OCEANIC ®

Veo 180Nx

Personal Dive Computer

Operating Manual

LIMITED TWO-YEAR WARRANTY
For details, refer to the Product Warranty Registration Card provided.

PATENT NOTICE
U.S. Patents have been issued, or applied for, to protect the following design features:
Dive Time Remaining (U.S. Patent no. 4,586,136), Data Sensing and Processing Device (U.S. Patent no. 4,882,678), and Variable Ascent Rate Indicator (U.S. Patent no. 5,156,055). User Setable Display (U.S. Patent no. 5,845,235) is owned by Suunto Oy (Finland).

DECOMPRESSION MODEL
The programs within the Veo 180Nx 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 Veo 180Nx dive computer model is based upon the latest research and experiments in decompression theory. **Still, using the Veo 180Nx, just as using the U.S. Navy (or other) No Decompression Tables, is no guarantee of avoiding decompression sickness, i.e. "the bends."** Every diver's physiology is different, and can even vary from day to day. No machine can predict how your body will react to a particular dive profile.

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CONTENTS

CONTENTS (continued)

CONTENTS (continued)

⚠ **Pay special attention to items marked with this <u>Warning</u> symbol**.

LCD DISPLAY
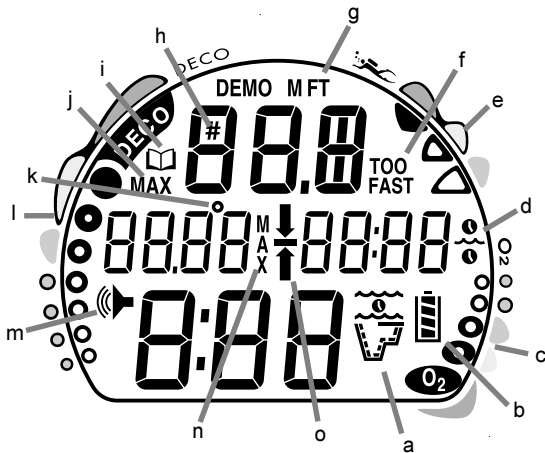
Components:
a. Icon - Operating Mode
b. Battery Indicator
c. O2 (oxygen) Bar Graph
d. Icon - Time
e. Variable Ascent Rate Indicator
f. Graphic - Ascent Too Fast
g. Graphic - Depth
h. Icon - Dive No. (Log only)
i. Icon - Log Mode
j. Graphic - Maximum Depth
k. Icon - Temperature
l. Tissue Loading Bar Graph
m. Icon - Alarm Set
n. Graphic - Maximum Depth
o. Icon - Descend Arrow
   Icon - Deco Ceiling Stop Bar
   Icon - Ascend Arrow

> ⚠️ **WARNING: Prior to diving with the Veo 180Nx, you must also <u>read and understand the Oceanic Dive Computer Safety and Reference Manual</u>, Doc. No. 12-2262, which provides Important Warnings and Safety Recommendations as well as general product information.**

FEATURES and DISPLAYS

INTRODUCTION

Welcome to Oceanic and thank you for choosing the Veo 180Nx !

It is extremely important that you read this Operating Manual in sequence and understand it completely before attempting to use the Veo 180Nx.

It is equally important that you read the Oceanic Dive Computer Safety and Reference Manual (Doc. No. 12-2262) provided with your Veo 180Nx. It contains information that you must become familiar with prior to diving with your Veo 180Nx.

Remember that 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.

CONTROL BUTTON

The Control Button allows you to select display options and access specific information when you want to see it. It is also used to enter settings and activate the Backlight.

Be a - RESPONSIBLE DIVER at all times.

BAR GRAPHS

Tissue Loading Bar Graph (TLBG)
The Tissue Loading Bar Graph (Fig. 1a) represents tissue loading of nitrogen, showing your relative no decompression or decompression status. As your depth and elapsed dive time increase, segments will add to the Graph, and as you ascend to shallower depths, the Bar Graph will begin to recede, indicating that additional no decompression time is allowed for multilevel diving.

The Tissue Loading Bar Graph 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 (normal) zone, a yellow Caution zone (also No Decompression), and a red Decompression (danger) zone.

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

⚠ **NOTE: Displays associated with oxygen and the O2 Bar Graph will only appear if FO2 has been set at a value other than 'Air' (e.g., a numerical value).**

Fig. 1 - TLBG

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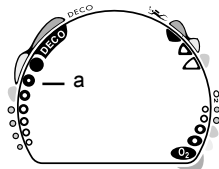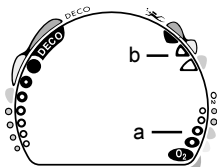
Fig. 2 - O2BG and VARI

Oxygen Accumulation Bar Graph (O2BG)

The O2 Bar Graph (Fig. 2a) represents oxygen loading, showing the maximum of either per dive accumulated oxygen, or 24 hour period accumulated oxygen.

As your oxygen exposure (accumulation) increases during the dive, segments will add to the Bar Graph, and as loading decreases, it will begin to recede, indicating that additional exposure is allowed for that dive and 24 hour period.

Variable Ascent Rate Indicator (VARI)

The Variable Ascent Rate Indicator (Fig. 2b) provides a visual representation of ascent speed (i.e., an ascent speedometer). Green is a 'normal' rate, yellow a 'caution' rate, and red is 'Too Fast'.

The segments of the Variable Ascent Rate Indicator represent two sets of speeds which change at a reference depth of 60 feet (18 meters). Refer to the chart for segment values.

Deeper than 60 feet (18 m)

Segments Displayed	Ascent Rate = FPM	MPM
0	0-20	0 - 6
1	21-50	6.5-15
2	51-60	15.5-18
3	>60	>18

60 feet (18 m) & Shallower

Segments Displayed	Ascent Rate = FPM	MPM
0	0-10	0 - 3
1	11-25	3.5-7.5
2	26-30	8-9
3	>30	>9

Variable Ascent Rate Indicator

⚠ **WARNING: At depths greater than 60 feet (18 meters), ascent rates should not exceed 60 feet per minute (18 meters per minute). At depths of 60 feet (18 meters) and shallower, ascent rates should not**

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exceed 30 feet per minute (9 meters per minute).
ALPHA / NUMERIC DISPLAYS

Each numeric and graphic display represents a unique piece of information. It is imperative that you understand the formats, ranges, and values of the information represented to avoid any possible misunderstanding that could result in error.

Fig. 3 - Current Depth

Depth Displays
During a dive, the **Current Depth** display (Fig. 3a), indicates depths from 0 to 330 feet (99.9 meters) in 1 foot (.1 meter) increments.

By pressing the button, the **Maximum Depth** reached during that dive will be displayed in the center/left portion of the display (Fig. 4a).

- When the unit is set to operate as a digital depth gauge/ timer (referred to as User Set Gauge Mode), the Depth Display range is 'extended' to 399 feet (120 meters). At depths greater than 99.9 meters it will indicate metric values in increments of 1 meter.

During a Decompression Dive, the required **Ceiling Stop Depth** is displayed in the center of the screen. Maximum Depth
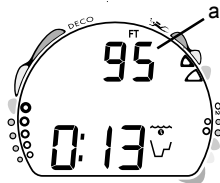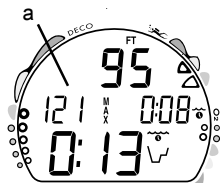
Fig. 4 - Maximum Depth

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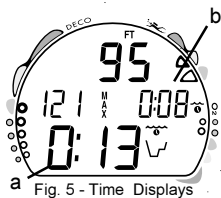
Fig. 5 - Time Displays

can be viewed by pressing the button.

Time and Date Displays

Time displays are shown in hour:minute format (i.e., 1:16 represents 1 hour and 16 minutes, not 116 minutes!). The colon that separates hours and minutes blinks once per second when the display is indicating real time (e.g., Elapsed Dive Time), and is solid (non-blinking) when times are calculated projections (e.g., Time to Fly).

The **Main Time** display is located in the lower portion of the display (Fig. 5a) and a **second time display** (Fig. 5b) is located in the center/right. Both displays are identified by a clock icon.

• Time of Day can be set for 12 hour format (Am/Pm) or 24 hour format.

Date (Month and Day) is displayed in the center/left portion of the screen (Fig. 6a) only to identify dive data while it is viewed in the Log Mode. Year is only displayed when setting the Date.

• When Units of Measure are set for 'Imperial', the Month appears to the left of Day. When set for Metric, the Month appears to the right of Day.
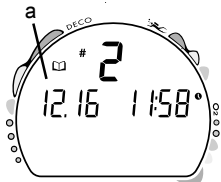
Fig. 6 - Date Display

Temperature Display

Ambient Temperature is displayed in the center/left portion of the screen (Fig. 7a) while in the Surface Mode and Log Mode, and can be viewed as part of an Alternate Display when the button is pressed while in a dive mode.

⚠️ **NOTE: The Informational Displays are described in detail as the various operating modes they appear in are presented throughout this manual.**

AUDIBLE ALARM

When warning situations activate the Alarm, the unit will emit a beeping tone for 10 seconds. The Alarm will sound again upon reentry into the warning situation, or entry into another type of warning situation. A red LED Warning Light is synchronized with the Audible Alarm and will flash when the Alarm emits a tone.

Situations that will activate the Alarm include -
- Entry into Decompression Mode
- PO2 => than the Max PO2 Alarm or => 1.60 ATA.
- Depth => 330 feet/99.9 meters.
- O2 Accumulation => 300 OTU.
- Ascending above a required Decompression stop depth.
- Ascent rate exceeds the allowed limit.
- Decompression requires a stop depth=> 70 feet/21 meters.
- Being on the surface for 5 minutes after a Conditional Violation (Permanent Violation).
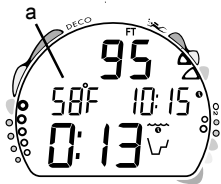
Fig. 7 - Temperature Display

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BACKLIGHT

To activate the Backlight while on the surface, press and release the button momentarily (less than 2 seconds). During a dive depress the button for 2 seconds

- While on the surface or during a dive, the Smart Glo® feature senses the intensity of natural light present. If a low level of light is present, the Backlight will activate and illuminate the display for 10 seconds.
- The Backlight does not operate during a Low Battery condition.
- Press/release the button again to activate as desired.

POWER SUPPLY

The Veo 180Nx utilizes one (1) type CR 2450 Lithium 3 volt cell that should provide 300 hours of continuous, or 50 activation periods, of operation. If you conduct 1 dive each time the unit is activated, you should obtain approximately 50 dives. If you conduct 3 dives each time the unit is activated, you should obtain approximately 150 dives.

Battery Indicator

A Battery Indicator provides an indication of battery condition. When power is sufficient for normal unit operation, the Indicator will be displayed during Surface Mode (Fig. 8a). The Indicator
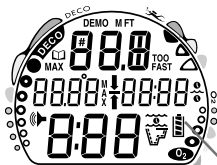
Fig. 8 - Battery Indicator

will not be displayed during Dive Mode(s).

Low Battery Condition
Voltage level is checked upon activation and every (1) minute during operation on the surface.

- When 75 % of the Rated Power has been consumed, the **lower bar** of the Battery Indicator (only segment) will be displayed, and the outline of the Indicator will flash once per second (Fig. 9) as a warning that the Battery is to be re-placed prior to conducting any further dives.
- Upon decreasing to a voltage level that will no longer sustain proper operation, the Indicator will flash 5 times followed by shutdown of the unit.
- If a Low Battery Condition exists <u>when the unit is activated (by pressing the button)</u>, the graphic bAT and the Battery Indicator will appear flashing for 5 seconds followed by shutdown of the unit.
- If the <u>button is not pressed to activate the unit</u> prior to a dive, and a Low Battery Condition exists, the Battery Indicator will appear flashing as a warning upon descent past 4 feet (1.2 meters). No other information will be displayed.
- If the unit did not display a Low Battery Condition 'prior to' entering the Dive Mode, and a Low Battery Condition occurs <u>during the dive</u>, there will be sufficient battery power to maintain unit operation for the remainder of 'that dive'. The Battery Indicator will appear after the dive in Surface Mode.

Fig. 9 -Low Battery Condition

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Fig. 10 - FO2 set for Air

FO2 MODE

After Activation, the Veo 180Nx will operate as an Air computer without displaying information associated with oxygen calculations, unless it is set for a percentage of oxygen (FO2) other than Air (a numerical value between 21 and 50 %).

When set with an **FO2 value of 'Air'** (Fig. 10), the Veo 180Nx will perform calculations the same as if FO2 were set for 21% oxygen, internally accounting for oxygen loading for any subsequent Nitrox dives. However, oxygen related displays, warnings, and the O2 Bar Graph will not appear on the display for that dive, or subsequent dives, unless FO2 is set for a numerical value (21 - 50).

Once a dive is made with the unit set as a nitrox computer (FO2 set for a numerical value), it cannot be programmed to operate as an 'Air' computer until 24 hours after the last dive. 'Air' will not be displayed as an option in the FO2 Mode. However, you can set FO2 for 21% for use with Air.

Fig. 11 - FO2 set for 21%

When FO2 is set at a **value of 21%** (Fig. 11), the unit will remain set at 21% for subsequent nitrox dives until FO2 is set to a higher value, or until it automatically turns off and is reactivated.

Setting FO2 is described on Page 23.

FO2 50% Default

If the Default is set to ON (Fig. 12) and FO2 is set to a value 'greater than 21%', the FO2 set point value will automatically revert to 50% 10 minutes after that dive. The Maximum Depth that can be achieved with a PO2 of 1.60 ATA will also be displayed.

Fig. 12 - FO2 Default ON

- FO2 must therefore be reset for each repetitive nitrox dive, or the value will automatically 'default' to 50(%) and the dives will be calculated based on 50% O2 (50% nitrogen) for oxygen calculations and 21% O2 (79% nitrogen) for nitrogen calculations.

If the Default is set to OFF (Fig. 13), the FO2 value for repetitive dives remains the same as previously set until the set point is manually changed.

Fig. 13 - FO2 Default OFF

<u>KEY TO SETTING INSTRUCTIONS</u>

PAGE:

> **⚠ WARNING: Prior to diving with the Veo 180Nx, you must also <u>read and understand the Oceanic Dive Computer Safety and Reference Manual</u>, Doc. No. 12-2262, which provides Important Warnings and Safety Recommendations as well as general product information.**

ACTIVATION and SETUP

Fig. 14 - Diagnostic Mode

ACTIVATION

⚠️ **WARNING: If the unit is activated at elevations higher than 14,000 feet (4,267 meters), it will perform a diagnostic check and immediately shutdown.**

To Activate the Veo 180Nx, press and release the Button.
- Upon manual activation, the unit will enter Diagnostic Mode (Fig. 14), displaying all segments of the LCD as 8's, followed by dashes (- -), then a countdown from 9 to 0. Diagnostic Mode checks the display and Battery voltage to ensure that everything is within tolerance and functioning properly.
- When the button is held depressed when the Diagnostic countdown reaches 00, an External Access request is initiated. A Serial Number screen appears displaying the unit's Serial Number and firmware code Revision Number as long as the button is held depressed (Fig. 15). Upon releasing the button, the unit shuts Off.
- After manual activation, it will also check the ambient barometric pressure, and calibrate its present depth as zero. At elevations of 2,000 feet (610 meters) or higher, it will recalibrate itself to measure depth in feet of fresh water instead of feet of sea water.

Fig. 15 - Serial Number

Backup Activation (only if Water Activation is set ON)
As a backup, the Veo 180Nx will also automatically activate by water contact. This is accomplished by bridging the gap between contacts located on the Button stem and back of the case.

If no dive is made within 2 hours after initial activation, the unit will automatically deactivate. If the wet contacts are still bridged, the unit will reactivate and display the H2O graphic.

SURFACE SEQUENCE
While on the surface, the unit will automatically scroll through a Sequence of displays including -
- Surface Mode
- Fly Mode
- DeSat Mode
- Plan Mode

As the Surface Sequence is scrolling, you can use the button to access Log Mode and Set Mode.

SURFACE MODE
Surface Mode, identified by the Surface Time icon (Fig. 16a), follows Diagnostic Mode after Activation. Information includes Dive Number '0' (no dive made yet), Temperature (and icon), Time of Day (with icon), the Battery Indicator, and Surface Time (with flashing colon).

Fig. 16 - Surface Mode
(module is dry)

Fig. 17 - Surface Mode
(module is wet)

If the wet contacts are bridged, the graphic 'H2O' will appear in place of the dive number '0' (Fig. 17). After the unit is rinsed and dried, '0' will replace 'H2O'.

While the Surface is scrolling -
- press/release the button (< 2 seconds) to access Log Mode.
- depress the button for 2 seconds to access Set Mode.

SET MODE

After gaining access to Set Mode, settings can be made in sequence one after the other, or you can access a specific item that you want to set, bypassing others.

Set Mode Access/Timing

To access while the Surface Sequence is scrolling, press and release the button momentarily (< 2 seconds).

- Upon entry into Set Mode, the Set FO2 screen will be displayed with the Set Point flashing (Fig. 18).

- If the button is not pressed during a 2 minute period while in the Set Mode, the unit will revert to Surface Mode and resume the Surface Sequence scroll.

Fig. 18 - Set Mode Entry

TO SET - FO2

Factory set for Air, FO2 can also be set to values between 21 and 50% in increments of 1%.

- While the Surface Sequence is scrolling, press the button for 2 seconds.

- Release the button when the FO2 screen appears with the Set Point flashing (Fig. 19).

- Press and release the button repeatedly to increase the FO2 value from 21 to 50% in increments of 1%, then display AIR again.

- For each FO2 value that appears, the display indicates the Maximum Depth that can be achieved for a PO2 of 1.60 ATA (Fig. 20a), or the PO2 Alarm Set Point. If FO2 is set for AIR, no Depth value will be displayed.

- Press the button for 2 seconds to accept the FO2 Set Point displayed and advance to the PC screen.

Fig. 19 - FO2 set for AIR

Fig. 20 - FO2 set for 32%
(130 feet allowed)

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PC INTERFACE

PC Interface is not a setting, it is included in the Set menu for easy access when data in the Veo 180Nx's memory is to be downloaded (copied) to the PC download software program for storage and viewing.

To download data -

- After having set and accepted FO2, the PC screen appears (Fig. 21).

- - or - -

- While the Surface Sequence is scrolling, press the button for 4 seconds. The FO2 screen will appear, then the PC screen.
- Release the button when the PC screen appears.
- A 2 minute countdown timer will be displayed with the graphic PC and begin counting down from 119 to 0 seconds.
- Download is initiated by the external device requesting data transfer (i.e., the PC download program). Download must be initiated before the timer reaches 0.
- The unit reverts to Surface Mode after completion of the Download operation, or after 2 minutes if the button is not pressed to access the Set Units screen.

⚠ NOTE: For more information regarding PC Interface, refer to page 59 of this manual and to documents provided with the PC download product.

Fig. 21 - PC Interface

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TO SET - UNITS OF MEASURE
Factory set for Imperial, Units of can also be set for Metric.

- After having set and accepted FO2, the PC screen appears. To bypass PC, press the button until the Set Units screen appears with the Set Point flashing (Fig. 22).

- - or - -

- While the Surface Sequence is scrolling, press the button for 6 seconds.
- Release the button when the Set Units screen appears with the Set Point flashing.
- Press and release the button (less than 2 seconds) to toggle between Imperial (FT and F) and Metric (M and C) units.
- Press the button for 2 seconds to accept the Units Set Point and advance to Set Hour Format.

Fig. 22 - Set Units

TO SET - HOUR FORMAT

Factory set for 12 Hour (12: AM to 11: PM), the Hour Format can also be set for 24 Hour (0: to 23: hours).

- After having set and accepted Units, the Set Hour Format screen appears with the Set Point flashing (Fig. 23).

- - or - -

- While the Surface Sequence is scrolling, press the button for 8 seconds.
- Release the button when the Set Hour Format screen appears with the Set Point flashing.
- Press and release the button (less than 2 seconds) to toggle between 12 and 24.
- Press the button for 2 seconds to accept the Set Point and advance to Set Time.

Fig. 23 - Set Hour Format

TO SET - TIME

Set for factory local time, the Time can be set to values between
0:00 and 12:59 (AM/PM) or 0:00 and 23:59.

- After having set and accepted Hour Format, the Set Time
  screen appears with the Hour Set Point flashing (Fig. 24).

- - or - -

- While the Surface Sequence is scrolling, press the button for
  10 seconds.
- Release the button when the Set Time screen appears with
  the Hour Set Point flashing.
- Press and release the button repeatedly (less than 2 seconds
  each time) to advance the Hour setting in increments of 1
  Hour per press of the button.
- Press the button for 2 seconds to accept the Hour Set Point,
  the Minutes Set Point flashes.
- Press and release the button repeatedly (less than 2 seconds
  each time) to advance the Minute setting in increments of 1
  Minute per press of the button.
- Press the button for 2 seconds to accept the Minute Set Point
  and advance to Set Date.
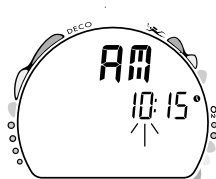
Fig. 24 - Set Time

TO SET - DATE

Factory set for the factory local Date, the Date can be set to values between 01/01/2004 and 12/31/2039.

- After having set and accepted the Time, the Date appears with the graphic dAY, and Year Set Point flashing (Fig. 25).

- - or - -

- While the Surface Sequence is scrolling, press the button for 14 seconds.
- Release the button when the Set Date screen appears with the Year Set Point flashing.
- Press and release the button repeatedly (less than 2 seconds each time) to advance the Year setting in increments of 1 Year per press of the button.
- Press the button for 2 seconds to accept the Year Set Point, the Month Set Point flashes.
- Press and release the button repeatedly (less than 2 seconds each time) to advance the Month setting in increments of 1 Month per press of the button.
- Press the button for 2 seconds to accept the Month Set Point, the Day Set Point flashes.
- Press and release the button repeatedly (less than 2 seconds each time) to advance the Day setting in increments of 1 Day per press of the button.
- Press the button for 2 seconds to accept the Date Set Point and advance to Set PO2 Alarm.

Fig. 25 - Set Date

TO SET - PO2 ALARM
Factory set for 1.60 (ATA), the Maximum PO2 Alarm can be set to values between 1.20 and 1.60 (ATA) in increments of .10 (ATA).

- After having set and accepted the Date, the Set PO2 Alarm screen appears with the Set Point flashing (Fig. 26).

- - or - -

- While the Surface Sequence is scrolling, press the button for 20 seconds.
- Release the button when the Set PO2 Alarm screen appears with the PO2 Set Point flashing.
- Press and release the button repeatedly (less than 2 seconds each time) to advance the PO2 Alarm setting in increments of .10 ATA per press of the button.
- Press the button for 2 seconds to accept the PO2 Alarm Set Point and advance to Set FO2 Default.

Fig. 26 - Set PO2 Alarm

TO SET - FO2 50% DEFAULT

Factory set ON, the FO2 50% Default feature can be set to
OFF. The effects of this feature being ON or OFF are described
on page 17.

- After having set and accepted the PO2 Alarm setting, the Set
  FO2 50% Default screen appears with the Set Point flashing
  (Fig. 27).

- - or - -

- While the Surface Sequence is scrolling, press the button for
  22 seconds.
- Release the button when the Set FO2 50 screen appears
  with the Set Point flashing.
- Press and release the button (less than 2 seconds) to toggle
  between ON and OFF.
- Press the button for 2 seconds to accept the Set Point and
  advance to Set Digital Gauge Mode.

Fig. 27 - Set FO2 Default

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TO SET - DIGITAL GAUGE MODE

Factory set OFF, Digital Gauge Mode can also be set ON. The effects of this feature being ON or OFF are described on page 50.

- After having set and accepted the FO2 Default setting, the Set Digital Gauge Mode screen appears with the Set Point flashing (Fig. 28).

- - or - -

- While the Surface Sequence is scrolling, press the button for 24 seconds.
- Release the button when the Set Digital Gauge Mode screen appears with the Set Point flashing.
- Press and release the button (less than 2 seconds) to toggle between ON and OFF.
- Press the button for 2 seconds to accept the Set Point and advance to Set Water Activation.

Fig. 28 - Set Digital Gauge

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TO SET - WATER ACTIVATION

Factory set for On, the Water Activation feature can also be set for OFF (disabled) to prevent inadvertent activation during travel or storage. When set On, the Veo 180Nx will automatically Activate and enter Dive Mode upon immersion in water.

- After having set and accepted the Digital Gauge Mode setting, the Set Water Activation screen appears with the Set Point flashing (Fig. 29).

- - or - -

- While the Surface Sequence is scrolling, press the button for 26 seconds.
- Release the button when the Set Water Activation screen appears with the Set Point flashing.
- Press and release the button (less than 2 seconds) to toggle between On and OFF.
- Press the button for 2 seconds to accept the Set Point and advance to Surface Mode.

Fig. 29 - Set Water Activation

⚠ **WARNING: When the Water Activation feature is set OFF, the Veo 180Nx must be manually activated or it will not enter Dive Mode upon descent.**

> ⚠️ **WARNING: Prior to diving with the Veo 180Nx, you must also <u>read and understand the Oceanic Dive Computer Safety and Reference Manual</u>, Doc. No. 12-2262, which provides Important Warnings and Safety Recommendations as well as general product information.**

PLAN and DIVE MODES

PRE DIVE PLANNING SEQUENCE™

The Pre Dive Planning Sequence (PDPS), which appears after Surface Mode prior to the first dive of a new activation period, provides a sequence of theoretical dive times available for depths ranging from 30 feet (9 meters) to 190 feet (57 meters) in 10 foot (3 meter) increments.

No decompression times (limits), or NDLs, are only displayed for depths where there is at least 3 minutes of theoretical dive time available at the depth, taking into account a descent rate of 60 feet (18 meters) per minute.

The PDPS should be reviewed prior to every dive to help you plan your dive as required to avoid exceeding no decompression or oxygen exposure limits.

For repetitive dives, the PDPS indicates adjusted dive times that are available for the next dive, based on residual nitrogen or oxygen accumulation (whichever is in control) following the last dive and surface interval. It appears after the SAT screen in the scrolling Surface Sequence (SURF > FLY > SAT > PDPS).

Depth	NDL	
feet (meters)		
hours:mins		
30 (9)	4:20	(4:43)
40 (12)	2:17	(2:24)
50 (15)	1:21	(1:25)
60 (18)	:57	(:59)
70 (21)	:40	(:41)
80 (24)	:30	(:32)
90 (27)	:24	(:25)
100 (30)	:19	(:20)
110 (33)	:16	(:17)
120 (36)	:13	(:14)
130 (39)	:11	(:11)
140 (42)	:09	(:09)
150 (45)	:08	(:08)
160 (48)	:07	(:07)
170 (51)	:07	(:06)
180 (54)	:06	(:06)
190 (57)	:05	(:05)

**NDLs at Sea Level
for an Air Dive
(no dive made yet)**

⚠️ **WARNING: The available dive times provided are only predictions, depending on cylinder size and air consumption rate, you may have less time available than indicated because of those and other factors.**

- With each Depth displayed by the PDPS, you will see either predicted no decompression limits (NDLs) based upon your previous dive profiles (if calculated to be nitrogen controlled), or predicted oxygen tolerance limits (OTLs) based upon either a single dive exposure or your 24 hour accumulation of oxygen (if calculated to be oxygen controlled).
- The Maximum Depth allowed for a PO2 level of 1.60 (ATA) for the FO2 setting will also be displayed.
- Depths greater than the Maximum Depth that can be achieved with a PO2 of 1.60 ATA will not be displayed.
- If the Tissue Loading Bar Graph is displayed (Fig. 30), that next dive is calculated to be controlled by nitrogen loading.
- If the O2BG and O2 symbol are displayed (Fig. 31), it is calculated to be controlled by oxygen loading.
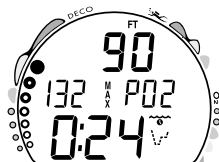
Fig. 30 - Nitrogen Control

⚠ **NOTE: The Veo 180Nx will store O2 accumulation calculations for up to 10 dives conducted during a 24 hour period. If the maximum limit for oxygen loading has been exceeded for that day (24 hour period), all segments of the O2BG will be displayed flashing .**

Depth/Time values will not appear until the O2BG recedes into the green (normal) zone (i.e., your daily O2 dosage decreases an amount equivalent to the amount accumulated during the latest dive completed).
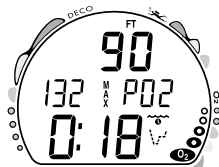
Fig. 31 - Oxygen Control
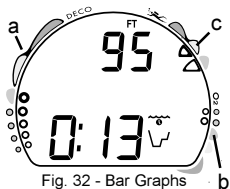
Fig. 32 - Bar Graphs

TISSUE LOADING BAR GRAPH (TLBG) (Fig. 32a)
As your Depth and Elapsed Dive Time increase, the Tissue Loading Bar Graph (TLBG) will add segments (green toward red) to represent the absorption of nitrogen.

While ascending to shallower depths, the number of segments displayed will begin to recede, offering a graphic representation of your multilevel diving capability.

OXYGEN ACCUMULATION BAR GRAPH (O2BG) (Fig. 32b)
If FO2 was set for a numerical value (nitrox), the Oxygen Accumulation Bar Graph (O2BG) will add segments (green toward red) to represent oxygen accumulation for that dive, or 24 hour period, whichever amount is greater.

VARIABLE ASCENT RATE INDICATOR (Fig. 32c)
The Variable Ascent Rate Indicator (VARI) shows how fast you are ascending. When you exceed the maximum recommended ascent rate for the depth you are at (see page 10), it will enter the red (Too Fast) zone (Fig. 33) and you will be alerted by the graphic TOO FAST Fig. 33a), all segments of the bar graph flashing, an Audible alarm and the red LED Warning Indicator. The warnings will stop when your Ascent Rate is slowed.
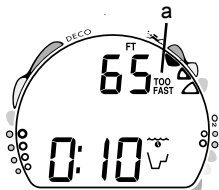
Fig. 33 - Ascent Too Fast

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CONTROL OF DISPLAYS

During No Decompression conditions, various displays of information (up to 4) are available. Each provides Depth, Dive Time Remaining, and additional information. The intent of this feature is to allow the diver to select which information is on display at any given time during the dive. The screens can be changed from one display to another as often as desired by pressing and releasing the button momentarily (< 2 seconds).

During conditions in which cautionary type information is displayed (e.g., Decompression, High PO2, High O2, etc.), there is a Main Display of important information relevant to the specific condition. Other screens of information can be accessed, which automatically revert to the Main Display after 3 seconds.

To activate the Backlight, press the button for 2 seconds.

- The display will be illuminated 10 seconds.
- The Backlight will not activate during a Low Battery Condition.

NO DECOMPRESSION DIVE MODE

The Veo 180Nx will enter the No Decompression Dive Mode when you descend deeper than 4 feet (1.2 meters).

Responsible DIVER
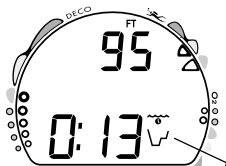
Fig. 34 - No Deco Main #1

No Deco Mode icon

No Decompression Main Display #1 (Fig. 34)
Information includes Current Depth, Dive Time Remaining (and Mode icon), and the applicable bar graphs.

- Press and release the button 1 time (< 2 seconds) to change the screen to Main Display #2.
- Press and release the button 2 times (< 2 seconds each time) to change to Main Display #3.
- Press and release the button 3 times (< 2 seconds each time) to change to Main Display #4 (if a Nitrox dive).

No Decompression Main Display #2 (Fig. 35)
Information includes Current Depth, Maximum Depth for that dive (and icon), Elapsed Dive Time (and icon), Dive Time Remaining (and Mode icon), and the applicable bar graphs.

- Press and release the button 1 time (< 2 seconds) to change the screen to Main Display #3.
- Press and release the button 2 times (< 2 seconds each time) to change to Main Display #4 (if a Nitrox dive), or #1.
- Press and release the button 3 times (< 2 seconds each time) to change to Main Display #1.

Fig. 35 - No Deco Main #2

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No Decompression Main Display #3 (Fig. 36)
Information includes Current Depth, Temperature, Time of Day, Dive Time Remaining (and Mode icon), and the applicable bar graphs.

- Press and release the button 1 time (< 2 seconds) to change the screen to Main Display #4 (if a Nitrox dive), or #1.
- Press and release the button 2 times (< 2 seconds each time) to change to Main Display #1.
- Press and release the button 3 times (< 2 seconds each time) to change to Main Display #2.

Fig. 36 - No Deco Main #3

No Decompression Main Display #4 (Fig. 37)
Display #4 will not appear when FO2 is set for AIR.
Information includes - Current Depth, current value of PO2 (if a nitrox dive) and PO2 graphic, Dive Time Remaining (and Mode icon), and applicable bar graphs.

- Press and release the button 1 time (< 2 seconds) to change the screen to Main Display #1.
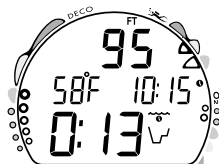- Press and release the button 2 times (< 2 seconds each time) to change to Main Display #2 (if a Nitrox dive), or #1.
- Press and release the button 3 times (< 2 seconds each time) to change to Main Display #3.
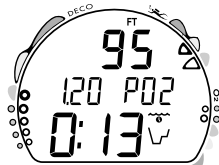
Fig. 37 - No Deco Main #4

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Fig. 38 - No Deco Safety Stop

No Decompression Dive SAFETY STOP (Fig. 38)
Upon ascending to 20 feet (6 meters) on any No Decompression dive in which Depth exceeded 30 feet (9 meters), a short beep will sound and a Safety Stop screen will appear displaying a Stop at 15 feet (4.5 meters) with a 3 minute Countdown Timer that counts down from 3:00 to :00 (minutes:seconds).

The Safety Stop will be displayed until the countdown times out, or the a descent is made below 30 feet (10 meters), or the diver surfaces. There is no Penalty if the diver surfaces prior to completing the Safety Stop.

Information includes Current Depth, Stop Depth (15 feet or 4.5 meters), Stop Bar icon, Countdown Timer, Dive Time Remaining, and applicable bar graphs.

Deco Mode icon

DECOMPRESSION DIVE MODE
The Veo 180Nx is designed to help you by providing a representation of how close you are to entering decompression. Decompression Dive Mode (Fig. 39) activates when theoretical No Decompression time/depth limits are exceeded.
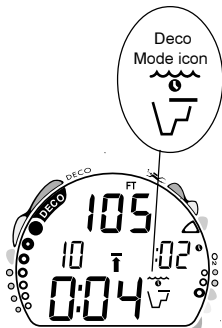
Fig. 39 - Entry into Deco Mode

Upon entering Decompression Mode, the Mode icon will change from No Deco to Deco, the Audible Alarm will sound and the red LED Warning Indicator will flash for 10 seconds.

- The UP Arrow and Deco Bar will flash if you are greater than 10 feet (3 meters) deeper than the Required Stop Depth.
- Once you are within 10 feet (3 meters) of, and below, the required Stop Depth, both Arrows and the Bar appear solid.

Total Ascent Time
Total Ascent Time (Fig. 40a) includes Stop Times required at all required decompression ceilings and vertical Ascent Time calculated at 60 feet (18 meters) per minute for depths deeper than 60 feet (18 meters), and 30 feet (9 meters) per minute for depths of 60 feet (18 meters) and shallower.

Managing Decompression Stops
To fulfill your decompression obligation, you should make a safe controlled ascent to a depth slightly deeper than, or equal to, the Required Ceiling Stop Depth indicated (Fig. 40b) and decompress for the Stop Time indicated (Fig. 40c).

The amount of decompression <u>Credit Time</u> that you receive is dependent on Depth, with slightly less Credit given the deeper you are. You should stay slightly deeper (Fig. 40d) than the Required Stop Depth indicated until the next shallower Stop Depth appears. Then, you can slowly ascend to, but not shallower than that indicated ceiling Stop Depth.

Fig. 40 - Deco Stop

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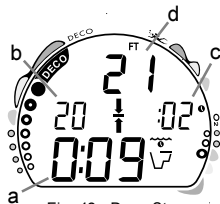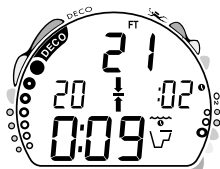
Fig. 41 - Deco Stop Main

- While in Decompression Mode, Alternate Displays can be accessed that will automatically revert to the Main (Default) Display after 3 seconds.

Decompression Main (Default) Display (Fig. 41)
Information includes - Current Depth, required Ceiling Stop Depth and Time, Total Ascent Time (and Mode icon), both Arrows and the Deco Bar, and the applicable bar graphs.

- Press and release the button 1 time (< 2 seconds) to view Alternate Display #1.
- Press and release the button 2 times (< 2 seconds each time) to view Alternate Display #2.
- Press and release the button 3 times (< 2 seconds each time) to view Alternate Display #3 (if a Nitrox dive).

Deco Alternate Display #1 (Fig. 42)
Information includes - Current Depth, Max Depth (and icon), Elapsed Dive Time (and icon), Total Ascent Time (and icon), both Arrows and the Deco Bar, and the applicable bar graphs.

Fig. 42 - Deco Stop Alt #1

- Press and release the button 1 time (< 2 seconds) to view Alternate Display #2.
- Press and release the button 2 times (< 2 seconds each time) to view Alternate Display #3 (if a Nitrox dive).

Deco Alternate Display #2 (Fig. 43)
Information includes - Current Depth, Temperature, Time of Day (and icon), Total Ascent Time, both Arrows and the Deco Bar, and the applicable bar graphs.

• Press and release the button 1 time (< 2 seconds) to view Alternate Display #3 (if a Nitrox dive).

Fig. 43 - Deco Alternate #2

Deco Alternate Display #3 (Fig. 44)
Display #3 will not appear when FO2 is set for AIR. Information includes - Current Depth, the current value of PO2 and PO2 graphic, Total Ascent Time, Mode icon, both Arrows and the Deco Bar, and applicable bar graphs.

VIOLATION MODES
While in Violation Modes, the Alternate Displays previously described for Deco can be accessed and the Backlight can be activated using the button.

• Upon entry into Violation Modes, the Audible Alarm will sound and the red LED will flash for 10 seconds.

• The Veo 180Nx will automatically revert to the Main (Default) Display after 3 seconds unless the button is pressed to view another display of information.

Fig. 44 - Deco Alternate #3

Conditional Violation Mode

If you ascend shallower (Fig. 45a) than a Required Decompression Ceiling Stop Depth displayed (Fig. 45b), the Down Arrow, Deco Bar, and Total Ascent Time will flash until you descend below the Required Stop Depth. Also displayed will be Current Depth and applicable bar graphs.

The Audible Alarm will sound and the red LED will flash as a warning for 10 seconds.

If you descend below the required decompression ceiling before 5 minutes have elapsed, the Veo 180Nx will continue to function in Decompression Dive Mode. In this case, no off-gassing Credit will be given, and for each minute above the ceiling $1^1/_2$ minutes of **Penalty Time** will be added to Required Stop Time.

The added Penalty (decompression) Time will have to be 'worked off' first, before obtaining off-gassing credit. Once the Penalty Time is worked-off, and off-gassing Credit begins, required decompression Stop Depths and Time will decrease toward zero, then the Tissue Loading Bar Graph will recede into the yellow Caution Zone and the Veo 180Nx will revert to the No Decompression Dive Mode.
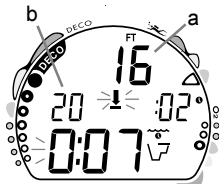
Fig. 45 - Conditional Violation

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⚠ **NOTE: Upon entry into Violation Modes, the red LED will flash and the Audible Alarm will sound.**

Delayed Violation Mode #1 (Fig. 46)

If you remain above the Required Ceiling Stop Depth for 'more than 5 minutes', the TLBG and Total Ascent Time will flash until you descend below the Required Stop Depth. This is a continuation of a Conditional Violation.

Fig. 46 - Delayed Viola #1

Delayed Violation Mode #2 (Fig. 47)

The Veo 180Nx cannot calculate decompression times for Stop Depths much greater than 60 feet (18 meters) and offers no indication of how much time spent underwater would result in the need for a greater Stop Depth.

If your Decompression obligation requires a Ceiling Stop Depth 'between' 60 feet (18 m) and 70 feet (21 m), the TLBG will flash. Total Ascent Time will still be displayed.

You must ascend to just deeper than, and stay as close as possible to, 60 feet (18 meters) <u>without causing the Total Ascent Time display to flash.</u> When the Required Stop Depth indicates 50 FT/ 15 M, etc., you can ascend to those depths and continue decompressing.
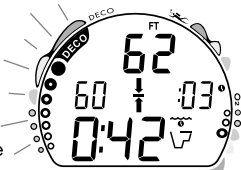
Fig. 47 - Delayed Viola #2
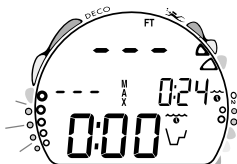
Fig. 48 - Delayed Viola #3

Delayed Violation Mode #3 (Fig. 48)

If you descend deeper than 330 feet (99.9 meters),
the TLBG segments will flash, and the Current Depth and Max
Depth displays will only indicate 3 dashes (- - -).

Upon ascending above 330 feet (99.9 meters), the Current
Depth display will be restored, however Max Depth will only
display 3 dashes for the remainder of that dive. The Log for that
dive will display 3 dashes as the Max Depth achieved.

Immediate Violation Mode and Gauge Mode

During a Dive, if a ceiling much greater than 60 feet (18 meters)
is required, an **Immediate Violation Mode** will be entered.
This situation would be preceded by entering Delayed Violation
Mode #2.
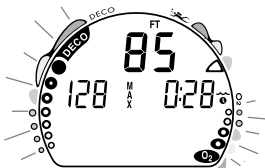
Fig. 49 - Viola Gauge Mode

The Veo 180Nx would then operate with limited functions in
Gauge Mode during the remainder of that dive and for 24
hours after surfacing. **Gauge Mode** turns the Veo 180Nx into
a digital instrument without any decompression or oxygen
monitoring functions. Only Current Depth, Max Depth, Elapsed
Dive Time, and the Variable Ascent Rate Indicator will be dis-
played (Fig. 49). The TLBG and O2BG will both flash as a
warning of this condition.

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The Veo 180Nx will also enter an **Immediate Violation Mode** 5 minutes after reaching the surface from a dive in which a Delayed Violation occurred.

On the surface, **Gauge Mode** displays the Dive Number, Temperature, Time of Day, Surface Interval, and bar graphs flashing (Fig. 50). It does not provide the FO2, PDPS, or Time to Fly and Desaturate features.

The countdown timer that appears when you try to access Time to Fly does not represent 'Time to Fly'. It is only provided to inform you of the time remaining before normal Veo 180Nx operation can resume with full features and functions.

This condition is a Permanent Violation, and in the event that a dive is made during the 24 hour period, a full 24 hour surface interval must then be served before all functions are restored.

Fig. 50 - Viola Gauge Mode
(on Surface)
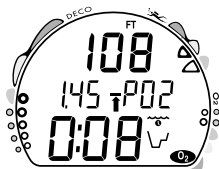
Fig. 51 - PO2 Warning

HIGH PO2 DIVE MODE

When partial pressure of oxygen (PO2) becomes equal to, or greater than, 1.40 ATA, or 0.2 ATA less than the PO2 Alarm set point (a user setting); the red LED warning will flash, the Audible Alarm will sound, and the current PO2 value, PO2 symbol, O2 segment of the O2 Bar Graph, and UP Arrow will appear on the Main Display as a warning until PO2 decreases. Current Depth and Dive Time Remaining will also be displayed (Fig. 51).

If PO2 continues to increase, the value displayed will increase toward a maximum value of 5.50 ATA in increments of .01 ATA. When it reaches a value of 1.60 ATA, or the PO2 Alarm Set Point (a user setting), the Audible Alarm will sound and the current PO2 value, PO2 symbol, O2 segment of the O2 Bar Graph, and UP Arrow will flash as a warning until PO2 decreases (Fig. 52).

Fig. 52 - PO2 Alarm

- Press and release the button momentarily (< 2 seconds) to view the Alternate Displays.
- The unit will revert to the Main Display after 3 seconds.
- Depress the button for 2 seconds to activate the Backlight.

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HIGH OXYGEN ACCUMULATION

The O2 Bar Graph displays either oxygen accumulated during that nitrox dive, or during the repetitive nitrox dives you conduct during that 24 hour period, whichever of the two is greater at that time.

The yellow Caution Zone of the O2 Bar Graph offers you a convenient way to consistently monitor how close you are coming to the limits of oxygen exposure. Use it as a visual reference to place a wider margin of protection between you and the Limits.

If the theoretical amount of oxygen accumulated equals, or exceeds, the limit for a single exposure, or the exposure limit for a 24 hour period, Oxygen Dive Time Remaining becomes zero (0:00) and the O2 Bar Graph will enter the red O2 (Danger) Zone (Fig. 53). The red LED will flash, the Audible Alarm will sound), and the UP Arrow and the full O2 Bar Graph will flash as a warning until the level of oxygen decreases below the limit.

- Press and release the button momentarily (< 2 seconds) to view the Alternate Displays.
- The unit will revert to the Main Display after 3 seconds.
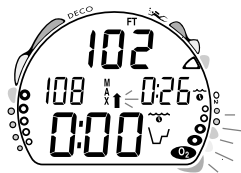
Fig. 53 - High O2

Fig. 54 - Digital Gauge Mode
Main

• Depress the button for 2 seconds to activate the Backlight.

USER SET DIGITAL GAUGE MODE

When Digital Gauge Mode is set for ON, the Veo 180Nx will operate as a Digital Depth Gauge/Timer without performing nitrogen and oxygen calculations.

While in this mode, the range of the Current and Maximum Depth displays are extended to 399 feet (120 meters) to accommodate activities involving diving with advanced breathing gas mixtures or free diving beyond the normal depth limit of the unit. Elapsed Dive Time will also be displayed (Fig. 54).

• Press and release the button momentarily (< 2 seconds) to view the Alternate Display Temperature/Time (Fig. 55).
• The unit will revert to the Main Display after 3 seconds.
• Depress the button for 2 seconds to activate the Backlight.

UNEXPECTED LOSS OF DISPLAYED INFORMATION

If your Veo 180Nx stops working for any reason, it is important that you have anticipated this possibility and are prepared for it. **This is an important reason for not pushing the No Decompression and Oxygen Accumulation Limits, and a critical reason to avoid entering Decompression.**

If you dive in situations where your trip would be ruined or your Safety would be jeopardized by losing the use of your Veo

Fig. 55 - Digital Gauge Mode
Alternate

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WARNING: Prior to diving with the Veo 180Nx, you must also <u>read and understand the Oceanic Dive Computer Safety and Reference Manual</u>, Doc. No. 12-2262, which provides Important Warnings and Safety Recommendations as well as general product information.

POST DIVE MODES

Fig. 56 - Transition Period

POST DIVE SURFACE MODE

When you ascend to 3 feet (1 meter) or shallower, the Veo 180Nx will enter Surface Mode and begin counting your surface interval.

TRANSITION PERIOD

The first 10 minutes is, in affect, a Transition Period during which time the following information is displayed (Fig. 56):

- Number of that dive (during that activation period)
- Temperature (ambient)
- Time of Day and icon
- Battery Consumption Indicator
- Surface Interval time (colon flashing) and icon (flashing)
- TLBG indicating current nitrogen loading
- O2BG indicating current oxygen accumulation (if nitrox)

During the Transition Period, Log Mode can be accessed. No other modes (e.g., PDPS, Fly, Desat, Set, PC) are accessible.

To view the Log for that dive (Fig. 57), press and release the button (less than 2 seconds).

Log Data will not be stored in the unit's memory until the 10 minute Transition Period on the surface is completed.

Fig. 57 - Log Mode
(during Transition Period)

Press and release the button momentarily (< 2 seconds) to activate the Backlight.

If you descend <u>during</u> the 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 Dive Time.

AFTER THE TRANSITION PERIOD (THE FIRST 2 HOURS)
Once 10 minutes have elapsed, the Surface Mode icon and Surface Interval time display colon stop flashing (Fig. 58) indicating that the Dive and Transition Period are completed, and a subsequent descent will be considered a new dive.

For the remainder of the first 2 hours after surfacing, information will continue to be displayed as the Surface Sequence, scrolling through the Surface Mode > Fly > Sat > Plan screens. You will have full access to Log and Set modes.).

Press and release the button momentarily (< 2 seconds) to activate the Backlight.

Fig. 58 - Surface Mode
(greater than 10 minutes)

Fig. 59 - Time to Fly

Time to Fly/Desaturate

The Time to Fly and Desat Timers begin counting down 10 minutes after surfacing from a dive (after the Transition Period).

The FLY countdown (Fig. 59) always begins at 23:50 (hr:min) and the Desat countdown (Fig. 60) at 23:50 (maximum).

If a Violation occurred during the dive a single dash (-) will appear instead of the letters FLY. DeSat time will not be displayed.

The Time to Fly counter is provided to assist you with deciding when enough surface time has elapsed to fly (or travel to higher elevations).

- After a surface interval of 12 hours, you may choose to fly (or travel to higher elevations), provided that your dive profile(s) did not enter decompression.

Fig. 60 - Time to Desaturate

- 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.

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Pre Dive Planning Sequence (PDPS)
After a dive, the PDPS provides 'adjusted' No Decompression Limits (Fig. 61) based on residual nitrogen calculated to be remaining from that dive and previous dives in the same series.

Log Mode
The Veo 180Nx will store up to 24 dives in its Log for viewing.

Each dive has 3 Log screens - Dive Identifier (Preview), Dive Data, and O2 Data (if a Nitrox dive).

Once the Log is full (24 dives), each subsequent dive will then overwrite the oldest dive stored in the Log. It is therefore suggested that you transfer the Log's data to your log book at the end of each day of diving, or Download it to the OceanLog PC program files.

Log data will not be lost when the battery is removed/replaced, however, factory service and calibration will delete the data.

The first dive conducted each time the unit is Activated will be #1, therefore there may be multiple #1 dives in the Log.

Dives are displayed in a reverse sequence that starts with the dive most recently recorded, back to the oldest one stored. The most recent dive will always be the first shown in the sequence.
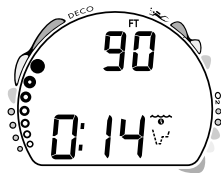
Fig. 61 - Adjusted NDLs

Fig. 62 - Log (Dive Identifier)

To access Log Mode -
- Press and release the Button momentarily (< 2 seconds) while the unit is scrolling through the Surface Sequence.
- The <u>first screen</u> (Dive Identifier) of the most recent dive conducted will appear displaying (Fig. 62) -
  - Log Mode icon
  - Dive Number (for that activation period)
  - Date of the Dive Month/Day
  - Time of Day, that the dive started (Hour/Minute)
- Press the Button momentarily to view the second screen.

Dive Data <u>(the second screen) information includes</u> (Fig. 63A)

- Log Mode icon
- Maximum Depth - reached during the dive (and icon)
- Temperature - minimum during the dive (and icon)
- Surface Interval - prior to that dive (and icon).
- Elapsed Dive Time (and icon)
- Variable Ascent Rate Indicator - showing the maximum ascent rate maintained for 4 consecutive seconds during the dive.
- Tissue Loading Bar Graph - showing tissue nitrogen loading at the time you surfaced at the end of the dive. Also, the segment that reflects the maximum loading during the dive will appear flashing.
- Press the Button momentarily to view the third screen.
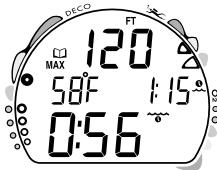
Fig. 63 - Log (Dive Data)

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O2 Data (the third screen) information includes (Fig. 64) -
- Log Mode icon
- Graphic FO2 (at top) and FO2 Set Point (at bottom)
- Maximum PO2 level reached during the dive and MAX icon and graphic PO2.
- O2 Bar Graph - showing oxygen loading at the time you surfaced at the end of the dive.

To access the first screen of the previous dive's Log, press the Button momentarily (< 2 seconds).

To return to the Surface Sequence at any time while in Log Mode, press the Button for 4 seconds, releasing it when Surface Mode appears.

The unit will automatically revert to the Surface Sequence after 2 minutes if the Button is not pressed to view another Log Screen.

AFTER THE FIRST 2 HOURS
Two hours after the last dive, the Surface Sequence will no longer be displayed. The Time to Fly and Desaturation count-down screens (Fig. 65) will be displayed alternately for 3 seconds each until they count down to 0:00 or another dive is made.

Fig. 64 - Log (O2 Data)

Fig. 65 - FLY/SAT

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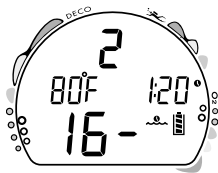
Fig. 66B - Surface Mode
(SI > 16 Hours))

Fig. 66B - Surface Mode
(unit wet)

Fig. 67 - SAT (unit wet)

To access other modes or enter settings -
- Press the button to reactivate the Surface Sequence.
- The unit will again revert to the Time to Fly and Desaturation countdowns after 2 hours, if the button is not pressed.
- Surface Interval Times greater than 9:59 (hr:min) will be displayed only as Hours 10-, 11-, 12-, etc. (Fig. 66A)

WET CONTACTS
If the graphic H2O appears during the Surface Mode (Fig. 66B), Fly Mode (Fig. 67), or Desaturation Mode, it is an indication that the water activation contacts are bridged (still wet) and the unit must be rinsed in fresh water and thoroughly dried.

- The contacts are located in the button stem and the download data port.
- Once the unit is dry, the graphic H2O will disappear from the display.
- If the unit is not cleaned and dried prior to the countdowns reaching 0:00 (hr:min), or making another dive, it will shut off then automatically reactivate.
- The graphic H2O would then appear in place of Dive Number when Surface Mode is displayed during the Surface Sequence.
- If no dive is made after activation, the unit would shut off after 2 hours, then automatically reactivate again if wet, repeating the action until cleaned and dried.

DOWNLOADING DATA TO A PC

Using special linking hardware, dive data can be downloaded (copied) from your Veo 180Nx to an IBM compatible PC program running on a Windows® operating system. Compatibility requirements and instructions are provided with the optional download package that is available from your Authorized Oceanic Dealer. The software program provides dive tabular and graphic profile data sampled throughout the dives at the interval you set.

⚠ **NOTE: Ensure that the download product that you acquire is compatible with the Veo 180Nx and the PC equipment that you will be using.**

The Interface Cable will be connected to the Data Port located on the side of the Veo 180Nx housing and the PC USB port.

Prior to attempting to download data from your Veo 180Nx, refer to the instructions provided in the User Manual that is incorporated into the CD for the download package.

Refer to page 24 of this manual for instructions regarding access to PC Interface (Fig. 68).

Fig. 68 - PC Interface

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RESET FEATURE

The Veo 180Nx is configured with a RESET feature that allows data to be cleared, including Nitrogen calculations and Log Mode entries.

⚠️ **WARNING: Reset after a dive and subsequent use for a repetitive dive conducted by the same diver could result in serious injury to or death.**

RESET PROCEDURE

- While the Surface Sequence is scrolling, press and release the button to access the Log Mode displaying the first screen (Dive Identifier) of the most recent dive.
- Press and release the button again to access the second screen (Dive Data) of the most recent dive.
- Press and hold the button for more than 4 seconds while the second Log screen of the most recent dive is being displayed to access the Reset Mode. The graphics **CLR** and **iD** will appear with the Key Code 0101, the first 2 digits flashing (Fig. 69).
- If necessary to change the first 2 digits, press and release the button repeatedly to advance to the correct number.
- Press the button for more than 2 seconds to save the first 2 digit number and advance to the second 2 digits, flashing.
- If necessary to change the second 2 digits, press and release the button repeatedly to advance to the correct number.
- Once the proper Key Code has been entered **(0101)**, pressing the button for more than 2 seconds will shut down the unit (i.e., resetting it). If an incorrect Key Code number has been entered, the unit will revert to the Surface Sequence, resuming previous operation(s).

Fig. 69 - Reset (Clear)

⚠️ **WARNING: Prior to diving with the Veo 180Nx, you must also <u>read and understand the Oceanic Dive Computer Safety and Reference Manual</u>, Doc. No. 12-2262, which provides Important Warnings and Safety Recommendations as well as general product information.**

GENERAL

CARE AND CLEANING

Protect your Veo 180Nx from shock, excessive temperatures, chemical attack, and tampering. Protect the lens against scratches with a transparent Instrument Lens Protector. Small scratches will naturally disappear underwater.

- Soak and rinse the Veo 180Nx in fresh water at the end of each day of diving, and check to ensure that the areas around the low pressure (depth) sensor (Fig. 70a), download Interface Data Port (Fig. 70b), and buttons are free of debris or obstructions.
- To dissolve salt crystals, use lukewarm water or a 50% white vinegar/50% fresh water bath. After removal from the bath, place the unit under gently running water and towel dry before storing.
- Transport your unit cool, dry, and protected.
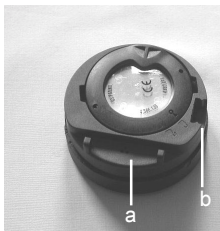
Fig. 70 - Case Back

INSPECTIONS AND SERVICE

Your Veo 180Nx should be **inspected annually** by an Authorized Oceanic Dealer who will perform a factory pre-scribed function check and inspection for damage or wear. To keep the 2 year limited warranty in effect, this inspection must be completed one year after purchase (+/- 30 days). Oceanic recommends that you continue to have this inspection performed every year to ensure it is working properly. The costs of annual inspections are not covered under the terms of the 2 year limited warranty.

To Obtain Service
Take your Veo 180Nx to an Authorized Oceanic Dealer or send it to the nearest Oceanic Regional Distributor Facility.

To return your Veo 180Nx to Oceanic:
• Record all dive data in the Log and/or download the data in memory. All data will be erased when it receives factory service.
• Package it using a protective cushioning material.
• Include a legible note stating specific reason for return, your name, address, daytime phone number, serial number, and a copy of your original sales receipt and Warranty Registration Card.
• Send freight prepaid and insured using a traceable method to the nearest Oceanic Regional Service Facility (see page 78), or to Oceanic USA.
• If shipping to Oceanic USA, obtain an RA (Return Authorization) number by contacting Oceanic at 510/562-0500 or send an e-mail to service@oceanicusa.com.
• Non-warranty service must be prepaid. COD is not accepted.
• Additional information is available at the Oceanic web site OceanicWorldWide.com

NOTE: The procedures that follow must be closely adhered to. Damage due to improper battery replacement is not covered by the unit's 2 year warranty.

MODULE REMOVAL FROM BOOT

If the Module is in a Console, bend the rubber Console Boot back to expose the edge of the Module. If the Boot is flexible enough to permit, you may bend it back far enough to scoop the Module out with your finger. Otherwise, it may be necessary to insert a blunt screwdriver until the tip rests <u>just underneath</u> 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.

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.

CAUTION: The procedure that follows must be closely adhered to. Damage due to improper Battery replacement is not covered by the limited 2 year warranty.

BATTERY REPLACEMENT

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.

To prevent formation of moisture in the Battery Compartment, it is recommended that the Battery be changed in an environment equivalent to the local outdoor temperature and humidity (e.g., do not change the Battery in an air conditioned environment, then take it outside during a hot sunny day).

⚠ **NOTE: If the old Battery can be removed and the new one inserted within 8 seconds, nitrogen calculations and settings, will be retained for repetitive dives.**

Battery Hatch Removal

- Locate the Battery Compartment on the back of the Module.
- While applying steady inward pressure on the center of the Battery Hatch, rotate the Hatch Retaining Ring 10 degrees clockwise using a flat blade screwdriver (Fig. 71) or a Battery Hatch Tool.
- Lift the Hatch Ring up and away from the Housing, or turn the Module over to allow the Ring to drop out into your hand.
- Remove the Battery Hatch.

Fig. 71 - Ring Removal

Battery Removal
- Remove the Retaining Bar located across the lower portion of the Battery (Fig. 72a).
- Remove the Hatch O-ring. DO NOT use tools
- Using care not to damage the Battery Contacts (Fig. 72b/c), slide the Battery up and out of the Battery Compartment.

Inspection
- Closely check all of the sealing surfaces for any signs of damage that might impair proper sealing.
- Inspect the Button, Lens, and Housing to ensure they are not cracked or damaged.
- If it is necessary to clean the Battery Compartment, flush it and all components with a solution of 50% white vinegar and 50% fresh water. Rinse with fresh water, and allow to dry overnight, or blow dry with a hair dryer (set at 'no heat').
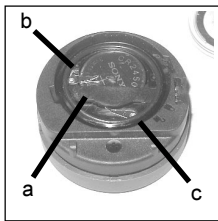

Fig. 72 - Hatch Removed

⚠ **WARNING: If damage or corrosion is found, return your Veo 180Nx to an Authorized Oceanic Dealer, and DO NOT attempt to use it until it has received factory prescribed service.**

Battery Installation
- Slide a new 3 volt type CR2450 Lithium Battery, negative (-) side down into the Battery Cavity. Slide it in from the right side and ensure that it slides under the contact clip on the left rim of the cavity (Fig. 73).
- Orient the Retaining Bar across the lower portion of the Battery and carefully push it down into position (Fig. 74).
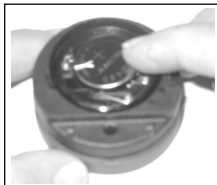
Fig. 73 -Inserting Battery

Battery Hatch and Hatch Retaining Ring Installation
- Replace the Hatch O-ring with a new one which must be a genuine Oceanic part that can be purchased from an Authorized Oceanic Dealer. Use of any other O-ring will void the warranty.
- Lightly lubricate the new Hatch O-ring with silicone grease and place it on the inner rim of the Battery Hatch (Fig. 75). Ensure that it is evenly seated.
- Slide the Hatch Retaining Ring, top portion first (small opening), onto your thumb.
- Carefully place the Battery Hatch (with O-ring) into position on the rim of the Battery Compartment, then press it evenly and completely down into place with your same thumb.
- Maintain the Battery Hatch securely in place and, using your other hand, slide the Retaining Ring down off your thumb and into position around the Battery Compartment.

Fig. 74 - Inserting Retaining Bar
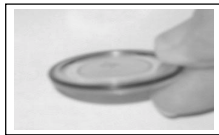
Fig. 75 - O-ring Orientation
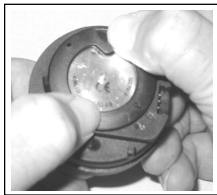
Fig. 76 -Engaging the
Retaining Ring Tabs

- The tabs on the Retaining Ring fit down into the two slots
  located at the 2 and 8 o'clock positions.
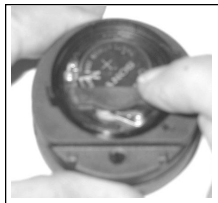- Using your fingers, turn the Ring counter clockwise 5 de-
  grees until the tabs engage (Fig. 76), then tighten it 5 more
  degrees by turning it counter clockwise using the Battery
  Hatch Tool (Fig. 77).
- While tightening the Retaining Ring, exert continuous inward
  pressure on it until it is secured in the proper position. A
  small symbol located on the Ring should be aligned with the
  Locked symbol located on the Housing (Fig. 77a)

Inspection
- Activate the unit and watch carefully as it performs a full
  diagnostic and battery check, and enters Surface Mode.
- Observe the LCD display to ensure it is consistently clear and
  sharp in contrast throughout the screen.
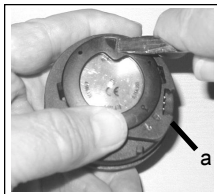
⚠ **WARNING: If there are any portions of the display
missing or appearing dim, or if a Low Battery condi-
tion is indicated, return your Veo 180Nx to an Autho-
rized Oceanic Dealer for a complete evaluation before
attempting to use it.**

Fig. 77 -Tightening the
Retaining Ring

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RETURNING THE MODULE TO BOOT

- If the Boot was fitted with a Spacer and it was previously removed, replace the Spacer into the Boot.
- Orient the Module over the opening in the Boot, and dip the bottom edge into it while pressing the top edge with the palm of your hand. Stop pressing when the bottom edge of the Module has just entered the 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.

ALTITUDE COMPENSATION

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 ambient pressure indicate depth readings shallower than the depth they are actually at.

The Veo 180Nx automatically compensates for decreased ambient pressures for Altitudes between 2,000 (610 meters) and 14,000 feet (4,267 meters). Its program contains a high altitude algorithm that reduces no decompression and oxygen exposure limits to add a larger zone of caution.

The Veo 180Nx senses ambient pressure when it is activated, every 15 minutes while it is activated, or every 30 minutes when it is not activated. At an Altitude of 2,000 feet (610 meters), it will automatically recalibrate itself to measure depth in feet of fresh water rather than feet of sea water. It will then readjust the no decompression and oxygen limits at additional intervals of 1,000 feet (305 meters). Therefore, when returning to lower Altitudes, diving should not be conducted until the unit automatically clears of any residual nitrogen and oxygen loading and resets to operate at the new lower Altitude.

⚠️ **WARNING: The Veo 180Nx will not sense ambient pressures or provide Altitude compensation when it is wet. DO NOT dive at any different Altitude until the unit shuts off and is reactivated at the new Altitude.**

If the unit is activated at elevations higher than 14,000 feet (4,267 meters), it will perform a diagnostic check followed by immediate shutdown.

SPECIFICATIONS

CAN BE USED AS
- Air Computer
- Nitrox Computer
- Digital Depth Gauge/Timer

NO DECOMPRESSION MODEL
Basis:
- Modified Haldanean Algorithm
- 12 tissue compartments

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

Performance:
- Tissue compartment halftimes (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 ft (3, 6, 9, 12, 15, 18 m)

Altitude Algorithm:
- Based on NOAA tables

Oxygen Exposure Limits:
- Based on NOAA tables

OPERATIONAL MODES
- Activation/Diagnostic
- Serial Number
- Surface
- Time to Fly Countdown
- Desaturation Countdown
- Pre Dive Planning Sequence (30 - 190 ft / 9 - 57 m)
- Dive Log (Date / Time, Nitrogen, & Oxygen)
- Reset

- Set FO_2 (Air, 21 to 50%)
- PC Interface (to Download data)
- Set Units of Measure (Imperial / Metric)
- Set Hour Format (12 / 24)
- Set Time (Hour, Minute)
- Set Date (Year, Month, Day)
- Set PO_2 Alarm (1.20 to 1.60 ATA)
- Set FO_2 50% Default (On/Off)
- Set Digital Gauge Mode (On / Off)
- Set Water Activation (On / Off)

SPECIFICATIONS (CONTINUED)

OPERATIONAL MODES (continued)

- No Decompression Dive:
  - #1 (Current Depth, Dive Time Remaining, Bar Graphs)
  - #2 (Current Depth, Dive Time Remaining, Max Depth, Elapsed Dive Time, Bar Graphs)
  - #3 (Current Depth, Dive Time Remaining, Temperature, Time of Day, Bar Graphs)
  - #4 -if nitrox dive (Current Depth, Dive Time Remaining, Current PO2, Bar Graphs)
  - Safety Stop - for dives deeper than 30 feet (9 meters).
- Decompression Dive:
  - #1 - Default (Current Depth, Stop Depth / Time, Total Ascent Time, Bar Graphs)
  - #2 (Current Depth, Stop Depth / Time, Total Ascent Time, Max Depth, Elapsed Dive Time, Bar Graphs)
  - #3 (Current Depth, Temperature, Time of Day, Total Ascent Time, Bar Graphs)
  - #4 - if nitrox dive (Current Depth, Current PO2, Total Ascent Time, Bar Graphs)
- Violation (Conditional, Delayed, & Immediate/Gauge)
- High PO2 (1.20 to 1.60 ATA)
- High Oxygen Accumulation (per dive / 24 hr)

DISPLAY RANGE/RESOLUTION

Numeric Displays:	Range:	Resolution:
Dive Number	0 - 24	1
Depth	0 - 399 ft (0 - 120 m)	1 ft (.1 m / 1 m > 99.9 m)
Maximum Depth	399 ft (120 m)	1 ft (.1 m / 1 m > 99.9 m)
FO2 Set Point	Air, 21 - 50 %	1 %
PO2 Value	0.00 - 5.50 ATA	.01 ATA
Dive Time Remaining	0:00 - 9:59 hr:min	1 minute
Total Ascent Time	0:00 - 9:59 hr:min	1 minute
Decompression Stop Time	0:00 - 9:59 hr:min	1 minute
Elapsed Dive Time	0:00 - 9:59 hr:min	1 minute
Surface Time	0:00 - 9:59 hr:min	1 minute
	(> 9:59 hr:min SI will be displayed as Hours only 10-, 11-, 12-, etc.)	
Dive Log Surface Interval	0:00 - 25:59 hr:min	1 minute

DISPLAY RANGE/RESOLUTION (continued)

Numeric Displays:	Range:	Resolution:
• Time to Fly	23:50 - 0:00 hr:min*	1 minute
	(* starting 10 min after the dive)	
• Time to Desaturate	23:50 (maximum) - 0:00 hr:min*	1 minute
	(* starting 10 min. after the dive)	
• Temperature	0 to 99°F (-9 to 60°C)	1°

Special Displays:	Occurrence
• Diagnostic Display	After Manual Activation
• Serial Number Display	After Diagnostics (if the Button is held depressed)
• Out of Range (- - -)	>330 feet (>99.9 meters)
• Gauge Mode Countdown Timer	23:50 to 0:00 hr:min (after violation)

BAR GRAPHS

Tissue Loading Bar Graph	segments		**Oxygen (O2) Bar Graph:**	segments
• No Decompression zone (green)	5		• Normal zone (green)	3
• No Deco Caution zone (yellow)	2		• Caution zone (yellow)	1
• Decompression Warning zone (red)	1		• Danger zone (red)	1

Variable Ascent Rate Indicator: 60 feet (18 m) & Shallower   Deeper than 60 feet (18 m)

	segments	feet/min	meters/min	segments	feet/min	meters/min
	0	0 - 10	0 - 3	0	0 - 20	0 - 6
• Normal Zone (Green)	1	11 - 25	3.5 - 7.5	1	21 - 50	6.5 - 15
• Caution Zone (Yellow)	2	26 - 30	8 - 9	2	51 - 60	15.5 - 18
• Too Fast Zone (Red - flashing)	3	> 30	> 9	3	> 60	> 18

OPERATIONAL PERFORMANCE

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

Dive Counter:
- Displays Dives #1 to 24, 0 if no dive made yet.
- Resets to Dive #1, upon reactivation after having shut off.

Dive Log Mode:
- Stores 24 most recent dives in memory for viewing
- After 24 dives, adds 25th dive in memory and deletes the first dive

Altitude:
- Operational from sea level to 14,000 feet (4,267 meters) elevation
- Samples Ambient Pressure every 30 minutes when not activated, when manually activated, and every 30 minutes while activated. Does not sample Ambient Pressure while it is wet.
- Adjusted No Decompression and O2 Limits and recalibration of depth readings at elevations between 2,000 feet (610 meters) and 14,000 feet (4,267 meters) at intervals of 1,000 feet (305 meters).

Power:
• Battery	1 - 3 vdc, type CR2450 Lithium battery
• Shelf life	Up to 5 years
• Replacement	User replaceable (annual recommended)
• Life expectancy	100 dive hours (if 1 - 1 hour dive per dive day) to over 300 dive hours (if 3 - 1 hour dives per dive day)

Battery Status Indicator:	segments displayed	estimated power remaining
	all	26 to 100%
	1	25% or less

SPECIFICATIONS (CONTINUED)

OPERATIONAL PERFORMANCE (continued)

Activation:
- Manual - push button (recommended)
- Automatic - by immersion in water (if set ON)
- H2O graphic indicates Wet Contacts are bridged (unit must be dried prior to transport or storage)
- Cannot be manually activated deeper than 4 feet (1.2 m), if the Water Activation feature is set OFF.
- Cannot be activated at elevations higher than 14,000 feet (4,267 m)

Shutoff:
- Automatically shuts off if no dive is made within 120 minutes after initial activation. Reactivation required.
- Automatically shuts off 24 hours after last dive (will reactivate if the H2O graphic is displayed).
- Cannot be shut off manually.

Setting FO2:
- Automatically set for 'Air' upon activation
- Remains set for Air unless an FO2 numerical value is set
- Nitrox set points from 21 to 50 %
- If set for 21%, remains set for 21% until changed
- If set for >21%, it reverts to 50% 10 minutes after the dive, if the FO2 Default is ON. If the FO2 Default is OFF, the value will remain at the value set for that activation period.

Operating Temperature:
- The Veo 180Nx will operate in almost any **temperature** diving **environment** in the world, between 32 °F and 140 °F (0 and 60 °C).   At extremely low temperatures, the LCD may become sluggish, but this will not affect it's accuracy. If stored or transported in extremely low temperature areas (below freezing), you should warm the module and its battery with body heat before diving.

ACCESSORIES (optional items available from your Authorized Oceanic Dealer):
- Lens Guard - covers lens face, prevents scratches
- OceanLog PC download package (hardware and software)
- Battery Kit - includes 1 battery, 1 battery hatch o-ring, silicone grease

NOTES

NOTES

OCEANIC WORLD WIDE

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Fax: 510/569-5404
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E-mail: office@oceanic.de

Oceanic South Europe - Genova, Italy
Tel: 0039-010-834-51 Fax: 0039-010-834-52-50
E-mail: info@oceanicse.it

Oceanic SW, Ltd - Devon, United Kingdom
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E-mail: info@oceanicuk.com

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E-mail: oceanichi@oceanicusa.com

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E-mail: info@oceanicasia.com.sg

Oceanic Japan - Yokohama, Japan
Tel: 045-575-6671 Fax: 045-575-6673
E-mail: oceanic@gol.com

Oceanic New Zealand
Wellington, New Zealand
Tel: 64-4-472-5335   Fax: 64-4-472-5334

SERVICE RECORD

Serial Number _____

Date of purchase _____

Purchased from _____

Below to be filled in by an Authorized Oceanic Dealer:

Date	Service Performed	Dealer / Technician

OCEANIC®