PROPLUS X

DIVE COMPUTER

OPERATING MANUAL

CONTENTS

NOTICES

LIMITED TWO-YEAR WARRANTY

For details, refer to the Product Warranty Registration Card provided. Register on line at www.OceanicWorldwide.com

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ProPlus X Operating Manual, Doc. No. 12-5655
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San Leandro, CA USA 94577

TRADEMARK, TRADE NAME, AND SERVICE MARK NOTICE

PATENT NOTICE

U.S. Patents have been issued, or applied for, to protect the following design features:
Systems and Methods for Dive Computers with Remote Upload Capabilities (U.S. Patent no. 9,443,039).

DECOMPRESSION MODEL

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

Welcome

to

OCEANIC

and

THANK YOU

for choosing the

ProPlus X

GETTING STARTED

BASICS

The ProPlus X is an easy to use dive computer utilizing a four button interface. Divers may choose between either Dive or Gauge Mode. Though the ProPlus X is easy to use, you will get the most out of your new ProPlus X if you take some time to familiarize yourself with its displays and operation. Information has been organized into easy to follow sections to aid you in learning all you need to know. There is also a glossary at the end of this guide for any terms that may sound unfamiliar to you.

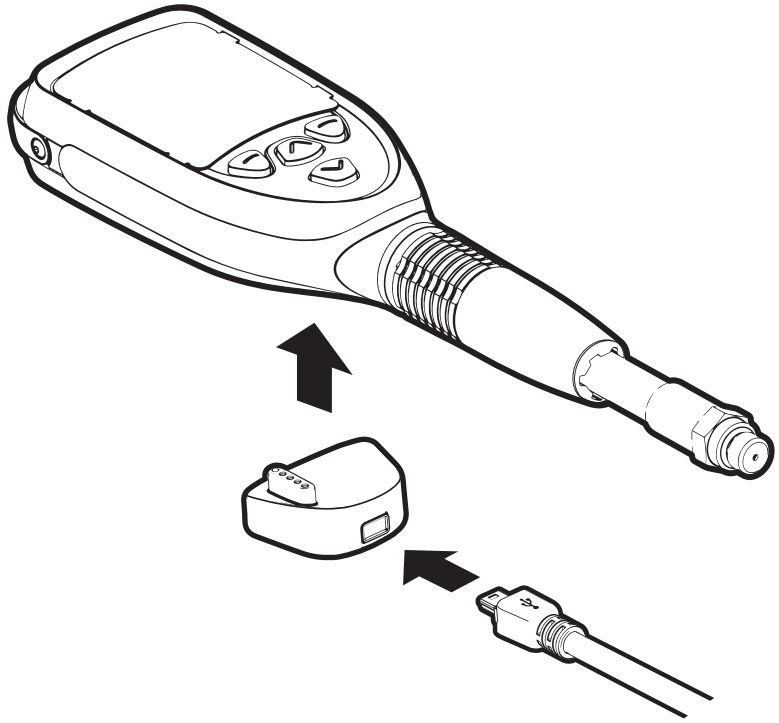
POWER

The ProPlus X housing contains a rechargeable lithium battery similar to that of a cell phone. The level of battery charge is displayed on the primary screens. Charge the battery fully before first use. With a full charge you can expect to average 55-60 dive hours at 60% brightness (35-40 hours at 100% brightness) before needing to recharge.

Keep in mind that the ProPlus X screen is the biggest draw of power. Using full brightness settings will reduce the interval between charges. This setting can be fully customized to your preferences in the ProPlus X settings. Additionally, the ProPlus X screen will sleep after 2 minutes of inactivity to conserve power. Pressing any button will wake the screen up again.

CHARGING THE BATTERY

Use the included adapter and cable to charge the battery. This process will take 3-4 hours for a full charge.



MAINTAINING THE BATTERY

Your ProPlus X battery requires proper care and storage to obtain maximum battery lifespan. The battery will gradually lose capacity over its lifespan, and the length of time it will power the ProPlus X will decrease. Estimated life of the battery is two to three years or 300 to 500 charge cycles, whichever comes first. If a battery is stored or otherwise unused for an extended period, charge the battery to at least 50% every 3 months. Always store the battery in a cool, dry place, away from direct sunlight and sources of heat.

ACTIVATION

To activate the ProPlus X, press and release any button. The ProPlus X will also turn on if its metal contacts become wet and you descend below 5 ft (1.5 m) for 5 seconds.

- Upon activation, the unit will display the Welcome screen and perform a diagnostic check. The ProPlus X checks the display and voltage at this time to ensure that everything is within tolerance.
- It will also check ambient barometric pressure, and calibrate present depth as 0 ft (m). When at 3001 ft (916 m), or higher, it will adjust for the higher altitude.
- After the Diagnostic check, the ProPlus X will display the Home Menu (or Norm Main if wet activation).

△ **NOTE: The ProPlus X has no off button or command. If no buttons are pressed or dives made, the unit will enter sleep mode after 2 minutes. Within 2 hours of no buttons being pressed or dives made, the unit will shut itself off. However, the ProPlus X will stay on for a 24 hour period after a dive, counting down Time To Fly and Desat (desaturation) time if a dive has been made.**

QUICK DISCONNECT HOSE

The Quick Disconnect allows for convenient removal and storage of your ProPlus X console.

Removal

- Turn the locking collar counterclockwise to loosen.
- Then push the hose fitting towards the ProPlus X and turn it counterclockwise ¼ turn. The hose will release from the console.



Assembly

- Visually inspect the fittings and connection O-ring for damage, corrosion, or deterioration.

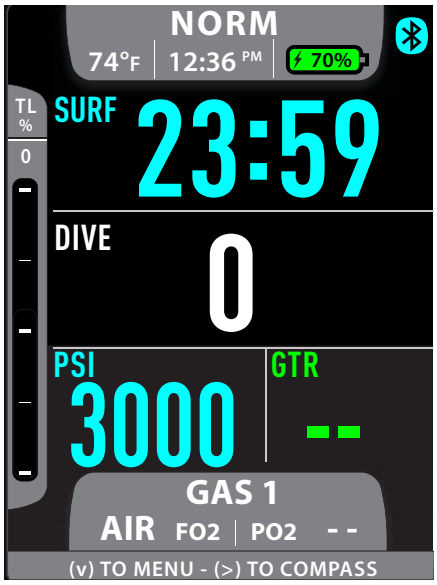
⚠ **WARNING: If damage, corrosion, or deterioration is found, return your ProPlus X to an authorized Oceanic dealer, and DO NOT attempt to use it until it has received factory prescribed service.**

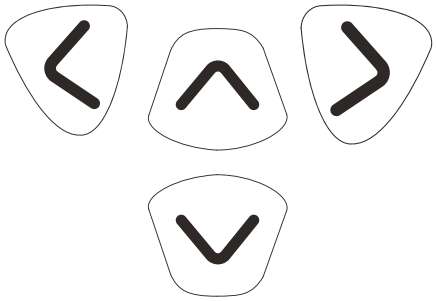
- Line up the Quick Disconnect Hose fitting with the male fitting on the ProPlus X console.
- Then push the two fittings together while turning clockwise ¼ turn.
- Secure the hose by tightening the locking collar clockwise.



DISPLAY ICONS

SYMBOL	MEANING
70%	BATTERY LEVEL (0 - 100%)
	BLUETOOTH IS ON
SURF	SURFACE TIME
FT OR M	DEPTH (FEET OR METERS)
DIVE	DIVE NUMBER
PSI OR BAR	GAS PRESSURE
GTR	GAS TIME REMAINING
NDC	NO DECOMPRESSION TIME
OTR	OXYGEN TIME REMAINING
EDT	ELAPSED DIVE TIME
DS	DEEP STOP TRIGGERED
TL	TISSUE LOADING BAR GRAPH
AR	ASCENT RATE
RUN	RUN TIMER (GAUGE MODE)
DSAT	DSAT ALGORITHM ACTIVE
CF	CONSERVATIVE FACTOR ACTIVE





BUTTONS
The ProPlus X utilizes 4 control buttons Up, Down, Left, and Right. They allow you to select mode options and access specific information. They are also used to enter settings and acknowledge the audible alarm.

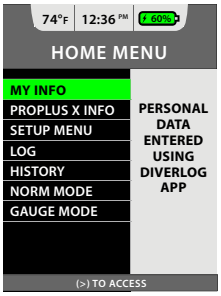
Pressing different combinations of these buttons will navigate through different menus and options of the ProPlus X. In some instances the buttons need to be pressed longer. The symbols below will be used throughout this manual to illustrate whether the button needs a short or long press.

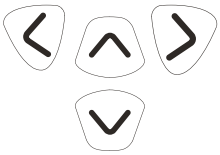
SYM-BOL	MEANING
	PRESS BUTTON LESS THAN 2 SECONDS
	HOLD BUTTON GREATER THAN 2 SECONDS

HOME MENU

HOME MENU

This is a base menu that provides access to general items common to all the operating dive modes. When the ProPlus X is activated manually, this is the first screen you will see after the Welcome screen. When ready to dive, select Norm or Gauge Mode from the menu.

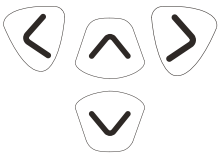




CONTROLS	
^	scroll up
v	scroll down
>	to access

MY INFO

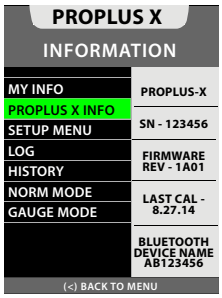
This screen displays personal information. Information must be entered using the Diverlog interface.

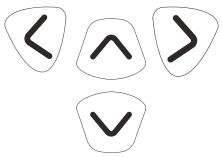


CONTROLS	
<	back to Home Menu

PROPLUS X INFO

Information displayed on the DC Info screen should be recorded and kept with your sales receipt. It will be required in the event that your ProPlus X requires factory service.

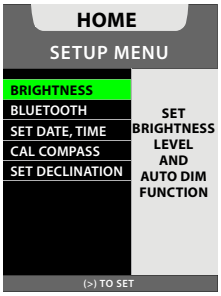


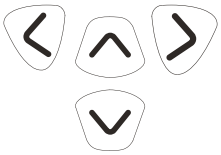


CONTROLS	
<	back to Home Menu

SETUP MENU

This menu allows you to adjust the Brightness, Bluetooth®, Set Date-Time, Calibrate Compass, and Set Declination features.

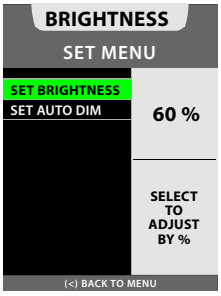


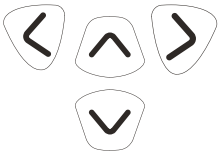


CONTROLS	
^	scroll up
v	scroll down
<	back to Home Menu
>	to set

1: BRIGHTNESS SET MENU

This submenu allows you to set the Brightness level and a power saving Auto Dim feature.



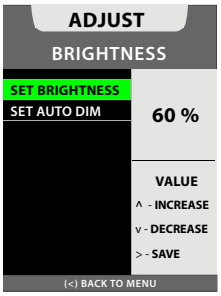


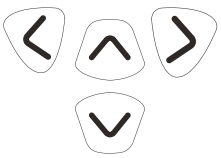
CONTROLS	
^	scroll up
v	scroll down
<	back to Setup Menu
>	to set

A: Set Brightness

The level (%) of screen brightness can be adjusted to optimize screen appearance in different lighting conditions or to conserve battery power.

⚠ **NOTE: During a Low Battery Warning or Alarm condition, the level will be limited to 60% maximum.**

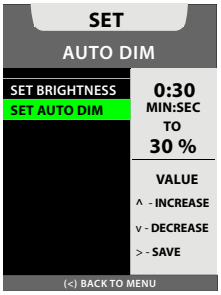


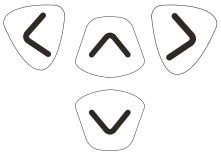


CONTROLS	
^	increase value
v	decrease value
<	back to Brightness Set Menu
>	to save value

B: Set Auto Dim

While underwater the ProPlus X screen dims after a set time interval from the last button press. This is done to reduce distractions during the dive and to conserve power. The ProPlus X allows you to customize the time interval and degree of dimming. This feature may also be turned off.



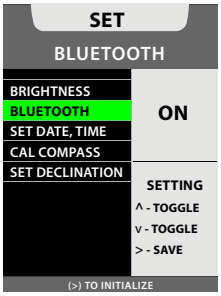


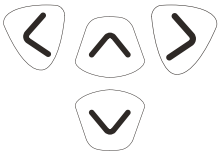
CONTROLS	
^	increase value
v	decrease value
<	back to Setup Menu
>	to save value

2: BLUETOOTH

Within this screen the Bluetooth® may be turned on or off. When Bluetooth® is turned on it will operate in sniffing mode (searching for compatible devices) while on the surface. Comunication with your ProPlus X must be initiated with your traditional computer or mobile device using Diverlog software.

NOTE: When Bluetooth® is ON the Bluetooth® icon will displayed while on the surface. Bluetooth® is temporarily deactivated when a dive is started and returns to "sniffing" mode when the ProPlus X returns to Surface Mode after a dive.

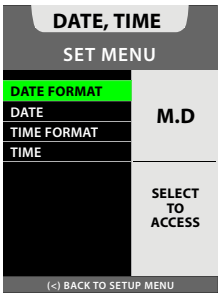


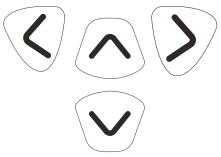


CONTROLS	
^	toggle setting
v	toggle setting
<	back to Brightness Set Menu
>	to save setting

3: DATE, TIME SET MENU

Within this menu you can set the formats, date, and time of day.

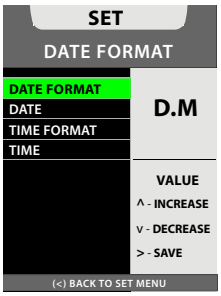


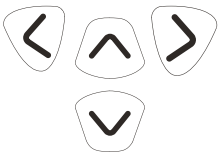


CONTROLS	
^	scroll up
v	scroll down
<	back to Setup Menu
>	to set

A: Set Date Format

You can choose between D.M (Day Month) and M.D (Month Day).

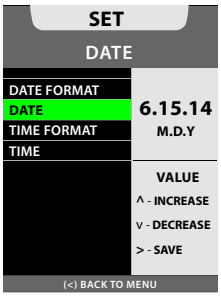


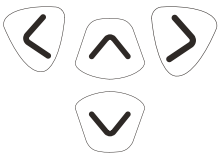


CONTROLS	
^	toggle setting
v	toggle setting
<	back to Set Menu
>	to save setting

B: Set Date

Set the year, month, and day in order. The corresponding digit will flash, allowing it to be set.

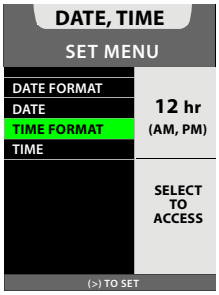


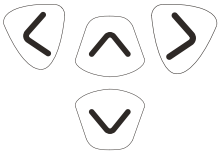


CONTROLS	
^	increase value
v	decrease value
<	back to Set Menu
>	to save value

C: Set Time Format

Choose your preferred hour format.

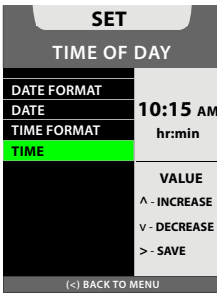


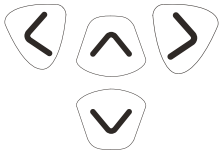


CONTROLS	
^	toggle setting
v	toggle setting
<	back to Set Menu
>	to save setting

D: Set Time

Set the time of day.





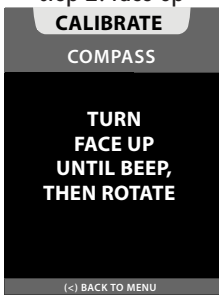
CONTROLS	
^	increase value
v	decrease value
<	back to Set Menu
>	to save value

4: CALIBRATE COMPASS

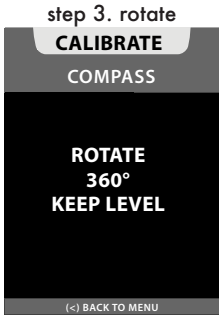
You may need to calibrate the compass from time to time to compensate for any magnetic changes (new dive location or other surrounding changes). Follow the prompts to calibrate the compass. The ProPlus X will then indicate if the calibration passed or failed.

step 1. face down

step 2. face up

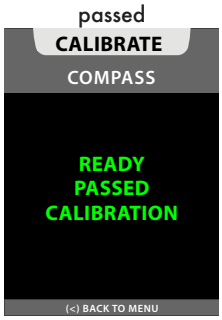


step 3. rotate

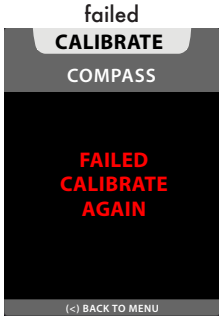


status

passed



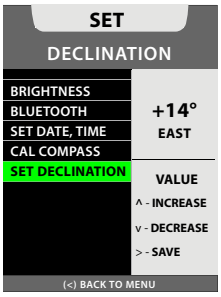
failed

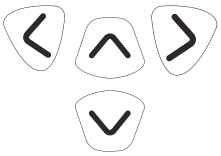


5: SET DECLINATION

Magnetic declination or variation measures the angle between the Earth's magnetic north and true north. The declination value for any region can be found on current geographical charts. By correcting for declination, you can achieve a more accurate compass reading.

NOTE: Magnetic north changes over time; so use only current geographical charts to obtain the declination value for any geographical region.





CONTROLS	
^	increase value
v	decrease value
<	back to Setup Menu
>	to set

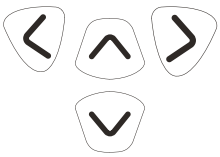
LOG

The log stores Information from Norm or Gauge Mode dives for viewing.

- If no dives are recorded, the message NO DIVES RECORDED YET will be displayed.
- There is a maximum 24 entries in the Log.
- After exceeding 24 dives, the most recent dive is stored while the oldest is deleted.
- Dives are numbered starting with 1 each time Norm (or Gauge) mode is activated. After 24 hours elapse with no dive, the first dive of the next period of operation is called Dive #1.
- In the event that elapsed dive time exceeds 599 min, the data at the 599 interval is recorded in the Log upon surfacing of the unit.

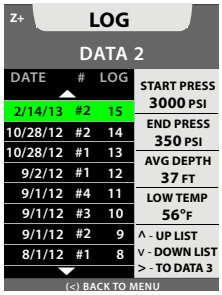
NOTE: New data will automatically overwrite the oldest data in memory when the memory becomes full. If you do not remember to log or download your dives, they will be lost when the memory overwrites. See the PC Download section of this manual for instructions on downloading dives.

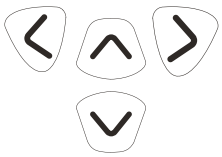
Data 1



CONTROLS	
^	scroll up
v	scroll down
<	back to Home Menu
>	to Log Data 2

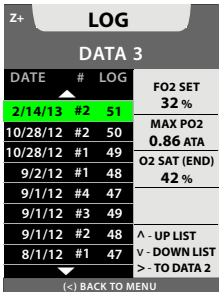
Data 2



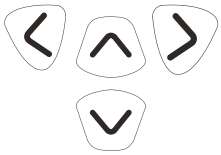


CONTROLS	
^	scroll up
v	scroll down
<	back to Log Data 1
>	to Log Data 3

Data 3



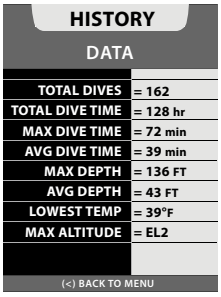
NOTE: If the record is a Gauge dive, the message GAUGE DIVE NO DATA will be displayed on the Log Data 3 screen.



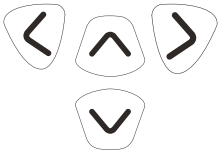
CONTROLS	
^	scroll up
v	scroll down
<	back to Log Data 2
>	back to Log Data 1

HISTORY

History is a summary of basic data recorded during all Norm and Gauge dives.



CONTROLS	
<	back to Home Menu



NORM MODE

Select this option to go to the Norm Main screen.

GAUGE MODE

Select this option to go to the Gauge Main screen.

DIVE FEATURES

DTR (DIVE TIME REMAINING)

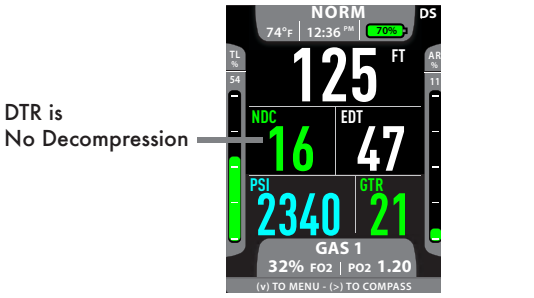
The ProPlus X constantly monitors No Decompression status and O2 Accumulation, and will display whichever time is the least amount available as DTR on the No Decompression Dive Main screen. The time being displayed will be identified by the NDC (no decompression) or OTR (Oxygen Time Remaining) icons.

NO DECOMPRESSION

No Decompression is the maximum amount of time that you can stay at your present depth before entering decompression. It is calculated based on the amount of nitrogen absorbed by 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 compartment is closest to this maximum level is the controlling compartment for that depth. Its resulting value NDC (no decompression) will be displayed. It will also be displayed graphically as the Tissue Loading Bar Graph, see Bar Graphs later in this section.

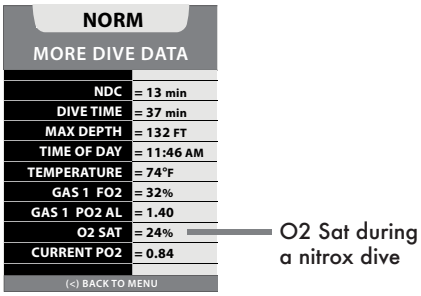
As you ascend, the Tissue Loading Bar Graph will recede as control shifts to slower compartments. This is a feature of the decompression model that is the basis for multilevel diving, one of the most important advantages that Oceanic dive computers offer.



OTR (OXYGEN TIME REMAINING)

When set for nitrox operation, O2 SAT (Oxygen Saturation) during a dive is displayed on the More Dive Data screen as a percentage of allowed saturation identified by O2 SAT. The limit for O2 SAT (100%) is set at 300 OTU (Oxygen Tolerance Units) per dive or 24 hour period. See the chart at the back of this manual for specific times and allowances. O2 SAT and OTR (Oxygen Time Remaining) values are inversely related; as the O2 SAT value increases the OTR (Oxygen Time Remaining) value decreases.

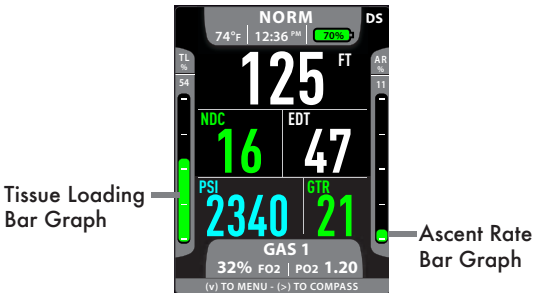
When the OTR (Oxygen Time Remaining) value becomes less than the No Decompression calculations for the dive, DTR (Dive Time Remaining) will be controlled by O2 SAT and the OTR (Oxygen time Remaining) value will be displayed as the DTR on the Dive Main screen, identified by the OTR icon.



BAR GRAPHS

The ProPlus X features two specific bar graphs.

1. The one on the left represents nitrogen loading. It is referred to as TL (Tissue Loading) Bar Graph.
2. The one on the right represents ascent rate. It is referred to as the AR (Ascent Rate) Bar Graph.

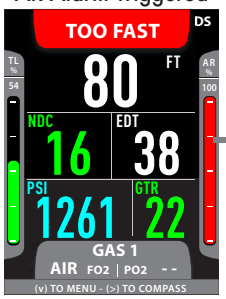


ASCENT RATE BAR GRAPH

The AR (Ascent Rate) Bar Graph provides a visual representation of ascent speed (i.e., an ascent speedometer). When the ascent is faster than the recommended 30 fpm (9 mpm), the bar graph will flash red until the ascent is slowed.

% OF BAR GRAPH	MEAN-ING
0 - 70%	Normal Zone
71 - 99%	Caution Zone
100%	Too Fast

AR Alarm Triggered



TISSUE LOADING BAR GRAPH

The TL (Tissue Loading) Bar Graph represents your relative No Decompression or Decompression status. As your depth and elapsed dive time increase, the bar graph will grow in length, shift from green to amber, and ultimately to red (indicating a Decompression condition). As you ascend the bar graph recedes, indicating that additional No Decompression time is available. The ProPlus X monitors multiple theoretical nitrogen compartments simultaneously. The TL Bar Graph displays the one that is in control of your dive at any given time.

DUAL ALGORITHM®

The ProPlus X is configured with 2 algorithms which allows you to choose which set of NDLs (No Decompression Limits) will be used for nitrogen/oxygen calculations and displays relating to Plan Mode and DTR (Dive Time Remaining) for NORM dives.

You can select DSAT or Z+ prior to new dives. Also, the selection can be changed after dives once Desaaturation Time decreases to 0:00, otherwise the
selection will lock in for 24 hours after the last dive.

DSAT was the original standard used by Oceanic in all of its dive computers until the dual function was implemented several years ago. It features NDLs
that are based on exposures and test data which also formed validation for the PADI RDP. It imposes restrictions for repetitive Decompression dives which are considered more risky than general No Deco dives.

Z+ (the Pelagic Z+ algorithm) performance is based on Buhlmann ZHL-16c. It features NDLs that are considerably more conservative than the DSAT version especially at shallower depths.

To create even greater margins of safety with respect to decompression, a Conservative Factor as well as Deep and Safety Stops are available and can be activated for NORM No Decompression dives.

CONSERVATIVE FACTOR

When the CF (Conservative Factor) is set On, the dive time remaining, No Decompression/Oxygen Time Remaining, which are based on the algorithm and used for N_2/O_2 calculations and displays relating to Plan Mode, will be reduced to the values available at the altitude level that is 3,000 ft (915 m) higher than the actual altitude at activation. Refer to the charts in the back of this manual for dive times.

DEEP STOP

When the DS (Deep Stop) selection is set ON, it will trigger after descending deeper than 80 ft (24 m). The ProPlus X then calculates (continually updating) a Stop Depth equal to ½ the Max Depth.

⚠ NOTE: The Deep Stop feature only works in Norm mode while within No Decompression times.

- While 10 ft (3 m) deeper than the calculated Deep Stop, you will be able to access a Deep Stop Preview screen that will display the current calculated Deep Stop Depth/Time.
- Upon initial ascent to within 10 ft (3 m) below the calculated Stop Depth, a Deep Stop screen displaying a Stop Depth at ½ the Max Depth will appear with a countdown timer beginning at 2:00 (min:sec) and counting down to 0:00. If you descend 10 ft (3 m) below, or ascend 10 ft (3 m) above, the calculated Stop Depth for 10 seconds during the countdown, the No Decompression Main will replace the Deep Stop Main display and the Deep Stop feature will be disabled for the remainder of that dive. There is no penalty if the Deep Stop is ignored.
- In the event that you enter Decompression, exceed 190 ft (57 m), or a High O2 SAT (Oxygen Saturation) condition, ≥ 80%, occurs, the Deep Stop will be disabled for the remainder of that dive.
- The Deep Stop is disabled during a High PO2 Alarm condition, ≥ set point.

SAFETY STOP

Upon ascent to within 5 ft (1.5 m) deeper than the SS (Safety Stop) depth set for 1 second on a No Decompression dive in which depth exceeded 30 ft (9 m) for 1 second, a beep will sound and a Safety Stop at the depth set will appear on the Dive Main display with a countdown beginning at the Safety Stop time set and counting down to 0:00.

- If the Safety Stop was set for OFF, the display will not appear.
- In the event that you descend 10 ft (3 m) deeper than the Stop Depth for 10 seconds during the countdown, or the countdown reaches 0:00, the No Decompression Main screen will replace the Safety Stop Main screen which will reappear upon ascent to within 5 ft (1.5 m) deeper than the Safety Stop depth set for 1 second.
- In the event that you enter Decompression during the dive, complete the Decompression obligation, then descend below 30 ft (9 m); the Safety Stop Main will appear again upon ascent to within 5 ft (1.5 m) deeper than the Safety Stop depth set for 1 second.
- If you ascend to 3 ft (0.9 m) of the surface for 1 second, the Safety Stop will be canceled for the remainder of that dive.
- There is no penalty if you surface prior to completing the Safety Stop or choose to ignore it.

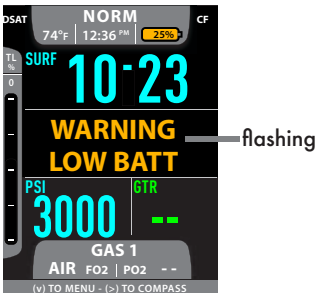
LOW BATTERY

⚠ **WARNING: DO NOT dive with a low battery. Charge the battery before diving if your ProPlus X indicates the Battery Low Warning or Alarm.**

Warning Level

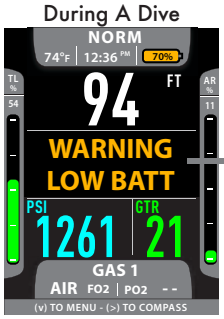
- When capacity drops to 25% of full charge, the battery icon is to change to the warning color and flash together with the graphics WARNING LOW BATT for 10 seconds while the audible sounds then the icon is to be solid and the graphics removed.
- All functions shall continue to be available on the surface and during dives.

On The Surface



flashing

During A Dive



flashing

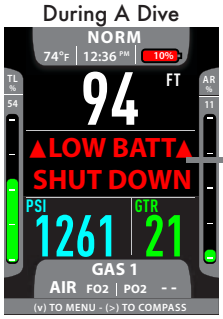
Alarm Level

- When capacity drops to 10% of full charge, the battery icon is to change to the alarm color and flash together with the graphics LOW BATT SHUTDOWN (with Up Arrows during dives), then the unit is to shut off after 5 seconds (even during dives).
- All functions are to be disabled and the unit is not to activate until the battery is charged.

On The Surface

flashing

During A Dive



flashing

AUDIBLE ALARM

While operating in Norm or Gauge mode, the audible alarm will emit 1 beep per second for 10 seconds when alarms strike. During that time, the audible alarm can be acknowledged and silenced by pressing the UP button.

The audible alarms will not be active if the audible alarm is set to OFF (a Set Alarms setting).

The following situations shall activate the Alarm (1 beep per sec for 10 sec):

- Conditional Violation.
- Delayed Violations 1, 2, 3.
- Ascent Rate too fast, 100% bar graph (red color).
- PO2 increases to .20 < Alarm Set Point and at the Alarm Set Point.
- Depth Alarm.
- TL Bar Graph Alarm.
- O2 Sat at 80% and 100%.
- Entry into Decompression.
- Elapsed Dive Time Alarm.
- Dive Time Remaining Alarm.
- Gas Time Remaining decreases to 5 minutes and again at 0 minutes.
- Turn Pressure Alarm.
- End Pressure Alarm.
- Gas Switch would expose the diver to PO2 => 1.60 ATA.

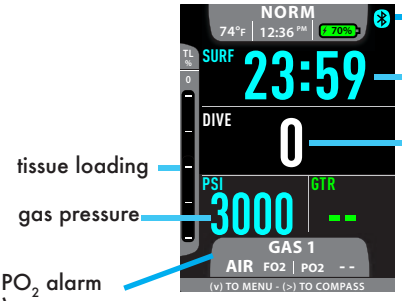
The following situations shall activate the 3 short beep Alarm:

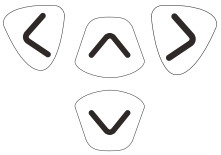
- Ascent Rate (warning), 71-99% bar graph (amber color).

NORM SURFACE MODE

ON THE SURFACE BEFORE A DIVE

The Norm Surface Main screen will display the SURF (Surface Time), dive number, gas pressure, any residual nitrogen loading, and the selected FO_2 of the breathing gas. The surface time displayed is the time since activation or the surface interval after a dive.

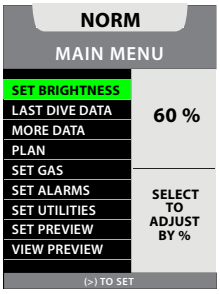


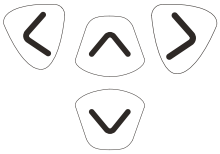


CONTROLS	
⌄	to Main Menu
<	to Home Menu
>	to Compass

NORM MAIN MENU

To view dive data, plan dives, or change settings you must navigate through the Norm Main Menu. Some screens simply display data. While other screens are lead-ins to sub menus and settings. Press the Right button to choose menus or options from the Main Menu when available.



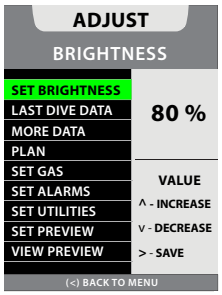


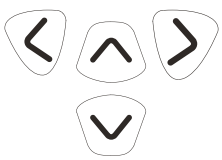
CONTROLS	
^	scroll up
⌄	scroll down
<	to Surface Main
>	to access

SET BRIGHTNESS

The level (%) of screen brightness can be adjusted to optimize screen appearance in different lighting conditions or to conserve battery power.

△ **NOTE: During a Low Battery Warning or Alarm condition, the level will be limited to 60% maximum.**

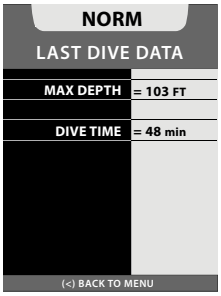




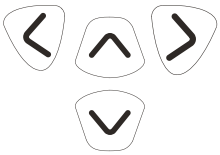
CONTROLS	
^	increase value
⌄	decrease value
<	to Main Menu
>	to save value

LAST DIVE DATA

This screen displays essential data from the last dive. If there has been no dive within the current activation cycle, the the max depth and elapsed dive time will be displayed as zero.

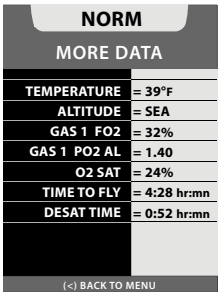


CONTROLS	
<	to Main Menu

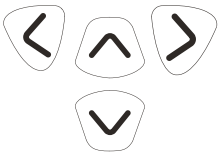


MORE DATA

This screen as the name implies displays more dive data.



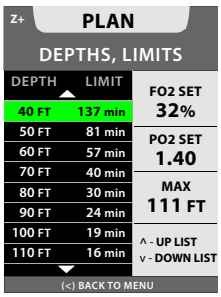
CONTROLS	
<	to Main Menu



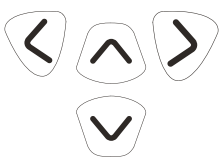
PLAN

This mode calculates dive depth and time limits. To do so, it accounts for any residual nitrogen, oxygen, surface intervals, the programmed gas mix, and PO2 alarm setting. Either NDC (No Decompression) or OTR (Oxygen Time Remaining) limits are displayed, depending on whether nitrogen or oxygen levels will be the limiting factor. The time limit will display in minutes.

⚠ **NOTE: Depths exceeding the MOD (Maximum Operating Depth), if nitrox, or that have less than 1 minute allowed dive time will not be displayed.**



CONTROLS	
^	scroll up
v	scroll down
<	to Main Menu



SET GAS

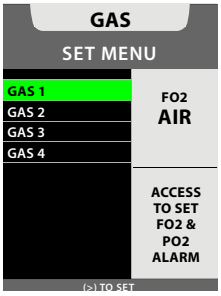
Within this submenu you can change the available gas mixes from OFF, AIR, or to any nitrox mix between 21 - 100 FO2 (% O2). Nitrox mixes are displayed with their corresponding MOD (Maximum Operating Depth) and the current PO2 Alarm setting for the selected gas. Default settings are FO2 Air with no PO2 alarm value for Gas 1, and OFF for Gas 2, 3, and 4. Settings revert to the defaults when 24 hours elapse without conducting a dive. If you save a nitrox mix value for any gas, the ProPlus X will highlight the PO2 alarm value allowing it to be set. Additionally, the ProPlus X allows for each gas (1 - 4) to have individual PO2 alarm settings.

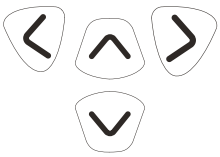
NOTE: Once any Gas is set for Nitrox, any other Gas set for AIR will automatically be set to 21%. The AIR option will not be displayed as an FO2 setting until 24 hours elapse after the last dive.

NOTE: When FO2 is set for AIR, oxygen related data (such as PO2, % O2) will not be displayed at any time during the dive, on the surface, or in Plan Mode. Though these oxygen values will be tracked internally for use in any subsequent nitrox dives.

NOTE: Gas 1 cannot be set to OFF.

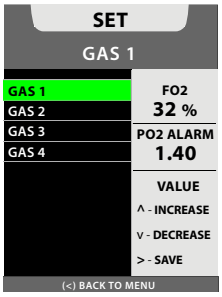
Gas Set Menu

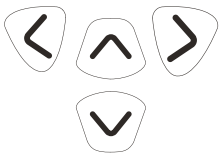




CONTROLS	
^	scroll up
v	scroll down
<	to Main Menu
>	to set gas

Set FO2 then PO2 Alarm

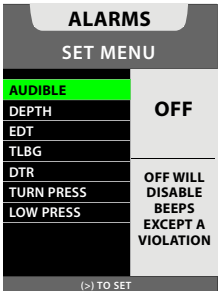


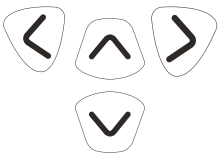


CONTROLS	
^	increase value
v	decrease value
<	to Gas Set Menu
>	to save value

SET ALARMS

Within this submenu you can customize the following seven alarm settings. When one of these alarms is triggered the critical data will flash on the Dive Main screen.

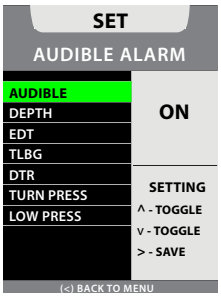


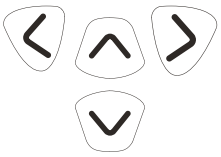


CONTROLS	
^	scroll up
v	scroll down
<	to Main Menu
>	to set

1: AUDIBLE

The Audible Alarm allows you to set audible alarms ON or OFF.

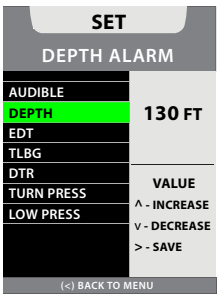


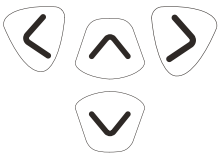


CONTROLS	
^	toggle setting
v	toggle setting
<	to Alarms Set Menu
>	to save value

2: DEPTH

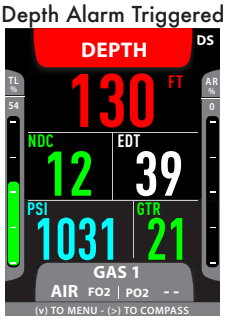
The Depth Alarm allows you to set a maximum depth alarm. Selections inlcude OFF or 30 - 330 ft (10- 100 m).





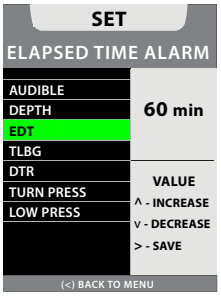
CONTROLS	
^	increase value
v	decrease value
<	to Alarms Set Menu
>	to save value

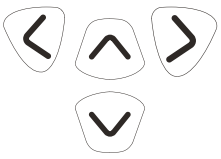
Depth Alarm Triggered



3: EDT (ELAPSED DIVE TIME)

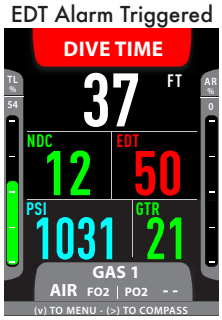
The Elapsed Dive Time Alarm allows you to set an alarm to go off at a predetermined amount of dive time. Settings include OFF or 10 - 180 min.





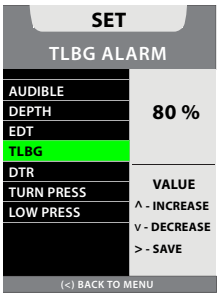
CONTROLS	
^	increase value
v	decrease value
<	to Alarms Set Menu
>	to save value

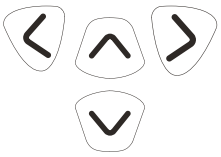
EDT Alarm Triggered



4: TLBG (TISSUE LOADING BAR GRAPH)

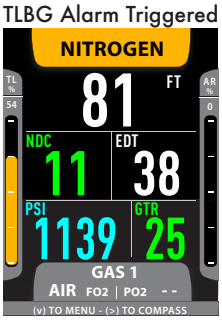
This feature allows you to set an alarm to go off at a predetermined percentage of Tissue Loading Bar Graph being filled.





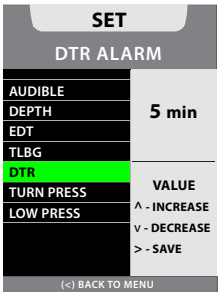
CONTROLS	
^	increase value
v	decrease value
<	to Alarms Set Menu
>	to save value

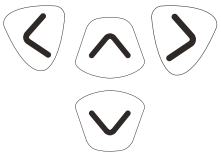
TLBG Alarm Triggered



5: DTR (DIVE TIME REMAINING)

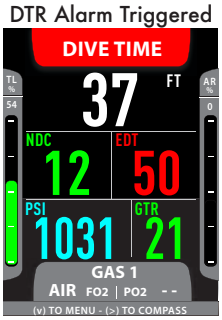
The Dive Time Remaining Alarm allows you to set an alarm to go off with a designated reserve. Settings include OFF or 5 - 20 min of dive time remaining.





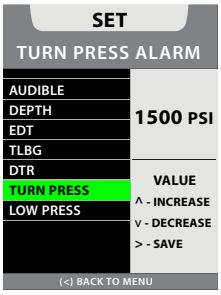
CONTROLS	
^	increase value
v	decrease value
<	to Alarms Set Menu
>	to save value

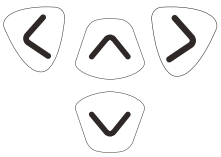
DTR Alarm Triggered



6: TURN PRESS

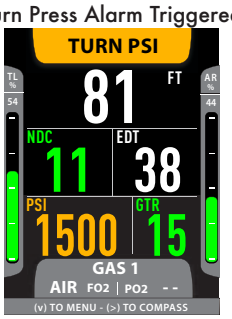
The Turn Pressure Alarm allows you to set an alarm to go off at a designated turn pressure. You may choose from OFF or 1000 to 3000 PSI (70 to 205 BAR) in increments of 250 PSI (5 BAR).





CONTROLS	
^	increase value
v	decrease value
<	to Alarms Set Menu
>	to save value

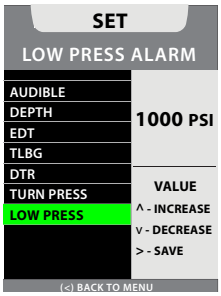
Turn Press Alarm Triggered

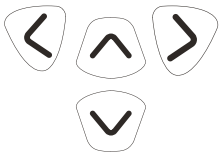


7: LOW PRESS

The Low Pressure Alarm allows you to set an alarm for when you reach a designated end pressure. You may choose from from 300 to 1500 PSI (20 to 105 BAR) in increments of 100 PSI (5 BAR).

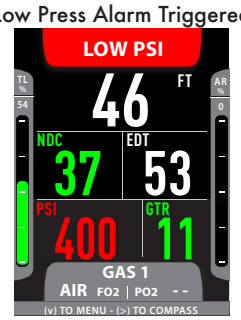
NOTE: The Low Pressure Alarm only considers gas 1.





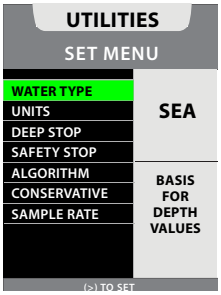
CONTROLS	
^	increase value
v	decrease value
<	to Alarms Set Menu
>	to save value

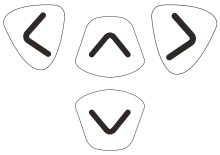
Low Press Alarm Triggered



SET UTILITIES

Within the Utilities set menu you can customize the following seven operational functions.

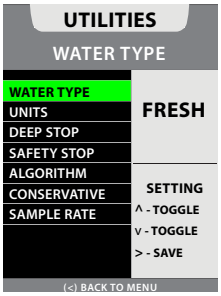


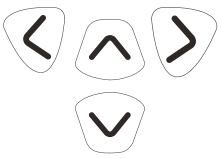


CONTROLS	
^	scroll up
v	scroll down
<	to Main Menu
>	to set

1: WATER TYPE

The Water Type feature allows you to set SALT or FRESH water environment for accurate depth calculations.

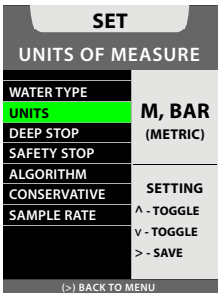


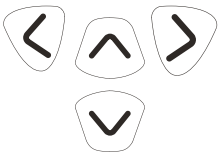


CONTROLS	
^	toggle setting
v	toggle setting
<	to Utilities Set Menu
>	to save setting

2: UNITS

The Units feature allows you to select whether Imperial (FT, PSI) or Metric (M, BAR) units of measure will be displayed.

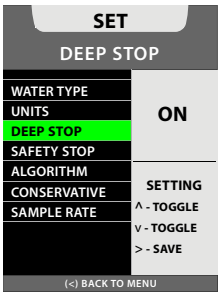


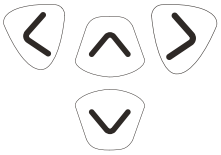


CONTROLS	
^	toggle setting
v	toggle setting
<	to Utilities Set Menu
>	to save setting

3: DEEP STOP

The Deep Stop feature can be set ON or OFF.

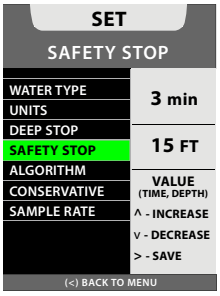


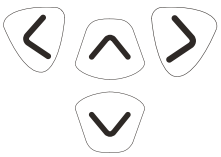


CONTROLS	
^	toggle setting
v	toggle setting
<	to Utilities Set Menu
>	to save setting

4: SAFETY STOP

The Safety Stop feature can be set ON or OFF. If SET is selected, you may choose from an available 3 or 5 min Safety Stop at depths of 10, 15, or 20 ft or (3, 4, 5, or 6 m).



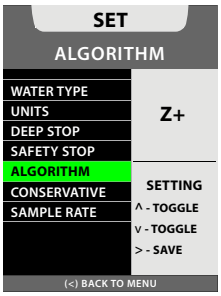


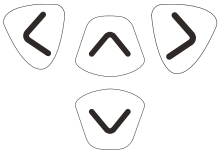
CONTROLS	
^	increase value
v	decrease value
<	to Utilities Set Menu
>	to save value

5: ALGORITHM

This feature allows the choice of using the Z+ or DSAT algorithms, for nitrogen and oxygen calculations. See page 20 for further Dual Algorithm details.

NOTE: Changing the algorithm is blocked during 24 hours after NORM dives unless Desat time decreases to 0:00.

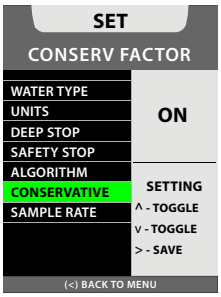


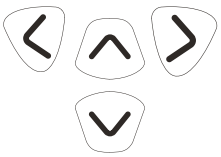


CONTROLS	
^	toggle setting
v	toggle setting
<	to Utilities Set Menu
>	to save setting

6: CONSERVATIVE

The Conservative factor feature (see pg. 20) can be set ON or OFF.



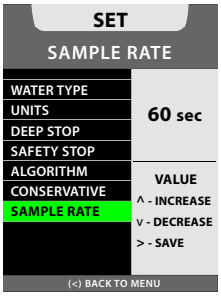


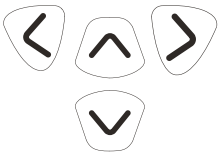
CONTROLS	
^	toggle setting
v	toggle setting
<	to Utilities Set Menu
>	to save setting

7: SAMPLE RATE

The Sample Rate controls how frequently the ProPlus X stores a data snapshot for PC Download during a dive. Setting options are 2, 15, 30, or 60 second intervals. Shorter intervals will provide a more precise record of your dives.

NOTE: New data will automatically overwrite the oldest data in memory when the memory becomes full. The ProPlus X Log and PC Download data is stored separately in different partitions of the memory. The Log only stores a short summary of each dive. Alternately, the PC Download function stores much larger files for each dive. Depending on the chosen settings and dive durations, it is possible to see dives stored in the ProPlus X's onboard Log that have already been overwritten in the PC Download Partition. Choosing a longer Sample Rate interval will consume less memory per dive. Remember to download your dives more frequently if you are using a shorter Sample Rate interval.

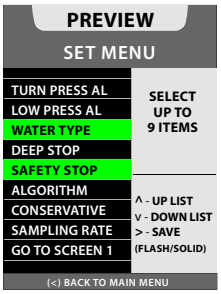


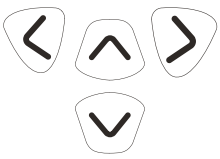


CONTROLS	
^	increase value
v	decrease value
<	to Utilities Set Menu
>	to save setting

SET PREVIEW

Using this listing, you can select up to 9 items (set points that have been entered) for display on a Preview screen that can be ac-cessed from the Norm Main Menu.

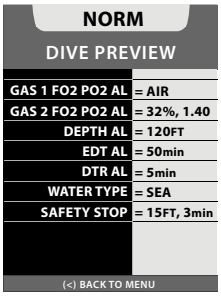


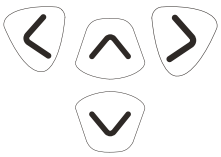


CONTROLS	
^	scroll up
v	scroll down
<	to Main Menu
>	to select/deselect item

VIEW PREVIEW

Upon accessing this screen from the Norm Main Menu, the items selected using the Set Preview function previously described will be displayed with the settings last saved.



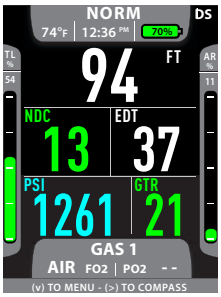


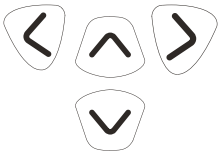
CONTROLS	
	to Main Menu

NORM DIVE MODE

INITIATING A DIVE

With the ProPlus X in Dive Mode, a dive will commence upon descending to 5 ft (1.5 m) for at least 5 seconds. Below is a diagram to help you navigate Dive Mode functions.



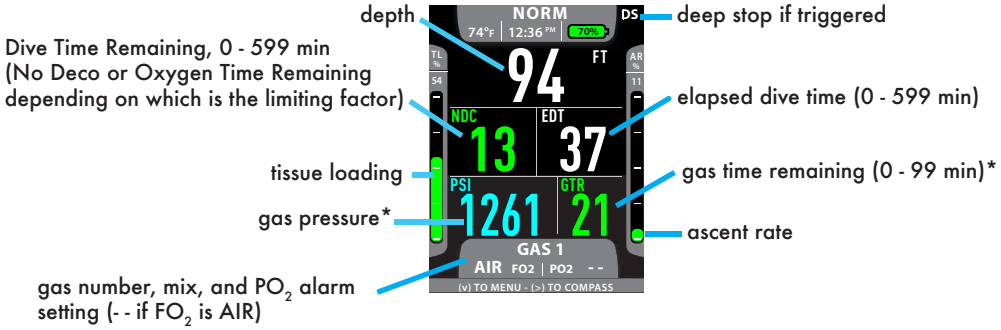


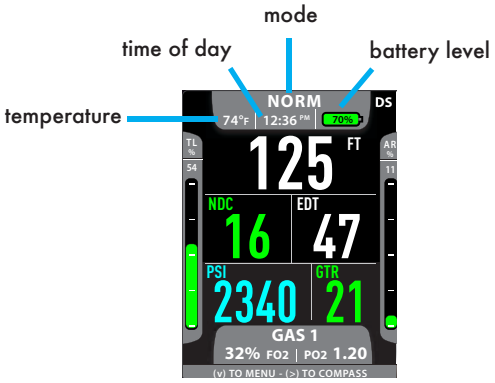
CONTROLS	
^	to acknowledge alarm
v	to Main Menu
<	to apply Earmark
>	to Compass

NO DECOMPRESSION DIVE MAIN

From the Main screen you can see all critical dive parameters. During a dive an audible alarm may sound and the priority of information displayed may change. This is to indicate a safety recommendation, warning, or alarm. The following information in this chapter demonstrates and describes an uneventful dive, in terms of safety. Alarms are described in the Complications section of this chapter.

⚠ **WARNING: Before diving with the ProPlus X take time to familiarize yourself with both normal and alarm conditions of operation.**

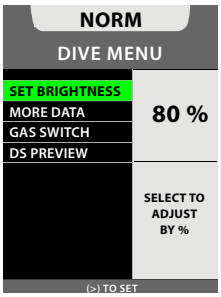


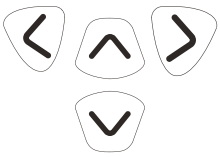


**If gases 2 - 4 are selected, then SPG (submersible pressure gauge) will be displayed in place of pressure and gas time remaining.*

DIVE MENU

Set Brightness, More Data, Gas Switches, and Deep Stop Preview are all accessed from the Dive Menu.



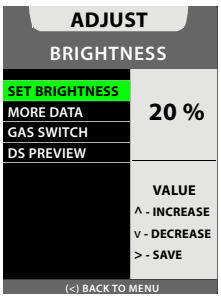


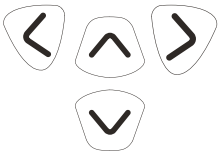
CONTROLS	
^	scroll up
v	scroll down
<	to Dive Main
>	to Set

1: SET BRIGHTNESS

The level (%) of screen brightness can be adjusted to optimize screen appearance in different lighting conditions or to conserve battery power.

△ NOTE: During a Low Battery Warning or Alarm condition, the level will be limited to 60% maximum.

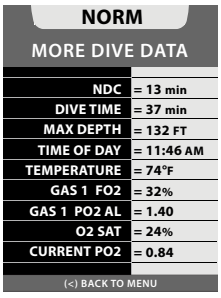


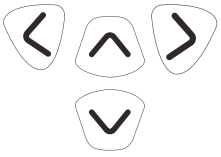


CONTROLS	
^	increase value
v	decrease value
<	to Dive Menu
>	to save setting

2: MORE DATA

This screen reveals additional dive data.





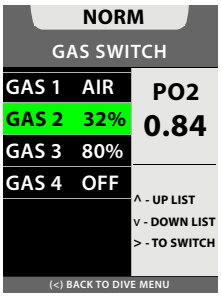
CONTROLS	
<	to Dive Menu

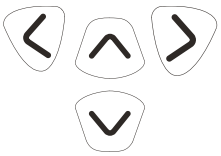
3: GAS SWITCH

⚠ WARNING: Historically, many accidents and near misses have occurred by switching to the wrong gas at the wrong depth. DO NOT attempt gas switch decompression dives without proper education and training to do so from an internationally recognized training agency.

Overview

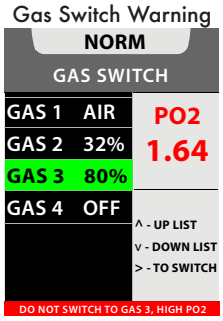
- All dives begin with gas 1.
- The GAS defaults to # 1 after 10 minutes on the surface.
- Gases cannot be switched while in surface mode.
- The Gas Switch Menu cannot be accessed during the sounding of alarms.
- If an alarm strikes while in the Gas Switch Menu, the switch operation is terminated (reverting to the Dive Main screen.
- If a gas has a prohibitive PO_2 value (≥ 1.6 PO_2), a warning will be displayed. Though the diver will not be prevented from chosing the gas. If the diver proceeds to select said gas a high PO_2 alarm will then trigger.





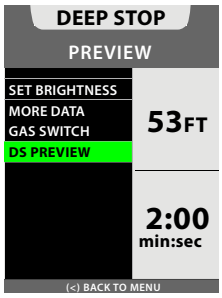
CONTROLS	
^	scroll up
v	scroll down
<	to Dive Menu
>	to switch gas

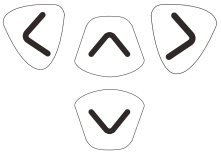
Gas Switch Warning



4: DEEP STOP PREVIEW

If Deep Stop was set to ON in the Utilities Menu, the Deep Stop Preview screen is available after exceeding 80 ft (24 m) of depth. The Deep Stop is always at a depth half that of your maximum depth during the dive. This preview screen keeps track of that depth for you.

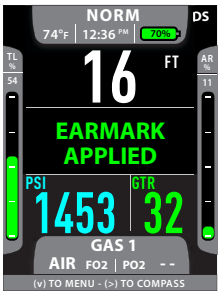




CONTROLS	
<	to Dive Menu

EARMARK

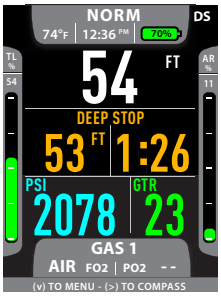
By holding the left button for more than 2 seconds during a dive you can manually record a data snapshot. The snapshot can later be accessed using the ProPlus X's download feature. The message "EARMARK APPLIED" will be displayed for 3 seconds as confirmation after an earmark is made.



DEEP STOP MAIN

If triggered, the Deep Stop will activate upon ascending to within 10 ft (3 m) below the calculated Deep Stop depth. The stop time will be displayed and count down to 0:00 as long as you stay within 10 ft (3 ft) above or below the stop. See Deep Stop in the Dive Features chapter for further details.

NOTE: The ProPlus X does not penalize for a missed Deep Stop.



SAFETY STOP MAIN

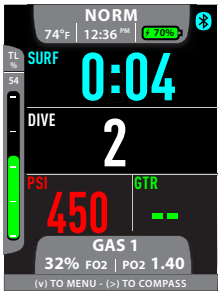
If triggered, the Safety Stop will activate upon ascent to within 5 ft (1.5 m) deeper than the Safety Stop depth on a No Deco dive. The stop time will then countdown to 0:00. See Safety Stop in the Dive Features chapter for further details.

NOTE: The ProPlus X does not penalize for a missed Safety Stop.

SURFACING

Upon ascending to 3 ft (0.9 m) the ProPlus X transitions to Dive Surface mode.

NOTE: If using gas 2, 3, or 4, the ProPlus X will revert to gas 1 after 10 minutes on the surface.



COMPLICATIONS

The preceding information has described standard dive operations. Your new ProPlus X is also designed to help you to the surface in less than ideal situations. The following is a description of these situations. Take some time to familiarize yourself with these operations before diving your ProPlus X.

DECOMPRESSION

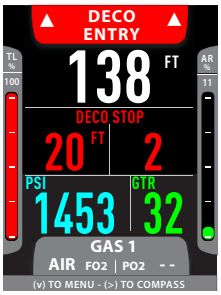
Decompression (deco) mode activates when theoretical No Decompression time and depth limits are exceeded.

- Once within 10 ft (3 m) below the required Stop Depth (stop zone) and Stop Time will be displayed in amber.

To fulfill your decompression obligation, you should make a safe controlled ascent to a depth slightly deeper than, or equal to, the required stop depth indicated and decompress for the stop time indicated. The amount of decompression credit time that you receive is dependent on Depth, with slightly less credit given the deeper you are below the Stop Depth indicated. You should stay slightly deeper than the required Stop Depth indicated until the next shallower Stop Depth appears. Then you can slowly ascend to that indicated Stop Depth but not shallower.

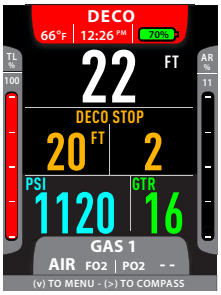
DECOMPRESSION ENTRY

Upon entry into decompression (deco) the audible alarm will sound until the audible is silenced. The message DECO ENTRY, up arrows, and full Tissue Loading Bar Graph will flash. Additionally, the stop depth and stop time values will be displayed.



DECOMPRESSION STOP MAIN

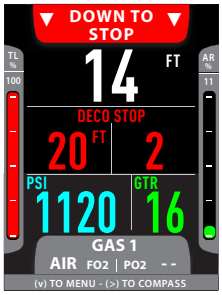
Decompression (deco) Stop Main will display upon ascending to within 10 ft (3 m) below the Deco Stop depth. The message "DECO" will be displayed, and the Stop Depth and Stop Time color will change to amber.



CONDITIONAL VIOLATION

Upon ascent above the required Decompression (deco) Stop depth, operation will enter Conditional Violation during which time no off gassing credit will be given. The Audible alarm will sound. Additionally, the full Tissue Loading Bar Graph, down arrows, and DOWN TO STOP message will flash until the audible alarm is silenced, then the Tissue Loading Bar Graph will be solid.

- The down arrows continues to flash until descending below the required Stop Depth (within stop zone).
- If you descend deeper than the required Decompression Stop before 5 minutes elapse, Decompression operation will continue with no off gassing credit given for time above the stop. Instead, for each minute above the stop, 1½ minutes of penalty time will be added to the required stop time.
- The added penalty (decompression) time will have to be worked off 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. The Tissue Loading Bar Graph will recede into the No Decompression zone, and operation will revert to No Decompression mode.



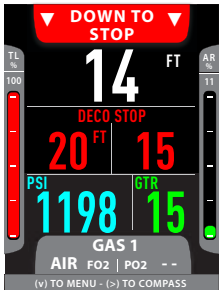
DELAYED VIOLATION 1

If you remain shallower than a Deco Stop Depth for more than 5 minutes, operation will enter Delayed Violation 1* which is a continuation of Conditional Violation with penalty time still being added. Again, the audible alarm will sound and the full Tissue Loading Bar Graph will flash until it is silenced.

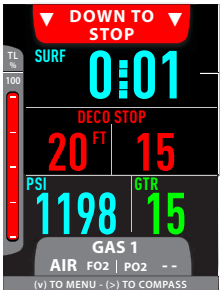
**The difference is that 5 minutes after surfacing from the dive, operation will now enter Violation Gauge Mode.*

- Down arrow and DOWN TO STOP message continues to flash until descending below the required Stop Depth.
- If the Delayed Violation 1 status is ignored, the ProPlus X will enter Delayed Violation 1 Surface mode for 5 minutes upon surfacing from the dive. Down arrows and Deco Stop depth/time will alternate with VIOLATION. After 5 minutes on the surface in DV1 mode, the unit will enter VGM (Violation Gauge Mode).

DV 1 Dive Main



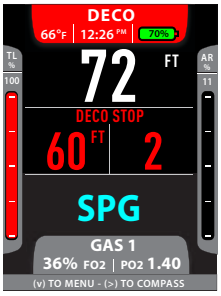
DV 1 < 5 Min On Surface



DELAYED VIOLATION 2

If the calculated Decompression obligation requires a Stop Depth between 60 ft (18 m) and 70 ft (21 m), operation will enter Delayed Violation 2. The audible alarm will sound. Additionally, the full Tissue Loading Bar Graph will flash until the audible is silenced.

- Up arrows flash if 10 ft (3 m) deeper than the required Stop Depth.
- Once within 10 ft (3 m) of and below the required Stop Depth, the DECO STOP message will be displayed.

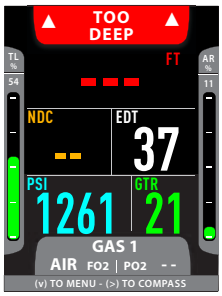


DELAYED VIOLATION 3

If you descend deeper than the maximum functional depth*, the audible alarm will sound. Also, the up arrows, and TOO DEEP message will flash. Only dashes will display for Current Depth and NDC (No Decompression) time signifying that you are too deep.

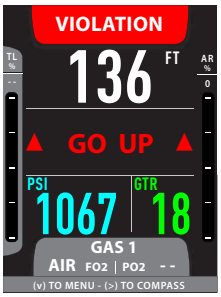
**The maximum functional depth (Dive/Gauge = 330 ft / 100 m) is the depth at which the ProPlus X can properly perform calculations or provide accurate display information.*

Upon ascending above the maximum functional depth, current depth will be restored. However, the log for that dive will display dashes for max depth.



VIOLATION GAUGE MODE (VGM) DURING A DIVE

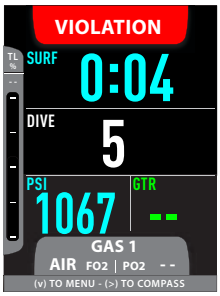
During Dive mode dives, operation will enter VGM when Decompression requires a Stop Depth greater than 70 ft (21 m). Operation would then continue in VGM during the remainder of that dive and for 24 hours after surfacing. VGM turns the ProPlus X into a digital instrument without any decompression or oxygen related calculations or displays. Upon activation of VGM, the audible alarm will sound. The message VIOLATION GO UP with up arrows will flash. After the audible alarm becomes silent (10 seconds), the NDC (No Decompression) and Tissue Loading Bar Graph will not display for the rest of the dive.



VIOLATION GAUGE MODE (VGM) ON THE SURFACE

The message VIOLATION is displayed until 24 hours elapse with no dives. During that 24 hours, VGM lockout does not allow access to the Set Gas, Plan, and Desat features/screens. The Compass function will be allowed.

- The Fly countdown timer provides the time remaining before normal operation can resume with full features and functions.
- In the event that a dive is made during the 24 hour lockout period, a full 24 hour surface interval must then be served before all functions are restored.

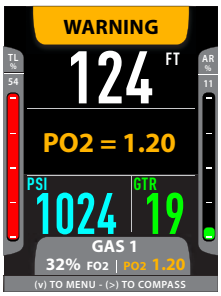


HIGH PO_2

Warning >> at Alarm Set Point value minus .20
Alarm >> at Set Point value, except in Deco then at ≥1.60 only

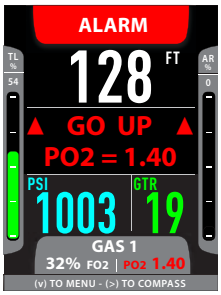
WARNING

When PO_2 (partial pressure of oxygen) increases to the Warning level; the audible alarm sounds and the PO_2 value will flash in place of NDC (No Decompression) and EDT (Elapsed Dive Time) until the audible alarm is silenced.



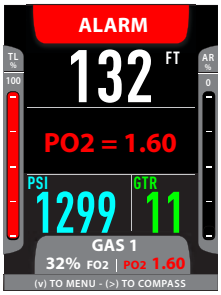
ALARM

If PO_2 continues to increase and reaches the alarm set point, the audible alarm sounds again. The PO_2 value, GO UP message, and up arrows will flash during the audible alarm. After the audible alarm is silenced, they alternate with NDC (No Decompression) and EDT (Elapsed Dive Time) until PO_2 decreases below the alarm set point.



PO_2 DURING DECOMPRESSION

The PO_2 alarm setting does not apply when in Decompression. If PO_2 exceeds 1.60 while in Decompression, the PO_2 value (= 1.60) will flash during the audible alarm. After the audible alarm is silenced, they alternate with Deco Stop/Time until PO_2 decreases below 1.60.

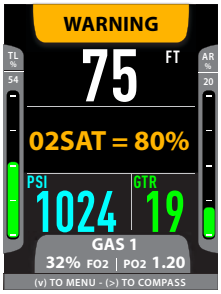


HIGH O_2 SAT (OXYGEN SATURATION)

Warning >> at 80 to 99% (240 OTU)
Alarm >> at 100% (300 OTU)

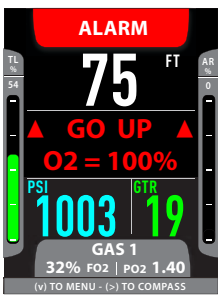
WARNING

When O_2 reaches the Warning Level, the audible alarm sounds and the O2 SAT (oxygen saturation) value will flash in place of NDC (No Decompression) and EDT (Elapsed Dive Time). They will be restored when the audible alarm is silenced.



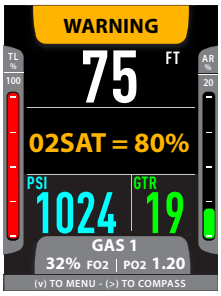
ALARM

If O2 SAT reaches the Alarm level, the audible alarm sounds. The GO UP message, up arrows, and the O2 SAT value will flash in place of NDC (No Decompression) and EDT (Elapsed Dive Time). They will be solid after the audible alarm is silenced.



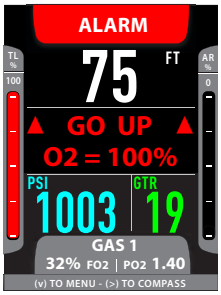
WARNING DURING DECOMPRESSION

When O2 SAT reaches the Warning Level, the audible alarm sounds and the O2 SAT value will flash in the middle of the screen. When the audible alarm is silenced, the O2 Sat value will alternate with Decoo Stop/Time.



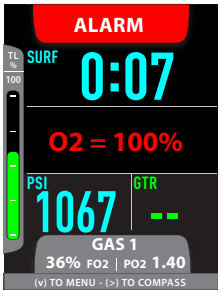
ALARM DURING DECO

If O2 SAT reaches the Alarm level, the audible alarm sounds and the O2 SAT value will flash in the middle of the screen. When the audible alarm is silenced, the message O2 SAT 100% will display solid until on the surface.



ALARM ON SURFACE

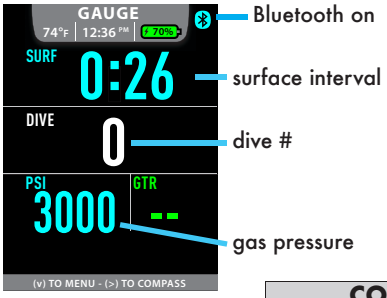
- If O2 SAT is 100% upon surfacing while in No Decompression, O2 SAT = 100% will flash until the O2 SAT value decreases below 100%.
- If O2 SAT becomes less than100% during the first 5 min on the surface, the Delayed Violation 1 Main screen will be displayed.
- If O2 SAT is still 100% after 5 min, operation is to revert to Violation Gauge Mode for 24 hours.

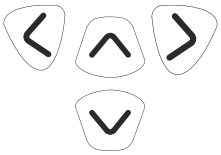


GAUGE MODE

ON THE SURFACE BEFORE A DIVE

Gauge Surface Main is nearly identical to Dive Mode. Unlike Dive Mode, there will be no Tissue Loading Bar Graph or gas mix values displayed.



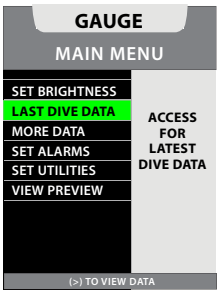


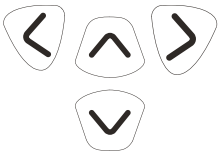
CONTROLS	
☞ v	to Main Menu
☞ <	to Home Menu
☞ >	to Compass

GAUGE MAIN MENU

To view dive or change settings you must navigate through the Gauge Main Menu.

NOTE: Menu options are similar to those described previously for Norm Mode. See the Norm Surface Mode chapter for further details.

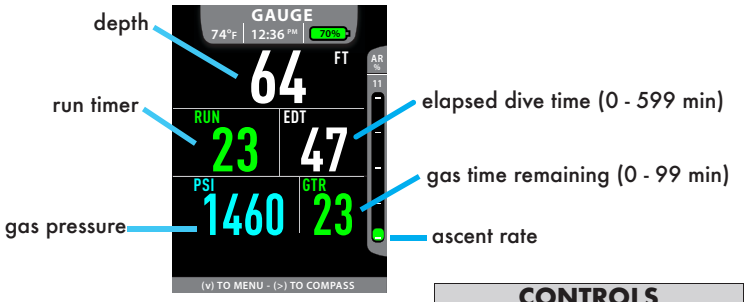


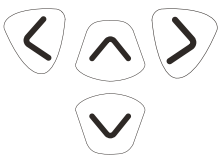


CONTROLS	
☞ ^	scroll up
☞ v	scroll down
☞ <	to Surface Main
☞ >	to access

INITIATING A DIVE

With the ProPlus X in Gauge Mode, a dive will commence upon descending to 5 ft (1.5 m) for longer than 5 seconds. Below is a diagram to help you navigate Gauge Dive Mode functions. The dive will end and revert to Surface Mode upon ascent to 0.9 m (3 ft) of depth for at least 1 second.





CONTROLS	
☞ ^	to acknowledge alarm
☛ ^	to reset timer
☞ v	to Main Menu
☞ <	to start/stop timer
☛ <	to apply Earmark
☞ >	to Compass

NOTE: The ProPlus X will be locked in Gauge Mode for 24 hours after surfacing from a Gauge Mode dive.

NOTE: All other Gauge mode dive functions are similar to Norm Mode. See the Norm Dive Mode chapter for further details.

COMPASS MODE

COMPASS DISPLAY ICONS

1	COMPASS MODE
2	DEPTH OR SURFACE TIME
3	HEADING CORRECTION ARROW
4	HEADING MARKER
5	TIME OUT COUNTDOWN
6	HEADING DEGREES
7	ASCENT RATE
8	DIVER'S DIRECTION (LUBBER LINE)
9	HEADING INDEX

OVERVIEW

The ProPlus X is equipped with an advanced 3D digital compass. Compass Mode can be activated while in Dive or Gauge operation modes by pressing the right button.

- The ProPlus X reverts back to the previous operation mode after 1 minute unless the Compass Mode is reset by pressing any of the buttons. See the Timeout section at the end of this chapter for further details.
- There are three modes (North, Reference, Reverese Reference) of compass operation.
- North Mode is the default Compass operation. Though if another compass operation mode is selected, the ProPlus X will return to that function when the compass is selected during the activation cycle.

NOTE: You may need to calibrate the compass from time to time to compensate for any magnetic interference (new dive location, or other surrounding changes). The Calibrate Compass function is found in the Home > Setup Menu, see p. 15.

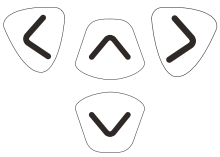
NOTE: Magnetic declination or variation measures the angle between the Earth's magnetic north and true north. The declination value for any region can be found on current geographical charts. By correcting for declination, you can achieve a more accurate compass reading. Remember magnetic north changes over time; so use only current geographical charts to obtain the declination value for any geographical region. The Set Declination function is found in the Home > Setup Menu, see p. 16.

NOTE: Similar to an analog compass, magnetic and ferrous metals can cause erratic and erroneous readings.

WARNING: You must become thoroughly familiar with the setup and operation of the ProPlus X digital compass before using it as your primary device for navigation. Failure to do so could result in serious errors relating to activities involving navigation.

NORTH MODE

North Mode is the standard compass function displaying the current heading.



CONTROLS	
☛ ∨	to Reference Mode
☜ <	to Norm/Gauge Main
☛ <	to apply earmark*

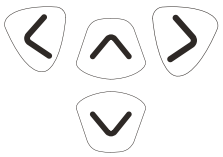
REFERENCE/REVERSE REFERENCE

The Reference modes allow you to select course headings. The heading marker and course correction arrows will aid you in navigating. When first entering this mode the reference heading in the lower left of the screen will be flashing.

- Press the right button to allow you to set or reset the heading.
- Point the heading index in the direction you wish to travel.
- Press the righ button again to lock the heading.
- Press and hold the right button to reverse the reference (set the reciprical heading).

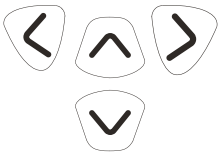
Reference Main

reference heading, flashing until set



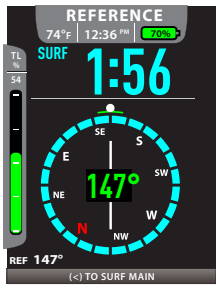
CONTROLS	
⌄	to North Mode
<	to Norm/Gauge Main
<	to apply earmark
>	to Set Heading

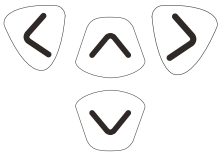
Choose Heading



CONTROLS	
⌄	to North Mode
<	to Norm/Gauge Main
<	to apply earmark
>	to lock heading
>	to Reverse Reference

Reverse Reference Main





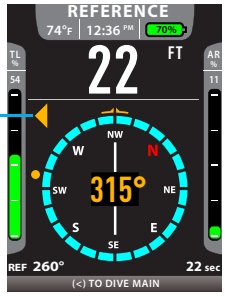
CONTROLS	
⌄	to North Mode
<	to Norm/Gauge Main
<	to apply earmark
>	to original Reference

Once a heading is set, the heading degrees, heading index (lubber line), and heading marker will change to amber color when off course. To get back on course, an amber heading correction arrow will point in the direction to turn.

On Course (heading 147°)

correction arrow, flashing

Off Course (heading 260°)



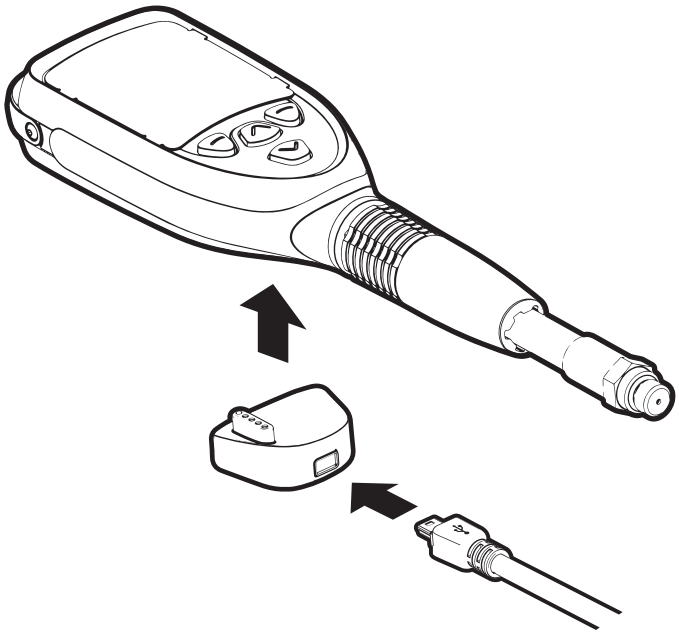
REFERENCE

UPLOADING/DOWNLOADING DATA

As previously described (page 13), the ProPlus X can be paired using the Bluetooth® feature. This requires a PC, Mac, or mobile device running Diverlog software and equipped with Bluetooth® functionality. If your personal computer is not equipped with internal Bluetooth® hardware, a Bluetooth® dongle can be purchased separately from a computer store.

Alternately, The ProPlus X is configured with a data/charging connection port located on the back of the case. It can be used with the included adapter to connect the ProPlus X with a PC or Mac using a USB cable. Connect the adapter clip to the ProPlus X. When connecting the adapter clip to the ProPlus X, ensure that the adapter is connected as shown. Then connect the USB interface cable to the adapter clip. The ProPlus X and USB cable assembly can now be connected to a PC or Mac running Diverlog software.

⚠ **NOTE: If a USB cable is connected to the ProPlus X, Bluetooth® connection will be blocked or disabled. Though any active downloads, uploads, or firmware updates using Bluetooth® will be allowed to finish first.**



CARE AND CLEANING

Protect your ProPlus X from shock, excessive temperatures, exposure to chemicals, and tampering. Protect the lens against scratches with the stick on ProPlus X lens protector. Small scratches will naturally disappear underwater.

- Soak and rinse the ProPlus X in fresh water at the end of each day of diving, and check to ensure that the areas around the low pressure (depth) sensor, PC interface data port, and buttons are free of debris or obstructions.
- To dissolve salt crystals, use lukewarm water or a slightly acidic bath (50% white vinegar/50% fresh water). After removal from the bath, place the ProPlus X under gently running fresh water. Towel dry before storing.
- Keep your ProPlus X cool, dry, and protected during transport.

INSPECTIONS AND SERVICE

Your ProPlus X 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 2 year limited warranty in effect, this inspection must be completed one year after purchase (+/- 30 days). Oceanic recommends that you continue to have an inspection performed every year to ensure it is working properly. The costs of annual inspections, or inspections relating to water tight integrity, are not covered under the terms of the 2 year limited warranty.

To Obtain Service:
Take your ProPlus X to an Authorized Oceanic Dealer or send it to the nearest Oceanic Regional Facility.
To return your ProPlus X to Oceanic:

- Record all dive data in the Log and/or download the data stored in memory. All data will be erased during factory service.
- Package it using a protective cushioning material.
- Include a legible note stating the specific reason for return, your name, address, daytime phone number, serial number(s), 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 Facility, 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

ALTITUDE SENSING AND ADJUSTMENT

Altitude (i.e., ambient pressure) is measured upon activation and every 15 minutes until a dive is made.

- Measurements are only taken when the unit is dry.
- Two readings are taken, the second reading 5 seconds after the first. The readings must be within 1 foot (30 cm) of each other to record that ambient pressure as the current Altitude.
- No adjustments are made during any time that the Wet Contacts are bridged.
- When diving in high altitude waters from 3,001 to 14,000 feet (916 to 4,270 meters), the ProPlus X automatically adjusts to these conditions providingcorrected Depth, and reduced No Deco and O2 Times at intervals of 1,000 feet (305 meters).
- When the Conservative Factor is set On, NDLs are calculated based upon the next higher 3,000 foot (915 meter) Altitude.
- At Sea Level, calculations are based upon an Altitude of 6,000 feet.
- All adjustments for Altitudes greater than 11,000 feet (3,355 meters) are then made to allowable dive times for 14,000 feet (4,270 meters).
- The ProPlus X will not function as a Dive Computer above 14,000 feet (4,270 meters).

TECHNICAL DATA

DSAT BASED NDLS (HR:MIN)
(IMPERIAL)

Altitude (feet)	0 to 3000	3001 to 4000	4001 to 5000	5001 to 6000	6001 to 7000	7001 to 8000	8001 to 9000	9001 to 10000	10001 to 11000	11001 to 12000	12001 to 13000	13001 to 14000
Depth (FT)												
30	4:20	3:21	3:07	2:55	2:45	2:36	2:28	2:21	2:15	2:10	2:04	1:58
40	2:17	1:43	1:36	1:30	1:25	1:20	1:16	1:12	1:09	1:06	1:03	1:01
50	1:21	1:03	1:00	0:58	0:55	0:52	0:48	0:45	0:43	0:41	0:39	0:37
60	0:57	0:43	0:40	0:38	0:36	0:34	0:33	0:31	0:30	0:29	0:28	0:27
70	0:40	0:31	0:30	0:28	0:27	0:26	0:24	0:23	0:22	0:20	0:19	0:18
80	0:30	0:24	0:23	0:21	0:20	0:19	0:18	0:17	0:16	0:16	0:14	0:13
90	0:24	0:19	0:18	0:17	0:16	0:15	0:14	0:13	0:12	0:11	0:10	0:10
100	0:19	0:15	0:14	0:13	0:12	0:11	0:10	0:10	0:09	0:09	0:08	0:08
110	0:16	0:12	0:11	0:10	0:09	0:09	0:08	0:08	0:08	0:07	0:07	0:07
120	0:13	0:09	0:09	0:08	0:08	0:08	0:07	0:07	0:07	0:06	0:06	0:06
130	0:11	0:07	0:07	0:07	0:06	0:06	0:06	0:06	0:05	0:05	0:05	0:05
140	0:09	0:07	0:07	0:06	0:06	0:06	0:06	0:05	0:05	0:05	0:05	0:05
150	0:08	0:06	0:06	0:06	0:05	0:05	0:05	0:05	0:05	0:04	0:04	0:04
160	0:07	0:06	0:05	0:05	0:05	0:05	0:05	0:04	0:04	0:04	0:04	0:04
170	0:07	0:05	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:04	0:03
180	0:06	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03
190	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03	0:03	0:03

DSAT BASED NDLS (HR:MIN)
(METRIC)

Altitude (meters)	0 to 915	916 to 1220	1221 to 1525	1526 to 1830	1831 to 2135	2136 to 2440	2441 to 2745	2746 to 3050	3051 to 3355	3356 to 3660	3661 to 3965	3966 to 4270
Depth (M)												
9	4:43	3:37	3:24	3:10	2:58	2:48	2:39	2:31	2:24	2:18	2:12	2:07
12	2:24	1:52	1:44	1:37	1:30	1:25	1:21	1:17	1:13	1:10	1:07	1:04
15	1:25	1:06	1:03	1:00	0:57	0:55	0:52	0:49	0:46	0:43	0:41	0:39
18	0:59	0:45	0:42	0:40	0:38	0:36	0:34	0:32	0:31	0:30	0:29	0:28
21	0:41	0:33	0:31	0:29	0:28	0:27	0:26	0:24	0:23	0:21	0:20	0:19
24	0:32	0:26	0:24	0:22	0:21	0:20	0:19	0:18	0:17	0:16	0:15	0:14
27	0:25	0:19	0:18	0:17	0:16	0:16	0:14	0:13	0:12	0:12	0:11	0:10
30	0:20	0:16	0:15	0:13	0:12	0:12	0:11	0:10	0:10	0:09	0:09	0:08
33	0:17	0:12	0:11	0:11	0:10	0:09	0:09	0:08	0:08	0:08	0:07	0:07
36	0:14	0:10	0:09	0:09	0:08	0:08	0:07	0:07	0:07	0:06	0:06	0:06
39	0:11	0:08	0:08	0:07	0:07	0:07	0:06	0:06	0:06	0:06	0:05	0:05
42	0:09	0:07	0:07	0:07	0:06	0:06	0:06	0:05	0:05	0:05	0:05	0:05
45	0:08	0:06	0:06	0:06	0:06	0:05	0:05	0:05	0:05	0:05	0:04	0:04
48	0:07	0:06	0:06	0:06	0:05	0:05	0:05	0:04	0:04	0:04	0:04	0:04
51	0:06	0:05	0:05	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:04
54	0:06	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03
57	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03	0:03	0:03

ALTITUDE LEVELS

Display:	**Range:**
• SEA = Level 1 (Sea Level)	0 to 3,000 feet (0 to 915 meters)
• L2 = Level 2	3,001 to 5,000 feet (916 to 1,525 meters)
• L3 = Level 3	5,001 to 7,000 feet (1,526 to 2,135 meters)
• L4 = Level 4	7,001 to 9,000 feet (2,136 to 2,745 meters)
• L5 = Level 5	9,001 to 11,000 feet (2,746 to 3,355 meters)
• L6 = Level 6	11,001 to 13,000 feet (3,356 to 3,965 meters)
• L7 = Level 7	> 13,000 feet (3,965 meters)

Z+ BASED NDLS (HR:MIN)
(IMPERIAL)

Altitude (feet)	0 to 3000	3001 to 4000	4001 to 5000	5001 to 6000	6001 to 7000	7001 to 8000	8001 to 9000	9001 to 10000	10001 to 11000	11001 to 12000	12001 to 13000	13001 to 14000
Depth (FT)												
30	3:17	2:30	2:21	2:14	2:08	2:02	1:57	1:52	1:47	1:39	1:34	1:29
40	1:49	1:21	1:15	1:11	1:08	1:05	1:02	1:00	0:57	0:55	0:53	0:51
50	1:05	0:53	0:51	0:49	0:47	0:44	0:42	0:39	0:37	0:35	0:34	0:33
60	0:48	0:37	0:35	0:33	0:32	0:30	0:28	0:26	0:24	0:23	0:22	0:21
70	0:35	0:26	0:24	0:23	0:21	0:20	0:19	0:18	0:17	0:16	0:16	0:14
80	0:26	0:19	0:18	0:17	0:16	0:15	0:14	0:13	0:12	0:11	0:11	0:10
90	0:19	0:15	0:14	0:13	0:12	0:11	0:10	0:10	0:09	0:09	0:08	0:08
100	0:16	0:11	0:10	0:10	0:09	0:09	0:08	0:08	0:07	0:07	0:07	0:07
110	0:12	0:09	0:08	0:08	0:08	0:07	0:07	0:07	0:06	0:06	0:06	0:05
120	0:10	0:08	0:07	0:07	0:07	0:06	0:06	0:06	0:05	0:05	0:05	0:05
130	0:08	0:07	0:06	0:06	0:06	0:05	0:05	0:05	0:05	0:05	0:04	0:04
140	0:07	0:06	0:05	0:05	0:05	0:05	0:05	0:04	0:04	0:04	0:04	0:04
150	0:06	0:05	0:05	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:03
160	0:06	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03
170	0:05	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03	0:03	0:03	0:03
180	0:05	0:04	0:04	0:04	0:03	0:03	0:03	0:03	0:03	0:03	0:03	0:03
190	0:04	0:04	0:04	0:03	0:03	0:03	0:03	0:03	0:03	0:03	0:03	0:00

Z+ BASED NDLS (HR:MIN)
(METRIC)

Altitude (meters)	0 to 915	916 to 1220	1221 to 1525	1526 to 1830	1831 to 2135	2136 to 2440	2441 to 2745	2746 to 3050	3051 to 3355	3356 to 3660	3661 to 3965	3966 to 4270
Depth (M)												
9	3:37	2:41	2:31	2:23	2:16	2:10	2:04	1:59	1:54	1:50	1:43	1:37
12	1:55	1:27	1:21	1:15	1:12	1:08	1:05	1:03	1:00	0:58	0:55	0:54
15	1:08	0:55	0:53	0:51	0:49	0:47	0:44	0:42	0:39	0:37	0:36	0:34
18	0:50	0:39	0:37	0:35	0:33	0:32	0:30	0:28	0:26	0:24	0:23	0:22
21	0:36	0:28	0:26	0:24	0:23	0:21	0:20	0:19	0:18	0:17	0:16	0:16
24	0:27	0:20	0:19	0:18	0:17	0:16	0:15	0:14	0:13	0:12	0:11	0:11
27	0:20	0:16	0:15	0:13	0:12	0:11	0:11	0:10	0:09	0:09	0:09	0:08
30	0:16	0:12	0:11	0:10	0:09	0:09	0:09	0:08	0:08	0:07	0:07	0:07
33	0:13	0:09	0:09	0:08	0:08	0:07	0:07	0:07	0:07	0:06	0:06	0:06
36	0:10	0:08	0:07	0:07	0:07	0:06	0:06	0:06	0:05	0:05	0:05	0:05
39	0:09	0:07	0:06	0:06	0:06	0:06	0:05	0:05	0:05	0:05	0:05	0:04
42	0:08	0:06	0:06	0:05	0:05	0:05	0:05	0:05	0:04	0:04	0:04	0:04
45	0:06	0:05	0:05	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:04
48	0:06	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03
51	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03	0:03	0:03
54	0:05	0:04	0:04	0:04	0:04	0:03	0:03	0:03	0:03	0:03	0:03	0:03
57	0:05	0:04	0:04	0:03	0:03	0:03	0:03	0:03	0:03	0:03	0:03	0:03

SPECIFICATIONS

CAN BE USED AS
- Dive Computer (Air or Nitrox)
- Digital Depth Gauge/Timer

DIVE COMPUTER PERFORMANCE
- Buhlmann ZHL-16c based PZ+, or DSAT based, algorithm.
- No Decompression limits closely follow PADI RDP.
- Decompression in agreement with Buhlmann ZHL-16c and French MN90.
- No Decompression Deep Stops - Morroni, Bennett.
- Decompression Deep Stops (not recommended) - Blatteau, Gerth, Gutvik.
- Altitude - Buhlmann, IANTD, RDP (Cross).
- Altitude corrections and O2 limits based on NOAA tables.

OPERATIONAL PERFORMANCE

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

Dive Mode Activation:
- Manually by pressing any button or automatic by immersion in water.
- Cannot operate as a DC at elevations higher than 14,000 feet (4,270 meters)

Dive Counter:
- Norm/Gauge displays Dives #1 to 24.
- Resets to Dive #1, upon diving (after 24 hours with no dives).

Dive Log Mode:
- Stores max 24 entries per day, 99 entries in memory for viewing.
- After 24 dives in one day or 99 dives overall, new dives overwrite older dives.

Altitude:
- Operational from sea level to 14,000 feet (4,270 meters) elevation.
- Measures ambient pressure every 30 minutes in Watch mode, when Dive Computer mode is accessed, and every 15 minutes while in DC Surface modes.
- Does not measure ambient pressure when wet.
- Compensates for Altitudes above sea level beginning at 3,001 feet (916 meters) elevation and every 1,000 feet (305 meters) higher.

Power:
- Rechargeable lithium battery
- Replacement: factory only

Battery Indicator:
- Graphical level gauge

Operating Temperature:
- Out of the water - between 20 °F and 140 °F (-6 and 60 °C).
- In the water - between 28 °F and 95 °F (-2 and 35 °C).

BAR GRAPHS:

TLBG

• No Deco Normal zone	0-70%
• No Deco Caution zone	71-99%
• Decompression zone	100%

VARI

• Normal zone	0-70%
• Caution zone	71-99%
• Too Fast zone	100%

SPECIFICATIONS (CONTINUED)

NUMERIC DISPLAYS:	Range:	Resolution:
• Temperature	0 to 140 F (-18 to 60 C)	1 degree
• Altitude Level	Sea, EL2 to EL7	1 level
• Depth, Max Depth	0 to 330 FT (100 M)	1 FT (0.1 M)
• Time to Fly	23:50 to 0:00 hr:min* (* starting 10 min after the dive)	1 minute
• Time to Desaturate	23:50 to 0:00 hr:min* (* starting 10 min after the dive)	1 minute
• Surface Interval	0:00 to 23:59 hr:min	1 minute
• Dive No.	0 to 24	1
• Elapsed Dive Time	00 to 599 min	1 minute
• FO2 Set Points	Air, 21 to 100 %	1 %
• PO2 Value	0.00 to 5.00 ATA	.01 ATA
• O2 Saturation	0 to 100 %	1 %
• Dive Time Remaining	0 to 599 min	1 minute
• No Deco Deep Stop Time	2:00 to 0:00 min:sec	1 second
• No Deco Safety Stop Time	5:00 to 0:00 min:sec	1 second
• GAUGE Dive Run Timer	0 to 599 min	1 minute
• Deco Stop Time	0 to 599 min	1 minute
• Total Ascent Time	0 to 599 min	1 minute
• Violation Countdown Timer	23:50 to 0:00 hr:min	1 minute

MAX FUNCTIONAL DEPTH:	Limit:
Norm/Gauge	330 ft (100 m)

ABBREVIATIONS/TERMS

AL	= Alarm
AR	= Ascent Rate
ATA	= Atmospheres Absolute
AUD	= Audible
BAR	= Metric Unit Of Pressure
BATT (BAT)	= Battery
CAL	= Calibrate (Compass
CDT (CD)	= Countdown Timer
CHG	= Change
CONSERV	= Conservative Factor
CV	= Conditional Violation
DA	= Depth Alarm
DECO	= Decompression
DESAT	= Desaturation
DFLT	= Default
DS	= Deep Stop
DSAT	= Algorithm type
DTR	= Dive Time Remaining
DURA	= Duration (backlight)
DV	= Delayed Violation
EARMARK	= Data Saved
EDT	= Elapsed Dive Time
EL	= Elevation (altitude)
FO2	= Fraction of Oxygen (%)
FORM	= Format (date, time)
FPM	= Feet Per Minute
FT	= Feet (depth)
GTR	= Gas Time Remaining
HR	= Hour
M	= Meters (depth)
MAX	= Maximum
M.D (D.M)	= Month.Day (Day.Month)
MIN (min)	= Minutes (time)
MPM	= Meters Per Minute
NDC	= No Deco DTR
NDL	= No Deco Limit
NO	= Number
NORM	= Normal Dive Mode
NORTH	= Standard Compass Mode
O2	= Oxygen
O2SAT	= % O2
OTR	= Oxygen Time Remaining
PDPS	= Pre Dive Planning Sequence
PO2	= Partial Pressure of O2 (ATA)
PRESS	= Pressure
PSI	= Pounds per Square Inch
RUN	= Run Timer (Gauge)
SAFE	= Safety (stop)
SAT	= Time to Desaturate
SEC (sec)	= Seconds (time)
SI	= Surface Interval
SN	= Serial Number
SS	= Safety Stop
SR	= Sampling Rate
SURF	= Surface
TOTAL ASCENT	= Total Ascent Time
TLBG (TL)	= Tissue Loading Bar Graph
VARI	= Variable Ascent Rate Indcator
VGM	= Violation Gauge Mode
VIO	= Violation
Z+	= Algorithm type

INSPECTION / SERVICE RECORD

Serial Number: _____

Firmware Rev: _____

Date of Purchase: _____

Purchased from: _____

Below to be filled in by an Authorized Oceanic Dealer:

Date	Service Performed	Dealer/Technician

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ProPlus X

DIVE COMPUTER

OPERATING MANUAL