ReACT

OWNER'S MANUAL

GENESIS® SCUBA

RESPONSIBLE COMPUTER DIVING

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

- Plan each dive, and dive your plan - **Your computer was not designed to make decisions for you, only to provide you with the information you need to make responsible decisions for yourself. This begins with a dive plan that will help you avoid a low air or decompression situation.**
- Do not plan any dive that exceeds your training or experience level.
- Inspect your computer before every dive - **If it shows any signs of damage or abnormal function, DO NOT dive with it until it has received factory service.**
- Make your deepest dive first - **When making repetitive dives, it is imperative to ensure that each consecutive dive is shallower than the one before. This will allow your body's slower tissues to continue outgassing nitrogen.**
- Make the deepest part of your dive first, and gradually work your way to the surface using a staircase profile - **The ability to perform multilevel diving is one of the most important contributions of a dive computer, and you should take advantage of it. It will increase your bottom time and at the same time decrease your risk of decompression sickness.**
- Ascend slowly by following an ascent line whenever possible, or by ascending diagonally toward the surface - **Watch the Ascent Rate Indicator closely while you ascend, and keep it in the green zone as much as possible.**
- Make a safety stop at 15-20 feet (4.5-6 m) at the end of every dive - **A safety stop of as little as 5 minutes has been shown to have a dramatic effect on the bubble formation in divers.** It's important. Don't forget it.

PADI DIVER Responsible

The following symbols are used throughout this manual to bring your attention to situations that require special consideration. Be sure to read and follow all instructions carefully.

A **WARNING** is used before a procedure that will result in serious injury or death if the procedure is not followed carefully.

A **CAUTION** is used before a maintenance technique that will result in damage to parts if that technique is not followed carefully.

A **NOTE** is used to emphasize an important maintenance technique.

WARNINGS:

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

LIMITED TWO-YEAR WARRANTY

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

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

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

Statement of Limitations - General:

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

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

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

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TRADEMARK NOTICE

PATENT NOTICE

U.S. Patents have been issued, or applied for, to protect the following design features:
Data Sensing and Processing Device (U.S. Patent no. 4,882,678), Dive Time Remaining (U.S. Patent no. 4,586,136), and Ascent Rate Indicator (U.S. Patent no. 5,156,055).

DECOMPRESSION MODEL

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

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FEATURES and DISPLAYS

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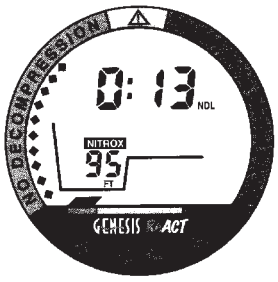
INTRODUCTION

Congratulations on your recent purchase of the Genesis ReACT !

Your ReACT presents the information that you need before, during, and after your air (or nitrox) dives using an intuitive combination of easy to read displays and unique identification icons.

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



As you progress through this instructional guide, you will become familiar with all of the unique functions and features available and see examples of the displays that you could expect to see in the various operational modes. Although it will require an initial investment of time to become acquainted with the various icons and symbols, you'll soon agree that your ReACT is easy to understand and use.

Due to the importance that you understand the ReACT thoroughly prior to using it, information will be expanded upon and some refreshed as you proceed. Relax and read through the complete owner's manual.

It is extremely important that you:

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

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

STOP **WARNING: Inspect your ReACT prior to every dive, checking for any signs of the entrance of moisture, damage to the button membranes, or damage to the LCD display. If these or other signs of damage are found, return the unit to an Authorized Genesis Scuba Dealer. DO NOT attempt to use it until it has received factory service.**

Be a - RESPONSIBLE DIVER at all times.

CONTROL BUTTONS

The ReACT is a unique dive computer with interactive controls that allow you to select various display options and access specific information when you choose to see it. These are referred to as the **LEFT** and **RIGHT** buttons (Fig. 1).

The control buttons can be pressed repeatedly, or held in to scroll and continue as you set or access different display modes.

On the surface the control buttons are used to activate the ReACT; activate the backlight; access the Date/Time, Plan, and Log modes; select units of measure; set the FO2 default feature (On/Off); set the percentage of oxygen (FO2) for a nitrox mix being used; set the Date/Time; and select the dive profile sampling resolution that you desire for data to be downloaded.

The buttons can also be used to access an External Access mode to download (copy) dive data to a unique PC log/profile program.

Underwater, the buttons are used to activate the backlight and view Alternate displays of information for that dive including elapsed dive time, maximum depth, temperature, Time, % of O2 saturation, value of PO2, and FO2 set point.

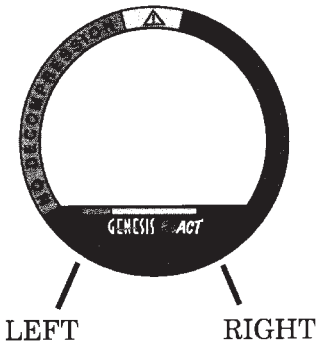


Fig. 1 - Control Buttons

INTUITIVE DISPLAYS

The ReACT uses Genesis Scuba's unique Dive Profile Diagram (Fig. 2a) and easy to understand symbols, displaying information where you would expect it to be when looking at a log profile.

When you enter Special Situations, such as Decompression, High PO2, High O2, and Out of Range modes, an UP Arrow symbol (Fig. 2b) will appear in the middle portion of the display as a warning that a controlled ascent is required.

It is imperative that you understand the formats, ranges, and values of the information presented by the ReACT's numeric and graphic displays to avoid any possible misunderstanding that could result in error.

NOTE: Throughout this owner's manual reference is made to the term "breathing gas'. The rational being that the ReACT can be used for 'air' dives or 'nitrox' dives. For clarity these terms are defined as -

Breathing Gas - the gaseous mixture breathed during a dive.
Air - a breathing gas that contains approximately 21% oxygen and 79% nitrogen (nature's common nitrogen-oxygen mixture).
Nitrox - a nitrogen-oxygen breathing gas that contains a higher fraction of oxygen (22 to 50%) than air.

Fig. 2 - Mode Symbols

BAR GRAPHS

Two segmented bar graphs appear around the perimeter of the upper screen next to green, yellow, and red color coded portions of the peripheral decal that denote normal, caution, and danger zones, respectively.

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

Ascent Rate Indicator

The Ascent Rate Indicator (Fig. 3) is provided to help you avoid excessive ascent rates by providing a visual representation of ascent speed, rather than just showing that you are ascending too fast.

The LCD displays up to 5 segments that may be considered an ascent rate speedometer. Green is a 'normal' rate, yellow a 'caution' rate, and red is 'Too Fast'. The actual speeds represented are shown at the left.

When your ascent rate exceeds the maximum recommended rate of 60 feet (18 meters) per minute, the bar graph segments will enter the red 'Too Fast' zone and all 5 segments will flash once per second until your ascent speed is slowed.

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

Fig. 3 - Ascent Rate Indicator

Nitrogen Bar Graph

The Nitrogen Bar Graph (Fig. 4) represents tissue loading of nitrogen, showing your relative no decompression or decompression status. As your depth and bottom time (BT) increase, segments will add to the graph, and as you ascend to shallower depths, the bar graph will begin to recede, indicating that additional no decompression time is allowed for multilevel diving. The Nitrogen Bar Graph also assists you with managing decompression by filling red 'ceiling stop required' segments which are described in more detail in the Special Situations section of this manual.

The Nitrogen Bar Graph monitors 12 different nitrogen compartments simultaneously and displays the one that is in control of your dive at that time. It is divided into a green No Decompression zone, a yellow Caution zone, and a red DECO (decompression) zone.

The yellow Caution zone gives a visual representation of just how close you are to the no decompression limit which allows you to make a decision regarding safety stop duration or necessity.

The red DECO zone alerts you to focus your attention on the current required DECO stop 'ceiling' depth indicated by the bar graph segment. When stop depths of 50 FT (15 M) and 60 FT (18 M) are required, all red segments are displayed and the required stop depth is displayed numerically.

Fig. 4 - Nitrogen Bar Graph

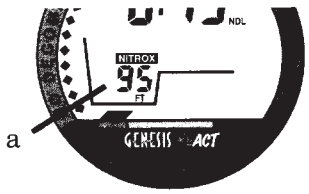


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Fig. 5 - Current Depth

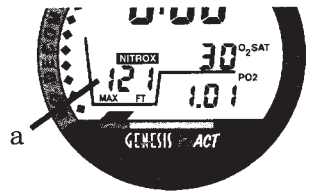

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Fig. 6 - Maximum Depth

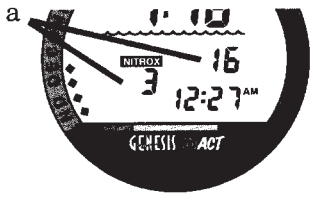

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Fig. 7 - Date

DEPTH DISPLAYS

The **Depth** display indicates depths from 0 to 330 feet (99.5 meters) in 1 foot (.5 meter) increments.

During a dive, **Current Depth** is displayed continuously on the Main display (Fig. 5a) with the symbol FT or M (below it).

When the LEFT button is pressed one (1) time to view the first Alternate display, **Maximum Depth** (Fig. 6a) and the symbol MAX (below it) are displayed in place of Current Depth.

In the event that you descend deeper than 330 feet (99.5 meters), this display will show three dashes (- - -) to indicate that you have gone 'out of range'. This is described in more detail in the Special Situations section of this manual.

During a Decompression Dive, required **Ceiling Stop Depths** of 50 FT (15 M) and 60 FT (18 M) are displayed in the lower/right portion of the Main display. This is described in more detail in the Special Situations section of this manual.

DATE DISPLAY

The **Date** is displayed continuously when the ReACT is in Surface Mode (Fig. 7a). It is not displayed in any other modes on the surface or during Dive Modes.

TIME DISPLAYS

The ReACT has three time displays.

The largest display is the **Main Time** display (Fig. 8a). Indicated are theoretical No Decompression Limit (NDL), Oxygen Tolerance Limit (OTL), Bottom Time (BT), Total Ascent Time (TAT), or Surface Time, depending on the operating mode that the ReACT is in.

A second time display (Fig. 8b) indicates Decompression Stop Time required at the stop depth indicated, or Time to Desaturate, depending on the operating mode that the unit is in.

The third time display (Fig. 8c) indicates Time of Day, or Time to Fly, depending on the operating mode that the unit is in.

Each display is described in detail in subsequent sections of this manual.

Time displays are shown in hour:minute format (i.e., 1:09 represents one hour and nine minutes, not 109 minutes!). The colon that separates hours and minutes blinks once per second when the display is indicating real time such as Surface Time, Bottom Time, and Time of Day. NDL, OTL, TAT, Deco Stop Time, Time to Fly, and Time to Desaturate are calculated projections of time and use a solid (non-blinking) colon to indicate that they are counting down.

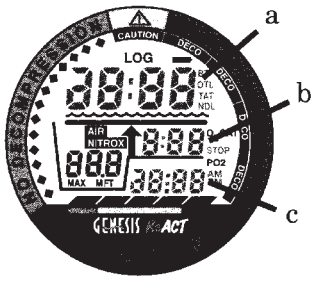

Fig. 8 - Time Displays

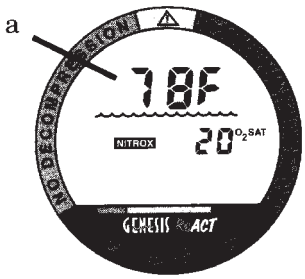

Fig. 9 - Temperature Display

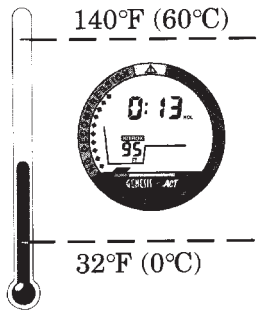

Fig. 10 - Operating Temperature

TEMPERATURE DISPLAY

While in the Surface Mode, Ambient Temperature (Fig. 9a) will be displayed for 10 seconds in place of Surface Time when the LEFT button is pressed. During a dive, Water Temperature is displayed when the LEFT button is pressed 2 times to view the second Alternate display.

If the Temperature exceeds a value of '99', two dashes (- -) will be displayed on the screen until the unit's temperature decreases to '99'.

BACKLIGHT FEATURE

On the surface while in Surface Mode or Fly Mode, or during any Dive Mode, the ReACT's Hydroglow™ backlight will illuminate the display when the RIGHT button is pressed. The display will remain illuminated as long as the button is pressed, plus 10 seconds after being released.

OPERATING TEMPERATURE

The ReACT will operate in almost any temperature diving environment in the world (Fig. 10) between 32 and 140 °F (0 and 60 °C). At extremely low temperatures, the LCD may become sluggish, but this will not affect it's accuracy. If stored or transported in extremely low temperature areas (below freezing), you should warm the module and its batteries with body heat before diving.

ACTIVATION and SETUP

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Fig. 11 - Diagnostic Mode

Fig. 12 - Low Battery

ACTIVATING THE DISPLAY

WARNING: Never attempt to activate the ReACT underwater. This may result in inaccurate depth and no-decompression time displays. If the unit is activated when deeper than 4 feet (1 meter) underwater, or at elevations higher than 14,000 feet (4,267 meters), it will perform a diagnostic check followed by immediate shutdown.

To **activate** the ReACT, press the RIGHT button once and release. It will immediately enter **Diagnostic Mode**, displaying all "8's" (Fig. 11), followed by "dashes", and a countdown from 9 to 0. The left digit of the Main Time display and the lower Time display do not contain segments in their top/left positions.

While conducting diagnostics, the display is illuminated by the backlight as it checks its display functions to ensure that everything is working properly and that battery voltage is sufficient to complete a full day of diving. If there is not enough battery voltage, the unit will either deactivate itself or would not have activated at all.

WARNING: If a Low Battery symbol (Fig. 12a) is indicated following diagnostics, Genesis Scuba strongly recommends that you DO NOT dive until the battery is replaced.

Upon activation, the ReACT will also check the ambient barometric pressure, and calibrate its present depth as zero. At elevations of 2,000 feet (610 m) or higher, it will recalibrate itself to measure Depth in feet of fresh water instead of feet of sea water.

If no dive is made within 2 hours after initial activation, the unit will automatically deactivate to conserve its battery power.

WARNING: If any display or function varies from the information presented here, return the ReACT to your Authorized Genesis Scuba Dealer for inspection.

SURFACE MODE

Surface Mode, identified by the Surface Wave symbol (Fig. 13a), immediately follows Diagnostic Mode after activation.

Information displayed includes Surface Time (Fig. 13b) with colon flashing, Date (Fig. 13c/d) and Time (Fig. 13e) with Am or Pm symbol, and AIR (or NITROX) symbol (Fig. 13f).

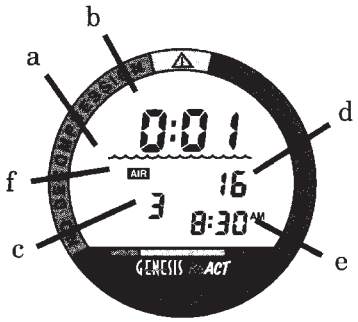

Fig. 13 - Surface Mode

ENTERING SETTINGS

Before going diving, use the Set Mode to set, or verify, FO2 50% Default (On or Off), Units of Measure (Imperial or Metric), Date/Time, and Dive Profile Sampling Rate (for download data).

Setting the FO2 'value' for the nitrox mix being used is a 'pre dive' setting be entered, or verified before 'each' nitrox dive. This is described in the Pre Dive and Dive Mode section of this manual.

WARNING: Settings must be verified and reset as necessary if the battery is replaced.

1 - FO2 50% Default
2 - Units of Measure
3 - External Access
4 - Year
5 - Month
6 - Day
7 - Hour
8 - Minute
9 - Sampling Rate

Fig. 14 - Set Mode Sequence

While in the Set Mode, the Advance (Left) button is used to move through the available settings, and the Select (Right) button is used to enter the setting that is shown on the screen.

NOTE: If the ReACT is left unattended (no buttons depressed) for 2 minutes while in the Set Mode, it will automatically revert to Surface Mode.

To access the **Set Mode** while in the Surface Mode, press BOTH buttons simultaneously and momentarily. To bypass a setting that you do not wish to change, press the LEFT button to move to the next setting in the Sequence (Fig. 14).

TO SET FO2 (50%) DEFAULT - ON/OFF

- ON = FO2 value set point reverts to 50% after dives (must be set each dive)
- OFF = FO2 value set point remains at the % set until changed or shut down

Factory set for ON.

- press BOTH buttons simultaneously while in Surface Mode
- FO2 50 appears with On, or Off, flashing (Fig. 15)
- press the RIGHT button to toggle between On and Off
- press the LEFT button once to revert to Surface Mode

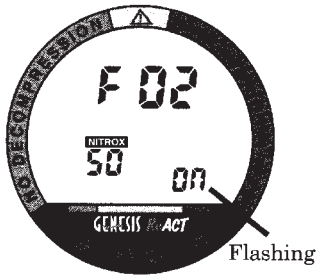

Fig. 15 - Set FO2 Default

TO SET UNITS OF MEASURE

Factory set for Imperial units of measure (FT and °F).

- press BOTH buttons simultaneously while in Surface Mode
- press the LEFT button 1 time to access Set Units
- FT and F appear flashing (Fig. 16)
- press the RIGHT button to toggle between Imperial and Metric (M and °C)
- press the LEFT button once to revert to Surface Mode

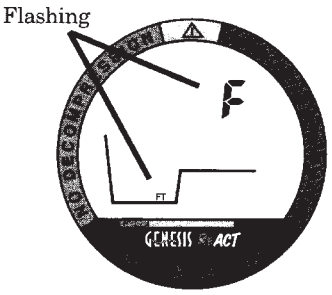

Fig. 16 - Set Units of Measure

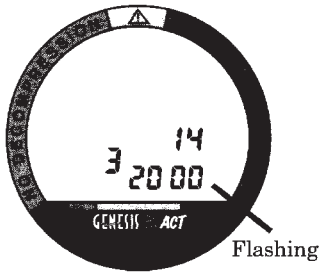

Fig. 17 - Set Date

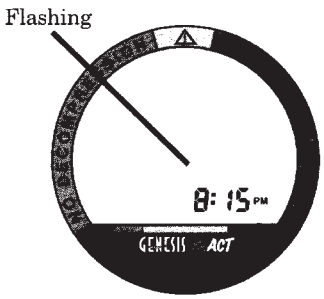

Fig. 18 - Set Time

TO SET DATE/TIME

Factory set for January 1, 2000, 12:00 Am (midnight).

- press BOTH buttons simultaneously while in Surface Mode
- press the LEFT button 3 times to access the DATE screen
  (If Units of Measure are set for Metric, Month appears above the Year.)
- The DATE appears with the Year flashing (Fig. 17).

Hint: To bypass a display that is flashing, do not press the RIGHT button, instead press the LEFT button to move to the next function.

- press and hold the RIGHT button until the correct Year appears
- press the LEFT button once. The Month flashes.
- press and hold the RIGHT button until the correct Month appears
- press the LEFT button once. The Day flashes.
- press and hold the RIGHT button until the correct Day appears
- press the LEFT button once. The TIME screen will appear with the Hour flashing (Fig. 18).
- press and hold the RIGHT button until the correct Hour appears
- press the LEFT button once. The Minute flashes.
- press and hold the RIGHT button until the correct Minute appears
- press the LEFT button once to revert to Surface Mode

TO SET DIVE PROFILE DATA SAMPLING RATE

This setting allows you to select the rate that the ReACT samples data points for onboard storage in memory for subsequent download to the Data Retrieval System PC software program. It does not affect the rate that data is sampled for operational displays.

Factory set for 30 seconds.

- press BOTH buttons simultaneously while in Surface Mode
- press the LEFT button 8 times to access Set Sampling Rate
- SEC and the numeric Rate appear with the Rate flashing (Fig. 19)
- press and hold the RIGHT button until the desired rate appears (options = 2, 5, 10, 15, 20, 25, or 30 SEC)
- press the LEFT button once to revert to Surface Mode

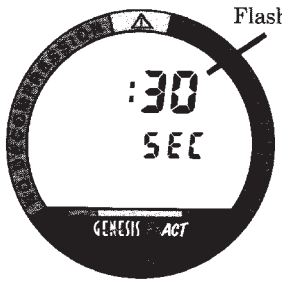

Fig. 19 - Set Sample Rate

EXTERNAL ACCESS (EA) MODE

Although this mode (Fig. 20) is within the sequence of settings, it does not have any set points or selections. It provides user access to the PC download feature that is described in the Post Dive Mode section of this manual. Also, the factory uses it to access diagnostic and calibration information.

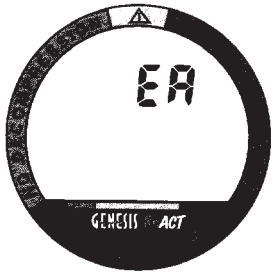

Fig. 20 - EA Mode

SUMMARY OF SET MODE SEQUENCE

To access a specific Set Mode directly from the Surface Mode, press BOTH buttons simultaneously and momentarily, then press the LEFT button the number of times indicated below.

To Access -	Press the LEFT button -
Set - FO2 Default (On/Off)	0 - times
Set - Units of Measure (Imperial/Metric)	1 - time
Download (EA Mode)	2 - times
Set - Year (2000 - 2015)	3 - times
Set - Month (1 - 12)	4 - times
Set - Day (1 - 31)	5 - times
Set - Hour (12 Am - 11 Pm)	6 - times
Set - Minute (00 - 59)	7 - times
Set - Dive Profile Sampling Rate	8 - times

PRE DIVE and DIVE MODES

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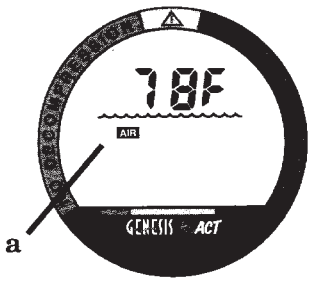


Fig. 20 - Temperature

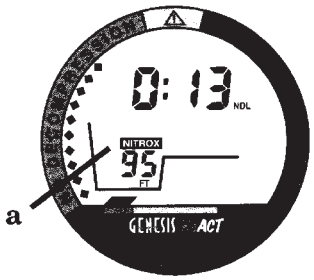


Fig. 21 - Set for Nitrox

PRE DIVE MODES

While in the Surface Mode, press the LEFT button to view Temperature (Fig. 20). Press the RIGHT button to activate the Hydroglow™ backlight.

The LEFT button is also used to access FO2, Plan, Fly, and Log Modes.

NOTE: Fly and Log modes are considered Post Dive modes and are described in the next section of this manual.

FO2 MODE

The ReACT can be set for use either as an AIR computer or as a NITROX computer. After activation, it will operate as an AIR computer without displaying information associated with oxygen calculations, unless it is set for a percentage of oxygen (FO2) other than Air (e.g., a numerical value between 21 and 50 %).

If your ReACT is set for use with Air as your breathing gas, the symbol **AIR** will be displayed (Fig. 20a) during all modes except the Set, Fly, and Gauge modes. If it is set for use with Nitrox, the symbol **NITROX** will be displayed (Fig. 21a).

WARNING: When set for use with Nitrox, the percentage of oxygen (FO2) in the nitrox mix being used must be set prior to every nitrox dive, or verified if the FO2 50% Default feature has been set to Off. Always verify the FO2 setting prior to each nitrox dive.

FO2 SET FOR USE WITH AIR

When set with an FO2 value of AIR (Fig. 22), the ReACT will perform calculations the same as if FO2 were set for 21% oxygen, internally accounting for oxygen loading for any subsequent Nitrox dives.

Fig. 22 - FO2 Set for AIR

Once a dive is made with the unit set as a NITROX computer (e.g., FO2 set for a numerical value), the unit cannot be programmed to operate as an AIR computer until 24 hours after the last dive. AIR will not be displayed as an option in the FO2 Set Mode. You can set FO2 for 21% for use with Air.

FO2 SET FOR USE WITH NITROX

If FO2 is set at a value of 21% (Fig. 23), the unit will remain set as a 21% NITROX computer for subsequent dives until FO2 is set to a higher value (22 to 50%), or until it automatically turns off and is reactivated.

Fig. 23 - FO2 Set for 21%

Fig. 24 - FO2 Default ON

Fig. 25 - FO2 Default OFF

FO2 50% Default ON

When the FO2 50% Default feature is set **On** and FO2 is set at a value of 22 to 50% to match the nitrox mix being used for that nitrox dive, the FO2 setting after that dive will automatically default to a value of 50% (Fig. 24).

If you surface for greater than 10 minutes during a dive and the FO2 default is set On, a subsequent descent will be considered a new dive and the FO2 value must be reentered.

CAUTION: When the FO2 default is set On, the FO2 value must be set for each repetitive nitrox dive, or the value will automatically be 50 and the dives will be calculated based on 50% O2 for oxygen calculations and 21% O2 (79% nitrogen) for nitrogen calculations.

FO2 50% Default OFF

When the FO2 50% Default feature is set **Off** and FO2 is set at a value of 22 to 50% to match the nitrox mix being used for that nitrox dive, the FO2 setting after that dive will remain at the value set prior to that dive (Fig. 25).

Setting FO2 for Use with Nitrox

To set FO2 for the percentage of oxygen (FO2) in your specific Nitrox mix:

- press the LEFT button 2 times while in Surface Mode, to access FO2 Mode
- press and hold the RIGHT button to scroll to the value required (Fig. 26a).
  - The percentage displayed will advance 1% per second from 21 to 50%.
  - The **Depth** display will simultaneously indicates the **Max**imum **Depth** that can be achieved for an oxygen partial pressure (PO2) of 1.60 ATA for each of the FO2 values (Fig. 26b).
- when the proper value of FO2 is displayed, release the button.
- press the LEFT button to revert to Surface Mode

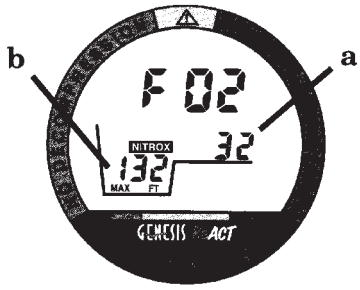


Fig. 26 - FO2 Set for 32%

PLAN MODE

⚠ **CAUTION: Genesis Scuba strongly recommends that you access and review the Plan Mode prior to every dive to help you plan your dive as required to avoid exceeding no decompression or oxygen exposure limits.**

This is especially important for repetitive dives, when the Plan Mode (Fig. 27) indicates adjusted no decompression limits, or oxygen tolerance limits, available for your next dive, based on any residual nitrogen and oxygen accumulation following your last dive and surface interval.

Fig. 27 - Plan Mode

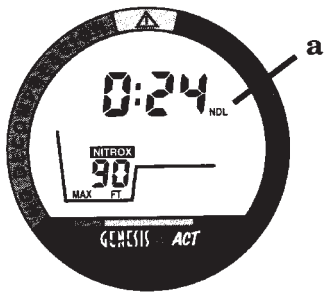


Fig. 28 - Nitrogen Control

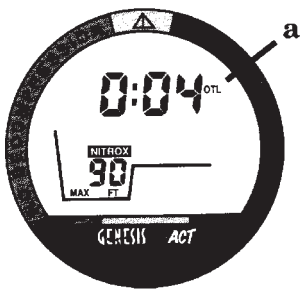


Fig. 29 - Oxygen Control

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

With each Depth displayed in the Plan Mode, you will see either 'predicted' no decompression limits (NDL) based upon your previous dive profiles, if calculated to be nitrogen controlled (Fig. 28a), or 'predicted' oxygen tolerance limits (OTL) based upon either a single dive exposure or your 24 hour accumulation of oxygen, if calculated to be oxygen controlled (Fig. 29a).

No decompression times are only displayed for depths where there are at least 3 minutes of dive time available at the depth, taking into account a descent rate of 120 feet (36 meters) per minute. Depths greater than the maximum depth that can be achieved with a PO2 of 1.60 BAR will not be displayed.

To access and view the Plan Mode:

- press the LEFT button 3 times, while in Surface Mode
- press and hold the RIGHT button to scroll through a sequence of Depths from 30 to 160 feet (9 to 48 meters) in 10 foot (3 meter) increments
- press the LEFT button to revert to Surface Mode

WARNING: The ReACT must be manually activated and be in an operating mode prior to start of a dive. The unit will not activate automatically by immersion in water. Also, the FO2 setting must be verified prior to each nitrox dive.

NO DECOMPRESSION DIVE MODE

Once activated, the ReACT will enter the No Decompression Dive Mode when you descend deeper than 5 feet (1.5 meters).

This mode is identified by the Dive Profile symbol (Fig. 30a). The AIR, or NITROX, symbol also will be displayed continuously.

The Bar Graphs will indicate nitrogen loading and ascent rate.

To activate the Hydroglow™ backlight, press the Right button. The display will be illuminated for button depression time plus 10 seconds after releasing it.

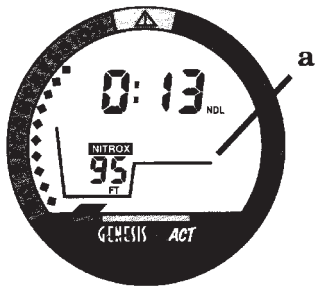


Fig. 30 - No Decompression Dive Mode

Main Display

Dive Time Remaining (NDL or OTL) and Current Depth are displayed continuously, unless the LEFT button is pressed to view Alternate Displays.

Dive Time Remaining is described in detail in the Reference section.

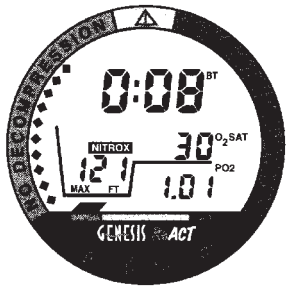


Fig. 31 - Alternate Display 1

Alternate Display 1

To view Alternate Display 1 (Fig. 31), press the LEFT button 1 time.

Bottom Time (BT), Maximum Depth (MAX), and (if set for Nitrox) percentage of Oxygen Saturation (O_2SAT) and level of PO2, will be displayed for 10 seconds.

Fig. 32 - Alternate Display 2

Alternate Display 2

To view Alternate Display 2 (Fig. 32), press the LEFT button 2 times while viewing the Main Display, or 1 time while viewing Alternate Display #1.

Water Temperature (F or C), Time of Day (Am or Pm), and (if set for Nitrox) the FO2 value set will be displayed for 10 seconds.

Bar Graphs

As your Depth and Bottom Time increase during a dive, the Nitrogen Bar Graph will fill with segments (green toward red) to represent nitrogen loading. Segments of the Ascent Rate Indicator fill (and recede) as your Ascent Rate increases (and decreases) throughout the dive.

WARNING: Every effort should be made to keep each of the bar graphs *in the green* throughout your dives.

ASCENDING TO THE SURFACE

While ascending to shallower depths, the segments that have filled up the Nitrogen Bar Graph will begin to recede (Fig. 33), offering a graphic representation of your multilevel diving capability.

The Ascent Rate Indicator shows how fast you are ascending. When you exceed the **maximum recommended ascent rate of 60 feet per minute (18 meters per minute)**, the bar graph will enter the red (Too Fast) zone (Fig. 34). All segments of the bar graph flash as a warning until your ascent rate is slowed.

A safety stop made between 15-20 feet (5-6.5 meters) is strongly recommended as a standard procedure before completing your ascent.

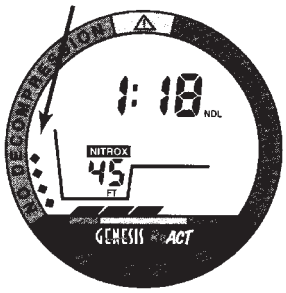


Fig. 33 - Nitrogen Bar Graph (receding)

ALTITUDE DIVING

The mathematical model within the ReACT accounts for the reduced dive times available at higher elevations based on NOAA (National Oceanic and Atmospheric Administration) guidelines.

When activated at altitudes from 2,000 to 14,000 feet (610 to 4,268 meters) , the ReACT will adjust automatically, providing corrected depth and reduced No Decompression and Oxygen Exposure times for that altitude.

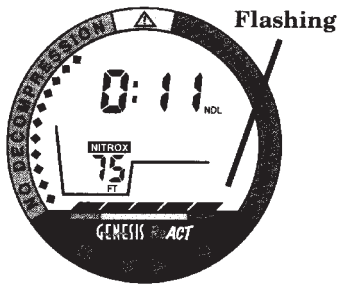


Fig. 34 - Ascent Too Fast

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

NOTE: If activated above 14,000 feet (4,268 meters), the ReACT will perform a diagnostic check followed by immediate shutdown.

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

More about altitude diving is presented in the Reference section.

Be a RESPONSIBLE DIVER at all times !

POST DIVE MODES

Fig. 35 - Transition Period

Fig. 36 - Alternate Display

POST DIVE SURFACE MODE

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

TRANSITION PERIOD

The first 10 minutes is, in affect, a Transition Period during which time the following information is displayed (Fig. 35):

- Wave symbol flashing to indicate Surface Mode Transition Period. The Dive Profile symbol disappears.
- Main Time display counting Surface Interval (colon flashing).
- Date/Time and the AIR, or NITROX, symbol.
- Nitrogen Bar Graph indicating current nitrogen loading.

If you descend during the 10 minute Transition Period, time underwater will be considered a continuation of that dive. The time at the surface (if less than 10 minutes) will not be added as Bottom Time.

To view the Temperature and O_2SAT (Fig. 36):

- press the LEFT button 1 time
- The unit will revert to Surface Mode after 10 seconds.

To view that dive's Log (Fig. 37):

- press the LEFT button 2 times, while in Surface Mode, or -
- press the LEFT button 1 time, while viewing Temperature, O2SAT
- press the RIGHT button 1 time to view the Nitrogen data screen*
- press the RIGHT button again to view the Oxygen data screen*

(* Nitrogen and Oxygen data screens are described on page 35.)

- The unit will revert to Surface Mode after 2 minutes.

Data will not be stored in the unit's memory until the 10 minute Transition Period on the surface is completed. Also, no other modes are accessible.

Fig. 37 - Dive Log (during Transition Period)

AFTER THE TRANSITION PERIOD (THE FIRST 2 HOURS)

Once 10 minutes have elapsed, the Wave symbol stops flashing indicating that the dive and Transition Period are completed, and a subsequent descent will be considered a new dive.

That dive will be entered into the ReACT's Dive Log and download memory.

For the remainder of the **first 2 hours after surfacing**, information will continue to be displayed as Surface Mode (Fig. 38) and you will have full access to the other modes.

Fig. 38- Surface Mode (first 2 hours)

Fig. 39 - FO2 (Default OFF)

Fig. 40 - FO2 (Default ON)

To view the Temperature and O2SAT:

- press the LEFT button 1 time, while in Surface Mode
- The unit will revert to Surface Mode after 10 seconds.

To access FO2 Mode:

- press the LEFT button 2 times, while in Surface Mode, or -

- If the FO2 Default was set OFF, the FO2 setting displayed will be the same value previously set (Fig. 39).
- If the FO2 Default was set ON, the FO2 value displayed will be the 'default value' of 50 (Fig. 40) and will have to be set for the breathing gas used for the next dive.
- press the RIGHT button to alter the setting, if required
- The unit will revert to Surface Mode after 2 minutes, unless the LEFT button is pressed to access the Plan Mode.

To access Plan Mode:

- press the LEFT button 3 times, while in Surface Mode
- press the RIGHT button to scroll through the sequence
- The unit will revert to Surface Mode after 2 minutes, unless the LEFT button is pressed to access the Log Mode.

The **Plan Mode** will now show either 'adjusted' no decompression limits based upon your previous dive profiles, if calculated to be nitrogen controlled (Fig. 41), or 'adjusted' oxygen tolerance limits based upon either a single dive exposure or your 24 hour accumulation of oxygen, if calculated to be oxygen controlled. The symbol NDL, or OTL, will be displayed to indicate which is in control.

Fig. 41 - Adjusted Limits

The Plan Mode will only display depths/times to the maximum depth allowed by the nitrogen or oxygen limit, whichever is in control. Calculated dive times and the maximum allowed depth displayed will increase as the real time Surface Interval increases after completion of a dive.

To access Fly/Desat Mode (countdowns):

- press the LEFT button 4 times, while in Surface Mode, or -
- press the LEFT button 1 time, while in Plan Mode
- The unit reverts to Surface Mode after 2 minutes, unless the LEFT button is pressed to access Log Mode.

The Time to Fly counter (Fig. 42a) begins counting down 10 minutes after the last dive (after the Transition Period) displaying FLY with a countdown that starts at 23:50 (hr:min) and counts down to 0:00 (hr:min).

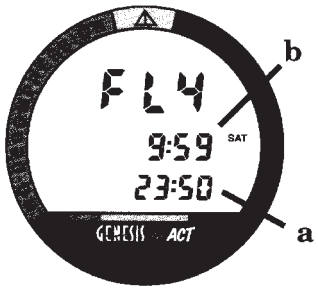


Fig. 42 - Fly/Desat

The Desat counter (Fig. 42b) provides calculated time for tissue desaturation at sea level. It begins 10 minutes after the last dive displaying SAT with a countdown that starts at 9:59 (hr:min) maximum and counts down to 0:00 (hr:min).

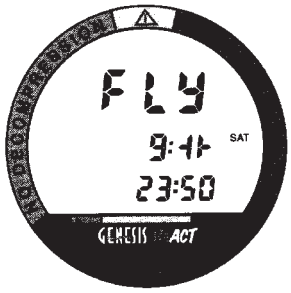


Fig. 43 - Desat > 9:59

If Time to Desaturate is calculated to be greater than 9:59 (hr:min), the display will indicate 9:+ + (Fig. 43) until the time decreases to 9:59.

If a violation occurred during the dive, Time to Desaturate will not be displayed and a single dash (-) will appear instead of the letters FLY (Fig. 44).

Fig. 44 - Fly Mode (after a violation dive)

LOG MODE

Information from your 12 latest dives is stored in the **Log** for viewing. After exceeding 12 dives, the ReACT will overwrite the oldest dive in the Log (i.e., the most recent dive deletes the oldest). Log information will not be lost when the battery is removed/replaced, but factory service will delete data.

Log Mode recalls dives in reverse order from the one most recently recorded back to the oldest of the 12 dives stored. Your most recent dive will always be the first shown when Log Mode is accessed. Each dive has three Log screens - Date/Time started, Nitrogen data, and Oxygen data.

Dives are identified by the Dive Number (for that day) and Date/Time started. The first dive of a new day (after midnight) will be #1.

The LEFT button is used to access (or bypass) each dive's in the Log and the RIGHT button is used to view second and third screens for that dive (Nitrogen and Oxygen related data).

To access the Log Mode (after a dive):

- press the LEFT button 5 times, while in Surface Mode, or -
- press the LEFT button 1 times, while in viewing Fly/Desat
- the first screen (**Dive Identifier** - Fig. 45) of the most recent dive will appear displaying -
  - LOG symbol and Dive Number (#1 to #12)
  - AIR (or NITROX) symbol
  - Date/Time the dive started

Hint: To 'bypass' this dive's Log to view an older dive's Log, press the LEFT button repeatedly until that dive's Log appears.

Fig. 45 - Dive Identifier (first Log screen)

To view the second screen for that dive (**Nitrogen Data**- Fig. 46):

- press the RIGHT button 1 time. Information displayed includes -
  - LOG, AIR (or NITROX), and Dive Profile symbols
  - Bottom Time (BT)
  - Maximum Depth (MAX) reached
  - Ascent Rate Indicator - showing the maximum ascent rate maintained for 4 consecutive seconds during the dive
  - Nitrogen Bar Graph - showing tissue nitrogen loading at the time you surfaced from the dive. If you entered Decompression Mode during the dive, the DECO segment for each required stop is displayed.

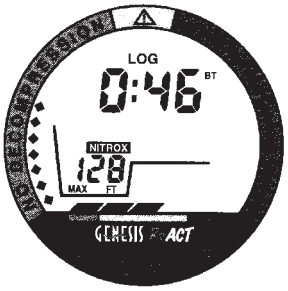


Fig. 46 - Nitrogen Data (second Log screen)

To view the third screen for that dive (**Oxygen Data** - Fig. 47):

- press the RIGHT button 1 time, while viewing Nitrogen Data. Information displayed includes -
  - LOG, AIR (or NITROX), and Wave symbols
  - Surface Interval - prior to that dive
  - FO2 value - % set for that dive
  - O2SAT value and symbol - % of allowable oxygen accumulated at the time you surfaced (whichever is higher of per dive or per day)
  - Maximum PO2 level and symbol - reached during that dive
- If FO2 was set for AIR for that dive, the O2 screen will only display AIR.
- press the LEFT button 1 time to view the first screen (Dive Identifier) of the previous dive's Log

Fig. 47 - Oxygen Data (third Log screen)

To exit Log Mode and return to the Surface Mode:

- press the LEFT button, any time after having pressed the RIGHT button.
- The unit will automatically revert to Surface Mode after 2 minutes, if no button is pressed while in Log Mode.

AFTER THE FIRST 2 HOURS

Two hours after the last dive, Surface Mode will no longer be displayed. The **Fly/Desat Mode** (countdown timers) will be displayed continuously, giving the final countdowns from 22:00 and 9:59 (hr:min) to 0:00 (Fig. 48).

Fig. 48 - Fly/Desat Mode
(> 2 hours after a dive)

To access other modes or enter settings:

- press the RIGHT button 1 time, while Fly/Desat are displayed
- The ReACT will perform a diagnostic check and enter Surface Mode.
- It will revert to Fly/Desat Mode after 2 hours, if neither button is pressed.

EXTERNAL ACCESS (EA) MODE

Dive profile data is stored in your ReACT's memory for subsequent download to the optional Data Retrieval System (DRS) PC program for Windows® 95/98. Instructions for performing the interface and download are provided with the DRS.

To access the External Access (EA) Mode:

- press BOTH buttons simultaneously, while in Surface Mode
- press the LEFT button 2 times - EA appears, flashing (Fig. 49)
- press the LEFT button to bypass EA Mode, or -
- press the RIGHT button to initiate download. The unit reverts to Surface Mode after 2 minutes, if neither button is pressed.
- The Backlight will not operate while in EA Mode.

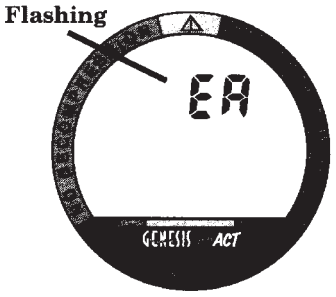


Fig. 49 - EA Mode

SUMMARY OF POST DIVE MODES

During the first 2 hours after a dive* (*after the 10 minute Transition Period has ended*):

MODES	TO ACCESS	TO VIEW
Backlight	press Right '1 time'	
Temperature / O2SAT	press Left '1 time'	
FO2 set	press Left '2 times'	> press Right (hold or repetitive)
Plan Sequence	press Left '3 times'	> press Right (hold or repetitive)
Fly/Desaturate	press Left '4 times'	
Log Mode	press Left '5 times'	> press Right (hold or repetitive)
Set Mode	press Both '1 time'	> Refer to page 18 of this Guide
EA Mode	press Both '1 time'	> press Left '2 times' > Right '1 time'

*After the First 2 Hours, the unit will remain in Fly/Desaturate Mode. To access other Modes:

- press the Right button to return to the Surface Mode, then press the buttons as indicated above.

SPECIAL SITUATIONS

EMERGENCY DECOMPRESSION

The ReACT is a sophisticated instrument designed with capabilities that go beyond the range of recreational diving with compressed air. It will help you to avoid and, if necessary, manage decompression.

WARNING: See pages 54 and 55 for Special Warnings and Additional Safety Information.

NITROGEN BAR GRAPH

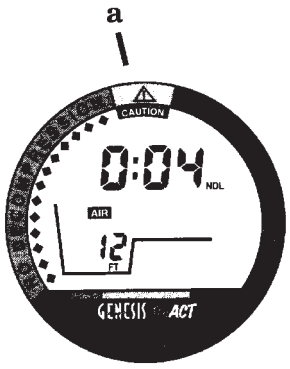


Fig. 50 - Caution Zone

The Nitrogen Bar Graph offers you a convenient way to consistently monitor how close you are coming to the No Decompression Limit. As you use the ReACT and become familiar with the Nitrogen Bar Graph, you will notice that it displays fewer segments for shorter dive times and shallower depths. Use this feature to adjust conservatism to your diving needs.

CAUTION: Use the yellow Caution Zone (Fig. 50a) as a visual reference to place a wider margin of protection between you and the No Decompression Limit.

Genesis Scuba suggests keeping the Nitrogen Bar Graph in the green No Decompression zone during all of your dives, and that it always be in the 'green' when leaving the water.

DECOMPRESSION DIVE MODE

The ReACT is designed to help you by providing a complete representation of how close you are to entering decompression. Decompression Dive Mode activates when theoretical no decompression time/depth limits are exceeded.

In the event that you enter Decompression Mode, immediately begin a safe controlled ascent to a depth slightly deeper than, or equal to, the Required Ceiling Stop Depth indicated and decompress for the Stop Time indicated.

Main Display

Upon entering Decompression Mode, Wave/Ceiling Bar symbols (Fig. 51a) and UP Arrow symbol (Fig. 51b) appear in the middle of the display as a warning. Also, the Nitrogen Bar Graph will display a segment next to the deepest Stop Depth required (Fig. 51c). Other information displayed includes:

- Total Ascent Time (TAT) (Fig. 51d) - stop times required at all ceilings plus vertical ascent time calculated at 60 ft (18 m) per minute.
- Stop Time Required (Fig. 51e) - for the Stop Depth indicated
- Current Depth (Fig. 51f)
- Ascent Rate Indicator

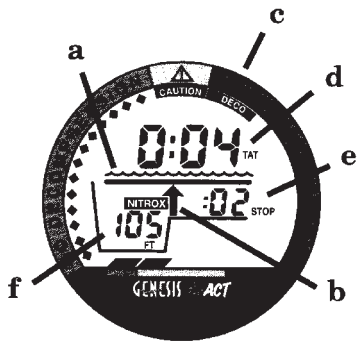


Fig. 51 - DECO Mode (Main Display)

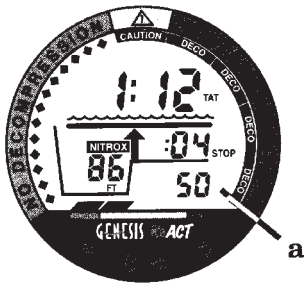


Fig. 52 - Stop > 40FT (12M)

If a **Stop Depth of 50 FT (15 M) or 60 FT (18 M)** is required, all segments of the bar graph will be displayed and the required Stop Depth will appear numerically in the lower/right portion of the display (Fig. 52a).

To activate the **Backlight**, press the RIGHT button 1 time. The display will remain illuminated for button depression time plus 10 seconds.

Alternate Display 1

To view Alternate Display 1 (Fig. 53), press the LEFT button 1 time.

Bottom Time (BT), Maximum Depth (MAX), and (if set for Nitrox) percentage of Oxygen Saturation (O_2SAT) and level of PO2, will be displayed for 10 seconds then revert to the Main Display.

Fig. 53 - Alternate 1

Alternate Display 2

To view Alternate Display 2, press the LEFT button 2 times while viewing the Main Display, or 1 time while viewing Alternate Display #1.

Water Temperature (F or C), Time of Day (Am or Pm), and (if set for Nitrox) the FO2 value set will be displayed for 10 seconds then revert to the Main Display.

MANAGING DECOMPRESSION STOPS

The amount of decompression credit time that you receive is dependent on depth, with slightly less credit given the deeper you are.

You should stay slightly deeper (Fig. 54a) than the Required Stop Depth indicated (Fig. 54b) until the next shallower Stop Depth appears. Then, you can slowly ascend to, but not shallower than that indicated ceiling Stop Depth.

WARNING: You must not ascend shallower than the decompression ceiling indicated. Doing so will greatly increase your risk of decompression sickness and place the ReACT into a Conditional Violation Mode (described on the next page).

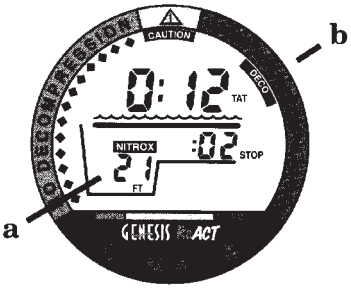


Fig. 54 - Managing a Stop

Once all required decompression has been completed, the ReACT will revert to the No Decompression Dive Mode. This is indicated by Total Ascent Time = 0:00, and the Nitrogen Bar Graph receding into the Caution Zone.

Dive Time Remaining now appears in place of Total Ascent Time (Fig. 55) displaying the No Decompression Time Remaining (NDL) or Oxygen Accumulation Time Remaining (OTL), whichever time is the least and in control.

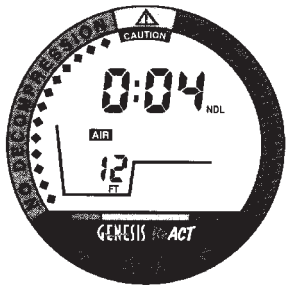


Fig. 55 - DECO Completed

VIOLATION MODES

Violation Modes the ReACT can enter are termed Conditional, Delayed, and Immediate. Permanent Violation Mode and Gauge Mode are continuations of these.

WARNING: If you exceed certain limits, the ReACT will not be able to tell you how to get safely back to the surface. These situations exceed tested limits and can result in loss of some ReACT functions for 24 hours after the dive in which a Violation occurred. It is important to understand each different Violation Mode and how to carry out emergency procedures in the event that you enter one.

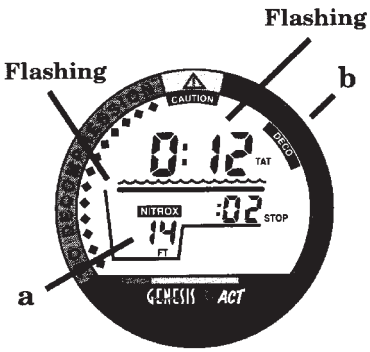


Fig. 56 - Conditional Violation (above ceiling < 5 min)

While in Violation Modes, Alternate Displays can be still be accessed using the LEFT button, and the Backlight can be activated using the RIGHT button.

CONDITIONAL VIOLATION MODE

The ReACT will enter the Conditional Violation Mode **if you ascend shallower than** (Fig. 56a) **the Required DECO Ceiling** Stop Depth displayed (Fig. 56b).

The UP Arrow will disappear, and Total Ascent Time (TAT) and the Ceiling Stop Bar symbol will flash until you descend below the Required Stop Depth.

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

The added penalty decompression time will have to be served before obtaining off-gassing credit. Once the penalty time is served and off-gassing credit begins, required Stop Depths and Time will decrease toward zero, then the Nitrogen Bar Graph will recede into the yellow Caution Zone and the ReACT will revert to the No Decompression Dive Mode.

DELAYED VIOLATION MODE

Three conditions will cause the ReACT to enter a Delayed Violation Mode:

1. You remain above the Required Ceiling Stop Depth for 'more than 5 minutes'.

Total Ascent Time (TAT), the Ceiling Stop Bar symbol, and the Nitrogen Bar Graph DECO segment will flash (Fig. 57) until you descend below the Required Stop Depth.

You would then need to follow the Stop Depths and Times toward the surface until the Nitrogen Bar Graph recedes into the yellow Caution Zone.

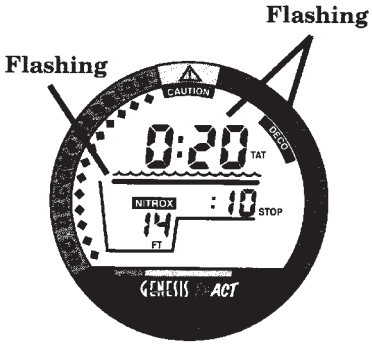


Fig. 57 - Delayed Violation (above ceiling > 5 min)

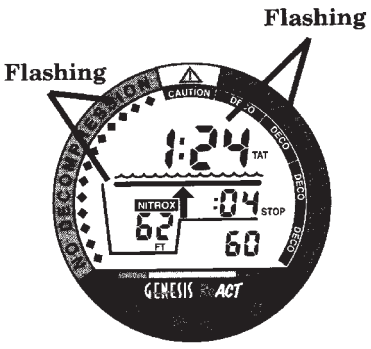


Fig. 58 - Delayed Violation (> 60 FT ceiling required)

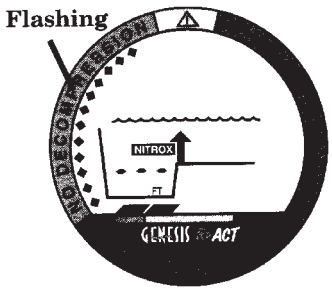


Fig. 59 - Delayed Violation (> 330 ft / 99.5 m)

2. Your necessary Decompression requires a Ceiling Stop Depth between 60 feet (18 meters) and 70 feet (21 meters).

Total Ascent Time (TAT), the Ceiling Stop Bar symbol, and the full Nitrogen Bar Graph will flash (Fig. 58) until you descend below the Required Stop Depth.

You must ascend to just deeper than 60 feet (18 meters), staying as close to 60 feet (18 meters) as possible without causing Total Ascent Time (TAT) to flash. When the Required Stop Depth indicates 50 FT (15 M), etc., you can ascend to, but no shallower than those depths and continue decompressing.

The ReACT cannot accurately calculate decompression times for Stop Depths much greater than 60FT (18M) and offers no indication of how much time spent underwater would result in the need for a greater stop depth.

3. You exceed the maximum operating depth (330 feet/99.5 meters).

Upon descending deeper than 330 feet (99.5 meters), the UP Arrow symbol will appear and the Nitrogen Bar Graph will flash as a warning (Fig. 59). Current Depth and Max Depth displays will only indicate 3 dashes (- - -) until ascent is made to a depth shallower than 330 feet (99.5 meters). Once you ascend above 330 feet (99.5 meters), the Current Depth display will be restored, however Max Depth will only display 3 dashes (- - -) for the remainder of that dive. The Log for that dive will also only indicate dashes (- - -) as the Max Depth achieved.

WARNING: The expanded capabilities of the ReACT are provided as safety features to assist you with emergency situations. Special training, equipment, and support are necessary for diving deeper than the maximum recommended sport diving depth limit of 130 feet (39 meters).

IMMEDIATE VIOLATION MODE AND GAUGE MODE

WARNING: The ReACT enters Immediate Violation Mode when a situation totally exceeds its capacity to predict an ascent procedure. These dives represent gross excursions into decompression that are beyond the boundaries and spirit of the ReACT design, and a ReACT should not be used for the dives.

During the Dive

If a ceiling *much greater* than 60FT (18M) is required, an Immediate Violation Mode (Gauge Mode) will be entered (Fig. 60). This situation would be preceded by entering Delayed Violation Mode, previously described.

The ReACT would then operate with limited functions in **Gauge Mode** during the remainder of that dive and for 24 hours after surfacing.

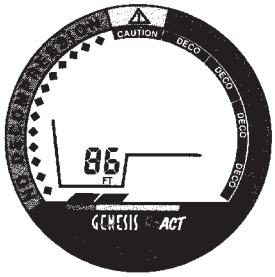


Fig. 60 - Immediate Violation (underwater)

Flashing

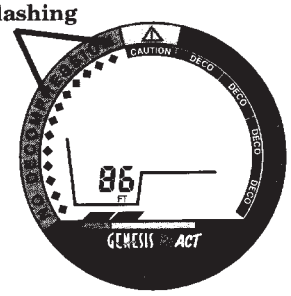


Fig. 61 - Gauge Mode (underwater)

Flashing

Fig. 62 - Gauge Mode (on the surface)

Gauge Mode turns the ReACT into a digital instrument without any decompression or oxygen monitoring functions. Only Current Depth, Max Depth, Bottom Time, and the Ascent Rate Indicator will be displayed. The full Nitrogen Bar Graph will flash as a warning (Fig. 61). Alternate Displays can be accessed using the LEFT button, and the Backlight can be activated using the RIGHT button.

After the Dive

The ReACT will also enter an **Immediate Violation/Gauge Mode** five minutes after surfacing from a dive in which a Delayed Violation occurred.

For the first 2 hours, **Gauge Mode** displays the Surface Interval, Date/Time, and the Nitrogen Bar Graph flashes as a warning (Fig. 62).

- To view Temperature, press the LEFT button 1 time.
- To access FO2 Mode, press the LEFT button 2 times (in sequence/no effect).
- To access Fly Mode, press the LEFT button 3 times.
- To access Log Mode, press the LEFT button 4 times.
- To activate the Backlight, press the RIGHT button.

The countdown timer that appears 2 hours after the dive does not represent 'Time to Fly'. It is only provided to inform you of the time remaining before normal ReACT operation can resume with full features and functions.

PERMANENT VIOLATION

Entering the Immediate Violation Mode, then Gauge Mode, will result in loss of all ReACT decompression and oxygen monitoring functions for 24 hours after that dive. FO2 and Plan Mode will not be accessible.

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

OXYGEN EXPOSURE

The ReACT is a sophisticated instrument designed with capabilities that go beyond the range of recreational diving with compressed air. It will help you to avoid and manage excessive oxygen exposure.

Refer to the Reference section of this manual for additional information.

PARTIAL PRESSURE OF OXYGEN

As depth increases during a dive, the partial pressure of oxygen (PO2) increases. The current level of PO2 may be viewed by pressing the LEFT button 1 time to access the Alternate 1 display (Fig. 63a).

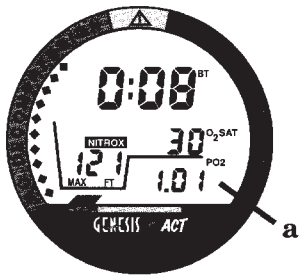


Fig. 63 - PO2 (Alt 1)

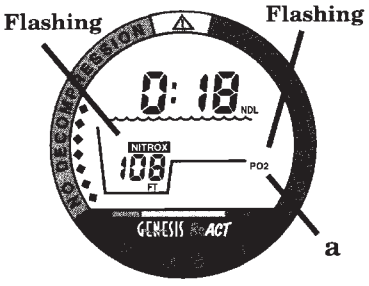


Fig. 64 - High PO2
(≥ 1.40 ATA, < 1.60 ATA)

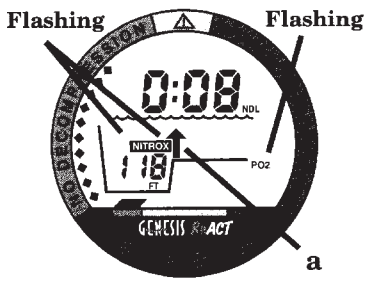


Fig. 65 - High PO2
(≥ 1.60 ATA)

High PO2 Dive Mode

The ReACT enters the High PO2 Dive Mode when the partial pressure of oxygen becomes equal to, or greater than, **1.40 ATA**, as indicated by the PO2 symbol appearing on the display (Fig. 64a) . The PO2 and NITROX symbols flash until PO2 decreases below a value of 1.40 ATA.

If partial pressure of oxygen continues to increase, the value of PO2 will increase toward a maximum value of 5.00 ATA in increments of '.01' ATA.

When PO2 reaches a value of **1.60 ATA**, the UP Arrow symbol will appear as a warning (Fig. 65a). The PO2, NITROX, and UP Arrow symbols flash until PO2 decreases below 1.60 ATA at which time the UP Arrow will disappear.

STOP **WARNING: In the event that you enter High PO2 Dive Mode, you must immediately focus on reducing the partial pressure of oxygen by slowly ascending to a shallower depth at a safe rate in accordance with your nitrox training. If you continue the dive at your current depth, or descend deeper, your exposure to CNS oxygen toxicity will increase.**

OXYGEN ACCUMULATION

It is important that you understand that conducting repetitive dives using enriched nitrogen-oxygen (nitrox) mixtures can lead to increases oxygen saturation (O_2SAT) and the risk of pulmonary oxygen toxicity.

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

During a Nitrox dive, the current level of O2 saturation (O2SAT) may be viewed by pressing the LEFT button 1 time to access the Alternate 1 display (Fig. 66a).

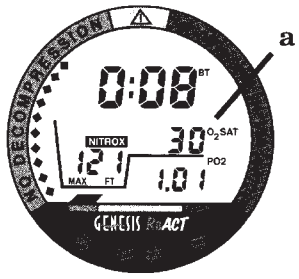


Fig. 66 - O_2SAT (Alt 1)

Displayed will be either the percentage (%) of oxygen accumulated during that dive, or during the repetitive dives you conducted during that 24 hour period, whichever of the two is calculated to be greater at that time.

High O2 Saturation

If the calculated amount of oxygen saturation equals, or exceeds, **80%** of the theoretical limit for a single exposure, or of the exposure limit for a 24 hour period, the O_2SAT symbol appears on the display (Fig. 67a).

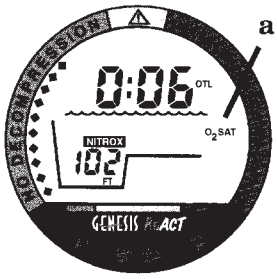


Fig. 67 - High O_2SAT ($\geq$ 80%)

If oxygen saturation continues to increase, the value of O_2SAT will increase toward a maximum value of 100 (%) in increments of 2 (%).

When O_2SAT reaches a value of **100 (%)**, Oxygen Dive Time Remaining (OTL) becomes zero (0:00) and the UP Arrow symbol will appear as a warning (Fig. 68a). The O_2SAT, NITROX, and UP Arrow symbols will flash until O_2SAT decreases below 100% at which time Oxygen Dive Time Remaining (OTL) will increase above zero (0:00) and the UP Arrow will disappear.

You must immediately focus on making **a safe controlled ascent** to the surface to prevent further exposure. As your level of saturation decreases during your surface interval, the amount of calculated dive time available will increase.

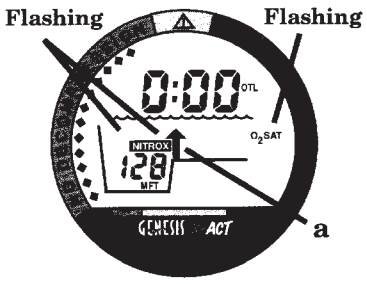


Fig. 68 - High O_2SAT (100%)

STOP **WARNING: If you exceed the per dive allowable oxygen exposure limit, it is recommended that you allow a surface interval of at least 2 hours before reentering the water. If you exceed the allowable limit for a 24 hour period, you must allow a surface interval of at least 24 hours before reentering the water.**

UNEXPECTED LOSS OF DISPLAYED INFORMATION

While No Decompression diving, if you find that any major piece of equipment is not functioning correctly, you must abort the dive immediately and surface slowly in a controlled manner.

If your ReACT stops working for any reason, it is important that you have anticipated this possibility and are prepared for it. **This is an important reason to avoid pushing the no decompression and oxygen tolerance limits, and a critical reason to avoid entering decompression.**

Regardless of your diving habits, Genesis Scuba advises you to dive with additional backup instrumentation that can provide the data necessary to properly surface if and when your primary instruments fail.

As with any other piece of equipment, unforeseen things can happen. By preparing ahead of time, you can spare yourself a great deal of frustration and disappointment. **If you dive in situations where your trip would be ruined or your safety would be jeopardized by losing the use of your ReACT, an analog or digital backup system or use of standard air (or nitrox) tables is highly recommended.**

Be a -
RESPONSIBLE DIVER
at all times.

SPECIAL WARNINGS and ADDITIONAL SAFETY INFORMATION

- **There are few legitimate excuses for making unplanned Decompression dives, and the consequences of this type of diving can be severe. By making an unplanned Decompression dive without the necessary preparation and training, you will have placed yourself in an unnecessarily dangerous situation. Allow a surface interval of at least 24 hours before reentering the water in the event a dive requires emergency decompression.**
- **By entering decompression, you automatically impose a ceiling above you which you cannot immediately ascend beyond, denying you free access to the surface.**
- **Exiting the water with the Nitrogen Bar Graph in the red DECO zone greatly increases the risk of decompression sickness, and may result in injury or death.**
- **Existing data for making planned decompression dives is extremely limited, and virtually nonexistent for repetitive decompression diving. Decompression diving greatly increases your risk of decompression sickness.**
- **Decompression diving, or diving deeper than 130 feet (39 m), will greatly increase your risk of decompression sickness.**
- **Genesis Scuba does not advocate diving to depths below 130 feet (39 meters), the basis for which is purely theoretical.**

SPECIAL WARNINGS and ADDITIONAL SAFETY INFORMATION

- **Maximum limits for exposure to oxygen should not be exceeded, and the consequences of CNS (Central Nervous System) oxygen toxicity can be severe, resulting in Gran Mal convulsions and drowning.**
- **Conducting repetitive dives using enriched nitrogen-oxygen mixtures can lead to oxygen buildup, reducing oxygen tolerance while increasing the risk of pulmonary oxygen toxicity.**
- **The oxygen features of the ReACT are intended for use only by recreational divers trained for nitrox diving by an instructor certified by a recognized training agency to teach diving with nitrox.**
- **Allowing oxygen saturation (O_2SAT) to increase to 100 (%) greatly increases the risk of CNS oxygen toxicity, and may result in serious injury or death.**
- **It should not be considered that the capabilities built into the ReACT provide any implied approval or consent from Genesis Scuba for individuals to exceed the defined limits of recreational dive profiles, as agreed on by all internationally recognized training agencies.**
- **The ReACT is not intended for use by military or commercial divers.**

SUMMARY OF SPECIAL SITUATION DIVE MODES

Modes	REASON	ACTION
Decompression	NDL exceeded	Decompress at Stop Depth indicated until it changes
Conditional Violation	above ceiling	Descend below Stop Depth indicated and decompress
Delayed Violation	> 5 min above ceiling	Descend below Stop Depth indicated and decompress
	60-70 FT (18-21 M) ceiling	Decompress at 60 FT (18 M) Stop Depth until it changes
	> 330 ft (99.5 m) depth	Ascend to within recreational limits
Immediate Violation and Gauge Mode	much > 60 FT (18 M) ceiling	No prediction available, only depth and elapsed time
	surfaced during delayed viola	No prediction available, only depth and elapsed time
High PO2	≥ 1.40 ATA	Safely ascend to shallower depth, reduce PO2 level
High O_2SAT	≥ 80 % of limit	Safely ascend to shallower depth, reduce O2 Saturation
	= 100 % of limit	Safely ascend to surface for 2 to 24 hours

CARE, INSPECTION, and SERVICE

57

CARE AND CLEANING

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

The housing is made of an impact resistant resin that is extremely shock resistant but is susceptible to scratches and attack by strong chemicals.

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

Be careful not to leave it in an unsupervised, unprotected location where it might be damaged. Many dive computers (and dive trips) are ruined due to carelessly tossed weight belts or cylinders.

If the transparent face becomes scratched, Genesis Scuba can replace it, although small scratches will naturally disappear underwater. For even more convenience and additional protection against scratches, place a transparent Genesis Scuba Instrument Lens Protector on the gauge face. These and other special accessories can be purchased from your Authorized Genesis Scuba Dealer.

CLEANING

Soak and rinse the REACT in fresh water following each day of diving, preferably after each dive, and ensure that it is free of any debris or obstructions that would block the sensors. If possible, use lukewarm water to dissolve any salt crystals. Salt deposits can also be dissolved using a slightly acidic vinegar/water bath. Towel dry before storing, and transport your ReACT cool, dry, and protected.

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

ANNUAL INSPECTIONS AND SERVICE

Your ReACT should be inspected annually by an Authorized Genesis Scuba 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). The original sales receipt and owner's portion of the warranty registration card must be presented at the time of service. Genesis Scuba recommends that you continue to have this inspection performed even after the warranty period has expired to ensure your ReACT is working properly.

A service record is provided in the back of this manual for your convenience. It should be signed by Authorized Genesis Dealer service technician after each annual inspection or factory service. The costs of annual inspections are not covered under the terms of the 2 year limited warranty.

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

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

⚠ **CAUTION: Never pressure test the ReACT in an air environment. Doing so may damage the depth sensor; possibly resulting in erroneous depth or time readings.**

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

BATTERY LIFE

Battery consumption rate varies throughout periods of operation, which begin upon activation and continue for 24 hours after surfacing from a dive. The exact number of dives, or hours of operation, that you will obtain is subject to variables, such as, temperature, the number of dives conducted during each operational period, and the frequency and duration that the backlight is used (excessive use will reduce battery life).

Tests and calculations indicate that a new Tadiran® 1/2AA model TL-2150, .95Ah, 1.0 ma, Lithium battery will maintain unit operation for approximately -

- 350 dive hours, if 1 - 1 hour dive per dive day
- 700 dive hours, if 2 or more 1 hour dives per dive day

LOW BATTERY CONDITION

During unit operation, voltage level is checked every second while on the surface. You will be alerted to a Low Battery condition by a flashing Battery symbol (Fig. 69).

Upon decreasing to a voltage level that will not maintain proper unit operation, the symbol will flash for 5 seconds followed by shutdown of the ReACT.

Fig. 69 - Low Battery

If the ReACT did not display the Low Battery symbol prior to entering the Dive mode, and a Low Battery condition occurs during a dive, there will be sufficient battery power to maintain unit operation for the remainder of that dive, however the Backlight will be disabled. You will be alerted by the Battery symbol.

NOTE: Genesis Scuba strongly advises that you replace the battery and DO NOT attempt to dive when the Battery symbol remains on display, and that you replace the battery with new prior to any multi day dive trip.

BATTERY REPLACEMENT

WARNING: Adjusted No Decompression Limits and Oxygen Calculations will be erased when the battery is replaced between repetitive dives.

MODULE REMOVAL FROM BOOT

If the ReACT is in a wrist boot, it will be necessary to peel the lips of the boot downward off the module while applying pressure from underneath, working it out slowly.

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

⚠ **CAUTION: The procedure that follows must be closely adhered to. Damage due to improper battery replacement is not covered by the ReACT's limited 2 year warranty.**

BATTERY REMOVAL

The battery compartment should only be opened in a dry and clean environment, with extreme care taken to prevent the entrance of moisture or dust.

Examine the case back to find the Battery Hatch (Fig. 70a):

- Remove the three screws that secure the battery hatch to the housing by turning them counter clockwise with a small Philips head screwdriver.
- Lift the hatch up and out of the housing.
- Lift the battery, positive (+) end first, out of the battery compartment.
- Remove the battery hatch o-ring and inspect it for any signs of deterioration or deformity. DO NOT use tools to remove the o-ring.

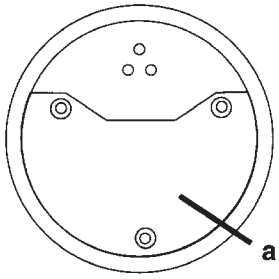


Fig. 70 - Case Back

- O-ring replacement is highly recommended to ensure proper sealing.
- Check the battery hatch and housing sealing surfaces for any signs of damage which might impair proper sealing, and the inside of the battery compartment for any signs of corrosion indicating entrance of moisture.
- **If damage is found, return your ReACT to your Authorized Genesis Scuba Dealer, and DO NOT attempt to use it until it has received factory service.**

STOP **WARNING: DO NOT attempt to disassemble any other portion of the module. Doing so may cause a dangerous malfunction, resulting in possible injury or death. Indication of tampering with the module will also void the ReACT's warranty.**

If moisture or corrosion is found in the battery compartment, DO NOT use it until it has received proper service. It is best to have your ReACT inspected and cleaned by an Authorized Genesis Scuba Dealer. If you are cleaning it in the field, proceed as follows:

- Inspect the lens and housing to ensure they are not cracked or damaged.
- Inspect the button coverings to ensure they do not have cuts or holes.
- Remove the battery and discard, DO NOT attempt to reuse.
- Check the battery hatch o-ring for damage (nicks, cuts, divots, etc.). If found, discard and replace with new.

- Before replacing the o-ring and battery, flush the battery hatch and compartment with a solution of 50% white vinegar and 50% water. Rinse with fresh water, and allow to dry overnight, or blow dry with a hair dryer (set at 'no heat').

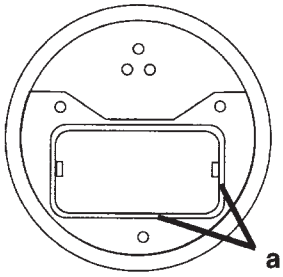


Fig. 71 - O-ring Installation

BATTERY INSTALLATION

- To replace the battery hatch o-ring, lightly lubricate it with silicon grease and place it on the beveled outer edge of the battery compartment (Fig. 71a). Ensure that it is evenly seated.

NOTE: This o-ring must be a genuine Genesis Scuba part that can be purchased from your Authorized Genesis Scuba Dealer. Use of any other o-ring will void the ReACT's warranty.

- Place a new 3.6 volt TADIRAN®, model TL-2150, .95Ah, 1.0ma, Lithium battery, negative end first, into the battery compartment, ensuring proper orientation of the positive (+) and negative (-) ends (Fig. 72).
- Carefully place the battery hatch into position so that it seats on top of the o-ring, and while holding it in place with your thumb, secure it with the three screws by turning them clockwise with a small Philips head screwdriver. DO NOT attempt to use any other screws.
- Carefully tighten the screws until secure by alternately turning them each one turn at a time. Turn the upper left, then the right, then the lower left..

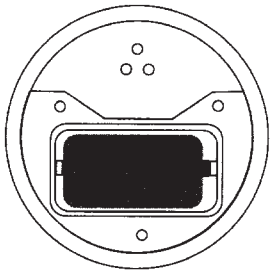


Fig. 72 - Battery Orientation

- Repeat the sequence until all of the screws are evenly secure. The outer surface of the battery hatch should be flush with the outer surface of the housing. DO NOT overtighten.

INSPECTION

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

RETURNING THE MODULE TO BOOT

- If the boot was fitted with a spacer and it was previously removed, replace the spacer into the boot.
- Orient the module over the opening in the boot, and dip the bottom edge into it while pressing the top edge with the palm of your hand. Stop pressing when the bottom edge of the module has just entered the boot.
- Correct the alignment of the module as needed so that it is straight.
- Press the module completely into place with your thumbs, watching the alignment, until it snaps into place.

Be a -
RESPONSIBLE DIVER
at all times.

REFERENCE

DIVE TIME REMAINING

One of the most important pieces of information on the ReACT is the patented Dive Time Remaining numeric display. To numerically display Dive Time Remaining, the ReACT constantly monitors two critical pieces of information; no decompression status and oxygen accumulation status. The Dive Time Remaining display will indicate the time that is more critical for you at that particular moment (i.e.; whichever time is the least amount available of the two).

This unique feature has been granted U.S. Patent No. 4,586,136.

NO DECOMPRESSION DIVE TIME REMAINING

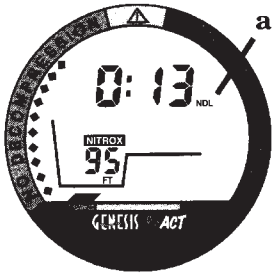


Fig. 73 - Dive Time Remaining (NDL less than OTL)

No Decompression Dive Time Remaining is the maximum amount of time that you can stay at your present depth before entering a decompression situation. It is calculated based on the amount of nitrogen absorbed by twelve hypothetical tissue compartments. The rates each of these compartments absorb and release nitrogen is mathematically modeled and compared against a maximum allowable nitrogen level. Whichever one of the twelve is closest to this maximum level is the controlling compartment for that depth. Its resulting value will be displayed numerically with the NDL symbol (Fig. 73a) and graphically as the Nitrogen Bar Graph.

As you ascend from depth following a dive that has approached the no decompression limit, the Nitrogen 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 the ReACT offers.

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

OXYGEN EXPOSURE DIVE TIME REMAINING

As oxygen accumulation increases during a nitrox dive, Dive Time Remaining before reaching the oxygen exposure limit for that dive, or 24 hour period, decreases.

When it becomes less than the No Decompression Dive Time Remaining (NDL), calculations for the current depth will be controlled by oxygen. Oxygen Time Remaining will then appear as the main numeric time display as signified by the OTL symbol (Fig. 74a).

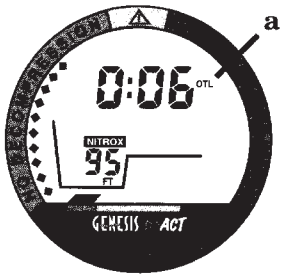


Fig. 74 - Dive Time Remaining (NDL less than OTL)

FLYING AFTER DIVING

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

* excerpted from "The UHMS Flying After Diving Workshop"

The two exceptions to this recommendation are:

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

Since the 1990 UHMS guidelines were introduced, data from the Diver's Alert Network (DAN) was introduced that resulted in DAN's position** that "A minimum surface interval of only 12 hours would be required in order to be reasonably assured a diver will remain symptom free upon ascent to altitude in a commercial jet airliner (altitude up to 8,000 feet/2,440 meters). Divers who plan to make daily, multiple dives for several days, or make dives that require decompression stops, should take special precautions and wait for an extended surface interval beyond 12 hours before flight".

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

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

To reduce the risk of developing decompression sickness after a single no decompression dive, current guidelines suggest waiting 12 hours prior to exposure to atmospheric pressures equivalent to 1,000 feet (330 meters) above sea level, or greater. When repetitive dives are conducted during the same day, or period of days, it is suggested that the interval be increased to a minimum of 24 hours. **Note that land travel to higher elevations after diving must also be considered as an exposure to altitude.**

ALTITUDE DIVING

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

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

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

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

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

Be a -
RESPONSIBLE DIVER
at all times.

NITROX DIVING

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

Both central nervous system (CNS) oxygen toxicity and pulmonary oxygen toxicity were taken into consideration when the Maximum Durations for a Single Exposure and for Any 24-Hour Day were published by in the October 1991 NOAA Diving Manual (Fig. 75). Although CNS oxygen toxicity is considered the primary constraint for higher levels of partial pressure of oxygen (PO2), there are circumstances in which pulmonary oxygen toxicity can limit exposures.

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

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

Fig. 75 - Oxygen Exposure Limits

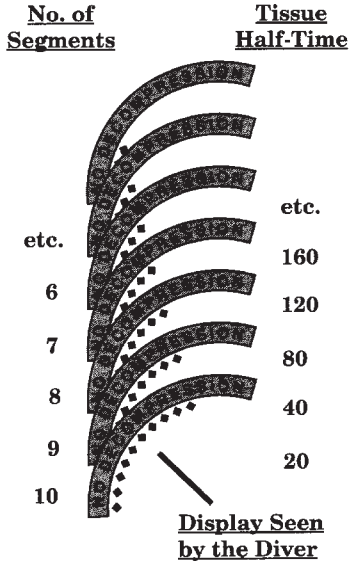


Fig. 76 - Tissue Compartment Control

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

WARNING: In the event that you exceed the maximum limit of per dive allowable oxygen exposure (dose), it is recommended that you allow at least 2 hours at a normoxic PO2 before diving again. If you have reached the Maximum Total 24-hour Day Limits, you must spend at least 12 hours at a normoxic PO2 before diving again (you should allow a surface interval of at least 24 hours before reentering the water).

MULTIPLE TISSUE TRACKING

The ReACT tracks twelve tissue compartments with halftimes ranging from 5 to 480 minutes. The Nitrogen Bar Graph always displays the controlling compartment that is the only one important at that time.

Think of the Nitrogen Bar Graph as twelve separate transparent displays laid on top of one another (Fig. 76). The tissue compartment that has filled up fastest is the only one that can be seen from the top.

At any particular point, one tissue compartment may be absorbing nitrogen, while another that was previously higher may be off-gassing. Figure 77 illustrates the point at which one compartment "hands over" control to another compartment at a different depth. **This feature of the Decompression Model is the basis of multilevel diving, one of the most important contributions the ReACT offers you.** Take advantage of this feature and make all of your dives multilevel dives.

REPETITIVE DECOMPRESSION DIVING

The decompression model used by the ReACT is based on the no decompression multilevel repetitive dive schedules successfully tested by Dr. Ray Rogers and Dr. Michael Powell. These tests did not include repetitive dives deeper than 90 feet (27 meters) or decompression dives. Due to the present unavailability of statistical data, the ReACT's decompression predictions are based on U.S. Navy theory. Therefore, pay special attention to the following warnings.

WARNING: <u>The decompression capabilities of the ReACT are intended strictly for emergency use.</u> Decompression diving is inherently hazardous and greatly increases your risk of decompression sickness, even when performed according to the computer's calculations. In the event that you must make an emergency decompression dive, you must not make another dive for at least 24 hours.

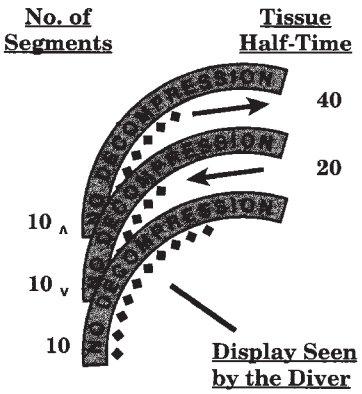


Fig. 77 - Tissue Compartment Control Hand-Over

Depth ft/m	ReACT NDL-mins. Eng/Metric	U.S. Navy NDL - mins.
30/9	260/283	- - -
35	- - -/- - -	310
40/12	137/144	200
50/15	80/84	100
60/18	57/58	60
70/21	40/41	50
80/24	30/31	40
90/27	24/26	30
100/30	19/20	25
110/33	16/16	20
120/36	13/13	15
130/39	10/11	10
140/42	9/9	10
150/45	8/8	5
160/48	7/7	5
170/51	*/*	5
180/54	*/ *	5
190/57	*/*	5

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

Fig. 78 - No Decompression Limits

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

WARNING: Genesis Scuba advocates responsible diving practices and does not recommend decompression diving, or diving below 130 feet (39 meters).

NO DECOMPRESSION LIMITS

Note how the No Decompression Limits (NDL) for the ReACT compare with the U.S. Navy limits (Fig. 78). For most depths, the ReACT provides somewhat less no decompression times than the U.S. Navy Tables. However, while the No Decompression Limits may be less, you will receive increased allowable Bottom Times as you take advantage of the multilevel dive capabilities offered by the ReACT. Notice also that the Plan Mode does not display data past 160 feet (48 meters).

CONCLUSION

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

SPECIFICATIONS

NO DECOMPRESSION MODEL

Basis:
- Modified Haldanean Algorithm
- 12 tissue compartments

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

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

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

Altitude Algorithm:
- Based on NOAA tables

Oxygen Exposure Limits:
- Based on NOAA tables

OPERATIONAL MODES

- Activation/Diagnostic
- Surface
- Temperature/O2SAT
- FO2 Set
- Plan
- Fly/DeSat
- Log (identifier/nitrogen/oxygen)
- Set -
  - FO2 50% Default (On/Off)
  - Units of Measure (Imperial / Metric)
  - External Access (to download)
  - Date (year, month, day)
  - Time (hour, minutes)
  - Dive Profile Sampling Rate
- No Decompression Dive - Main
- No Decompression Dive - Alternate 1
- No Decompression Dive - Alternate 2
- Decompression Dive
- Decompression Dive - Alternate 1
- Decompression Dive - Alternate 2
- Conditional Violation
- Delayed Violation
- Immediate Violation/Gauge
- High PO2 Level
- High O2SAT

SPECIFICATIONS (CONTINUED)

DISPLAY RANGE/RESOLUTION

Numeric Displays:	Range:	Resolution:
• Dive Number	0 - 12	1
• Depth	0 - 330 ft (0 - 99.5 m)	1 ft (.5 m)
• Maximum Depth	330 ft (99.5 m)	1 ft (.5 m)
• FO2 Set Point	21 - 50 %	1 %
• PO2 Value	1.40 - 5.00 ATA	.01 ATA
• O2SAT Value	0 - 100 %	2 %
• Dive Time Remaining	0 - 9 hr. 59 min.	1 minute
• Total Ascent Time	0 - 9 hr. 59 min.	1 minute
• Decompression Stop Time	0 - 99 min. (per stop depth)	1 minute
• Elapsed Dive Time	0 - 9 hr. 59 min.	1 minute
• Surface Time	0 - 23 hr. 59 min.	1 minute
• Dive Log Surface Interval	0 - 25 hr. 59 min.	1 minute
• Time to Fly	23 hr. 50 min. - 0* (* starting 10 min. after the dive)	1 minute
• Time to Desaturate	9 hr. 59 min. - 0* (* starting 10 min. after the dive)	1 minute

Special Displays:	Occurrence
• Diagnostic Display	Activation
• Out of Range (- - -)	>330 feet (>99.5 meters)
• Gauge Mode Countdown Timer	24:00 - 0:00 hr:min (after violation)

BAR GRAPHS

Nitrogen Bar Graph:	segments
No Decompression zone (green)	13
No Deco Caution zone (yellow)	1
Decompression Warning zone (red)	4

Ascent Rate Indicator:

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

OPERATIONAL PERFORMANCE

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

Dive Counter:
- Displays Dives #1 to #12 (continues #1 to #12)
- Displays #1 for 13th dive of a dive day
- Resets to Dive #1 upon diving after midnight (new 'date')

Dive Log Mode:
- Stores 12 most recent dives in memory for viewing
- After 12 dives, the 13th dive is added, overwriting the first dive
- Each air dive displays Identifier and Nitrogen Log screens
- Each nitrox dive displays Identifier, Nitrogen, and Oxygen Log screens

SPECIFICATIONS (CONTINUED)

OPERATIONAL PERFORMANCE (continued)

Altitude:
- Operational from sea level to 14,000 feet (4,267 meters) elevation
- Recalibration of depth readings from 'feet of sea water' to 'feet of fresh water' when higher than 2,000 feet (610 meters) elevation

Power:

• Batteries	1 - 3.6 volt 1/2AA TADIRAN® model TL-2150, .95Ah, 1.0ma, Lithium (must be 3.6 v, .95Ah, 1.0ma rating)
• Shelf life	Up to 5 years
• Replacement	User replaceable (yearly is recommended)
• Life expectancy	350 dive hours (if 1 - 1 hour dive per dive day) 700 dive hours (if 2 or more 1 hour dives per dive day)

Activation:
- Manual (push button) - cannot be activated by water immersion
- Cannot be activated deeper than 4 feet (1.5 m)
- Cannot be activated at elevations higher than 14,000 feet (4,267 m)
- Needed before first dive.
- Automatically shuts off if no dive is made within 2 hours after initial activation. Reactivation required prior to diving.
- Cannot be shut off manually.

PROGRAMMING (SETTING) FO2

- Automatically set for 'Air' upon activation
- Remains set for Air unless an FO2 numerical value is set
- Nitrox set points from 21 to 50 (%)
- If set for 21%, remains set for 21% until changed
- If set for >21%, reverts to 50% 10 minutes after the dive (if the FO2 50% Default is set ON). The previous FO2 value set will be retained, if the FO2 50% Default is set OFF.

NOTES

GLOSSARY

The following are diving terms to become familiar with. Some apply specifically to the ReACT.

Air Dive - A dive conducted using air (approximately 21% oxygen & 79% nitrogen) as the breathing gas.
Algorithm - A step-by-step mathematical formula designed to accomplish a particular result (i.e. Dive Time Remaining in the ReACT).
Altitude Dive - A dive made at an elevation above sea level (2,000+ ft. / 610+ m.) where a different set of no decompression tables is used .
Ascent Rate - The speed that a diver ascends toward the surface.
Ascent Rate Indicator - A graphic representation of vertical ascent rate (speed) displayed alongside a color coded indicator.
Boot - A protective rubber covering that surrounds an instrument module.
Bottom Time - The total time spent underwater during a dive between 5 feet (1.5 meters) on initial descent to 3 feet (1 meter) on final ascent.
Caution Zone - The yellow section of a bar graph that gives visual warning of a diver's proximity to projected limits.
Ceiling - See decompression ceiling.
Clean Dive - A dive preceded by 24 hours of no diving activity.
Competitive Dive - A dive conducted for profit or prize.
Compartment - A term applied to the hypothetical modeling of nitrogen absorption in the tissues (more accurate than the term "tissue" because dive computer models have no direct relation to human tissues).
CNS - Abbreviation for the Central Nervous System of the body.
DCS - Abbreviation for decompression sickness (i.e., the bends).

GLOSSARY (continued)

DECO - Abbreviation for Decompression.
Decompression Ceiling - The shallowest depth a diver may reach upon ascent without risking DCS.
Decompression Stop - The depth(s) at which a diver must pause during ascent to allow absorbed nitrogen to escape naturally from the tissues.
Depth Sensor - an electromechanical device that converts water pressure into an electrical signal, that is converted to a visual depth display.
Diagnostic Mode - The first display seen on Genesis Scuba dive computers after initial activation during which time a self–check for internal faults and battery voltage is performed.
Display - A visual readout of information.
Dive Time Remaining - A display of time allowed before a diver must surface based on no decompression status or oxygen saturation.
FO2 - The fraction (percent / 100) of oxygen (O2) in the breathing gas mixture.
Hydroglow™ - A Genesis Scuba term for an instrument backlight feature.
LCD - Abbreviation for liquid crystal display, an easily viewed low voltage display usually found on dive computers
Log Mode - A computer display of previous dive information.
Maximum Depth - The deepest depth attained during a dive.
Mode - A specific set of functions in a dive computer.
Multi-level Dive - A type of dive profile where the diver spends various times at different shallower depths (opposite of a "Square Wave" dive profile).
NDL - Abbreviation for No Decompression Limit.
Nitrogen Bar Graph - A graphic display of simulated nitrogen absorption.
Nitrox - A nitrogen-oxygen breathing gas mixture that contains a higher fraction of oxygen than air.

GLOSSARY (continued)

Nitrox Dive - A dive conducted using nitrox (22 to 50 % O2) as the breathing gas.
No Decompression - Any part of a dive where the diver can surface without requiring a decompression stop.
No Decompression Limit - The amount of dive time remaining based on no-decompression status.
O2SAT - Abbreviation for oxygen saturation.
OTL - Abbreviation for oxygen tolerance limit.
Out of Range - The point at which a dive computer can no longer supply correct dive information.
Oxygen Tolerance Limit - The amount of dive time remaining based on exposure to elevated levels of oxygen.
Oxygen Toxicity - The adverse physiological affects of exposure to elevated levels of oxygen.
Partial Pressure - The proportion of the total pressure contributed by a single gas in a mixture of gases.
Plan Mode - An accessible sequential display of available dive times at 10 foot. (3 meter) intervals from 30 to 160 feet. (9 to 48 meters) used when dive planning.
PO2 - Partial pressure of oxygen. The proportion of total pressure of a gas mixture contributed by oxygen.
Repetitive Dive - Any dive that takes place within 12 hours of a previous dive.
Safety Stop - A depth at which a diver may choose, but is not required, to pause during ascent to allow absorbed nitrogen to escape naturally from the tissues.
Square Wave Dive - A type of dive profile where the entire dive is spent at one depth between descent and ascent.
Symbol - a small pictorial representation of an operational mode or informational display.
Tissue - See Compartment.
Tissue Compartment - See Compartment.
Transducer - An electro-mechanical device in a dive computer that acts as a depth or pressure sensor.
Transition Period - The first 10 minutes of surface time after ascending above 3 feet (1 meter) from a dive.

REACT SERVICE RECORD

THE CODE OF THE RESPONSIBLE DIVER

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

RESPONSIBLE DIVING BEGINS WITH

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

Serial No.: _____

Date of Purchase: _____

Purchased from: _____

To be filled in by an Authorized Genesis Scuba Dealer:

Date	Service Performed	Dealer / Technician

MODE DISPLAYS

Surface Mode
(>10 min after dive)

FO2 Set Mode
(32%)

Plan Mode
(nitrogen control)

Fly/DeSat Mode
(10 min after dive)

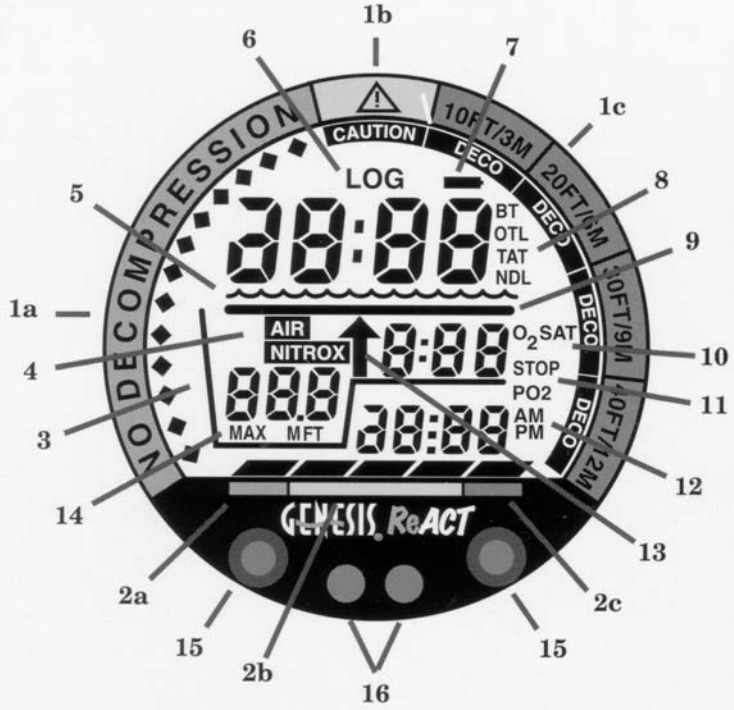
No Decompression
Dive Mode (nitrox)

No Decompression
Alt #1

No Decompression
Alt #2

Decompression
Dive Mode

FULL LCD DISPLAY



1a. Nitrogen Bar Graph - (Green-No Deco)
1b. Nitrogen Bar Graph - (Yellow-Caution)
1c. Nitrogen Bar Graph - (Red-Deco)
2a. Ascent Rate Indicator - (Green-normal)
2b. Ascent Rate Indicator - (Yellow-excessive)
2c. Ascent Rate Indicator - (Red-'Too Fast')
3. Symbol - Dive Profile - Plan or Dive Mode
4. Symbol - Operating Mode - AIR/NITROX
5. Symbol - Wave - Surface Mode
6. Symbol - Log Mode
7. Symbol - Low Battery
8. Symbol - Time - BT/OTL/TAT/NDL
9. Symbol - Deco Stop Bar
10. Symbol - O2 Saturation
11. Symbol - PO2 Level or Stop Time
12. Symbol - Am or Pm
13. Symbol - Up Arrow (ascend)
14. Symbol - Max Depth
15. Control Buttons
16. Sensors - Download

Questions or comments may be directed to:

GENESIS SCUBA

Authorized GENESIS Scuba dealers are equipped to provide you with the service you need including technical service, repair and returns. Should you need to return a product under warranty, please provide your GENESIS delaer with the item along with your sales receipt.

Doc. No. 3910 3/1/00