off.

After displaying the Surface Mode for approximately 10 seconds, the Data100 automatically changes to a Plan Mode (Fig. 2) referred to as the Pre Dive Planning Sequence or **PDPS** signified by the PDPS icon (Fig. 2a). 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. Upon completion of the Sequence, the Surface Mode is displayed, then the PDPS, etc.

WARNING: The Data100 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.

MAKING A DIVE

Once you enter the water and descend to a depth below 5 feet (1.5 m)., the Data100 changes to the **No Decompression Dive Mode** (Fig. 3) signified by the No Decompression icon (Fig. 3a). 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), and ascent rate (as the Variable Ascent Rate Indicator bar graph).

Fig. 3 - No Decompression Dive Mode

To make it easy to check your dive status on the Data100, a color coded system of graphic displays is used for representation of tissue nitrogen loading and ascent rate. This **Graphic Diver Interface™** (Fig. 4) consists of two segmented bar graphs appearing alongside green, yellow and red perimeter sections that signify normal, caution, and danger zones, respectively.

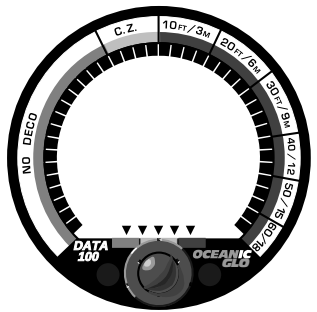


Fig. 4 - Graphic Diver Interface

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

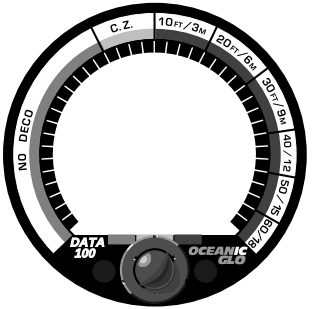


Fig. 5 - Tissue Loading Bar Graph (TLBG)

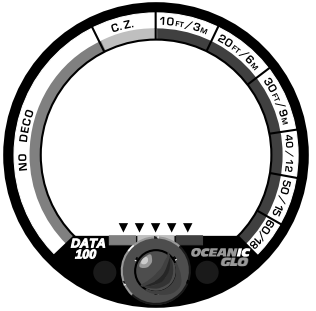


Fig. 6 - Variable Ascent Rate Indicator (VARI)

The **Tissue Loading Bar Graph®** (Fig 5) represents nitrogen loading, showing your relative no decompression or decompression status. As your depth and bottom time increase, segments will fill the graph to form an arc around the 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 indicating six red 'ceiling' stop depths. 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 (the 12 o'clock position of the TLBG) with a yellow **Caution Zone** (Fig. 5a). This Caution Zone portion of the TLBG 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.

When rising towards the surface, the **Variable Ascent Rate Indicator™** (Fig. 6) 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 whenever this is seen.

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

If your depth or bottom time is such that the TLBG enters the red zone, the Data100 will switch to the **Decompression Dive Mode** (Fig. 7) signified with the flashing Decompression Dive Mode icon (Fig. 7a). A decompression stop ceiling will be indicated by the TLBG, and the Stop Ceiling icon (Fig. 7b). 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 total required decompression stop times and vertical ascent time calculated for a rate of 60 feet (18 meters) per minute.

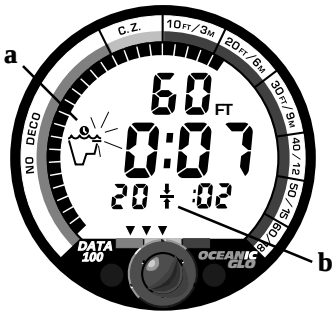


Fig. 7- Decompression Dive Mode

You must stay at, or slightly below, the ceiling stop depth indicated until the TLBG recedes into the next shallower zone 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. 8) appears automatically for 3 seconds. The two displays will continue to alternate while you are in the Decompression Dive Mode. 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. 8a) and Elapsed Dive Time icons (Fig. 8b).

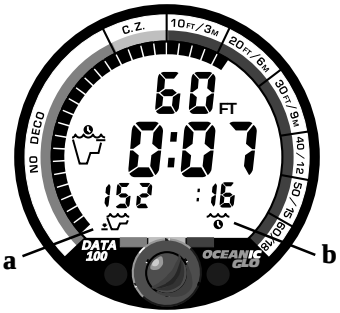


Fig. 8- Decompression Dive Mode - Alternate Display

Fig. 9 - Surface Mode

Fig. 10 - Dive Log Mode

AFTER THE DIVE

After reaching 3 feet (1 meter) upon ascent, the **Surface Mode** display (Fig. 9) will replace the Dive Mode display. After 10 minutes in the Surface Mode, and at once each minute afterward, the Surface Mode display will alternate with the Pre Dive Planning Sequence (PDPS). The PDPS will show 'adjusted' no decompression limits based on the nitrogen calculated to have been absorbed during your last dive. Calculated dive times displayed by the PDPS will increase as the real time surface interval increases after completion of a dive.

Immediately after a dive, various information is stored in the Data100's memory and can be viewed by accessing the **Dive Log Mode** (Fig. 10). This gives you a opportunity to record it 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. 10a) will automatically scroll through the latest 12 dives, starting with the most recent dive first. The Log displays the dive number (#), surface interval prior to the dive, maximum depth (and Max Depth icon), elapsed dive (bottom) time (and Elapsed Time icon), and maximum ascent rate (VARI) attained at any time during the dive. It also displays end of dive tissue loading (TLBG). This is handy when making decisions regarding subsequent dive planning.

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 Data100 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 54 in the Reference section.

The Data100 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. During the first 12 hours, the countdown appears for several seconds at the beginning of the PDPS (Fig.11).

During the second 12 hours of the countdown, only the word FLY and the counter will be displayed (Fig. 12). During this second period, depressing the control button will reactivate the Data100, replacing the Time to Fly countdown with the Surface Display and scrolling PDPS.

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

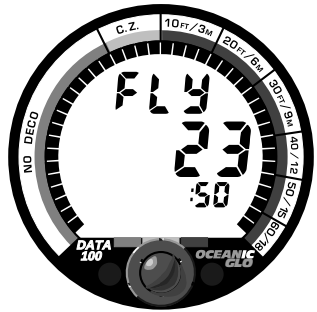


Fig. 11 - Time to Fly Mode (First 12 hours)

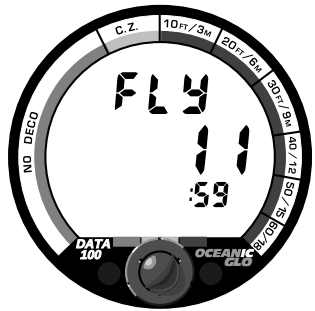
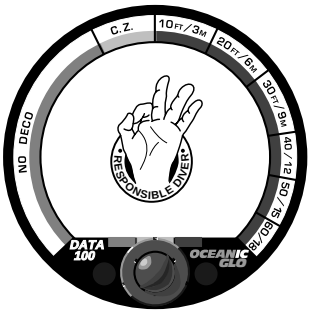


Fig. 12 - Time to Fly Mode (Last 12 hours)

ALTITUDE DIVING

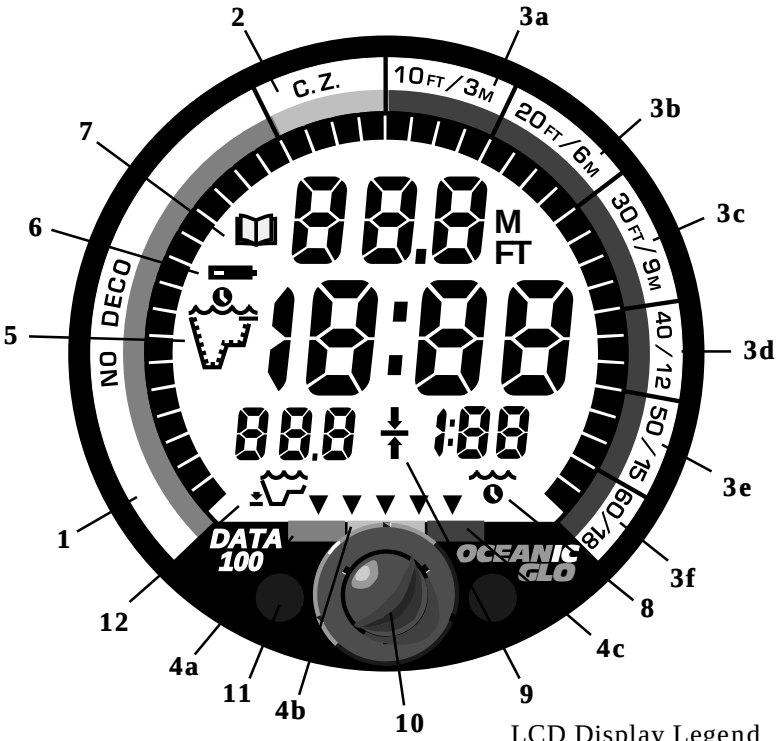
The mathematical model within the Data100 accounts for the reduced No Decompression time available at higher elevations based on NOAA (National Oceanic and Atmospheric Administration) guidelines. When diving in high altitude lakes or rivers from 2,000 to 14,000 feet (610 to 4,268 meters), the Data100 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 Data100 will not activate at altitudes above 14,000 feet (4,268 meters).



More about altitude diving and NOAA guidelines is presented on page 55 in the Reference section.

WARNING: Until it has shut itself off, you must not use the Data100 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. Battery removal and replacement will cause the Data100 to reset.

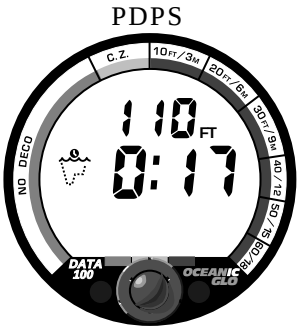


LCD Display Legend

1. Tissue Loading Bar Graph (TLBG) - (Green - No Decompression zone)
2. TLBG - (Yellow - Caution zone)
3a. TLBG - (Red - 10 foot/3 meter stop ceiling)
3b. TLBG - (20 foot/6 meter stop ceiling)
3c. TLBG - (30 foot/9 meter stop ceiling)
3d. TLBG - (40 foot/12 meter stop ceiling)
3e. TLBG - (50 foot/15 meter stop ceiling)
3f. TLBG - (60 foot/18 meter stop ceiling)
4a. Variable Ascent Rate Indicator (VARI) - (Green zone - rate safe)
4b. VARI - (Yellow zone - rate excessive)
4c. VARI - (Red zone - rate Too Fast)
5. Icon - Operating Mode - (See Detail A)
6. Icon - Low Battery
7. Icon - Log Mode
8. Icon - Elapsed Bottom Time
9. Icon - Deco Stop Ceiling
10. Control Button
11. Infrared Interface Ports (Factory Use)
12. Icon - Maximum Depth

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

Surface Mode



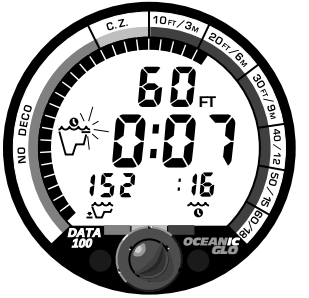
PDPS

Dive Log Mode

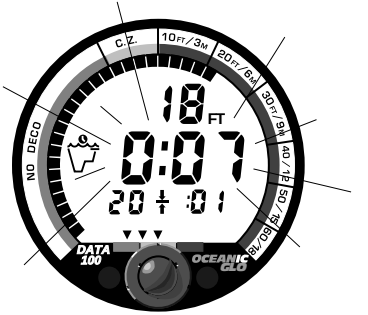
Time to Fly

No Deco Dive

Deco Dive



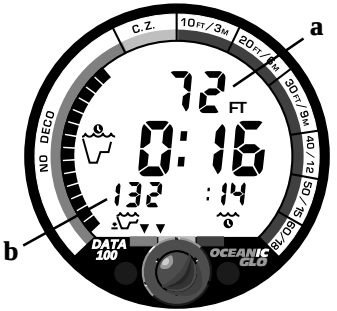
Deco - Alt Display



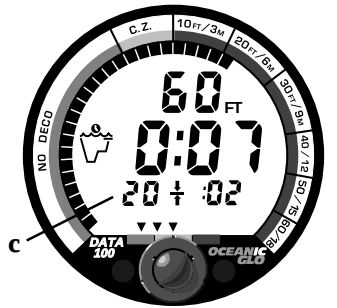
Conditional Violation

Operational Displays

DETAILED OPERATIONS GUIDE



(No Decompression Mode)



(Decompression Mode)

Fig. 13 - Depth Displays

INFORMATIONAL DISPLAYS

Each Data100 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 Data100's displays to avoid any possible misunderstanding that could result in error. This section describes each display in detail.

Depth Display

During a dive, the **Current Depth** display, located in the upper portion of the LCD (Fig. 13a), 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 to indicate, until you ascend to 330 feet (99.5 meters) or shallower, that you have gone 'out of range'. In the Surface or Dive Log modes, the Dive Number replaces the current depth display.

A second depth display located in the lower left portion of the LCD (Fig. 13b) 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 for the remainder of that dive and as the Max Depth in the Dive Log for that dive.

During a Decompression Dive the required **Ceiling Stop Depth** replaces the Maximum Depth display (Fig. 13c). 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.

Time Display

The **Main Time** display, located in the center of the LCD (Fig. 14a), indicates elapsed Surface Time, theoretical Dive Time Available during the PDPS, No Decompression Dive Time Remaining, or Total Ascent Time required depending on the mode that the Data100 is in at the time.

A second time display, located in the lower right portion of the LCD (Fig. 14b), indicates Elapsed Dive (bottom) Time, or Decompression Stop Time for the current stop ceiling indicated as identified by the Elapsed Dive Time and Ceiling Stop icons, respectively.

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, or Total Ascent Time required are calculated projections of time and use a solid (non-blinking) colon to indicate that they is counting down, rather than counting up.

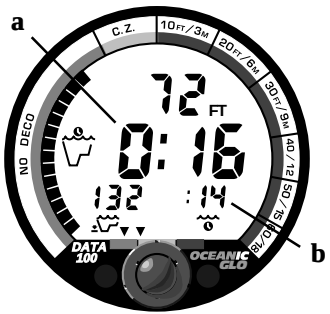


Fig. 14 - Time Displays

GRAPHIC DIVER INTERFACE™

Two bar graphs referred to as the Graphic Diver Interface™ are located around the perimeter of the Data100's LCD. 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 and ascent rate. Keeping these bar graphs **in the green** at all times will reduce your exposure to decompression sickness and the effects of an excessive ascent rate.

Tissue Loading Bar Graph® (TLBG)

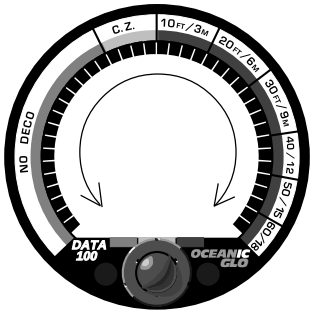


Fig. 15 - TLBG

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 indicating six 'ceiling' (stop) depths, which are explained in more detail in the Handling the Extremes section.

The TLBG, located around the outside edge of the LCD (Fig. 15), 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, a yellow Caution zone, and a red Decompression zone. The red Decompression zone is

further divided into 6 Decompression 'ceiling' zones representing 10FT/ 3M, 20FT/ 6M, 30FT/ 9M, 40FT/ 12M, 50FT/ 15M, and 60FT/ 18M stop depths.

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).

Variable Ascent Rate Indicator™ (VARI)

The Variable Ascent Rate Indicator™ (VARI), located along the bottom of the LCD screen (Fig. 16), 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, beginning from the left side, that may be considered an ascent rate speedometer. The actual speeds that the VARI segments represent are shown above Fig. 16. When your ascent rate exceeds 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.

A legend of the LCD is provided at the end of this section Ensure that you are familiar with all displays prior to using your Data100.

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

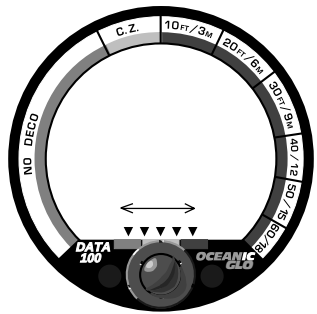


Fig. 16 - VARI

OPERATIONAL MODES

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

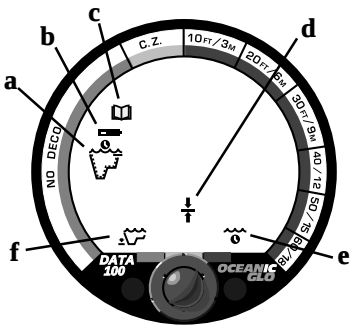


Fig. 17 - Icons

The Data100's different operating modes are easy to tell apart. Each is clearly identified with graphic mode icons (Fig. 17) which provide quick visual reference during the various modes of operation. Become familiar with all modes so that you understand exactly what information the Data100 is providing you at any specific time.

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

Underwater modes include the No Decompression Dive Mode, Decompression Dive Mode and Alternate Decompression Dive Mode, Violation Mode, and Gauge Mode. You will not see Decompression Dive, Violation, or Gauge Modes unless you dive to extremes.

Activation & Diagnostic Mode

WARNING: Never activate the Data100 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. 18). During the countdown, the Data100 checks its display functions and battery voltage to ensure everything is working properly, then changes to the Surface 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 shut-down of the Data100. See page 53 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 the flashing Low Battery icon disappears and the unit stays on implying satisfactory voltage, DO NOT dive until batteries are replaced. This could occur if the button is depressed for greater than 8 seconds and the unit enters an External Access (EA) mode.

If a dive is not made within 2 hours after activation, the Data100 will shut off automatically to save battery power. **Always check your Data100 before entering the water to ensure that it has been activated.**

Fig. 18 - Diagnostic Mode

Surface Mode

Surface Mode, identified by the Surface Mode icon to the left 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, and tissue (nitrogen) loading, if any, as the TLBG.

At the end of a dive, when you ascend to 3 feet (1 meter) or shallower, the Data100 will automatically enter Surface Mode (Fig 19) and begin counting your Surface Interval. 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 above the Main Time display.
- The TLBG will indicate current nitrogen loading.

Fig. 19 - Surface Mode (First 10 minutes)

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 bottom time. During the 10 minute transition period, the Log Mode is accessible and will display that dive'sdata, however, it 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. Other information will continue to be displayed as described above. Time to Fly will appear once per minute at the beginning of the PDPS. That dive will then be entered into the memory of the Log Mode, and a subsequent descent will be considered a new dive.

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. This is especially important for repetitive dives, when the PDPS (Fig. 20) will indicate for you the adjusted no decompression bottom times that are available to you on your next dive, based on any residual nitrogen following your last dive and surface interval.

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

As you will recall from page 5, after activation and diagnostics, the unit will enter the Surface Mode for 10 seconds then automatically commence the PDPS, identified by the PDPS icon (Fig. 20a). At that time and once each minute

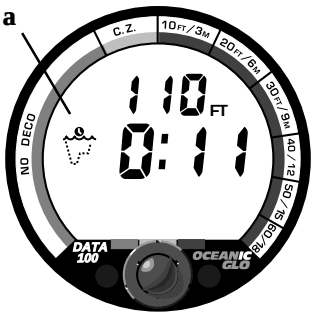


Fig. 20 - PDPS
(Repetitive Dive)

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)	0:30 (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. 21 - No Decompression Limits

afterward, the PDPS will automatically replace the Surface mode and sequentially show depths from 30 to 160 feet (9 to 48 m) in 10 foot (3 m) increments, which takes about 42 seconds. With each depth display you will see 'predicted' no decompression limits based upon your previous dive profiles.

The Data100 will then return to the Surface mode for approximately 18 seconds before repeating the PDPS, continuing between the two modes 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 21.

Information displayed (Fig. 20, page 21 and above Fig. 21) includes Maximum Depth, No Decompression Limit (Dive Time) available at that depth, and the PDPS mode icon. No Decompression times are only displayed for depths where there are at least 3 minutes dive time available at the depth, taking into account a descent rate of 120 feet (36 meters) per minute.

No Decompression Dive Mode

WARNING: The Data100 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.

Upon descending deeper than 5 feet (1.5 meters), the Data100 will enter the No Decompression Dive Mode, identified by the No Decompression Dive icon located to the left of the Main Time display.

Information provided includes Current Depth, Elapsed Dive Time (and Elapsed Dive Time icon), No Decompression Dive Time Remaining for that depth, and Maximum Depth for that dive (and Max Depth icon). The Graphic Diver Interface is also active, displaying nitrogen loading (TLBG) and ascent rate (VARI).

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 will be considered the controlling compartment for that depth. Its resulting value is displayed numerically (Fig. 22a) along with the No Decompression Dive icon (Fig. 22b), and graphically in the TLBG (Fig. 22c).

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 Data100 offers. See page 62 in the Reference section for more information pertaining to tissue tracking.

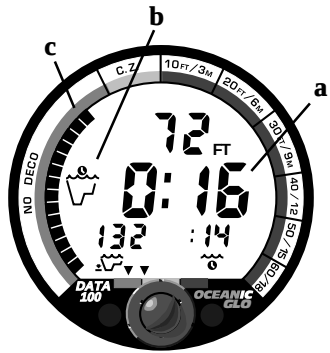


Fig. 22 - No Decompression Dive Mode

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. 23 - Entering into Decompression Mode

As your depth and bottom time increase, the TLBG will fill with segments in a clockwise direction from the lower left toward the upper center to represent the absorption of nitrogen. If the TLBG passes the 12 o'clock position (Fig. 23), you 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.

Decompression Dive Mode

The Data100 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 located to the left of the Main Time Display (Fig. 24a), activates when the theoretical no decompression dive time/depth limits are exceeded causing the TLBG to pass the 12 o'clock position and enter the red decompression zone (Fig. 24b). Information provided includes current depth, current required decompression ceiling stop depth and time (and Ceiling Stop icon - Fig. 24c), 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. 25) 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).

The Graphic Diver Interface will continue to display the VARI bar graph and the TLBG, that now acts as a Decompression "ceiling" indicator showing the ceiling stop depth that you must stay below.

Upon entering decompression, you must immediately change the focus of your dive to getting back to the surface. Upon seeing the TLBG enter the red 10FT/ 3M ceiling stop zone, you should immediately begin a safe ascent, 60 feet (18 meters) per minute or slower, to a depth slightly deeper than or equal to the stop ceiling indicated.

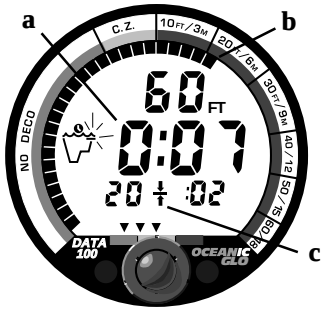


Fig. 24 - Decompression Dive Mode

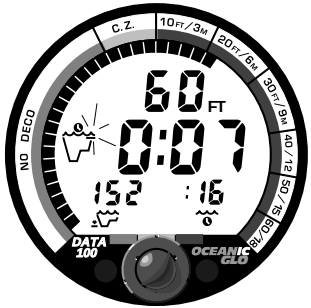


Fig. 25 - Decompression (Alternate Screen)

You must stay at, or slightly below, the ceiling stop depth indicated until the TLBG recedes into the next shallower zone 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 Data100 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. 26a) than the required stop depth indicated (Fig. 26b) until the TLBG recedes into the next shallower zone. Then, you can ascend to, but not shallower than, that indicated ceiling.

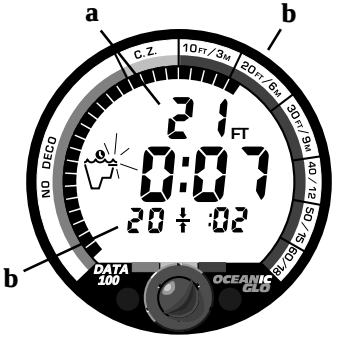


Fig. 26 - Decompression Stop Depth

Once you have performed the required decompression, the Data100 will switch to No Decompression Dive Mode, allowing additional time underwater. Though more time may be available, you must spend a portion of this time continuing to decompress at a safety stop deeper than or equal to 10 feet (3 meters). This will let the TLBG recede further into the yellow Caution zone or green No Decompression zone.

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

Violation Modes

The Data100 enters one of three different Violation Modes when you exceed its ability to predict an ascent procedure. These modes are explained fully in the Handling the Extremes section beginning on page 33.

Gauge Mode

If the Data100 enters a Permanent Violation Mode, it will operate in Gauge Mode on subsequent dives, only displaying depth and time. The Data100 removes calculated displays that no longer provide correct information because of the violation. For the Data100 to reset itself, no dives must be made for 24 hours. See page 43 for a more detailed explanation of Gauge Mode.

ASCENDING TO THE SURFACE

While ascending to shallower depths , the segments that have filled up the TLBG (Fig. 27a) 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.**

Fig. 27 - TLBG

Providing that your air supply is sufficient, you should make every effort to

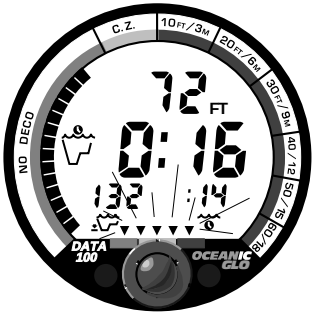


Fig. 28 - VARI (Too Fast)

Fig. 29 - Dive Log Mode

complete all of your ascents with the TLBG inside the green zone. **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 (Fig. 28) shows how fast you are ascending. When you exceed the maximum prescribed ascent rate of 60 feet per minute (18 meters per minute), the segments will enter the red zone and you will be alerted by a flashing bar graph. 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. 29a) located above the Surface Display icon, 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 Data100 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.

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 log for each dive for approximately 4 seconds before scrolling to the previous dive's log.

Pressing and holding the button in will freeze the information on the display giving you a chance to write it down in your logbook. To view the previous dive's log, momentarily release the button, then depress and hold it in again.

Information provided for each dive's log includes (Fig. 30):

- 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.
  - 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
- Maximum Depth - reached during that dive (and Max Depth icon)

Fig. 30 - Dive Log

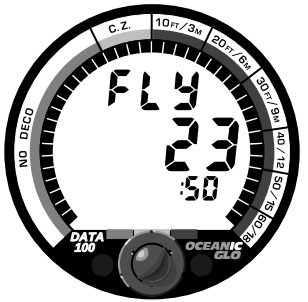


Fig. 31 - Fly Mode
(First 12 Hours)

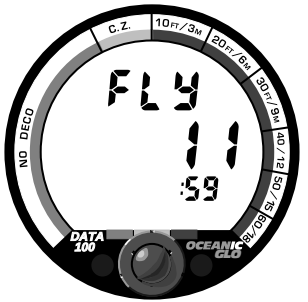


Fig. 32 - Fly Mode
(Second 12 Hours)

- Elapsed Dive Time (and Elapsed Dive Time icon)
- VARI - maximum ascent rate at any time during that dive
- TLBG - tissue 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 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 before the Pre Dive Planning Sequence (Fig. 31) showing the word FLY above a countdown display that starts at 23:50 (hr : min).

Twelve hours after the last dive, the Surface Mode and PDPS will be replaced with the Fly Mode (Fig. 32). The word FLY will be displayed continuously, with the final 12 hour countdown from 12:00 to 0:00.

⚠ **WARNING: During the final 12 hours (the period between 12 and 24 hours after a dive), the Data100 is in a countdown mode only and must be reactivated prior to commencing a dive.**

After a surface interval of 12 hours, you may choose to fly, provided that your dive profile(s) did not enter decompression. If your diving involved 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 50 for More About Flying After Diving, and DAN's guidelines.

External Access Mode (EA)

This special mode is not used by the diver. It is used only by the factory to retrieve diagnostic data from the Data100 through the small infrared ports located on the front of the display on each side of the button. Information is provided here to acquaint you with the mode and its possible effects.

External Access Mode, signified by EA (Fig. 33), 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 left of the LCD and a count down beginning at '6' in the lower right. After counting down to '0', the Data100 will revert back to the Surface Mode.

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

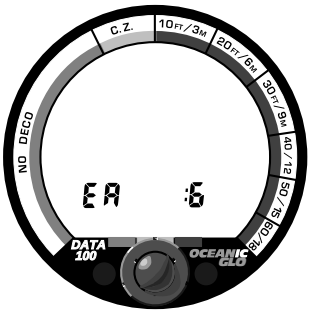


Fig. 33 - External Access (EA) Mode

BACKLIGHT FEATURE

In addition to using a high contrast LCD for easy readability in low light conditions, the Data100's Oceanglo™ backlight feature evenly and easily illuminates the full display (Fig. 34). 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.

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.

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

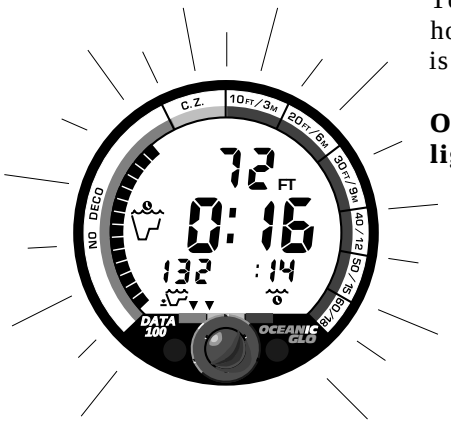


Fig. 34 - Oceanglo™ Backlight

HANDLING THE EXTREMES

EMERGENCY DECOMPRESSION

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 Data100 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.

DECOMPRESSION RULES ARE NOT MEANT TO BE BENT

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 Data100 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 Data100 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 Data100 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. 35), the Data100 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 Data100 cannot provide you with a backup air supply for emergencies or the ascent line you will need, and decompression diving greatly increases your risk of decompression sickness.

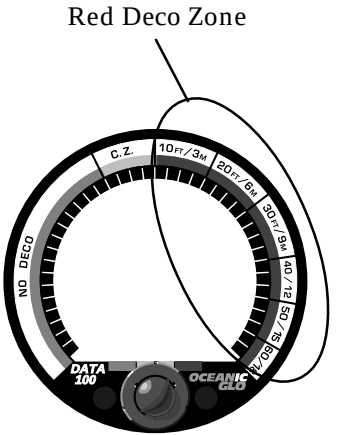


Fig. 35 - TLBG
Decompression Zone

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.

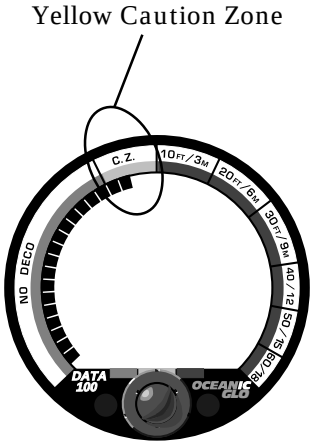


Fig. 36 - TLBG Caution Zone

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

After entering decompression (especially at deeper depths) the TLBG may fill the decompression stop zones rapidly. 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 stop ceiling. **If you continue the dive at a depth greater than the ceiling, your exposure to decompression sickness will increase, and you will risk entering violation mode and losing the information needed to ascend properly.**

CAUTION ZONE (TLBG)

Your dive training taught you not to get too close to the No Decompression limits. The yellow Caution zone (C.Z.) of the TLBG, and its position on the LCD peripheral (Fig. 36), offers you a convenient way to consistently monitor how

close you are coming to the No Decompression limit, located at the 12 o'clock position. Oceanic suggests always leaving the water with the TLBG **in the green** No Decompression zone.

WARNING: Never exit the water with the TLBG in the red Decompression 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 zone as a visual reference to place a wider margin of protection between you and the No Decompression limit.**

EXCEEDING MAXIMUM OPERATING DEPTH

Although the Data100 will withstand the pressures found at 330 feet (99.5 meters), the depth that you can still use all 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), or decompression diving, the basis for which is theoritical.

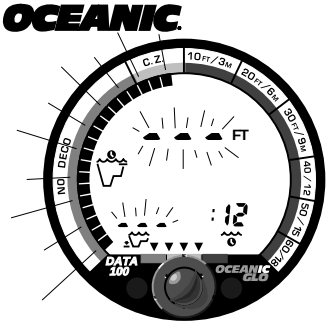


Fig. 37 - Out of Range
(>330 ft or 99.5 m)

Fig. 38 - Recognizing
Decompression Mode

The maximum depth that the Data100 will display all of its features, is 330 feet (99.5 meters). Upon exceeding 330 feet (99.5 meters), the TLBG will flash and Depth and Max Depth displays will only indicate and flash three dashes "---" signifying that you are 'Out of Range' (Fig. 37).

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, described on page 40. For the remainder of that dive, and in the log for that dive, three dashes will be displayed as the value for Max Depth.

After a dive, the Data100 will continue to calculate residual nitrogen for up to 24 hours. For a clean dive with no residual nitrogen remaining from previous dives, the Data100 will allow a maximum of 7 minutes no decompression dive time available at 160 feet (48 meters). Depending on your descent rate, 7 minutes at 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 Data100 closely because you will enter decompression rapidly. Upon entering decompression the TLBG will pass the 12 o'clock position and enter the red zone and the decompression stop ceiling icons will be displayed (Fig. 38).

VIOLATION MODES

WARNING: If you exceed certain limits, the Data100 will not be able to tell you how to get safely back to the surface. These situations will make the Data100 enter 'violation modes' and must be avoided at all costs. They push decompression theory to the limits and can result in loss of some Data100 functions for 24 hours after the dive in which a violation occurred.

The Violation Modes that the Data100 can enter, depending on the situation, are termed “Conditional”, “Delayed”, and “Immediate”. It is important to understand each different Violation Mode that the Data100 can enter and how to carry out decompression procedures in the event you enter one.

Conditional Violation Mode

The Data100 will enter the Conditional Violation Mode (Fig.39) if you **ascend shallower (Fig. 39a) than the required decompression ceiling indicated** by the TLBG (Fig. 39b) and Required Stop Ceiling display (Fig. 39c). 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 depth, watching the Data100 closely when managing decompression.

The Data100 will alert you to the Conditional Violation by flashing the Total

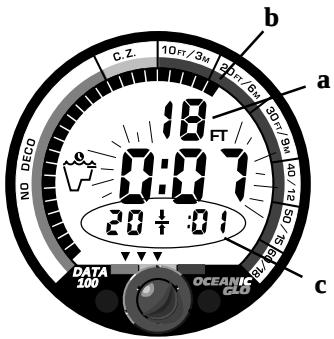


Fig. 39 - Conditional Violation

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 Data100 will continue to function as if no violation had occurred, and you will not be penalized for your breach of the ceiling.

For the first 5 minutes in the Conditional Violation Mode, 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, the TLBG will recede towards the Caution zone. Upon entry into the Caution zone the Data100 will revert to the No Decompression Mode.

If you exceed 5 minutes, the TLBG segments that have filled will flash and the Delayed Violation Mode will be entered.

Delayed Violation Mode

Three conditions will cause the Data100 to enter the Delayed Violation Mode:

1. **You remain Above the Required Decompression Ceiling for more than 5 minutes.** As previously described, you would then need to follow the

ceiling toward the surface as the TLBG recedes toward the Caution zone. Upon reaching zero Total Ascent Time remaining, you should continue decompressing until the TLBG segments are well inside of the **green** No Decompression zone, to the left of the 12 o'clock position.

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

The display will be the same as the Decompression Mode with all segments of the TLBG flashing (Fig. 40). Total Ascent Time needed to get back to the surface will still be displayed numerically in the Main Time display.

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 TLBG recedes to the 50 FT/ 15 M zone, you can ascend to, but no shallower than 50 feet (15 meters) and continue decompressing. As the TLBG recedes into the 40 FT/ 12 M, 30 FT/ 9 M, 20 FT/ 6 M and then 10 FT/ 3 M zones, you can ascend to, but no shallower than the zone indicated.

After Total Ascent Time reaches zero and the TLBG recedes into the yellow Caution zone, you can surface. **However, to add a greater margin of protection, Oceanic strongly recommends that you wait until the segments are well within the 'green' No Decompression zone, unless a low air condition requires you to surface.**

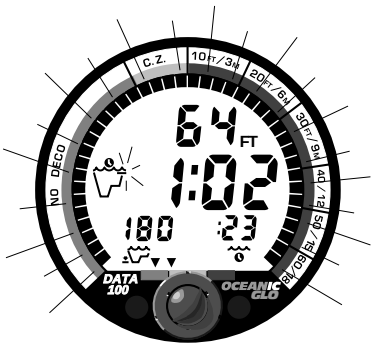


Fig. 40 - Delayed Violation

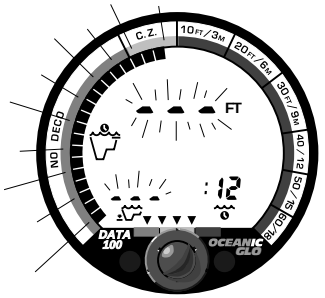


Fig. 41 - Out of Range

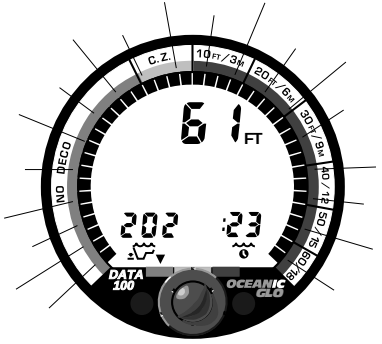


Fig. 42 - Immediate Violation

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

Oceanic reminds you that the Data100 is intended for no decompression diving at depths within 130 feet (39 meters). Expanded capabilities of the Data100 are provided as safety features to assist you with emergency situations.

As previously described on page 38, 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. 41) 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.

Five minutes after reaching the surface from a dive in which a Delayed Violation occurred, the Data100 will enter an Immediate Violation Mode and revert to Gauge Mode for 24 hours.

Immediate Violation Mode

WARNING: The Data100 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 Data100 design. If you are following these dive profiles, Oceanic advises you not to use a Data100 dive computer.

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 Data100 cannot calculate decompression ceilings 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. If a ceiling *much greater* than 60 feet (18 meters) is required, an Immediate Violation Mode (Fig. 42, page 42)) will be entered. The Data100 would operate with limited functions (depthe and elapsed dive time) in Gauge Mode during the remainder of the dive and for 24 hours after surfacing.

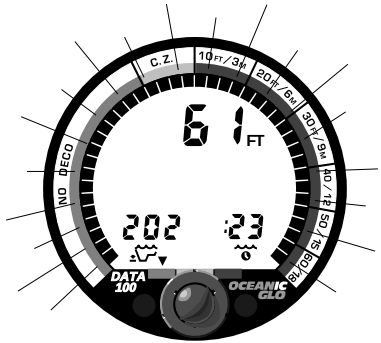


Fig. 43 - Gauge Mode (Underwater)

Gauge Mode

Underwater the Gauge Mode is a continuation of the Immediate Violation Mode that turns the Data100 into a digital instrument without any decompression monitoring functions (Fig. 43).

After surfacing, Gauge Mode does not provide the PDPS and Time to Fly features. During the first 12 hour period, the full TLBG will flash and the dive number, and Surface mode icon will be displayed with the Surface Time (Fig. 44). 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 Data100 operation can resume with full features.

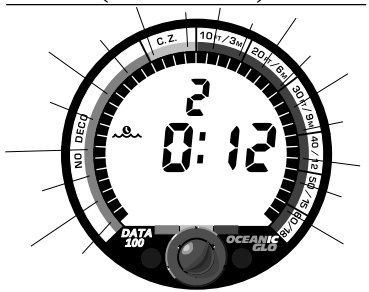
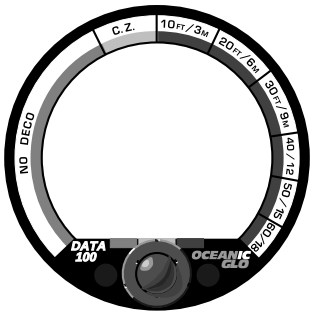


Fig. 44 - Gauge Mode (After Surfacing)

Permanent Violation

Entering the Immediate Violation Mode, then Gauge Mode, will result in loss of all Data100 decompression monitoring and calculating functions for 24 hours after that dive. This condition is considered a Permanent Violation.

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 Data100 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 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 your safety would be jeopardized by losing the use of your Data100, an analog or digital backup system or use of standard air tables is highly recommended.**

SHARING THE DATA100

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

The Data100 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 Data100, due to the personal information it provides.

OPERATING TEMPERATURE

The Data100 will operate in almost any temperature diving environment in the world (Fig. 45) between 32 and 140 °F (0 and 60 °C). At extremely low temperatures, the LCD may become sluggish which 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.

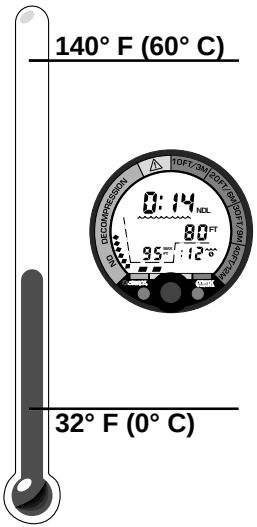


Fig. 45 - Ambient Operating Temperature

Even though the Data100 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 Data100 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 Data100 in water. The display should recover its normal appearance after a few minutes. **Damage from excess heat, or cold, is not covered by the Data100 two year limited warranty.**

A FINAL WORD CAUTION

Although the Data100 represents the latest in user friendly dive computer technology, it cannot force you to understand how to use it. Before diving with the Data100, 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!

CARE and MAINTENANCE

CARE AND CLEANING

Lens Protector
(actually transparent)

The Data100 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 Data100 and for many other instruments.

⚠ CAUTION: Never spray aerosols of any kind on, or near, the Data100. The propellants may chemically attack the plastic.

If diving with a console version of the Data100, 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™ (Fig. 46) 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 Data100 nearby for recording dives in your log book or planning the next dive.

During the dive, keep the Data100 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 Data100 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 Data100 cool, dry, and protected.

WARNING: Never, under any circumstances, poke any object through any slots or holes on the rear of the Data100. Doing so may damage the depth sensor, possibly resulting in erroneous depth and/or dive time remaining displays.

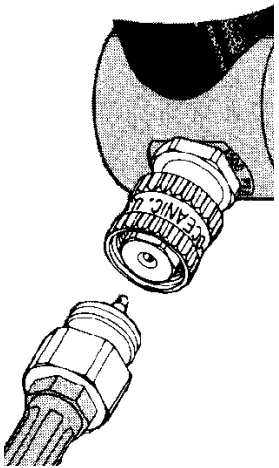


Fig. 46 - DataLink™

ANNUAL DEALER INSPECTIONS & FACTORY SERVICE

As with all Oceanic instrumentation, the Data100 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 Data100 is working properly.

A convenient service record is provided on page 80 of this owner's guide. This should be signed by the service technician after each annual inspection or factory service has been completed. The cost of this service is not covered under the terms of the two year limited warranty.

WARNING: If you are in doubt about the accuracy of your Data100's depth readings, DO NOT attempt to dive with it until it has been inspected by an Authorized Oceanic Dealer.

The facility providing conducting the depth check must have a test gauge on the pressure test chamber that is as accurate as the depth sensor in the Data100 (± 1% of full scale).

WARNING: Never pressure test the Data100 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 Data100 depth sensor if it is not pressure tested properly. The Data100 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 Data100 directly to Oceanic, or an Oceanic regional distribution center for service (Fig. 47).

NOTE: Previous dive log will be erased whenever your Data100 receives factory service. Copy all log information in your log book.

To obtain service from the Oceanic factory:

- Remove the Data100 module from its boot (see instructions on page 53). Be sure to remove all accessories and send only the module.
- Package the module carefully using a cushioning material.
- Include a legible note giving specific reason for return, your name, address,

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. 47 - Oceanic Service

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 Data100 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 Data100's 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 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

LOW BATTERY CONDITION

You will be alerted to a Low Battery condition by a flashing Battery icon located above the dive mode icon near the top left of the display (Fig. 48). The Data100 will only activate if there is enough battery power to complete one full day of diving. Also consider 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 Data100 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. 48 - 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 Data100's limited 2 year warranty.

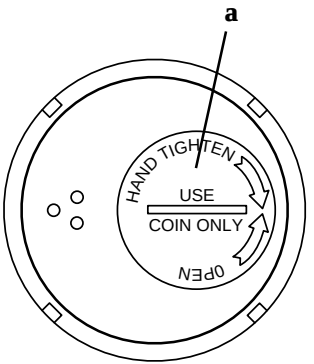


Fig. 49 - Battery Hatch

Examine the case back to find the battery hatch (Fig. 49a), 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 Data100 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. 50a). 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 Data100 to an Authorized Oceanic Dealer, and DO NOT attempt to use the unit until it has received service.

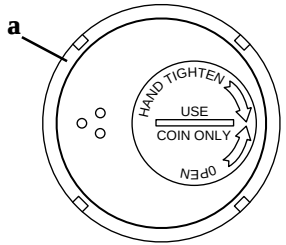


Fig. 50 - Outer Case Ring

Battery Installation

- Remove and check the battery hatch as described above.
- 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. 51). Avoid touching either the battery contacts or the flat surfaces of the batteries, as skin oil

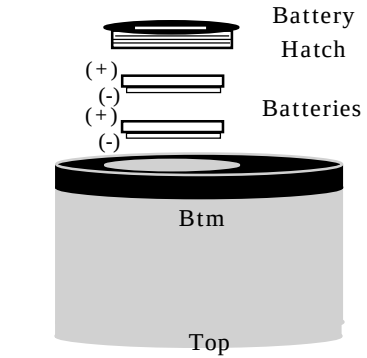


Fig. 51 - Installing Batteries

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, 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 Data100 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 decribed.

Inspection

- Activate the unit and watch carefully as it performs a full diagnostic and battery check and enters Surface Mode, followed by 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.

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".

* 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".

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 Data100 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 Data100 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 Data100 automatically clears of any residual nitrogen and resets to operate at the new altitude.

WARNING: Altitude compensation provided by the Data100 takes place when the unit is activated. DO NOT dive at any different altitude until the Data100 shuts off and will recalibrate when reactivated at the new altitude.

MULTIPLE TISSUE TRACKING

The Data100 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. 52, page 63). 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 53, page 63, illustrates the point at which one compartment “hands over” control to another at a different depth. This feature of the Decompression Model is the basis of multilevel diving, one of the most important contributions the Data100 offers you. Take advantage of this feature and make all of your dives multilevel dives.

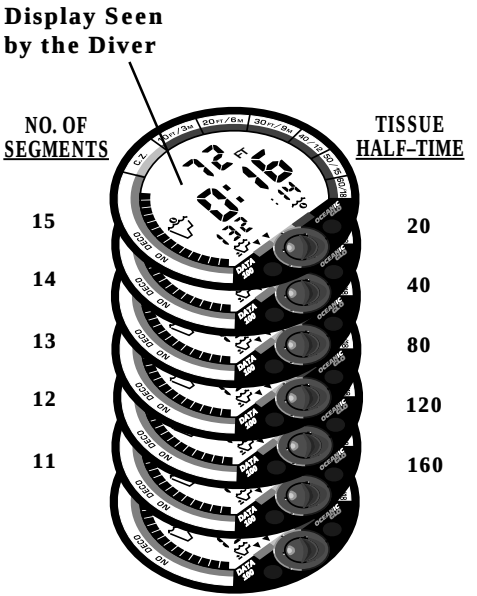


Fig. 52 - Tissue
Compartment Control

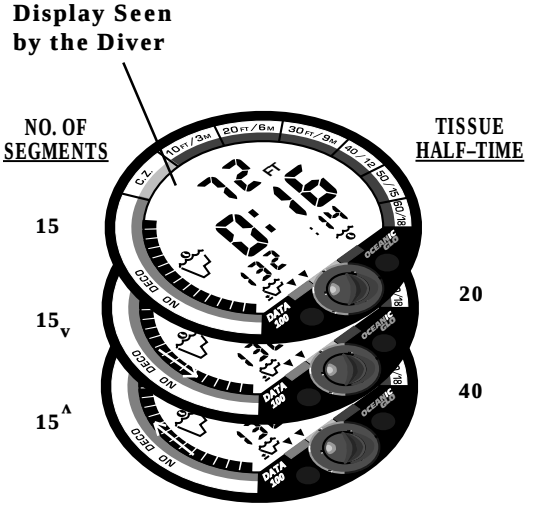


Fig. 53 - Tissue Compartment
Control Hand Over

NO DECOMPRESSION LIMITS

Note how the No Decompression Limits for the Data100 are contrasted with the U.S. Navy limits (Fig. 54, page 65). For most depths, the Data100 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 Data100. Notice also that the Data100's PDPS does not scroll past 160 feet (48 meters).

MAXIMUM NO DECOMPRESSION DIVE PROFILE

How deep you can go, and how long you can stay, with the Data100 depends on many factors including air supply, air consumption, previous dives made, etc. Figure 55, page 65, shows the maximum No Decompression dive profile that is possible with the Data100 on a first dive. This sample test assumes that no previous dives were made, and that the diver had an unlimited air supply.

The Data100 was taken to a simulated test depth where the No Decompression Dive Time Remaining reached zero minutes. It was then taken to a shallower depth that gave it one more minute of No Decompression Time. When the No Decompression Time reached zero at that new depth, it was taken to the next shallower depth. This continued until 33 feet, where No Decompression Time available far exceeded the possible Air Time remaining, even with the largest scuba cylinder. A safety stop was added as a precaution to round out this simulated multilevel dive.

Depth feet (meters)	Data100 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 Data100 PDPS will not scroll past 160 feet (48 meters), or when projected bottom / descent time is less than one minute.

Fig. 54 - No Decompression Limits

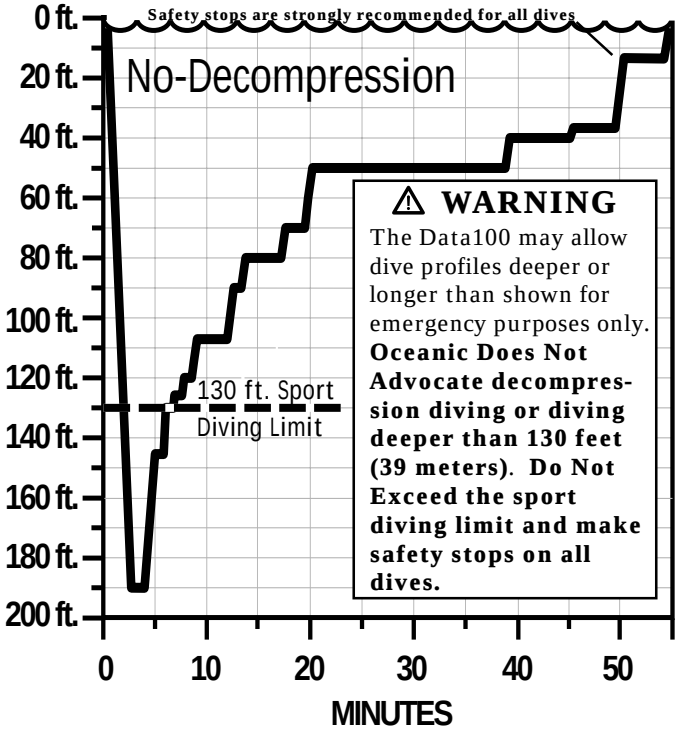


Fig. 55 - Maximum First Dive No Decompression Profile

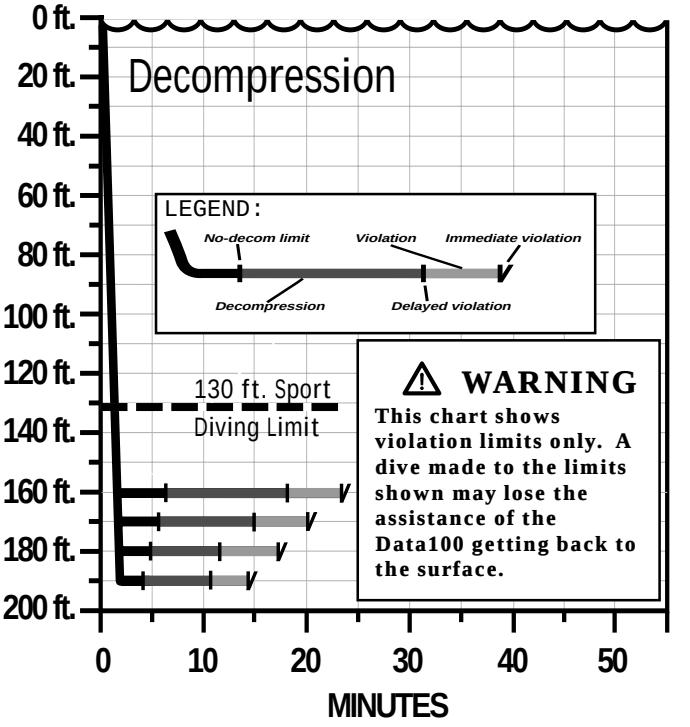


Fig. 56 - First Dive Decompression Violation Limits

DECOMPRESSION RULES ARE NOT MEANT TO BE BENT

Responsible DIVER

DECOMPRESSION VIOLATION LIMITS

As described earlier in the Handling the Extremes section, the Data100 has two permanent violation modes, Delayed and Immediate. If either mode is entered while underwater, your Data100 will loose some functions. Figure 56, page 66, provides a graph indicating where permanent violation modes occur on a sample extreme first dive profile between 160 and 190 feet (49 and 58 meters). **The graph is only an example and not a suggestion for planning a dive.**

It is possible to exceed the limits shown in Fig. 56 at much shallower depths, especially on repetitive dives. Watch the Data100 closely to avoid entering decompression, or a violation mode.

⚠ **WARNING: Oceanic recommends that you follow the rules of responsible diving on every dive and not share or swap your dive computer with any other diver. Oceanic also strongly recommends against decompression diving, or diving below 130 feet (39 meters).**

REPETITIVE DECOMPRESSION DIVING

The decompression model used by the Data100 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, Data100 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 Data100 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 Data100, 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 Data100 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 Data100, and **thank you for being a responsible diver!**

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 Data100, keep these basic 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

OPERATIONAL MODES & DISPLAY RANGE/RESOLUTION

Modes:
- Activation/Diagnostic Mode
- Surface Mode
- Pre Dive Planning Sequence Mode
- No Decompression Dive Mode
- Decompression Dive Mode
- Alternate Decompression Dive Mode
- Violation Modes (conditional, delayed, & immediate)
- Gauge Mode
- Dive Log Mode
- Time to Fly Mode

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)
• No Decompression Time	0 - 9 hrs. 59 mins.	1 minute
• Decompression Time	0 - 9 hrs. 59 mins.	1 minute
• Bottom Time	0 - 9 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)	

Graphic Diver Interface:

• Tissue Loading Bar Graph (TLBG)	Segments
No Decompression (green)	16
Caution Zone (yellow)	4
Decompression (red)	20

- Variable Ascent Rate Indicator (VARI)

	segments	feet/min.	meters/min.
Red zone (flashing)	5	61 +	18.5 +
Yellow zone	4	51 - 60	15.5 - 18
	3	41 - 50	12.5 - 15
	2	31 - 40	9.5 - 12
Green zone	1	21 - 30	6.5 - 9
	0	0 - 20	0 - 6

SPECIFICATIONS (cont'd)

Special Displays:	Occurrence
• Diagnostic Display	Activation
• Out of Range	330+ feet (99.5+ meters)
• Gauge Mode Countdown Timer	12 - 24 hours after violation
• External Calibration Access (EA)	If activation 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

Altitude:
- Altitude range 0 - 14,000 feet (4,267 meters) above sea level
- Modes Full computer functions up to 14,000 feet (4,267 meters)
- Activation not possible higher than 14,000 feet (4,267 meters).
- Recalibration of depth readings from 'feet of sea water' to 'feet of fresh water' higher than 2,000 feet (610 meters) 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	See battery manufacturer's specs. (2 to 5 yrs.)
• Low Battery condition	Replace both prior to diving.

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

External Access Mode:
- Not needed by the user, used by the factory for diagnostics / calibration.
- Mode is activated during the Surface or PDPS Mode when the activation button is held in for more than 8 seconds.
- Activation when a Low Battery condition is initially indicated 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 as the lower left display and a countdown appears as the lower right display. After counting down from 6 to 0, the Data100 reverts back to the Surface or PDPS Mode.

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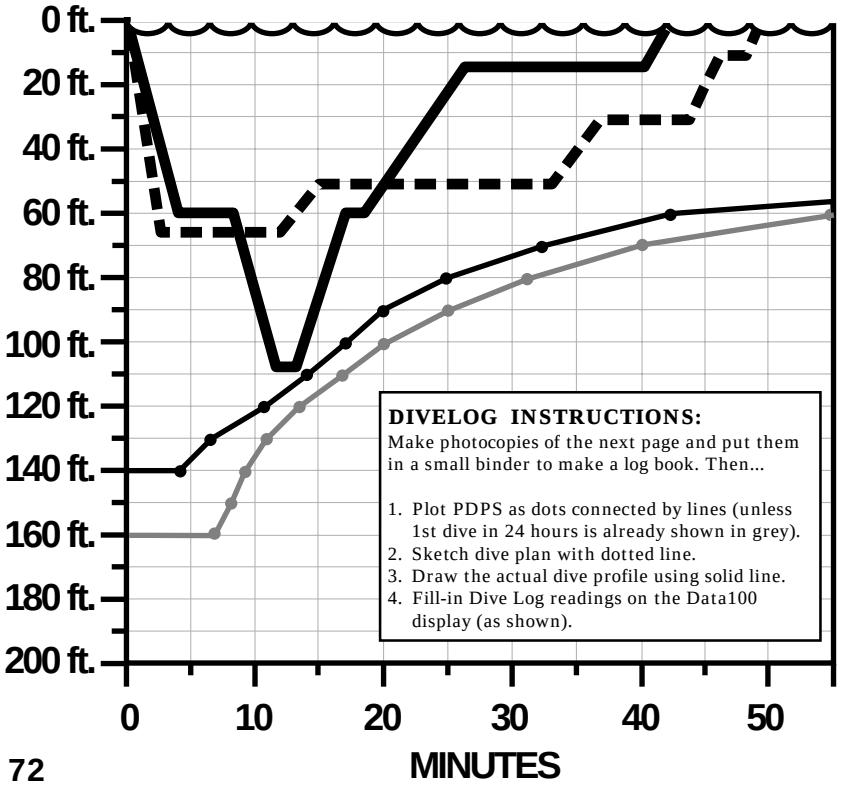
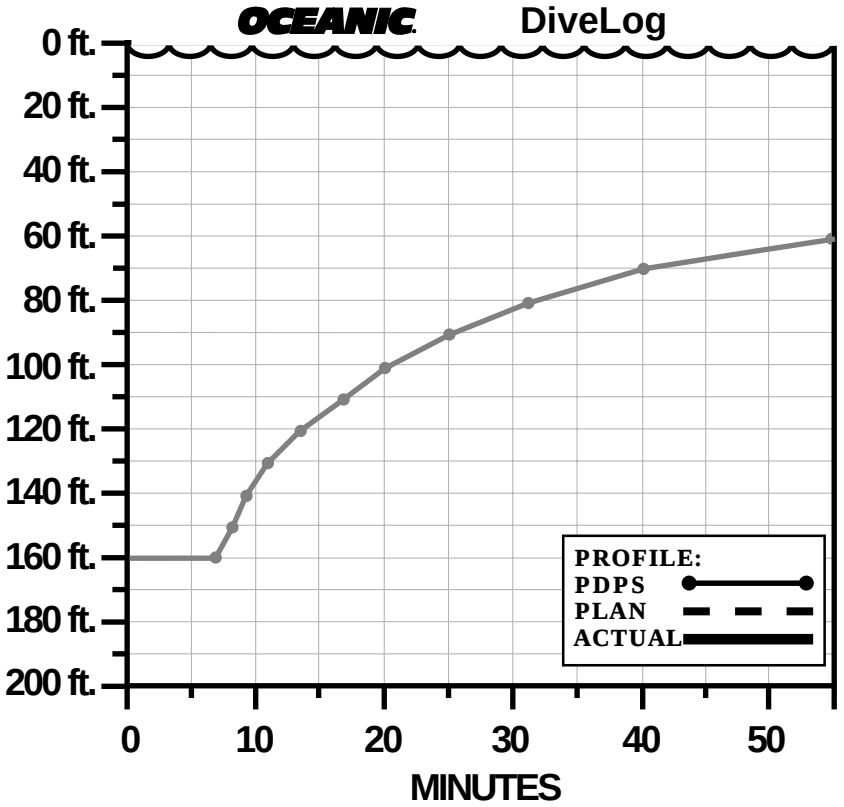
DiveLog Instructions



	TODAY	CUMULATIVE
Dive No.	2	84
Dive Site	Dive Site Name	
Location	City, State or Country	
Date	Today's Date	
Visibility	Vis in feet or meters	
Purpose	Why you're there	
Max Depth	From Dive Log Mode	
Bottom Time	From Dive Log Mode	
Rate Dive Site	Your Personal Rating Scale	
Buddy	Your Buddy's Name	
Buddy Cert. #	Your Buddy's #	



	TODAY	CUMULATIVE
Dive No.		
Dive Site		
Location		
Date		
Visibility		
Purpose		
Max Depth		
Bottom Time		
Rate Dive Site		
Buddy		
Buddy Cert. #		

GLOSSARY

The following are diving terms that you should become familiar with. Many definitions given below apply specifically to the Data100.

Algorithm - A step-by-step mathematical formula designed to accomplish a particular result (i.e. Dive Time Remaining in the Data100)
Altitude Dive - A dive made at an elevation above sea level where a different set of no decompression tables is used (higher than 3,000+ feet/915 meters with the Data100)
Ascent Rate - The speed that a diver moves vertically toward the surface
Boot - A protective rubber covering that surrounds an instrument module
Bottom 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
C.Z. - Abbreviation for Caution Zone
Caution Zone - The yellow section of the Tissue Loading Bar Graph that gives a visual warning of a diver's proximity to decompression
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)
DCS - Abbreviation for decompression sickness, i.e. 'the bends'
DECO - Abbreviation for Decompression
Decompression Ceiling - The shallowest depth a diver may reach upon ascent without risking decompression sickness (also see TLBG)

GLOSSARY (cont'd)

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 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 before a diver must surface based on no decompression status or tank pressure
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 relating to separate events
Multilevel Dive - A type of dive profile where the diver spends various times at different depths (opposite of a Square Wave dive profile)

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
Out of Range - The point at which a dive computer can no longer supply correct dive information
PDPS - Abbreviation for Pre Dive Planning Sequence
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
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
Tissue - See Compartment
Tissue Compartment - See Compartment
Tissue Loading Bar Graph™ - A graphic display of simulated nitrogen absorption 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
VARI - Abbreviation for Variable Ascent Rate Indicator
Variable Ascent Rate Indicator™ - A display that shows ascent rate as a bar graph alongside a color coded indicator (part of the Graphic Diver Interface)

NOTES

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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**

DATA100 SERVICE RECORD

Serial No. _____

Date of Purchase _____

Purchased from _____

To be filled in below by Authorized Dealer:

Date	Service Performed		Dealer / Technician

OCEANIC USA
2002 Davis Street
San Leandro, Ca. 94577
USA
Phone: 510/562-0500
Fax: 510/569-5404
Web: http://www.oceanicusa.com

Doc. No. 12-1966,R5 (2/1/00)