ZEN AIR

IQ-950

Owner's Manual

TUSA QUALITY

TUSA

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

COPYRIGHT NOTICE

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TRADEMARK NOTICE

PATENT NOTICE
U.S. Patents have been issued, or applied for, to protect the following design features:
Air Time Remaining (U.S. Patent no. 4,586,136 and 6,543,444), Data Sensing and Processing Device (U.S. Patent no. 4,882,678), Ascent Rate Indicator (U.S. Patent no. 5,156,055).

CE
The CE mark is used to mark conformity with the European Union EMC directive 89/336/EEC. TUSA dive instruments fulfill the required EU directives.

EN 13319 "Diving accessories - Depth gauges and combined depth and time measuring devices - Functional and safety requirements, test methods" is a European diving depth gauge standard. The ZEN AIR is designed to comply with this standard.

DECOMPRESSION MODEL
The program within the ZEN AIR simulates 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 ZEN AIR dive computer model is based upon the latest research and experiments in decompression theory. **Still, using the ZEN AIR, just as using the 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.

NOTICE

STORAGE and INITIAL ACTIVATION

ZEN AIR Watch/Dive Computers are placed in a Deep Sleep mode prior to being shipped from the factory. The intent is to extend storage life of the Battery for up to 7 years, before the unit is initially placed in service.

In this mode, Date and Time are updated as they normally would be. However, they are not displayed. Upon waking the ZEN AIR up, the correct Date and Pacific Time will be displayed and it will be ready to operate with full functions.

To wake the ZEN AIR up from Deep Sleep mode, simultaneously depress the upper/right (S) and lower/left (A) buttons for 2 to 3 seconds until the display comes full ON displaying the MAIN TIME screen, then release them.

△ **NOTE: Once the ZEN AIR is brought out of the Deep Sleep mode, it can only be placed back in it by the factory.**

FEATURES AND DISPLAYS

INTRODUCTION

Welcome to TUSA and thank you for choosing the ZEN AIR !

It is extremely important that you read this Owner's Manual in sequence and understand it completely before attempting to use the ZEN AIR as a dive computer.

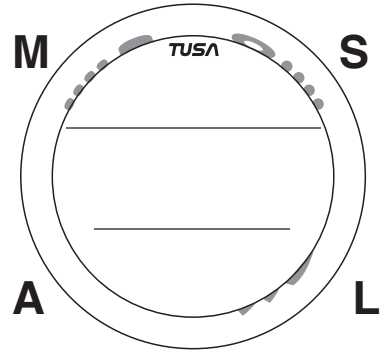
Remember that technology is no substitute for common sense, and a dive computer only provides the person using it with data, not the knowledge to use it.

CONTROL BUTTONS

The ZEN AIR features four Control Buttons that allow you to select mode options and access specific information. They are also used to link the Transmitter(s), enter Settings, activate the Backlight, and acknowledge the Audible Alarm.

Throughout this manual they will be referred to as the M, S, L, and A buttons.

- Upper/Left - Mode (M) button
- Upper/Right - Select (S) button
- Lower/Right - Light (L) button
- Lower/Left - Advance (A) button



OPERATING MODE STRUCTURE

Unless it is operating in Dive Computer mode, the ZEN AIR will be ON in the default WATCH MAIN TIME (home time) mode (Fig. 1), like a standard WATCH, until the Mode is changed.

The M button is used to access 4 other Modes that include Alternate Time Mode, Countdown Timer, Chronograph (stop watch/ lap timer), and Daily Alarm. It is also used to revert to the Local Default Time display and access Computer Modes.

The screens of the Main Modes and Sub Modes will remain on display until a button is pressed to access another screen or Mode, activate a sequence, or for 2 minutes if no button is pressed. The Chronograph remains on display as long as it is running unless another Mode is accessed.

When Wet Activation is set On, the ZEN AIR will enter selected Dive Mode upon descent to 5 FT (feet)/1.5 M (meters) for 5 seconds, regardless of what operating mode it is in.

⚠ WARNING: When Wet Activation is set OFF, the ZEN AIR must be in Dive Surface Mode (NORM, GAUG, or FREE) prior to the first dive of a new series. Commencing a dive while in Watch modes will not activate Dive Mode unless Wet Activation is set ON.

Main Sequence
(while at home)
Main Time
Alternate Time
Countdown Timer
Chronograph
Daily Alarm

Alternate Sequence
(at a travel location)
Alternate Time
Main Time (home)
Countdown Timer
Chronograph
Daily Alarm

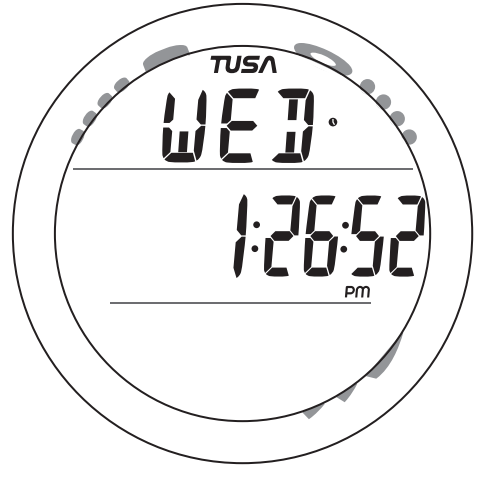


Fig. 1 - MAIN TIME

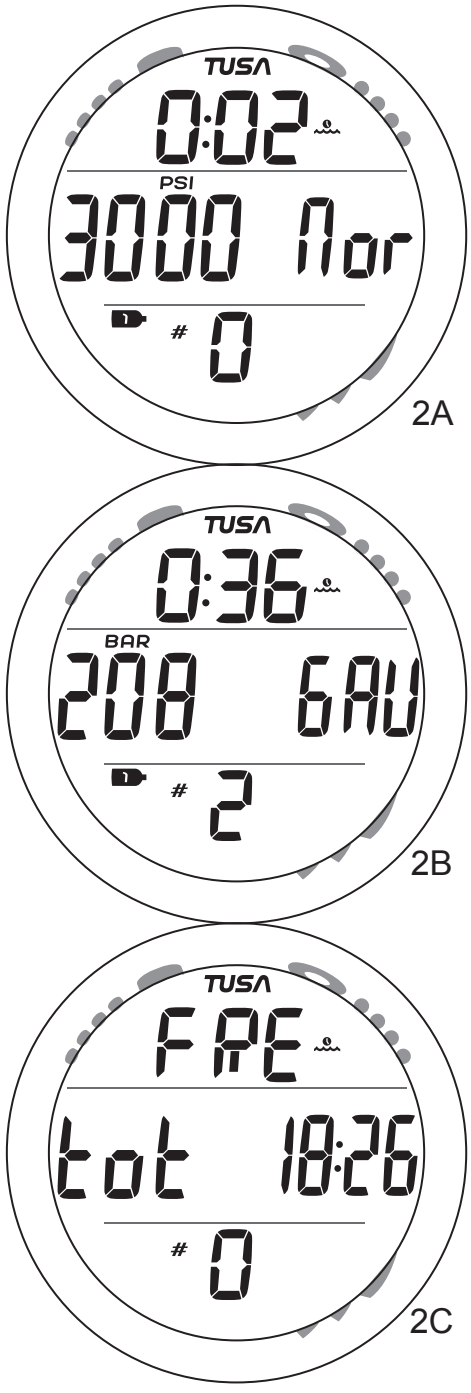


Fig. 2 - DC MODES

OPERATION AS A DIVE COMPUTER

The ZEN AIR features 3 Dive Computer (DC) Operating Modes, NORM (Fig. 2A) which is used for Air and Nitrox dives, GAUG (Fig. 2B) used for dives in which Nitrogen-Oxygen calculations are not performed, and FREE (Fig. 2C) used for activities that do not use SCUBA.

Entering Settings and Plan Mode are only available in NORM SURF Mode which also allows access to Battery/Transmitter Status, Fly, Desat, Log, and History Modes. Tank Pressure is displayed if a Transmitter is active and Linked with the ZEN AIR.

GAUG Mode only allows access to Battery/Transmitter Status, Fly, Log, and History Modes. It also displays Tank Pressure.

FREE Mode only allows access to ZEN AIR Battery Status, Log, and History Modes. It does not display Tank Pressure.

AUDIBLE ALARM

Most warning situations that activate the Audible Alarm while operating in NORM or GAUG Mode will sound 1 beep per second for 10 seconds, or until the situation is corrected, or it is acknowledged by pressing and releasing the S button (less than 2 seconds). After being acknowledged and the situation corrected, the Alarm will sound again upon reentry into the warning situation, or entry into another type of warning situation.

FREE Dive Mode has its own set of Alarms which emit 3 short beeps either 1 or 3 times which cannot be acknowledged or set Off.

The Audible will not be active if the Alarm is Set OFF (a group A setting).

Situations that will activate the NORM/GAUG 10 second Alarm include -

- Air Time Remaining (ATR) at 5 minutes, then again at 0 minutes.
- Turn Pressure at the Set Point selected (Transmitter 1).
- End Pressure at the Set Point selected (active Transmitter).
- Descent deeper than the Max Depth Set Point selected.
- Dive Time Remaining at the Set Point selected.
- Elapsed Dive Time at the Set Point selected.
- High PO2 of 1.60 ATA or the Set Point selected.
- High O2 of 300 OTU (single or daily exposure).
- Nitrogen Bar Graph at the segment Set Point selected.
- NORM/GAUG Ascent Rate exceeds 60 FPM (18 MPM) when deeper than 60 FT (18 M), or 30 FPM (9 MPM) at 60 FT (18 M) and shallower.
- Loss of the active Transmitter Link signal for more than 15 seconds during a dive.
- Entry into Decompression Mode (Deco).
- Conditional Violation (above a required Deco Stop Depth for less than 5 minutes).
- Delayed Violation (above a required Deco Stop Depth for more than 5 minutes).
- Delayed Violation (a Deco Stop Depth greater than 60 FT/18 M is required).
- Delayed Violation (Maximum Operating Depth of 330 FT/100 M is exceeded).
- A Gas Switch to another tank would expose the diver to PO2 greater than 1.60 ATA.
- Watch Daily Alarm reaches time set (disabled during Dive Modes).
- Watch Mode Countdown Timer reaches 0:00.

A single short beep (which cannot be disabled) is emitted for the following -

- Upon completion of a Hot Swap battery change.
- Change from Delayed to Full Violation 5 minutes after the dive.

3 short beeps (which cannot be disabled) are emitted for the following -

- NORM/GAUG Ascent Rate is 51 to 60 FPM (15.1 to 18 MPM) when deeper than 60 FT (18 M), or 26 to 30 FPM (7.5 to 9 MPM) at 60 FT (18 M) and shallower.
- FREE Dive Elapsed Dive Time Alarm (3 beeps every 30 seconds if set On).
- FREE Dive Depth Alarms 1/2/3 (set sequentially deeper) - each 3 beeps 3 times.
- FREE Dive NIBG Alarm (Caution zone, 4 segments) - 3 beeps 3 times.
- Entry into Deco during a FREE Dive (Permanent Violation) - 3 beeps 3 times.
- Free Dive Mode Countdown Timer reaches 0:00 - each 3 beeps 3 times.

During the following NORM Dive situations, the 10 second continuous tone will be followed by a 5 second steady beep that will not turn off when acknowledged -

- Ascending above a required Decompression Ceiling Stop Depth for more than 5 minutes (referred to as a Delayed Violation).
- Decompression requires a Ceiling Stop Depth of 70 FT/21 M or deeper.
- Being on the Surface for 5 minutes after a Conditional Violation.

BACKLIGHT

To activate the Backlight - press the L (lower/right) button.

- The Backlight will activate and illuminate the display for button depression time* plus the user set Duration time of 0, 5, or 10 seconds, for a maximum of 20 seconds. (*The Backlight turns Off if the button is held depressed for more than 10 seconds.)
- Press the button again to activate as desired.

NOTE: Extensive use of the Backlight reduces estimated Battery life. Also, the Backlight does not operate during a Low ZEN AIR Battery Condition or when the ZEN AIR is connected to a PC.

POWER SUPPLY

The ZEN AIR uses (1) 3 volt CR2430 Lithium Battery. Used as a Dive Computer, the battery should operate normally for 1 year or 300 dive hours if 2 dives are conducted during each dive period. Voltage is checked every 2 minutes on the surface.

- If voltage of the ZEN AIR decreases to the Warning level (2.75 volts), the Battery icon will appear on Surface display screens (Fig. 3a) as an indication that the Battery should be changed prior to commencing a series of dives.
- If the ZEN AIR's voltage decreases to the Alarm level (2.50 volts), the Battery icon will flash and the message CHG > BAt will scroll (Fig. 4a) for 5 seconds, then operation will automatically revert to Main Time Mode. The ZEN AIR would then only operate in Watch modes until the Battery becomes completely depleted.
- Low Battery conditions are not displayed during dives.
- If a Low Battery Condition was not displayed prior to starting a Dive, and a Low Battery Condition occurs during the dive, there will be sufficient Battery power remaining to maintain operation for the remainder of that dive.

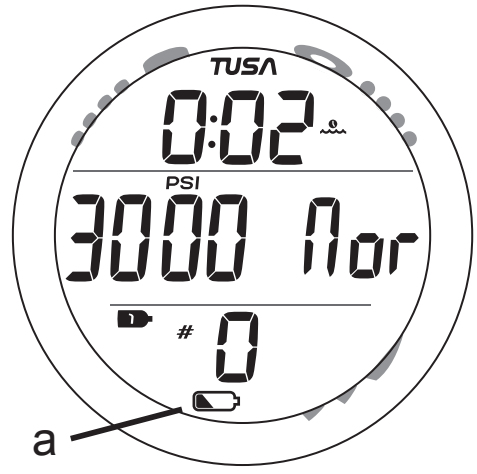


Fig. 3 - LOW BATTERY WARNING

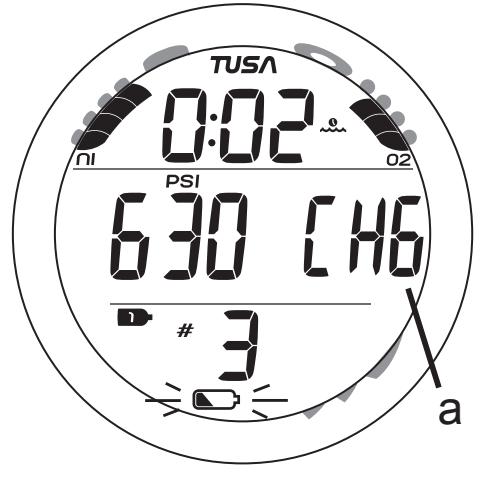


Fig. 4 - LOW BATTERY ALARM

Fig. 5 - ZEN AIR BATT GOOD

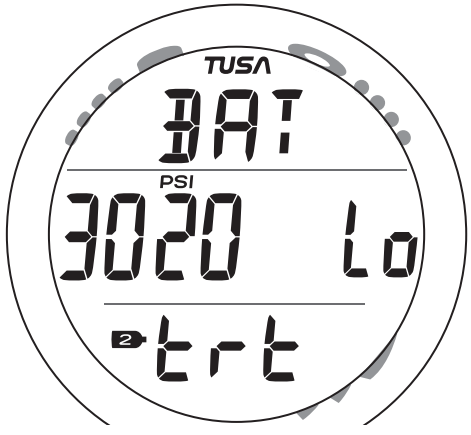


Fig. 6A - TRT BATT LOW

Fig. 6B - TRT NOT REPORTING

Transmitters (TRTs) each use (1) 3 volt, CR2 Lithium Battery. A TRT's battery should provide normal operation for 1 year or 300 dive hours. TRTs check battery voltage when they are pressurized and will send a Low Battery signal to the Receiver in the ZEN AIR when the voltage drops below the Warning level.

- TRT Low Battery conditions are only displayed on Status screens that can be accessed from the Surface Display.

To check the condition of the ZEN AIR or a TRT's Battery if NORM or GAUG Mode is selected, depress the S button for 2 seconds while viewing the Surface Main, then release it.

- As the button is depressed, the ZEN AIR's Receiver will activate, if in NORM or GAUG Mode.
- 2 seconds later, the ZEN AIR's Battery status will be displayed for 3 seconds (Fig. 5), then -
- if active and linked, TRT 1's Battery status will be displayed for 3 seconds (Fig. 6A), then -
- if active and linked, TRT 2's Battery status will be displayed for 3 seconds, then -
- if active and linked, TRT 3's Battery status will be displayed for 3 seconds, then -
- the display will then revert to Surface Mode.
- If a TRT is not active and linked, the message NOT AvAil (not available) will be displayed (Fig. 6B).

WATCH FEATURES AND DISPLAYS

Fig. 7 - MAIN TIME

LOCAL DEFAULT TIME

Watch Main Time (Fig. 7) is the current Time at your home location and is normally selected as the Local Default Time.

The normal Watch screen sequence accessed with momentary presses (less than 2 seconds each) of the M button is -

Main Time > Alternate Time > Countdown Timer > Chronograph > Daily Alarm

Watch Alternate Time (Fig. 8), which is set by Hour Differential, is the current Time displaying Am (or Pm) at a remote travel location. Upon arrival at the location, Alternate Time can be interchanged with Main Time to make it the Local Default Time while visiting the travel location.

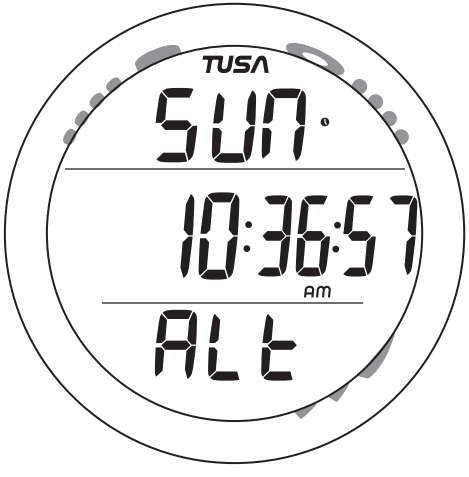


Fig. 8 - ALTERNATE TIME

The M button will then access the screens in this sequence -

Alternate Time > Main Time > Countdown Timer > Chronograph > Daily Alarm

While viewing Alternate Time, depressing and holding the S button for 2 seconds will replace Main Time with Alternate Time that will then become the Local Default Time until changed.

While viewing any of the Watch Mode displays, depressing the M button for 2 seconds or if no button is pressed for 2 minutes, operation will revert to the Watch Default Time screen selected.

MAIN TIME, information displayed includes (Fig. 9):

> Nitrogen Bar Graph, if any after NORM/FREE dives.
> O2 Bar Graph, if any after NORM Nitrox dives.
> Daily Alarm icon (clock) if it is set On (Fig. 9a).
> Day of the Week graphic MON (or TUE, WED, THU, FRI, SAT, SUN).
> Month and Day (Day and Month if set for Metric)
> Time of Day (hr:min:sec) with AM (or PM) icon if 12 Hour Format, no icon if 24 Hour.
> Battery icon, if a Low Battery Condition exists.

- M (repeatedly, < 2 sec each time) will step through Main Watch Modes.
- M (2 sec) will access Dive Computer Surface Mode (NORM, GAUG, or FREE).
- A (< 2 sec) will access NORM/GAUG Log and History Modes.
- A (2 sec) will access the ALT screen (Elev, Temp, Date).
- S (< 2 sec) will silence and acknowledge the Daily Alarm.
- L (press) will activate the Backlight.
- A and S buttons (simultaneously 2 sec) will access the SET TIME Menu.

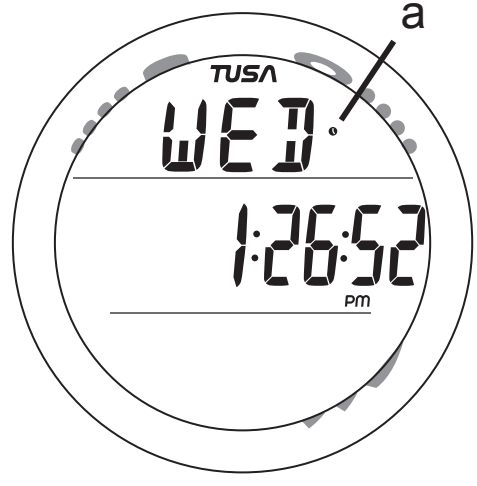


Fig. 9 - MAIN TIME
(12 Hour Format)

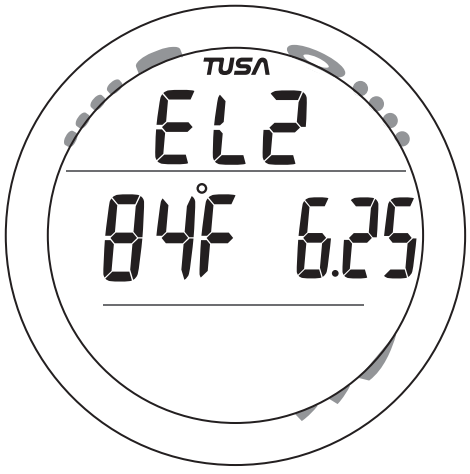


Fig. 10 - WATCH ALT

WATCH ALT DISPLAY, information includes (Fig. 10):

> Altitude graphic (EL2 to EL7), if above 3000 feet (915 meters), blank if below.
> Temperature with degrees icon and graphic F (or C).
> Date (Month.Day or Day.Month).

- After 5 seconds, operation will revert to the Watch Default Time screen.
- A (< 2 sec) will revert to the Watch Default Time screen.
- L (press) will activate the Backlight.

SET MAIN TIME

This mode allows the Date and Time of Day to be set which will also serve as the basis for Watch Alternate Time values.

> Set screens >>> Date Format >> Hour Format >> Time >> Date
> Day of the Week is set automatically when the Date is set.
> When the ZEN AIR is operating in Dive Computer mode, Date is displayed only to identify dives when they are accessed in the LOG Mode

- A (repeatedly, < 2 sec each time) will step through the menu items.
- M (2 sec) at any time, or if no button is pressed during a period of 2 minutes, operation will revert to the Watch Default Time screen.

Set Date Format

While viewing the Watch Default Time screen, depressing the A and S buttons simultaneously for 2 seconds will access the Set Date Format screen displaying the graphic dAtE and the Set Point M - D or D - M flashing (Fig. 11).

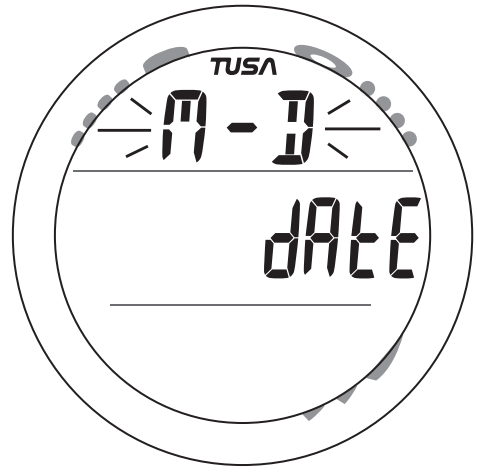


Fig. 11 - SET DATE FORMAT

> M - D means Month will be displayed to the left of Day.
> D - M means Day will be displayed to the left of Month.

- S (< 2 sec) will toggle between M - D and D - M.
- A (< 2 sec) will save the Set Point and access the Set Hour Format screen with the Set Point flashing.

Set Hour Format

The Set Hour Format screen displays the graphic HR with the clock icon and the Set Point 12 or 24 flashing (Fig. 12).

- S (< 2 sec) will toggle between 12 and 24.
- A (< 2 sec) will save the Set Point and access the Set Time screen.

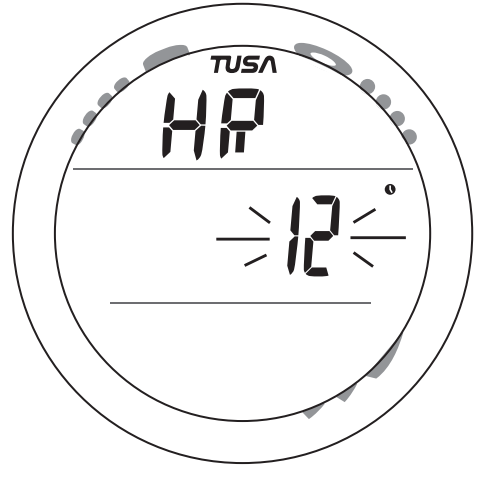


Fig. 12 - SET HOUR FORMAT

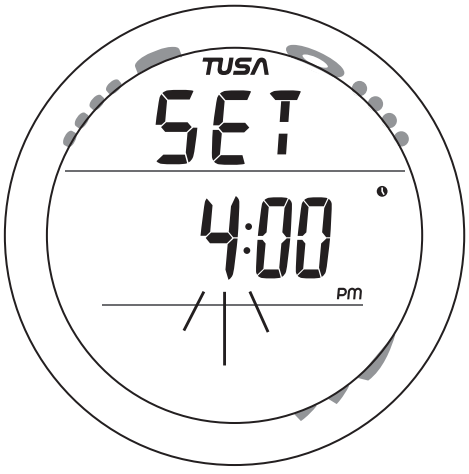


Fig. 13 - SET HOUR

Set Time

Upon access, the Set Time screen displays the graphic SET with the clock icon and the Time of Day (hr:min) with the Hour Set Point flashing (Fig. 13).

- S (hold) while the Hour Set Point is flashing will scroll upward through the Set Points in 1 Hour increments at a rate of 8 per second.
- S (repeatedly, < 2 sec each time) will step upward through the Set Points one at a time.
- A (< 2 sec) will save the Hour Set Point and the Minute digits will flash.
- S (hold) will scroll upward through the Minute Set Points in 1 minute increments at a rate of 8 per second.
- S (repeatedly, < 2 sec each time) will step upward through the Set Points one at a time.
- A (< 2 sec) will save the Minute Set Point and access the Set Date screen.

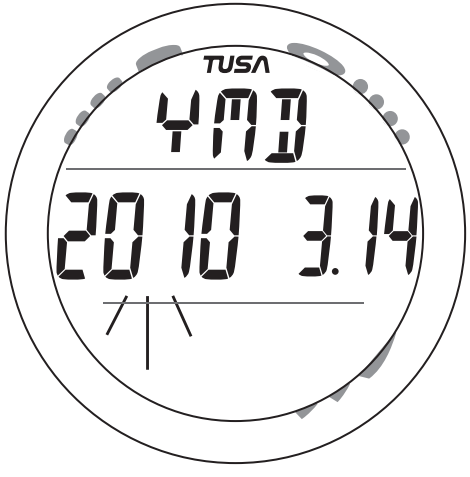


Fig. 14 - SET DATE

Set Date

Upon access, the Set Date screen displays the graphic YMD (meaning Date is arranged as Year Month.Day) or YDM (meaning Date is arranged as Year Day.Month) with the Year Set Point flashing (Fig. 14).

- S (hold) while the Year Set Point is flashing will scroll upward through the Set Points in 1 Year increments at a rate of 8 per second from 2009 to 2052 (with leap year corrections).
- S (repeatedly, < 2 sec each time) will step upward through the Year Set Points one at a time.
- A (< 2 sec) will save the Year Set Point and the Month digits will flash.
- S (hold) will scroll upward through the Month Set Points in 1 month increments at a rate of 8 per second.
- S (repeatedly, < 2 sec each time) will step upward through the Month Set Points one at a time.
- A (< 2 sec) will save the Month Set Point and the Day digits will flash.
- S (hold) will scroll upward through the Day Set Points in 1 Day increments at a rate of 8 per second.
- S (repeatedly, < 2 sec each time) will step upward through the Day Set Points one at a time.
- A (< 2 sec) will save the Date setting and revert to the Watch Default Time screen.

> Year will not be displayed in any mode other than Set Date.
> Main Time/Date can also be set using the DataLog PC Interface program.
> Prior to shipment from the factory, any error of the Main Time is corrected.

ALTERNATE TIME

- M (< 2 sec) while the Watch Default Time screen is displayed will access the Watch Alternate Time screen.

Information provided includes (Fig. 15):

> Nitrogen Bar Graph, if any after NORM/FREE dives.
> O2 Bar Graph, if any after NORM Nitrox dives.
> Day of the Week graphic MON (or TUE, WED, THU, FRI, SAT, SUN).
> Clock icon, if the Daily Alarm is set On.
> Time of Day (hr:min:sec) with AM (or PM) icon.
> Graphic ALt, indicating Time as Alternate (remote).
> Battery icon, if a Low Battery condition exists.

- M (< 2 sec) will access the Watch CDT (Countdown Timer).
- S (< 2 sec) will silence and acknowledge the Daily Alarm.
- S (2 sec) will interchange ALT Time with Main Time making ALT Time the local Watch Default Time screen.
- L (press) will activate the Backlight.
- M (2 sec) will revert to the Watch Default Time screen.
- A and S (simultaneously 2 sec) will access Set ALT Time .

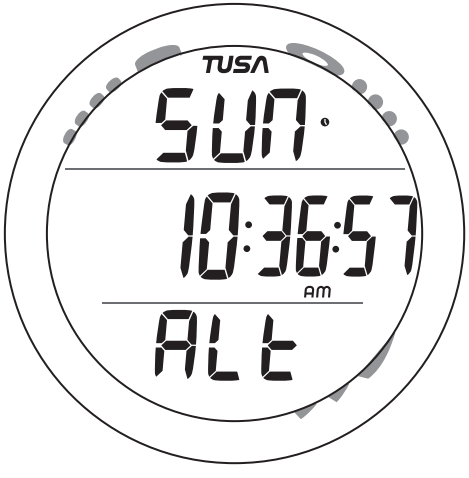


Fig. 15 - ALTERNATE TIME

SET WATCH ALT TIME

- ALT TIME can be set OFF, or to an Hour based numeric time Differential ranging from + 1 through +23 through - 23 through -1 (hours).
- Once the Differential is selected and saved, values of ALT Time will be based upon the Main Time Set Points plus/ minus the Differential.

Information displayed includes:

> Set Point graphic OFF (Fig. 16A) or numeric (Fig. 16B), flashing.

> Graphics SEt and ALt.

- S (hold) will scroll through the Set Points in increments of 1 Hour at a rate of 8 per second.
- S (repeatedly, < 2 sec each time) will step upward through the Set Points one at a time.
- A (< 2 sec) will save the Set Point and revert to the Watch ALT Time screen.
- M (2 sec) will revert to the Watch Default Time screen.
- If no button is pressed during a period of 2 minutes, operation will revert to the Watch Default Time screen.

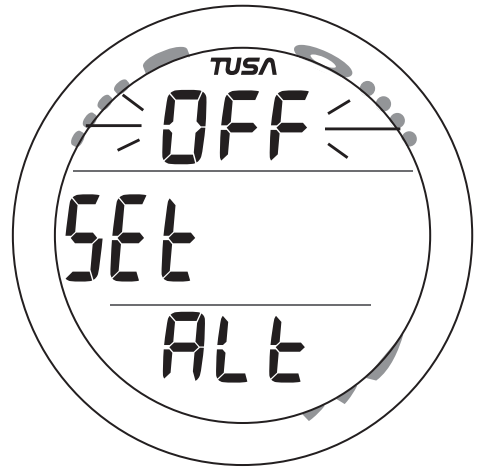


Fig. 16A - SET ALTERNATE TIME

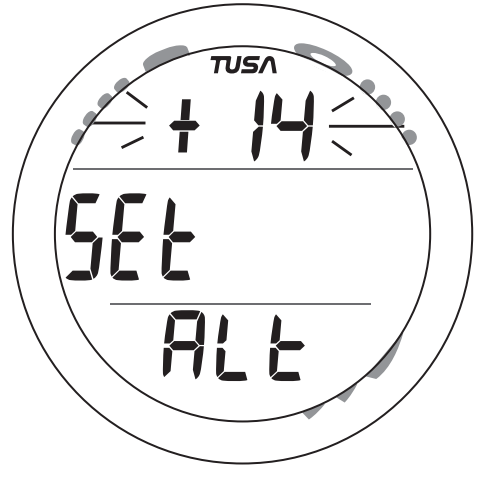


Fig. 16B - SET ALTERNATE TIME

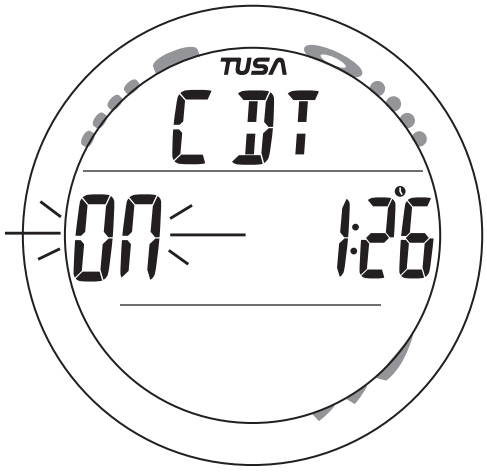


Fig. 17A - WATCH CDT
(running)

WATCH CDT (COUNTDOWN TIMER)

Pressing and releasing the M button momentarily 2 times (< 2 sec each time) while the Watch Default Time screen is displayed will access the Watch CDT status screen, displaying the remaining Countdown Time (hr:min) if running (Fig. 17A), or OFF flashing and the previously set Countdown Time if the set Countdown started and has ended, or OFF (solid) and 0:00 if no time was previously set (Fig. 17B).

Once set ON, a Countdown will run in the background until it counts down to 0:00, or it is set OFF, or a Dive is made at which time it will default to OFF and the value previously set.

When a set Countdown Time reaches 0:00, the Audible Alarm will sound.

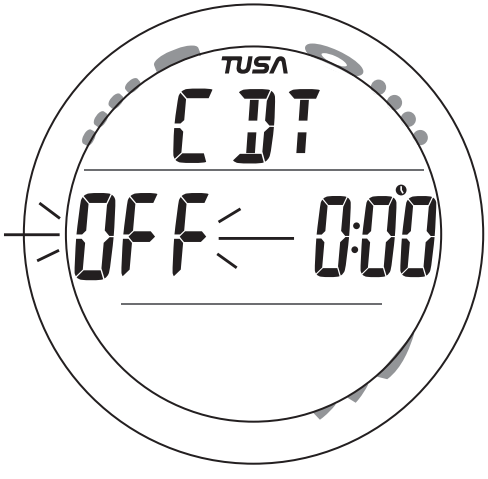


Fig. 17B - WATCH CDT
(no time set)

- S (< 2 sec) will toggle between ON and OFF. A toggle to ON will Start the Timer if a Time has been set.
- A and S (simultaneously 2 sec) will access Set Watch CDT.
- L (press) will activate the Backlight.
- M (2 sec) will revert to the Watch Default Time screen.
- If no button is pressed during a period of 2 minutes, operation will revert to the Watch Default Time screen.

Set Watch CDT

Upon access, the Set CDT screen displays the graphics CDT and SEt and the CDT (hr:min) with clock icon, the Hour Set Point flashing (Fig. 18A).

- S (hold) will scroll upward through the Hour Set Points in 1 hour increments at a rate of 8 per second.
- S (repeatedly, < 2 sec each time) will step upward through the Set Points one at a time.
- A (< 2 sec) will save the Hour Set Point and the Minutes digits will flash.
- S (hold) will scroll upward through the Minute Set Points in 1 minute increments at a rate of 8 per second.
- S (repeatedly, < 2 sec each time) will step upward through the Set Points one at a time.
- A (< 2 sec) will save the Minutes Set Point and revert to the CDT Status screen with the graphic OFF (flashing) in place of the graphic SEt (Fig. 18B).
- S (< 2 sec) will toggle from OFF to ON and Start the Timer.
- M (2 sec) will revert to the Watch Default Time screen.
- If no button is pressed during a period of 2 minutes, operation will revert to the Watch Default Time screen.

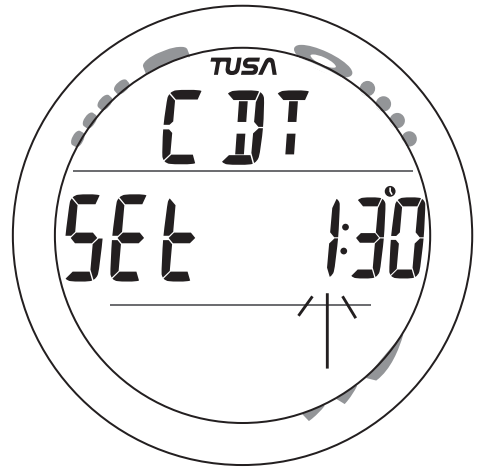


Fig. 18A - SET WATCH CDT

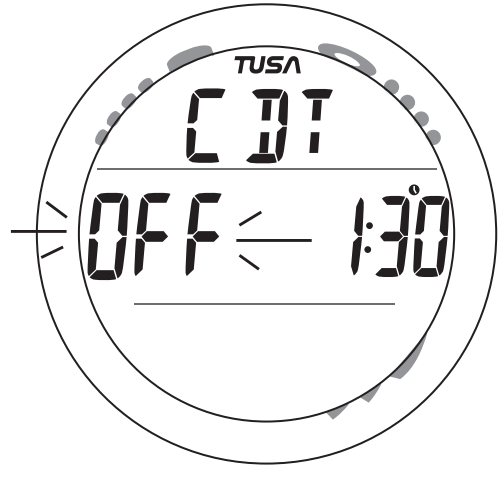


Fig. 18B - WATCH CDT
(set, ready)

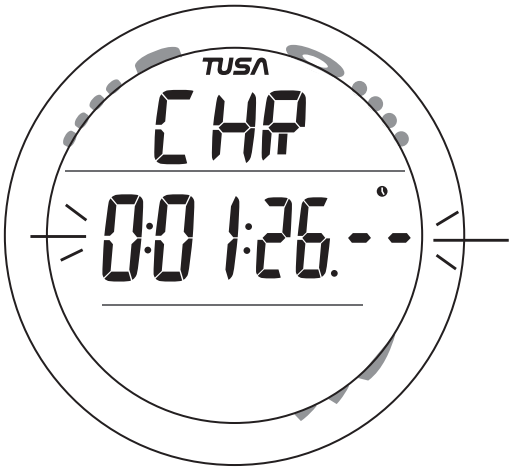


Fig. 19 - CHRONOGRAPH

Fig. 20 - LAP RECALL

CHRONOGRAPH (Stop Watch/Lap Timer)

- M (3 times, < 2 sec each time) while the Watch Default Time screen is displayed will access the Chronograph displaying the elapsed time if previously started or 0:00:00.00 (hr:min:sec.1/100th sec), flashing.
- S (< 2 sec) will Start the Timer which will begin counting up from 0:00:00.00 to 9:59:59.99 (hr:min:sec.1/100th sec) in increments of .01 (1/100th sec).
- During the first 4 seconds the 1/100th second values will be displayed after which 2 dashes (. - -) will be displayed (Fig. 19). The 1/100th values will be recorded and displayed when Laps are frozen and when later recalled.
- Subsequent presses of S (< 2 sec each time) will freeze Lap Times (LAP 1 through LAP 9). After 9 Laps are recorded, additional Laps will replace LAP 9, shift the others to lower LAP numbers, while discarding LAP 1.
- If the Timer reaches 9:59:59.99 hr:min:sec.1/100 sec), it will stop and save that number as a LAP. Subsequent presses of S will then have no effect.
- A (< 2 sec) will Stop the Timer and Recall LAP #1, displaying the graphic LAP and Lap Time with the Lap #. Repeat presses will display other Laps/Times (Fig. 20).
- A (2 sec) will Stop the Timer and Reset the Time to 0:00:00.00 (flashing).
- M (< 2 sec) will access the Daily Alarm Status screen.
- M (2 sec) will revert to the Watch Default Time screen.

While the Chrono is running, it will remain on the screen until a button operation is performed. If another screen is accessed, it will then continue to run in the background.
Upon descending on a dive, Chrono operation will be terminated and reset to 0:00:00.0.

DAILY ALARM

When set ON, the Daily Alarm will sound the Audible Alarm at the Time set every day.

- M (4 times, < 2 sec each time) while viewing the Watch Default Time screen will access the Daily Alarm Status screen.

Information provided includes (Fig. 21):

> Graphic AL and clock (alarm) icon
> Graphic ON (or OFF), flashing.
> Alarm Time Set Point (hr:min) with AM (or PM) icon.

- S (< 2 sec) will toggle between ON and OFF.
- Upon being toggled to ON, the Alarm will be set to sound every day at the Time displayed.
- A and S (simultaneously for 2 sec) will access Set Daily Alarm.
- M (2 sec) will revert to the Watch Default Time screen.
- If no button is pressed during a period of 2 minutes, operation will revert to the Watch Default Time screen.

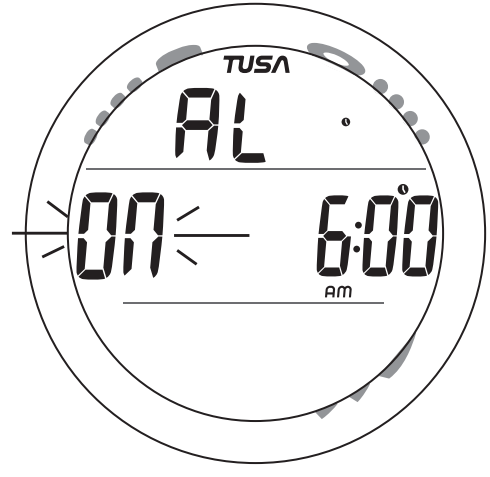


Fig. 21 - DAILY ALARM

SET DAILY ALARM, information provided includes (Fig. 22):

> Graphics AL and SEt with clock (alarm) icon.

> Alarm Time previously set (hr:min) with the Hour Set Point flashing.

- S (hold) while the Hour digits are flashing will scroll upward through the Set Points in 1 Hour increments at a rate of 8 per second.
- S (< 2 sec) will step upward through the Set Points one at a time.
- A (< 2 sec) will save the Hour Set Point and the Minute digits will flash.
- S (hold) while the Minute digits are flashing will scroll upward through the Set Points in 1 Minute increments at a rate of 8 per second.
- S (< 2 sec) will step upward through the Set Points one at a time.
- A (< 2 sec) will save the Set Point and revert to the Daily Alarm Status screen indicated by the graphic ON (or OFF) flashing.
- M (2 sec) will revert to the Watch Default Time screen.

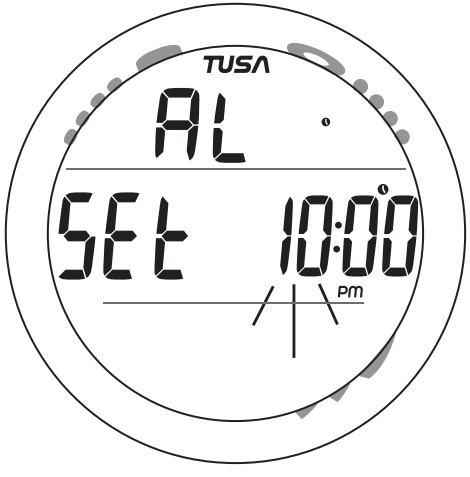


Fig. 22 - SET DAILY ALARM

DIVE COMPUTER FEATURES AND DISPLAYS

BAR GRAPHS

The ZEN AIR features 3 Bar Graphs >> NiBG, O2BG, and ASC.

NiBG (Nitrogen Loading Bar Graph)

The NiBG (Fig. 23a) represents tissue loading of nitrogen, showing your relative no decompression or decompression status. As your depth and elapsed dive time increase, segments will add to the NiBG, and as you ascend to shallower depths, the segments will recede, indicating that additional no decompression time is allowed for multilevel diving.

The Nitrogen Loading Bar Graph monitors 12 different nitrogen compartments simultaneously and displays the one that is in control of your dive. It is divided into a No Decompression (normal) zone, a Caution zone (also No Decompression), and a Decompression (danger) zone.

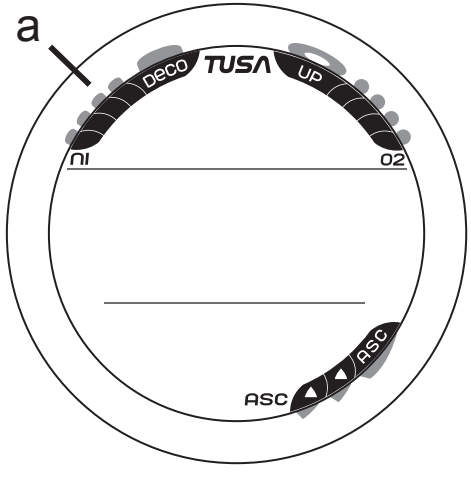


Fig. 23 - NIBG

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

NOTE: Displays associated with oxygen and the O2BG will only appear if FO2 has been set at a value other than Air (e.g., a numerical value).

Oxygen Bar Graph (O2BG)

The O2BG (Fig. 24a) represents oxygen accumulation, showing the maximum of either per dive accumulated oxygen, or 24 hour period accumulated oxygen.

As your oxygen exposure (accumulation) increases during the dive, segments will add to the O2BG, and as saturation decreases, it will begin to recede, indicating that additional exposure is allowed for that dive and 24 hour period.

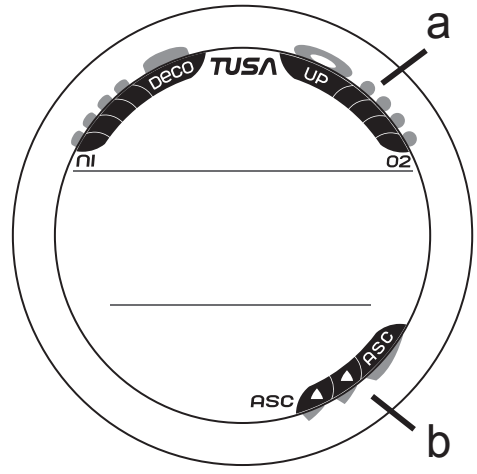


Fig. 24 - O2BG & ASC

Ascent Rate Indicator (ASC)

The ASC (Fig. 24b) provides a visual representation of ascent speed (i.e., an ascent speedometer).

The segments of the ASC represent two sets of speeds which change at a reference Depth of 60 FT (18 M). Refer to the chart for segment values.

⚠ WARNING: At depths greater than 60 FT (18 M), ascent rates should not exceed 60 FPM (18 MPM). At depths of 60 FT (18 M) and shallower, ascent rates should not exceed 30 FPM (9 MPM).

ASC values

Deeper than 60 FT (18 M)

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

60 FT (18 M) & Shallower

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

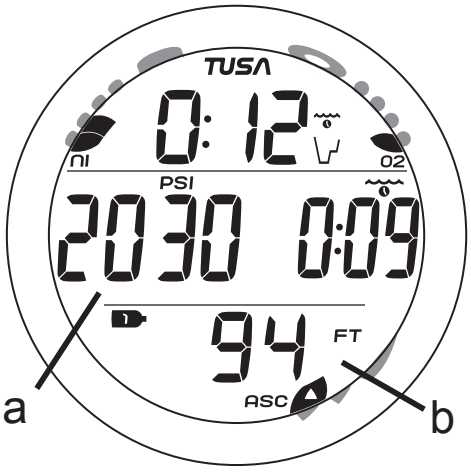


Fig. 25 - PRESSURE & DEPTH

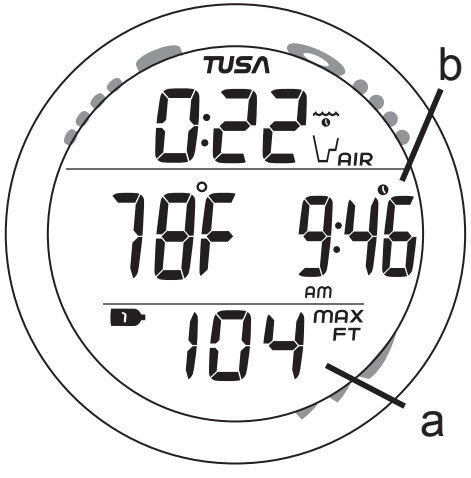


Fig. 26 - MAX DEPTH & TIMES

ALPHA / NUMERIC DISPLAYS

Tank Pressure

When the ZEN AIR's Receiver is set ON and active, Tank Pressure from the active Transmitter that is properly linked will be displayed on the NORM or GAUG MAIN screens (Fig. 25a).

Values of Pressure are displayed numerically from 000 PSI (00 BAR) up to 5,000 PSI (345 BAR) in increments of 5 PSI (1 BAR).

Depth

During dives, the Current Depth display (Fig. 25b) and Maximum Depth which is on an Alternate Display (Fig. 26a) indicate Depths from 0 to 330 FT (100 M) in increments of 1 FT (.1 M).

During a No Deco Safety Stop, the set Stop Depth is displayed and during Decompression, required Stop Depth is displayed.

Time and Date

Most Time displays like Time of Day (Fig. 26b) are shown in hour:minute format (i.e., 9:46 represents 9 hours and 46 minutes, not 946 minutes!). The colon that separates hr:min (min;sec) blinks once per second when the display is indicating real time (e.g., Time of Day, Elapsed Dive Time).

When Times are calculated projections such as NDC and Elapsed Dive Time (Fig. 27a/b), the colon is solid (non blinking).

FREE Dive Mode displays Times in minute:second format.

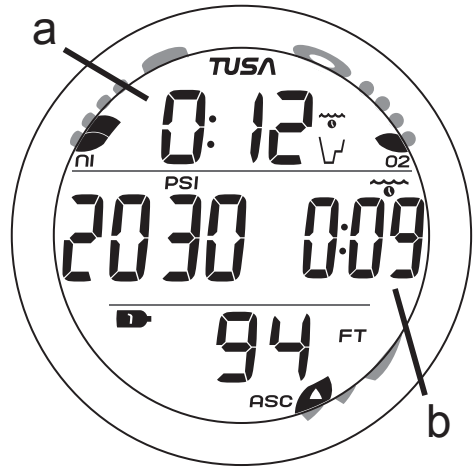


Fig. 27 - TIMES (Dive)

Temperature, Date, Elevation

Elevation, Temperature, and Date can be viewed by accessing the Watch Alternate Display (Fig. 28).

In Dive Computer modes, Time of Day is displayed in place of Date.

The only other place that Date is displayed is on Log Preview screens that identify dives.

When above the sea level range, which extends up to 3,000 feet (915 meters), Altitude is displayed on the Watch and Dive Computer Surface Alternate screens as EL (Elevation Level) from 2 up to 7.

EL2 = 3,001 to 5,000 feet (916 to 1,525 meters)
EL3 = 5,001 to 7,000 feet (1,526 to 2,135 meters)
EL4 = 7,001 to 9,000 feet (2,136 to 2,745 meters)
EL5 = 9,001 to 11,000 feet (2,746 to 3,355 meters)
EL6 = 11,001 to 13,000 feet (3,356 to 3,965 meters)
EL7 = 13,001 to 14,000 feet (3,966 to 4,270 meters)

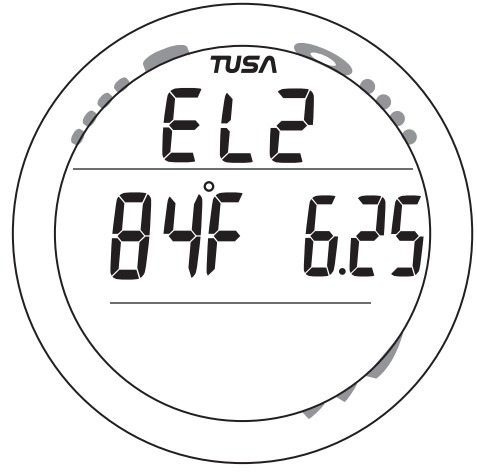


Fig. 28 - ELEV, TEMP, DATE

⚠ WARNINGS AND SAFETY RECOMMENDATIONS

- **It should not be considered that the capabilities built into the ZEN AIR provide an implied approval or consent from TUSA for individuals to exceed the defined limits for recreational diving, as agreed on by all internationally recognized training agencies.**

- **The oxygen features of the ZEN AIR are intended for use by recreational divers trained for Nitrox diving by an instructor certified by a recognized training agency to teach diving with Nitrox.**

- **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 ZEN AIR provides information based upon a personal dive profile, and therefore must not be shared between divers. It is impossible for two divers to stay precisely together underwater, and your computer's dive profile tracking of previous dives will be pertinent to you only. Nitrogen and oxygen loading of a second user may be significantly different and swapping dive computers could lead to inaccurate and dangerous predictions of decompression and oxygen accumulation status.**

DIVE COMPUTER SURFACE MODES

DIVE COMPUTER (DC) OPERATING MODES

The ZEN AIR features 3 selectable DC Operating Modes -

- NORM >> for Normal Air or Nitrox dives.
- GAUG >> for dives with no Nitrogen/Oxygen calculations.
- FREE >> for dives with no SCUBA.

SURFACE MODE

Depressing the M button for 2 seconds while the Local Default Watch Default Time screen is displayed will access the selected the NORM, GAUG, or FREE Surface Main screen.

If no dive has been taken within the past 24 hours, the NORM Surface Main will appear as the default display indicated by the graphic Nor (Fig. 29).

- The GAUG and FREE Surface Main screens can be accessed by subsequent 2 second presses of the M button. Their graphics will flash indicating that they can be selected as the Operating Dive Mode.

Fig. 29 - NORM SURF MAIN

- To select a Mode for diving, press/release the M button while that graphic is flashing. When the graphic becomes solid, that Mode is selected for the type of dives to be conducted.
- The Operating Mode selected (NORM, GAUG, or FREE) will remain on display for 2 hours until a dive is made or another Operating Mode is selected.

If a dive has been conducted within the past 24 hours, the Surface Main screen for that Operating Mode (NORM, GAUG, or FREE) will be displayed.

At any time while operating in Surface Modes, the ZEN AIR will enter Dive Mode upon descent to 5 FT (1.5 M).

- During the 2 hour pre dive surface period, if the M button is pressed to access other screens in the Watch Mode sequence, Surface Mode must again be accessed prior to the first dive of a series (if Wet Activation is set OFF).
- When Wet Activation is set ON, the Wet Contacts will activate the selected Dive Mode regardless of what Mode the ZEN AIR is operating in at the time of the descent.

The ZEN AIR will enter Post Dive Surface Mode following a dive upon ascent to 2 FT (0.6 M). The Surface Interval Time colon will flash during the first 10 minutes after a NORM or GAUG dive (Fig. 30A), or 1 minute after a FREE dive (Fig. 30B).

During the first 10 minutes after a dive, the Surface Main screen for the operating mode remains on display. Watch Default Time can be viewed for 5 seconds during that period by pressing and releasing the M button momentarily (< 2 sec).

When the 10 minute Surface Time has elapsed, the Watch Default Time screen will replace the DC Surface Main screen which can then be accessed by pressing the M button for 2 seconds.

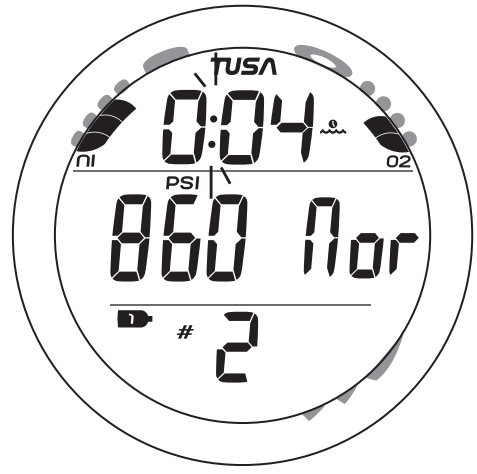


Fig. 30A - SURFACE MAIN
(< 10 min after NORM or GAUG dives)

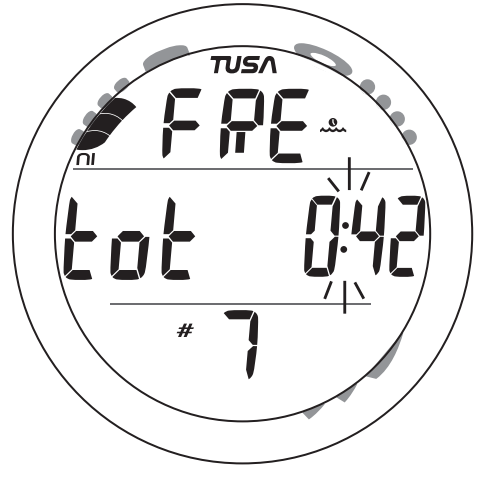


Fig. 30B - SURFACE MAIN
(< 1 min after FREE dive)

(no dive yet)

(12 min after dive 2)

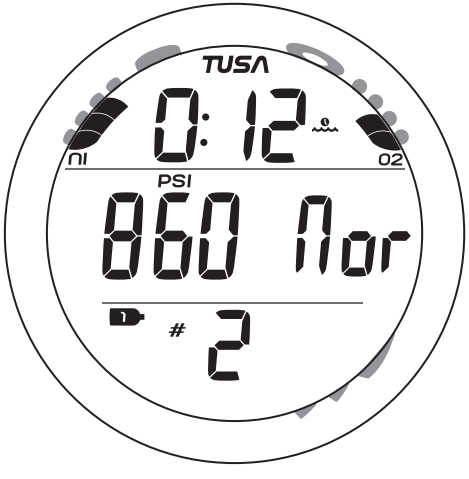


Fig. 31 - NORM SURF MAIN

NORM SURF MAIN, information provided includes (Fig. 31):

> Surface Interval Time (hr:min) with clock/wave icon
> Tank Pressure with PSI (or BAR), TRT in use
> Graphic Nor
> Tank icon (1, 2, or 3) representing Gas/TRT in use, 1 is the default upon start and 10 minutes after a dive
> Number of that dive (0 if no dive has been made yet) with # icon
> Battery icon if a Low Battery Condition exists
> NiBG, if any after a NORM or FREE dive
> O2BG, if any after a NORM Nitrox dive

- A (2 sec) will access NORM SURF ALT.
- A (< 2 sec) will access Log Mode, then again History.
- A and S (simultaneously 2 sec) will access the Set Menu.
- M (2 sec) will access GAUG Surface Main, then another 2 seconds FREE Surface Main.
- M (< 2 sec) will revert to the Watch Default Time.
- S (< 2 sec) will access Plan Mode, then again after dives Time to Fly, then Dsat Time.
- L (press) will activate the Backlight.

- S (2 sec) will activate the ZEN AIR's Receiver and access a series of screens that will indicate the Status of the system's Batteries and Pressures of the Tanks in use.

- If a Transmitter (TRT) is not active and linked to the ZEN AIR, a Not Available message will appear.
- Each screen will be displayed for 3 seconds. ZEN AIR Battery Status, then TRT 1 Battery/Pressure, then TRT2, then TRT 3.
- Operation will then revert to NORM Surface Main.

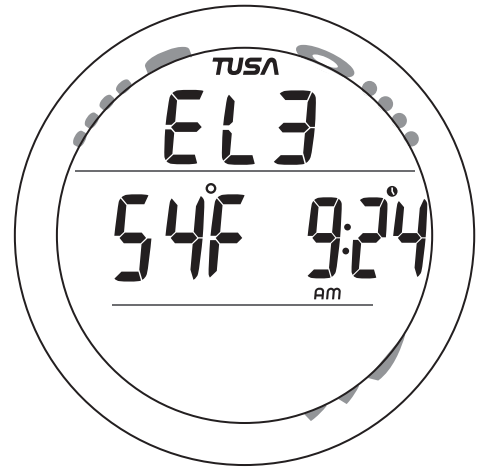


Fig. 32 - NORM SURF ALT

NORM SURF ALT, information includes (Fig. 32):

> Altitude graphic (EL2 to EL7), if above 3000 feet (915 meters), blank if below.
> Temperature with degrees icon and graphic F (or C).
> Time of Day (hr:min) with Time (clock) icon.

- A (< 2 sec) will revert to NORM Surface Main.
- After 5 sec, operation will revert to NORM Surface Main.
- L (press) will activate the Backlight.

ZEN AIR BATTERY STATUS, information includes (Fig. 33):

> Graphics BAT and ZEN
> Graphic Good or Lo
> Battery icon, if a Low Battery Warning Condition exists, flashing if an Alarm Condition exists.

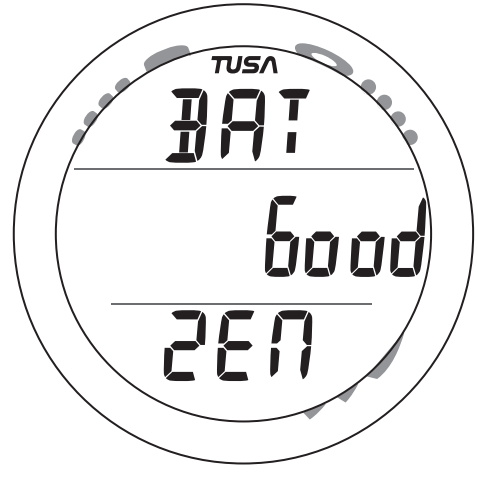


Fig. 33 - ZEN AIR BATTERY STATUS

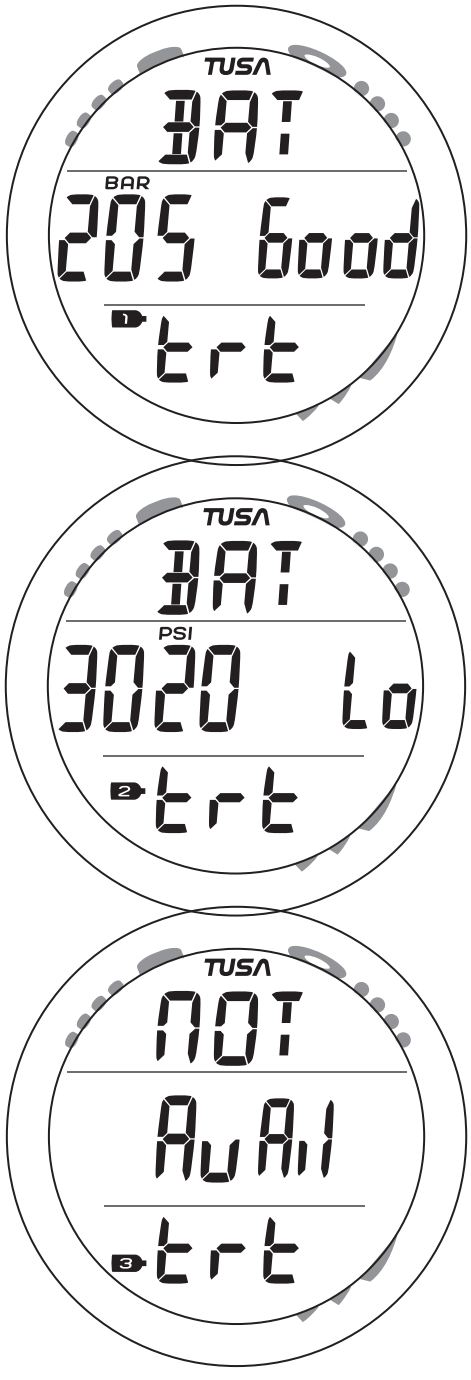


Fig. 34 - TRT STATUS

TRT STATUS, information includes (Fig. 34):

- > Graphics BAT and trt with Tank (1, 2, or 3) icon.
- > Tank Pressure with PSI (or BAR) icon.
- > Graphic Good or Lo.

- - or - -

- > Graphics NOT, AvAil, and trt with Tank icon if that TRT is not in use or not reporting.

NORM/GAUG SET MODES

SURF MAIN > SET F > SET A > SET U > Serial Number.

Access and step through of the sequence is gained by repeated simultaneous 2 second presses of the A and S buttons.

Alarms (Set A) and Utilities (Set U) Set Points can also be set/changed using the PC Settings Upload program. FO2 (Set F) entries must be made using only the push buttons.

Settings remain at the values set until they are changed.

SETTING FO2 FOR NITROX DIVES

For each value of FO2, the MOD (Max Operating Depth) that can be achieved for the PO2 Alarm limit previously set, will be displayed.

When the FO2 50% Default is set On and FO2 Gas 1 is set for a numerical value, 10 minutes on the surface after that dive, the FO2 for Gas 1 will be displayed as 50 and further dives will be calculated based on 50% O2 for oxygen calculations and 21% O2 for Nitrogen calculations (79% Nitrogen) unless the FO2 for Gas 1 is set before the dive.

FO2 for Gas 1 continues to reset to the FO2 50% Default after subsequent repetitive dives until 24 hours elapse after the last dive, or the FO2 50% Default is turned Off in the Set FO2 50% Default On/Off MODE.

When the FO2 50% Default is set Off, the FO2 for Gas 1 will remain at the last Set Point for the remainder of that series of repetitive dives.

The default FO2 for Gas 1 each new dive Period is AIR.

When FO2 for Gas 1 is set for AIR, the calculations are the same as when it is set to an FO2 of 21%. When FO2 for Gas 1 is set to AIR, it remains set for AIR until it is set for a numerical FO2 value (21 to 50%).

When FO2 is set only to AIR, the O2BG and PO2 values and/or warnings will not be displayed during the dive.

MODs affected by the PO2 limit set will not be displayed when FO2 for Gas 1 is set to AIR.

Internally, the ZEN AIR keeps track of the O2 so that if FO2 for Gas 1 is subsequently set for a numerical value, the O2 accumulated during previous AIR dives will be accounted for in the next Nitrox dive (during that dive period and series of repetitive dives).

Once FO2 Gas 1 is set for a numerical value (21 to 50%) and a dive is made, the AIR option is disabled until 24 hours elapse after the last dive. The AIR option will not be displayed in Set FO2 Gas 1 until a full 24 hour Surface Interval has elapsed.

If FO2 for Gas 1 is set for 21%, it will remain set for 21% for that series of dives until set for a higher numerical value.

If the FO2 50% Default is set Off, FO2 for Gas 2 and 3 will remain at their respective Set Points previously selected until they are changed. If the FO2 50% Default is set On, FO2 for Gas 2 and 3 will Default to 50% after the dive.

The ZEN AIR is programmed to prevent FO2 for Gas 2 and 3 from being set at values lower than the FO2 Set Point for Gas 1. Gas 2 and 3 can only be set to values equal to or higher than the FO2 Set Points of Gas 1 and 2, respectively.

When setting FO2 for Gas 2 and 3, the lowest values available will be the Set Point of the previous Gas set (e.g., If FO2 Gas 1 is set for 32%, FO2 Gas 2 can only be set at values from 32 to 100%. Likewise, FO2 Gas 3 will depend on the setting for FO2 Gas 2.

SET F GROUP (FO2)

Selections >> Gas 1 >> Gas 2 >> Gas 3 >> 50% Default.

> A and S (simultaneously for 2 sec) while NORM Surface Main is displayed will access Set F (Fig. 35).
> A (< 2 sec) will then access Set FO2 Gas 1.

SET FO2 GAS 1, information includes (Fig. 36):

> Graphic FO2
> Max Depth allowed for the PO2 Alarm Set with MAX and FT (or M) icons and graphic - PO2, blank if Air
> Tank 1 icon, representing Gas (mix) 1
> FO2 Set Point value, flashing

- S (hold) will scroll through the Set Points from AIR to 21 through 50% in 1% increments, at a rate of 8 per second.
- The scroll will stop when S is released, or momentarily at 32% (even if S is held depressed).
- Depressing S again will resume the scroll from 32 through 50%, then stop at AIR (or 21%).
- S (repeatedly, < 2 sec each time) will step through the Set Points one at a time.
- A (< 2 sec) will save the setting and access Set FO2 Gas 2.
- A and S (simultaneously for 2 sec) will save the setting and revert to Set F.

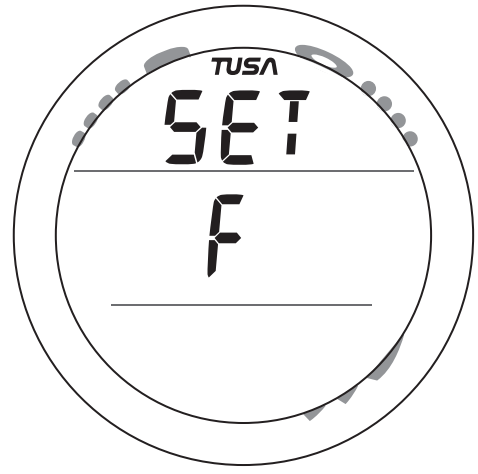


Fig. 35 - SET F (FO2)

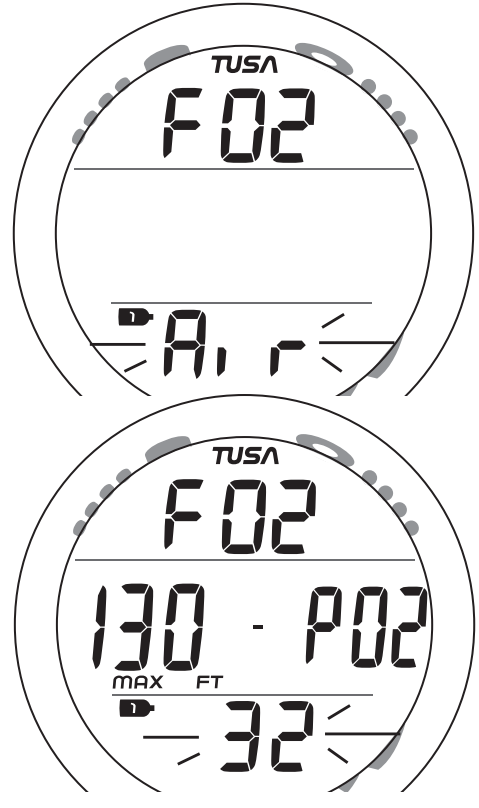


Fig. 36 - SET FO2 GAS 1

- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

SET FO2 GAS 2, information includes (Fig. 37):

> Graphic FO2
> Max Depth allowed for the PO2 Alarm Set with MAX and FT (or M) icons and graphic - PO2, blank if Air
> Tank 2 icon, representing Gas (mix) 2
> FO2 Set Point value, flashing

- S (hold) will scroll through the Set Points from AIR to 21 through 100% in 1% increments, at a rate of 8 per second.
- The scroll will start at the FO2 Gas 1 Set Point and stop when S is released, or momentarily at 50%, then again at 80%, then at the Gas 1 Set Point or at AIR (or 21%).
- S (repeatedly, < 2 sec each time) will step through the Set Points one at a time.
- A (< 2 sec) will save the setting and access Set FO2 Gas 3.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET F.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

Set FO2 Gas 3 is similar to Set FO2 Gas 2.

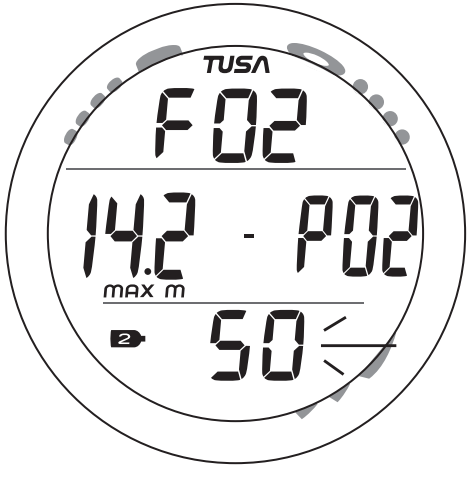


Fig. 37 - SET FO2 GAS 2

SET FO2 50% DEFAULT, information includes (Fig. 38):

> Graphics FO2, dFLt, and 50.
> Set Point graphic OFF (or ON), flashing.

- S (< 2 sec) will toggle between OFF and ON.
- A (< 2 sec) will save the setting and revert to SET F.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

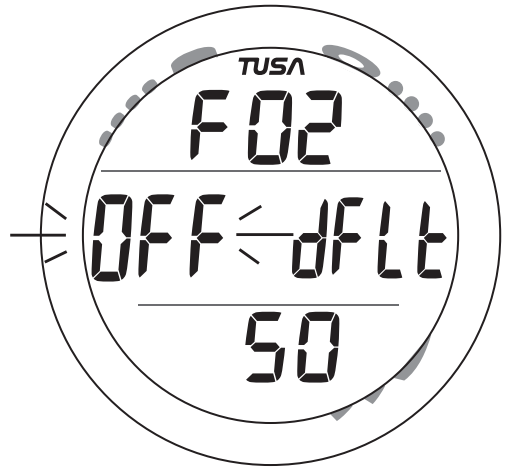


Fig. 38 - SET FO2 DEFAULT

SET A GROUP

Selections >> Audible >> Depth >> EDT >> NIBG >> DTR >
Turn Pressure >> End Pressure >> PO2.

> A and S (simultaneously for 4 sec) while NORM (or GAUG) Surface Main is displayed will access Set A (Fig. 39).
> A (< 2 sec) will then access Set Audible Alarm.

SET AUDIBLE ALARM

This option allows the Audible Alarm to be disabled.

Due to their importance, some cautionary situations will cause the Audible to sound even if this feature is set to Off.

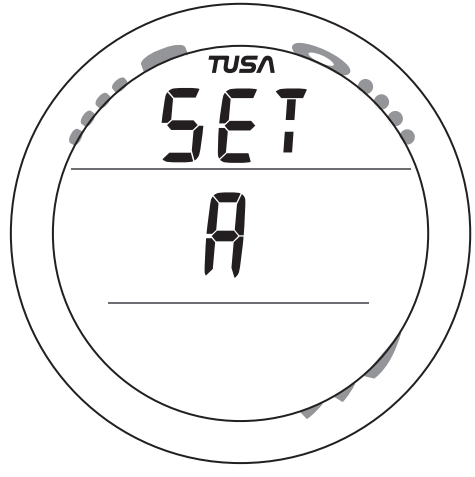


Fig. 39 - SET A (ALARMS)

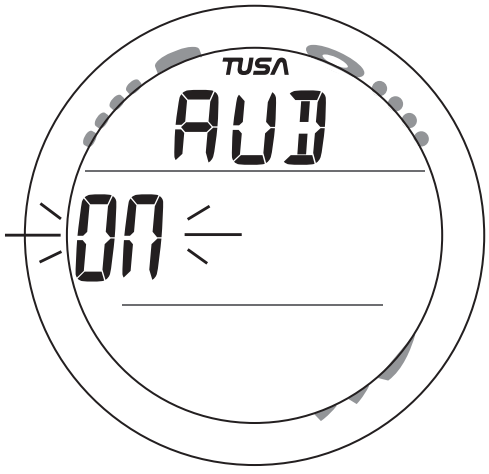


Fig. 40 - SET AUDIBLE ALARM

SET AUDIBLE ALARM, information includes (Fig. 40):

> Graphic AUD.
> Set Point graphic ON (or OFF), flashing.

- S (< 2 sec) will toggle between ON and OFF.
- A (< 2 sec) will save the setting and access Set Depth Alarm.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET A.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

SET DEPTH ALARM information includes (Fig. 41):

> Graphic DEP.
> Set Point value, flashing, with MAX and FT (or M) icons.

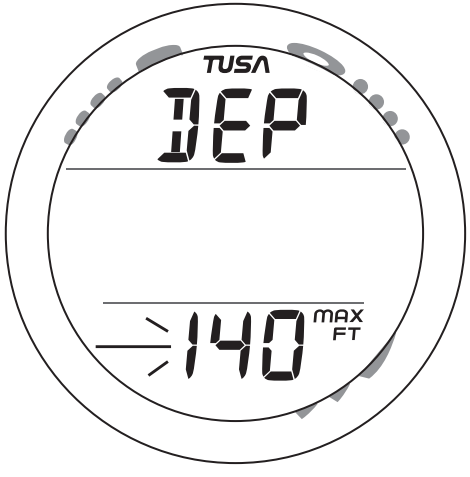


Fig. 41 - SET DEPTH ALARM

- S (hold) will scroll through the Set Points from 30 to 330 FT (10 to 100 M) in 10 FT (1 M) increments at a rate of 8 per second.
- S (repeatedly, < 2 sec each time) will step up through the Set Points one at a time.
- A (< 2 sec) will save the setting and access Set EDT Alarm.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET A.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

SET EDT ALARM, information includes (Fig. 42):

> Graphic EDT (Elapsed Dive Time).
> Set Point value (hr:min), flashing, with wave/clock icon.

- S (hold) will scroll through the Set Points from 0:10 to 3:00 (hours:minutes) in 5 minute (:05) increments at a rate of 8 per second.
- S (< 2 sec) will step through the Set Points one at a time.
- A (< 2 sec) will save the setting and access Set NiBG Alarm.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET A.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

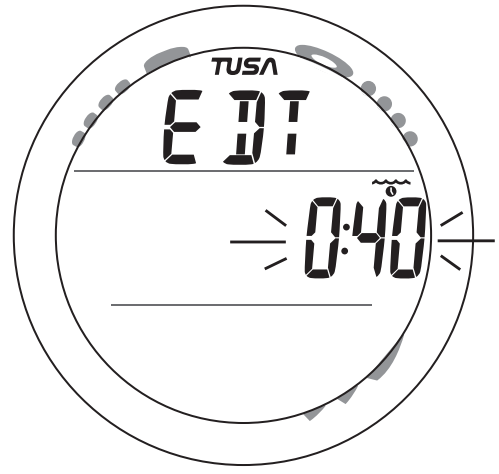


Fig. 42 - SET EDT ALARM

SET NiBG ALARM, information includes (Fig. 43):

> Graphic NBG (Nitrogen Bar Graph).
> NIBG Set Point (segments), flashing.

- S (< 2 sec) will step through the Set Points one at a time.
- A (< 2 sec) will save the setting and access Set DTR Alarm.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET A.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

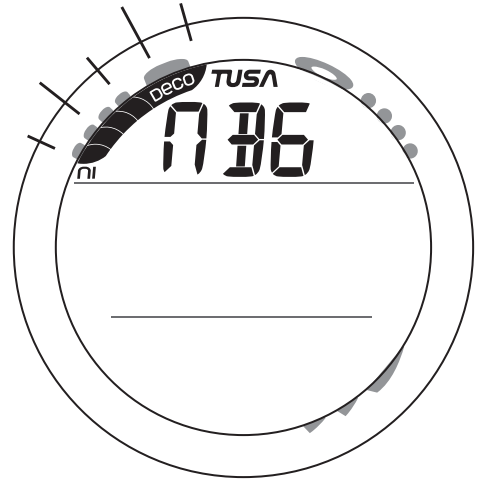


Fig. 43 - SET NiBG ALARM

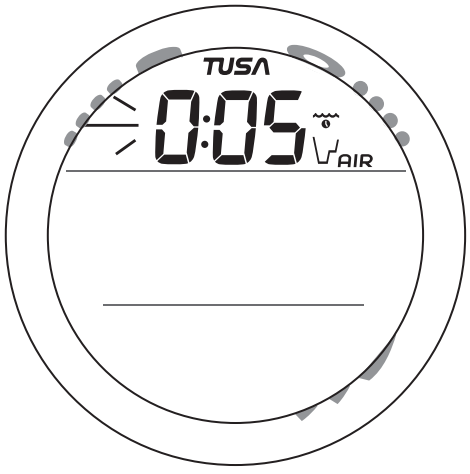


Fig. 44 - SET DTR ALARM

SET DTR ALARM, information includes (Fig. 44):

> Set Point value (min), flashing, with wave/clock/profile and AIR icons.

- S (hold) will scroll through the Set Points from 0:00 to 0:20 (min) in 1 minute (0:01) increments at a rate of 8 per second.
- S (< 2 sec) will step through the Set Points one at a time.
- A (< 2 sec) will save the setting and access Set Turn Alarm.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET A.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

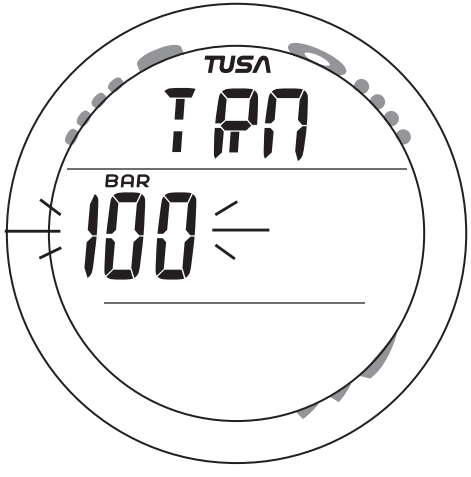


Fig. 45 - SET TURN ALARM

SET TURN ALARM (TRT1 only), information includes (Fig. 45):

> Graphic TRN (Turn Pressure).
> Set Point graphic OFF or numeric Presssure value, flashing, with PSI (or BAR) icon.

- S (hold) will scroll through the Set Points from OFF to 1000 to 3000 PSI (70 to 205 BAR) in 250 PSI (5 BAR) increments at a rate of 8 per second.
- S (< 2 sec) will step through the Set Points one at a time.
- A (< 2 sec) will save the setting and access Set End Alarm.

- A and S (simultaneously for 2 sec) will save the setting and revert to SET A.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

SET END ALARM, information includes (Fig. 46):

> Graphic END (End Pressure).

> Set Point numeric Presssure value, flashing, with PSI (or BAR) icon.

- S (hold) will scroll through the Set Points from 300 to 1500 PSI (20 to 105 BAR) in 100 PSI (5 BAR) increments at a rate of 8 per second.
- S (< 2 sec) will step through the Set Points one at a time.
- A (< 2 sec) will save the setting and access Set PO2 Alarm.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET A.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

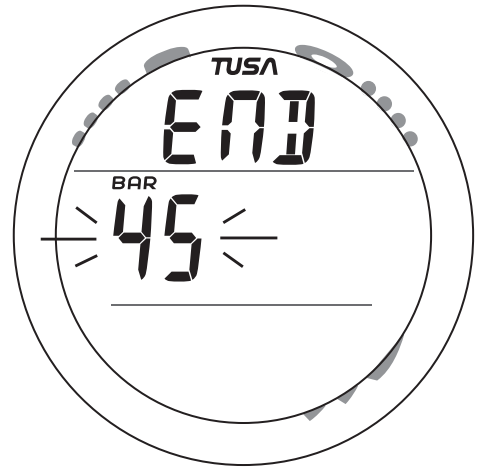


Fig. 46 - SET END ALARM

SET PO2 ALARM information includes (Fig. 47):

> Graphics PO2 and AtA.

> Set Point value, flashing, with MAX icon.

- S (< 2 sec) will step through the Set Points from 1.20 (ATA) to 1.60 (ATA) in .10 (ATA) increments.

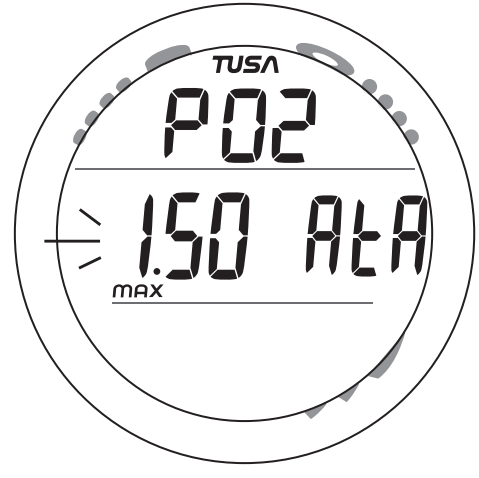


Fig. 47 - SET PO2 ALARM

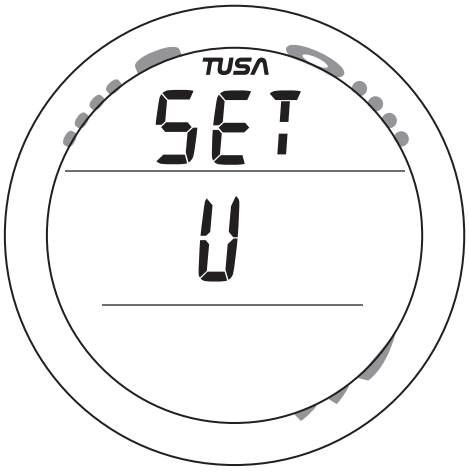


Fig. 48 - SET U (UTILITIES)

- A (< 2 sec) will save the setting and revert to SET A.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET A.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

SET U GROUP (UTILITIES)

Selections >> > Wet Activation >> Units >> Deep Stop >> Safety Stop >> Conservative Factor >> Backlight Duration >> Sampling Rate >> TRT 1 >> TRT 2 >> TRT 3.

> A and S (simultaneously for 6 sec) while NORM (or GAUG) Surface Main is displayed will access Set U (Fig. 48).
> A (< 2 sec) will then access Set Wet Activation.

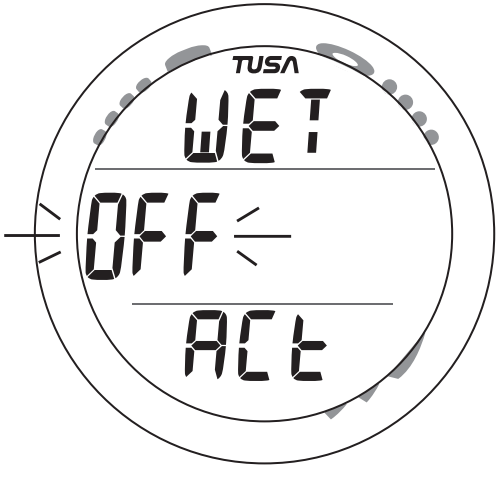


Fig. 49 - SET WET ACTIVATION

SET WET ACTIVATION, information includes (Fig. 49):

> Graphics WET and ACT.
> Set Point graphic OFF (or ON) flashing.

- S (< 2 sec) will toggle between ON and OFF.
- A (< 2 sec) will save the setting and access Set Units.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET U.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

SET UNITS, information includes (Fig. 50):

> Set Point icons/graphics PSI, F, and FT (or BAR, C, and M), flashing.

- S (< 2 sec) will toggle between Imperial and Metric.
- A (< 2 sec) will save the setting and access Set Deep Stop.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET U.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

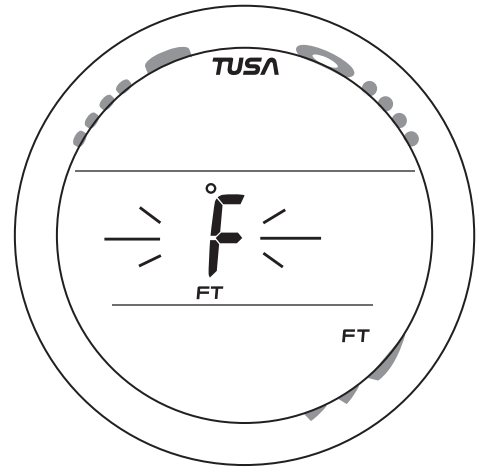


Fig. 50 - SET UNITS

SET NORM DEEP STOP, information includes (Fig. 51):

> Graphic DS (Deep Stop).
> Set Point OFF (or OFF), flashing, with STOP icon.

- S (< 2 sec) will toggle between OFF and ON.
- A (< 2 sec) will save the setting and access Set Safety Stop.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET U.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

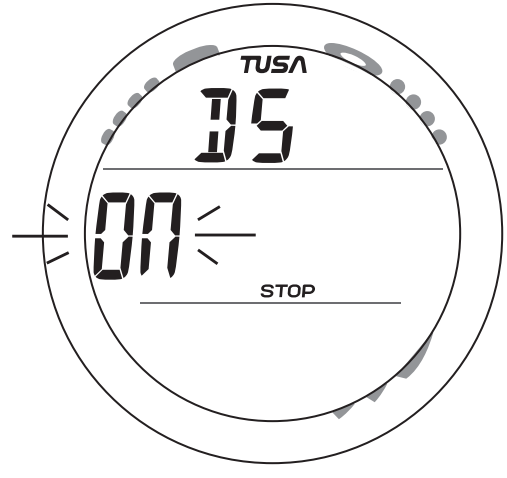


Fig. 51 - SET DEEP STOP

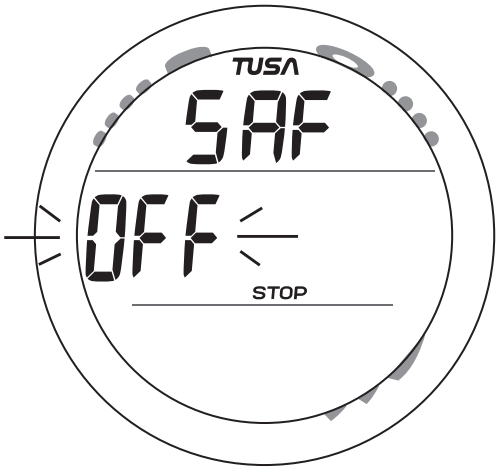


Fig. 52 - SET SAFETY STOP

SET NORM SAFETY STOP, information includes (Fig. 52):

> Graphic SAF (Safety Stop).
> Set Point OFF (or OFF), flashing, with STOP icon.

- S (< 2 sec) will toggle between OFF and ON.
- A (< 2 sec) will save the setting and access Set CF.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET U.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

SET CONSERVATIVE FACTOR, information includes (Fig. 53):

> Graphic CF (Conservative Factor) with wave/clock/profile icon.
> Set Point OFF (or ON), flashing.

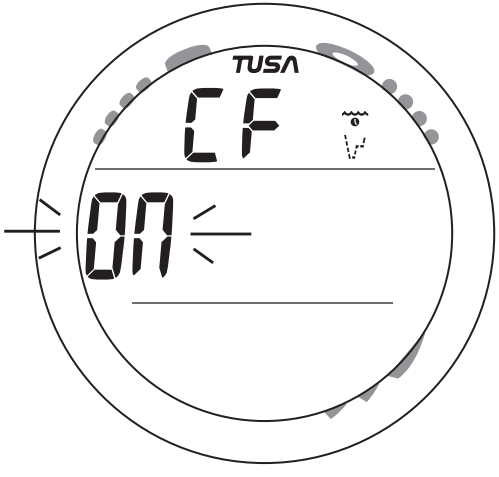


Fig. 53 - SET CONS FACTOR

- S (< 2 sec) will toggle between OFF and ON.
- A (< 2 sec) will save the setting and access Set CF.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET U.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

When the Conservative Factor is set ON, the No Deco Limits are reduced to those that would be available at the next higher 3000 foot (915 meter) Altitude.

SET BACKLIGHT DURATION, information includes (Fig. 54):

> Graphics BL (BackLight), dur (duration), and SEC (seconds).
> Set Point, flashing, with clock icon.

- S (< 2 sec) will step through the Set Points of 0, 5, and 10 (sec).
- A (< 2 sec) will save the setting and access Set Sampling Rate.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET U.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

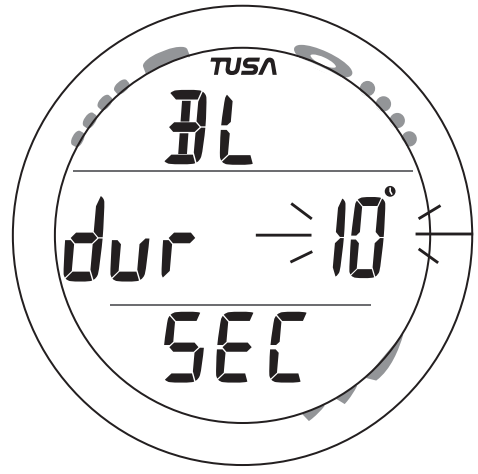


Fig. 54 - SET BACKLIGHT DURATION

SET SAMPLING RATE, information includes (Fig. 55):

> Graphics SR (Sampling Rate) and SEC (seconds)
> Set Point, flashing, with clock icon.

- S (< 2 sec) will step through the Set Points of 2, 15, 30, and 60 (sec).
- A (< 2 sec) will save the setting and access Set TRT 1.
- A and S (simultaneously for 2 sec) will save the setting and revert to SET U.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

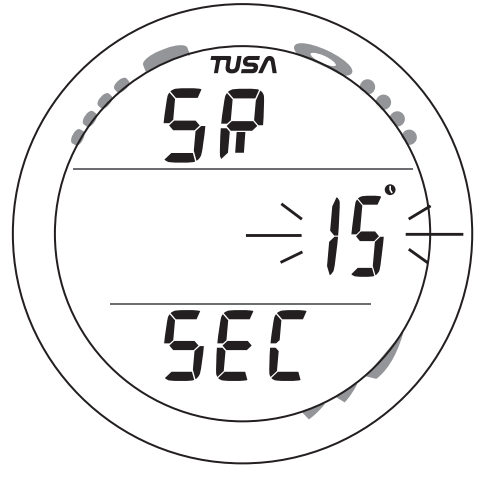


Fig. 55 - SET SAMPLING RATE

SET TRT 1, information includes (Fig. 56):

> Graphic TRT1 with Tank 1 icon.
> Set Point graphic OFF (or ON) flashing.
> TRT Serial Number (Link Code), up to 6 digits.

- S (< 2 sec) will toggle between OFF and ON.
- A (< 2 sec) will accept the OFF/ON selection.

> *If OFF is selected, Set TRT 2 and 3 will be bypassed and the operation reverts to the Set U screen.*
> *If ON is selected, the first (left) digit of the Code will flash.*

- S (hold) will scroll through the first digit's values from 0 to 9 in increments of 1 at a rate of 8 per second.
- S (repeatedly, < 2 sec each time) will step through the first digit's values one at a time.
- A (< 2 sec) will accept the first digit and flash the second.
  > *Repeat S and A operations to set the other digits.*
- When A is pressed to save the last (right) digit, the Set TRT2 screen will appear with OFF (or ON) flashing.
- A and S (simultaneously for 2 sec) will save the TRT setting and revert to SET U.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

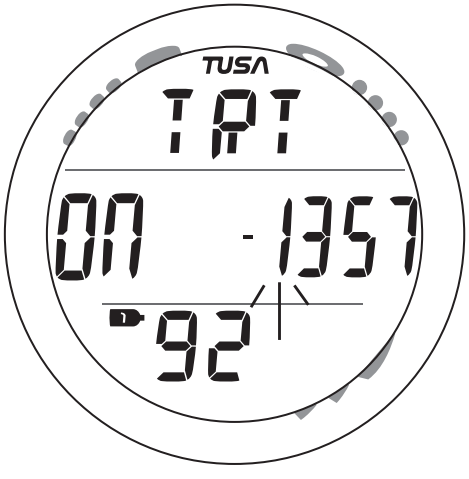


Fig. 56 - SET TRT 1

Set TRT 2 and 3 are similar to Set TRT 1.

SERIAL NUMBER

- A and S (simultaneously for 8 sec) while viewing the NORM Surface Main will access the SN screen (Fig. 57).

> Graphic SN (Serial Number).
> Factory programmed Serial Number.
> Firmware (operating software) revision (e.g., graphic r1A).

- A and S (simultaneously for 2 sec) will revert to the Surface Main.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

Fig. 57 - SERIAL NUMBER

The Serial Number and Firmware Revision will be requested in the event that you contact TUSA regarding the ZEN AIR. Enter them in the Records section provided in the back of this Manual.

NORM PLAN MODE

TUSA strongly recommends that you review the Plan Mode prior to every NORM 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 indicates adjusted dive times that are available for the next dive, based on residual nitrogen or oxygen accumulation (whichever is in control) following the last dive and surface interval.

NOTE: No Decompression Dive Times in Plan Mode are based on the FO2 setting for Gas 1. The FO2 settings for Gas 2 and 3 are not utilized for Plan calculations.

- S (< 2 sec) while the NORM Surface Main is displayed will access Plan Lead-in.

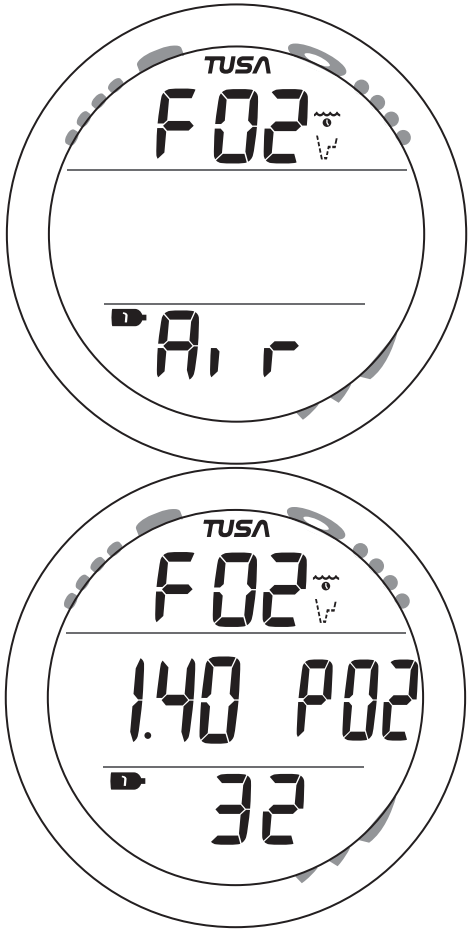


Fig. 58 - PLAN LEAD-IN

Plan Lead-in, information includes (Fig. 58):

> Graphic FO2 with wave/clock/profile icons.
> PO2 Alarm Set Point and graphic PO2, if FO2 is set for Nitrox, blank if set for Air.
> Tank 1 icon.
> FO2 Set Point, Air or 21 to 50(%).

- A (< 2 sec), after dives, will access Time to Fly, then again Dsat Time.
- S (repeatedly, < 2 sec each time) will access the first Plan Depth/Time screen and step through the screens*.

The screens will sequence through Depths from 30 up to 190 FT (9 to 57 M), or the Max Depth that will allow theoretical No Deco Dive Time of at least 1 minute based upon the previous dive profiles in a series of repetitive dives and taking into account descent and ascent rates of 60 FPM (18 MPM).

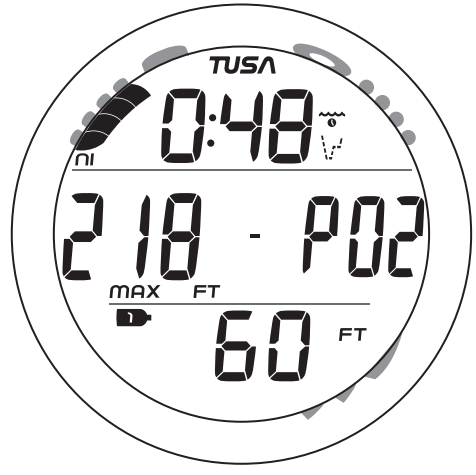
NOTE: When the Conservative Factor is set ON, No Decompression Dive times are reduced to the values of the next 3000 foot (915 meter) higher Altitude.

Plan Depth/Time, information includes (Fig. 59):

> NiBG (4 No Deco segments), or O2BG (4 segments), indicating which (Nitrogen or Oxygen) is in control of calculations based on previous dives.
> Dive Time (hr:min) allowed for the Depth displayed.
> Max Depth allowed for the PO2 Alarm value set with MAX and FT (or M) icons and graphic - PO2.
> Tank 1 icon indicating Gas (mix) 1.
> Plan Depth with FT (or M) icon.

- S (repeatedly, < 2 sec each time) will increase the Planned Depth in increments of 10 FT (3 M), displaying the information one screen at a time.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.

(Nitrogen control)



(O2 control)

Fig. 59 - PLAN LEAD-IN

FLY MODE

Time to Fly is a counter that begins counting down 10 minutes after surfacing from a dive from 23:50 to 0:00 (hr:min).

Ten minutes after a dive, operation reverts to the Watch Default Time screen at which time the Time to Fly countdown continues in the background. Access to the Fly screen is then gained by first accessing the NORM (or GAUG) Surface Main.

While viewing NORM Surface Main >> S (< 2 sec) to access Plan Lead-in, then A (< 2 sec) to access Fly.

While viewing GAUG Surface Main >> S (< 2 sec) to access Fly.

Time to Fly, information includes (Fig. 60):

> Graphic FLY.
> Countdown Time (hr:min) with clock icon.

- A (< 2 sec) will access Desat Time if in NORM, or revert to Surface Main if in GAUG.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.
- L (press) will activate the Backlight.

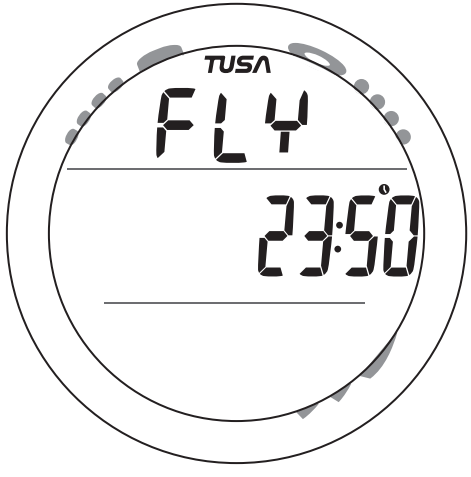


Fig. 60 - TIME TO FLY

DESAT MODE (NORM only)

The Time to Desaturate counter provides calculated time for Tissue Desatuation at sea level taking into consideration the Conservation Factor setting. It begins counting down 10 minutes after surfacing from a dive, counting down from 23:50 (hr:min) max to 0:00.

When the Countdown reaches 0:00, which will generally occur prior to the Fly countdown reaching 0:00, the Desat screen remains in the sequence of accessible NORM screens displaying 0:00 until the Fly counter shuts the Dive Computer operations Off 24 hours after a last dive.

> The SAT screen is not displayed after a Violation Dive.
> Desaturation requiring Times greater than 24 hours will display 23: - - .
> In the event that Time to Desaturate still remains at the end of 24 hours, the added time will be zeroed.
> Two hours after a dive, operation reverts to the Watch Default Time and the Desat countdown continues in the background.
> Access to the Desat screen is then gained by first accessing NORM Surface Main.

- S (< 2 sec) while viewing the NORM Surface Main will access Plan Lead-in, then A 2 times (< 2 sec each time) will access the Desat screen.

Desat Time, information includes (Fig. 61):

> Graphic SAT.
> Countdown Time (hr:min) with clock icon.

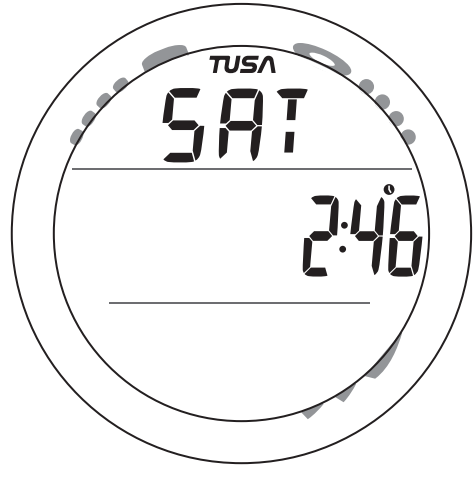


Fig. 61 - DESAT TIME

- A (< 2 sec) will revert to NORM Surface Main..
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.
- L (press) will activate the Backlight.

NORM/GAUG LOG MODE

Log Mode displays information from the latest 24 NORM and/or GAUG dives sequentially in reverse order (the most recent first). Log information is retained until over written by another dive. Battery removal will not affect the Log data stored for viewing.

After exceeding 24 dives, data from the most recent dive completed will be recorded in the Log and the oldest dive's data deleted.

Dives will be numbered 1 to 24 starting at #1 each time a new series of dives begins. After it shuts Off 24 hours after a dive, the first dive of the next new series will be #1.

- A (< 2 sec), while viewing Watch Default Time, NORM Surface Main, or GAUG Surface Main, will access Log Mode displaying the most recent dive’s Log Preview screen.
- S (hold) will then scroll back through the previous dives' Preview screens at a rate of 8 per second.
- S (< 2 sec) while viewing a Preview screen will display that dive’s Log Data 1 screen.
- S (< 2 sec), if that was a NORM Nitrox dive, will display that dive’s Log Data 2 screen (O2 data).

> Log screens remain on display until further button action occurs.

- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.
- L (press) will activate the Backlight.

Log Preview, information includes (Fig. 62):

> Log (book) icon.
> Graphic NOR (or GAU).
> Dive Mode (wave/clock/profile) icon, if NORM.
> Date (month.day or day.month) the dive was conducted.
> Time of Day the dive began (hr:min) with clock icon and AM (or PM) icon if set for 12 Hour Format.
> # icon and dive number (1 to 24) for that series.

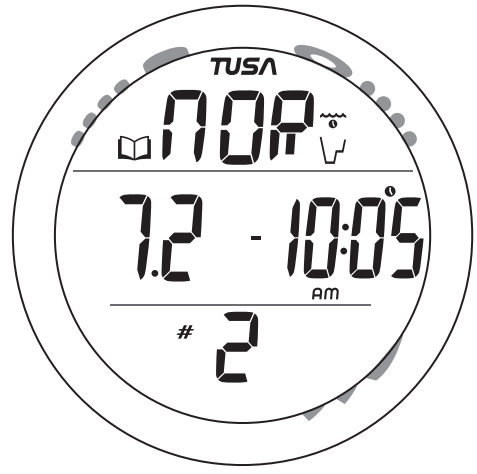


Fig. 62 - LOG PREVIEW

- S (< 2 sec) will access that dive's Log Data 1 screen.
- A (< 2 sec) will bypass Log Mode and access History.

Log Data 1, information includes (Fig. 63):

> NiBG with the max segment flashing, others fixed up to end of dive accumulation. All flashing if Violation.
> Log (book) icon.
> Pre dive Surface Interval time (hr:min) with clock/wave icon, 10 - through 23 - if > 9:59 hr:min, (- : - -) if no previous dive that period.
> Temperature (minimum that dive) with icon and graphic F (or C).
> Elapsed Dive Time (hr:min) with wave/clock icon.

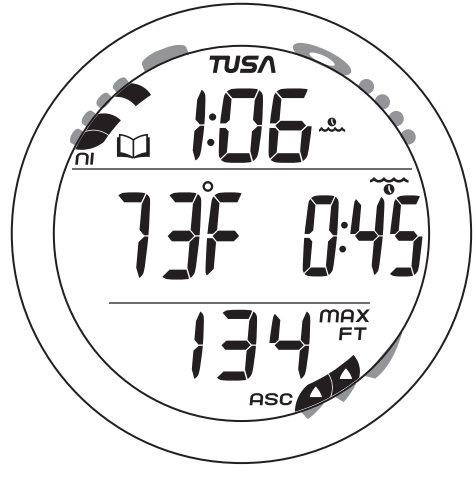


Fig. 63 - LOG DATA 1

> Max Depth with MAX and FT (or M) icons.
> ASC, segments representing max Ascent Rate recorded for 4 seconds.

- S (< 2 sec) will access Log Data 2.
- A (< 2 sec) will revert to NORM (or GAUG) Surface Main.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.
- L (press) will activate the Backlight.

Log Data 2 (only if Nitrox), information includes (Fig. 64):

> Log (book) icon.
> Graphic FO2 with FO2 Set for Gas 1 for that dive (at bottom).
> O2BG, segments representing O2 accumulated at the end of the dive.
> Max PO2 achieved (ATA) with MAX icon and graphic PO2.
> Tank 1 icon representing Gas (mix) 1.

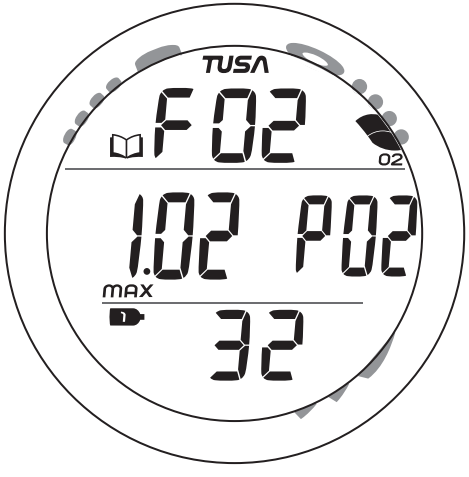


Fig. 64 - LOG DATA 2

- S (< 2 sec) will access the previous dive's Log Preview screen.
- A (< 2 sec) will revert to NORM (or GAUG) Surface Main.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.
- L (press) will activate the Backlight.

HISTORY MODE

History Mode displays information for up to 999 NORM and/or GAUG Dives, 9999 Dive Hours, and the Maximum Depth achieved. History information is retained indefinitely. Battery removal will not affect the History data stored for viewing.

- History Mode can be accessed by pressing and releasing the A button momentarily 2 times (< 2 sec each time) while viewing the Watch Default Time, NORM Surface Main, or GAUG Surface Main screen.

Fig. 65 - HISTORY 1

History 1, information includes (Fig. 65):

> Graphic HIS.
> Total Elapsed Dive Time recorded up to 9999 with graphic -Hour and clock icon.
> Total number of all dives recorded up to 999 with # icon.

- S (< 2 sec) will access the History 2 screen.
- A (< 2 sec) will revert to NORM (or GAUG) Surface Main.

History 2, information includes (Fig. 66):

> Altitude graphic SEA (or EL 2 through EL 7), max ever.
> Temperature, lowest ever with icon and graphic F (or C).
> Max EDT (hr:min) for a single dive with wave/clock icon.
> Max Depth ever with MAX and FT (or M) icons.

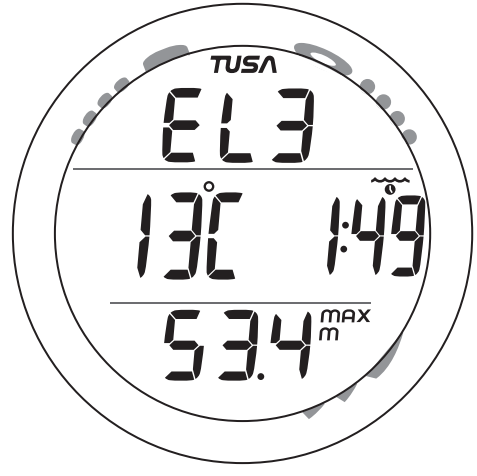


Fig. 66 - HISTORY 2

- A (< 2 sec) will revert to NORM (or GAUG) Surface Main.
- M (2 sec), or if no button is pressed within 2 minutes, operation will revert to the Surface Main.
- L (press) will activate the Backlight.

NOTE: FREE Dives are not recorded in the viewable Log or History. The data is stored in memory for subsequent download to the TUSA PC Interface program.

WARNINGS:

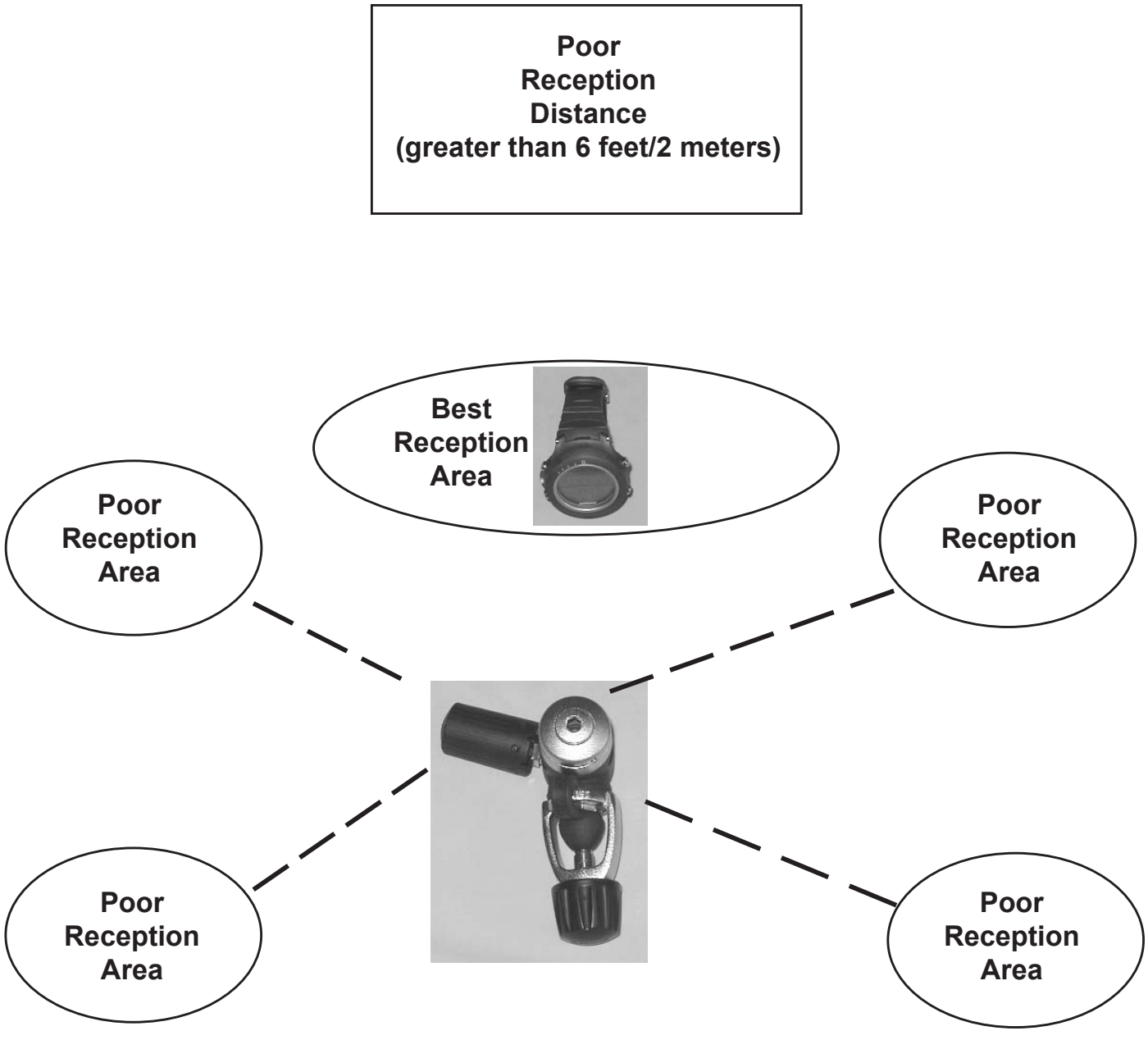
Making decompression dives without the proper preparation and training will place you in an unnecessarily dangerous situation.

Existing data for making planned decompression dives is limited, and virtually non-existent for repetitive decompression diving.

Decompression diving greatly increases your risk of decompression sickness.

Special training, equipment, and support are necessary for diving deeper than the maximum recommended sport diving depth limit(s).

NORM DIVE MODES



Transmitter Signal Reception Guide

POSITIONING OF THE ZEN AIR

The Transmitters (TRTs) emit low frequency signals that radiate outward in semicircular patterns that are parallel to the length dimension of the TRT. A coiled antenna inside the ZEN AIR receives the signals when it is positioned within a zone parallel to or at a 45 degree angle to the TRT as illustrated on page 68.

The ZEN AIR cannot effectively receive a signal when it is held out to the sides of the TRT or held at distances greater than 6 feet (2 meters) in front of the TRT. Best reception is achieved when the ZEN AIR is within 3 feet (1 meter) of the TRT.

When installed into the high pressure ports of the Regulator First Stages, the TRTs must be positioned so that they face horizontally outward from the Tank Valves.

Link Interruption Underwater

Moving the ZEN AIR out of the signal pattern of the TRT will result in a temporary interruption of the Link signal.

An interruption lasting greater than 15 seconds will cause the Audible to sound and the Tank Pressure value and Tank icon to flash (Fig. 67). The Link will be restored within 4 seconds after the ZEN AIR is moved back into its correct position.

An interruption of the TRT Link may also occur while the ZEN AIR is in an area within 3 to 4 feet (1 meter) of a running Dive Propulsion Vehicle. The Link will be restored within 4 seconds after the Vehicle is shut off or the ZEN AIR is moved out of that area.

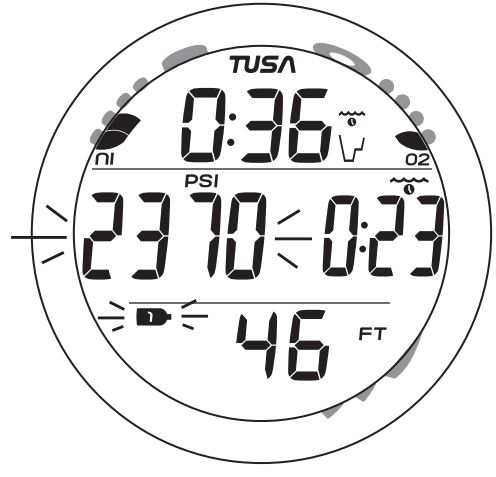


Fig. 67 - LOST LINK

When using a Strobe, a temporary interruption may occur shortly after the Strobe flashes. The Link will be restored within 4 seconds.

NO DECO DIVE TIME REMAINING (DTR)

The ZEN AIR constantly monitors No Decompression status (NDC), O2 accumulation, and Air Time Remaining, and displays whichever one is the least amount available at the time as DTR.

NDC 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 hypothetical tissue compartments.

The rates each of these compartments absorb and release Nitrogen is mathematically modeled and compared against a maximum allowable Nitrogen level.

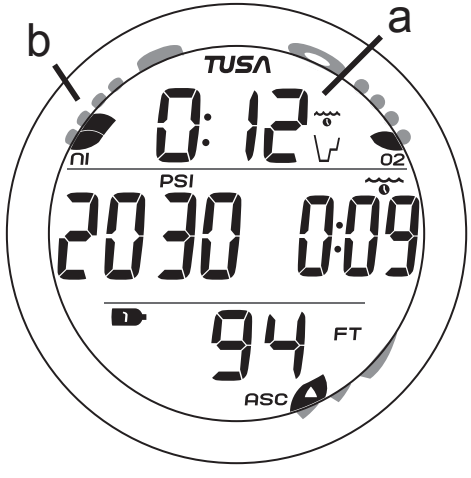


Fig. 68 - DTR (NDC)

Whichever one is closest to this maximum level is the controlling compartment for that Depth. Its resulting value will be displayed as NDC (Fig. 68a) and the NiBG (Fig. 68b).

As you ascend from Depth during a dive, the NiBG segments will recede as control shifts to slower compartments.

This is a feature of the Decompression model that is the basis for multilevel diving, one of the most important advantages that the ZEN AIR offers.

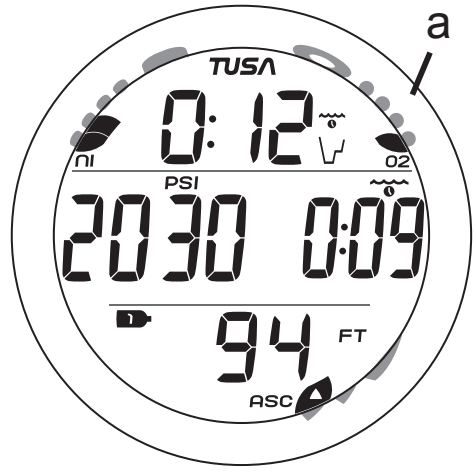


Fig. 69 - O2BG

Oxygen Accumulation

If FO2 was set for a numerical value (Nitrox), the O2BG (Fig. 69a) will add segments to represent oxygen accumulation for that dive, or 24 hour period, whichever amount is greater.

When O2 Time Remaining becomes less than NDC, it is displayed as DTR on the Main Dive screen.

Air Time Remaining (ATR)

ATR is the time you can remain at the present Depth and still safely surface with the tank Pressure reserve that you selected during setup (End Pressure Alarm Setting).

ATR, identified by the AIR icon (Fig. 70a), can be viewed when the Alternate #1 display is accessed during dive modes.

The ZEN AIR calculates ATR using a patented algorithm that is based on a diver's individual air consumption rate and current depth. Tank Pressure is measured once each second and an average rate of consumption is calculated over a 60 second period.

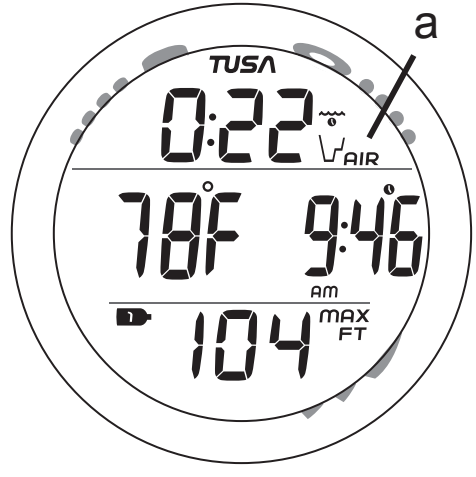


Fig. 70 - ATR

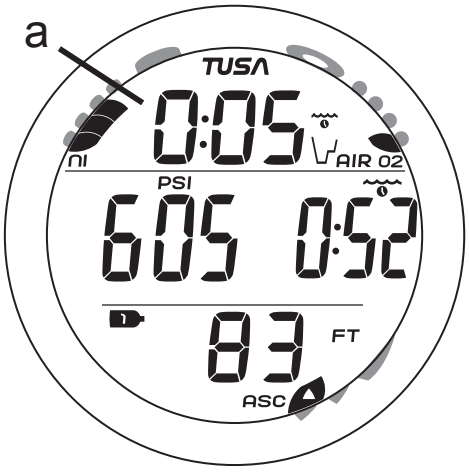


Fig. 71 - ATR WARNING

This rate of consumption is then used in conjunction with a knowledge of the depth dependence to predict the air required for the diver to make a safe controlled ascent including any Stops.

Air consumption and depth are continuously monitored and ATR reflects any change in circumstances. For example, when a buddy starts breathing from your octopus or you suddenly find yourself swimming against a strong current and begin breathing more rapidly, the ZEN AIR will recognize the change and adjust the ATR accordingly.

ATR Alarm

When ATR decreases to 5 minutes (Fig. 71a), the Audible will sound, and if it decreases to 0, the Audible will sound again with the message ATR flashing (Fig. 72) until the Audible is silenced, the the time value will be displayed.

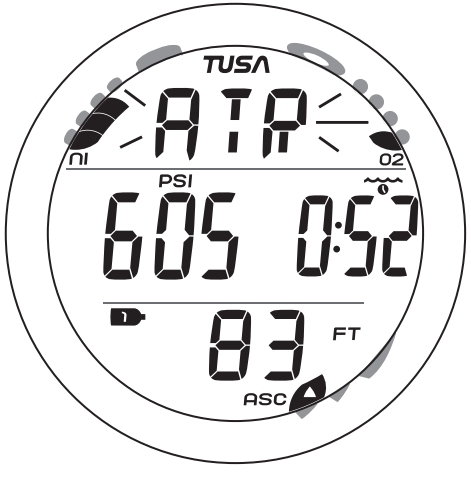


Fig. 72 - ATR ALARM

You should immediately initiate a controlled Ascent while monitoring your Tank Pressure. However, there is no reason to panic, the ZEN AIR has allowed for the Air necessary for a safe Ascent including the No Deco Safety Stop, if set On, and any Decompression Stops required.

Example of ATR Alarm:

- You set the End Pressure Alarm for 300 PSI (20 BAR).
- You are at a Depth of 60 FT (20 M).
- Air Time Remaining decreases to 0:00.
- You Ascend at a maximum rate of 30 FPM (10 MPM).
- You surface with a minimum of 300 PSI (20 BAR) pressure still in your Tank.

ASCENT RATE INDICATOR (ASC)

The ASC shows how fast you are ascending. When you exceed the maximum recommended Ascent Rate for the depth you are at, the Audible will sound during which time all segments of the ASC and the graphic SLO will flash on the Main Dive screen (Fig. 73). The flashing will stop and normal information restored when the audible is silenced or your Ascent Rate is slowed below the allowed rate.

The Ascent Rate alarm is based upon 2 sets of speeds which change at a reference depth of 60 FT (18 M).

⚠ WARNING: At depths greater than 60 FT (18 M), Ascent Rates should not exceed 60 FPM (18 MPM). At depths of 60 FT (18 M) and shallower, Rates should not exceed 30 FPM (9 MPM).

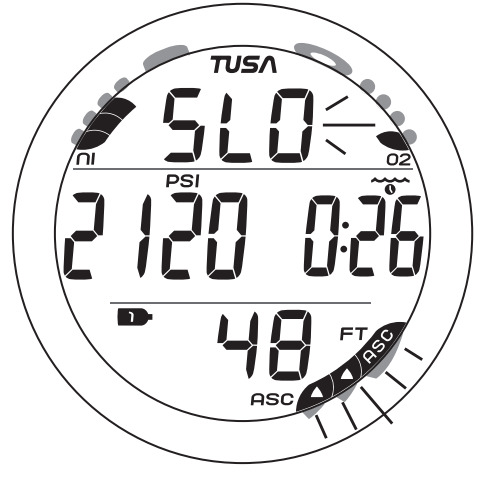


Fig. 73 - ASCENT ALARM

NORM NO DECOMPRESSION DIVE MODE

When the Wet Activation feature is set ON, the ZEN AIR will enter the NORM No Decompression Dive Mode any time you descend to 5 FT (1.5 M) for 5 seconds.

When the Wet Activation feature is set OFF, the ZEN AIR will not enter Dive Mode upon descent unless it is operating in one of the NORM Dive Computer modes (menus) at that time. Modes such as Surface Mode, Plan, Fly, etc.

NORM No Deco Main, information includes (Fig. 74) -

- > NiBG, O2BG, ASC - if applicable.
- > DTR (hr:min) with wave/clock/profile icon.
- > Tank Pressure with the PSI (or BAR) icon, if a TRT is active and linked.
- > EDT (hr:min) with wave/clock icon.
- > Tank icon, Gas/TRT in use (1, 2, or 3).
- > Current Depth with FT (or M) icon.

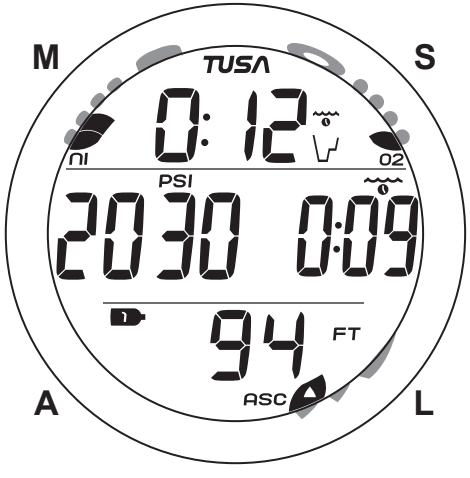


Fig. 74 - NO DECO MAIN

- A (< 2 sec) to view ALT 1.
- A (2 sec) to view Deep Stop Preview.
- M (2 sec) to access the Gas/TRT Switch Routine.
- S (< 2 sec) to acknowledge/silence alarms.
- L (press) to activate Backlight.

NORM No Deco ALT 1,information includes (Fig. 75) -

> ATR (hr:min) with wave/clock/profile and AIR icons.
> Temperature with degrees icon and graphic F (or C).
> Time of Day (hour:minute).
> Tank icon, Gas/TRT in use (1, 2, or 3).
> Max Depth with MAX and FT (or M) icons.

- A (< 2 sec) to view ALT 2.
- Operation will revert to Main after 5 seconds, if A is not pressed.
- L (press) to activate Backlight.

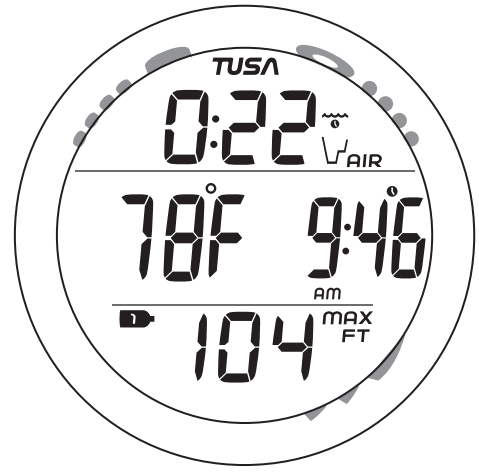


Fig. 75 - NO DECO ALT 1

NORM No Deco ALT 2, information includes (Fig. 76) -

> Graphic FO2.
> PO2 (ATA) with graphic PO2
> FO2 Setting and symbol FO2
> Tank icon, GAS in use (1, 2, or 3)
> FO2 set for Gas in use.

- Operation will revert to Main after 5 seconds, or if A is pressed.
- L (press) to activate Backlight.

ALT screens cannot be accessed during the time when an Alarm is sounding.

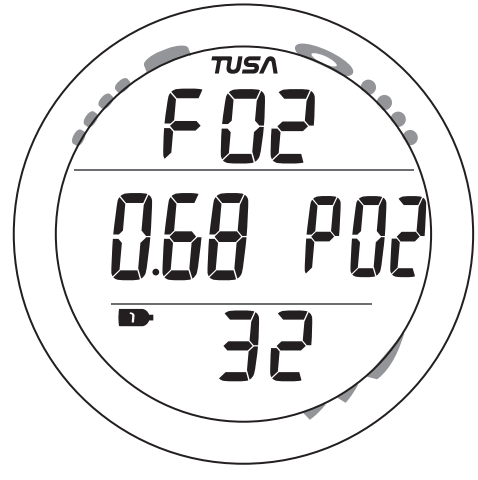


Fig. 76 - NO DECO ALT 2

Fig. 77 - DS PREVIEW

No Deco Deep Stop

On any No Deco dive in which Depth exceeds 80 FT (24 M), a Deep Stop Preview screen (Fig. 77) can be accessed that will display the graphic DS (meaning Deep Stop) and a recommended Stop Depth calculated to be 1/2 the Max Depth and a Stop Time of 02:00 (2 minutes) with a STOP icon. It will revert to the Main after 5 seconds.

- The intent of this screen is to suggest that a Stop should be made as indicated to help reduce tissue nitrogen loading prior to final ascent.
- The Preview screen will not be available for viewing once you ascend above the Stop Depth.

NOTE: The Deep Stop is not required and although recommended, it does not have to be taken. There is no penalty if the Stop is ignored and ascent (or other activity) is continued.

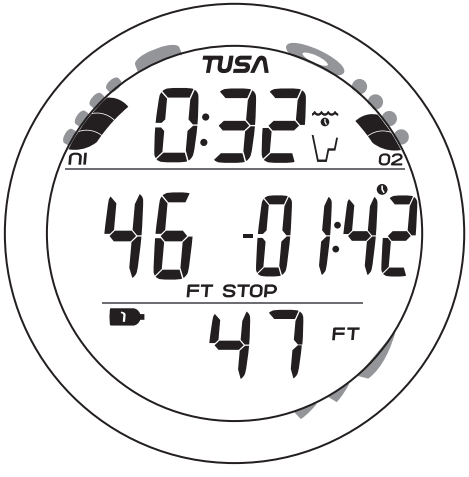


Fig. 78 - DS MAIN

Upon ascending to within 10 FT (3 M) below the calculated Stop Depth, the DS Main screen (Fig. 78) will appear displaying the calculated Stop Depth with FT (or M) and STOP icons and the Timer that counts down from 02:00 to 0:00 (min:sec) with clock icon. Also displayed will be DTR (hr:min) with mode icon, Tank icon (Gas 1, 2, or 3), current Depth with FT (or M) icon, and applicable bar graphs.

- A (< 2 sec) to view ALT 1 (Fig. 79) - Pressure, EDT.
- A (< 2 sec) again to view ALT 2 - ATR, Temperature, Time, Max Depth.
- A (< 2 sec) again to view ALT 3 (if Nitrox) - FO2, PO2.
- M (2 sec) to access Gas/TRT Switch Routine.
- L (press) to activate Backlight.

When the DS countdown reaches 0:00, the No Deco Main will be displayed and the DS feature will be disabled for the remainder of that dive.

If you descend 10 FT (3 M) below, or ascend 10 FT (3 M) above the Stop Depth, for more than 10 seconds during the countdown, the No Deco Main will be displayed and the DS feature will be disabled for the remainder of that dive.

> If you return to within the +/- 10 FT (3 M) range during the 10 seconds, the DS Main will reappear with the countdown still in progress.

The DS feature will be disabled, and it's screens not displayed, for the remainder of that dive, if you enter Deco or High O2 (80%), or descend deeper than 190 FT (63 M).

During High PO2 (=> Alarm Set Point), the DS screen information will be replaced with High PO2 information.

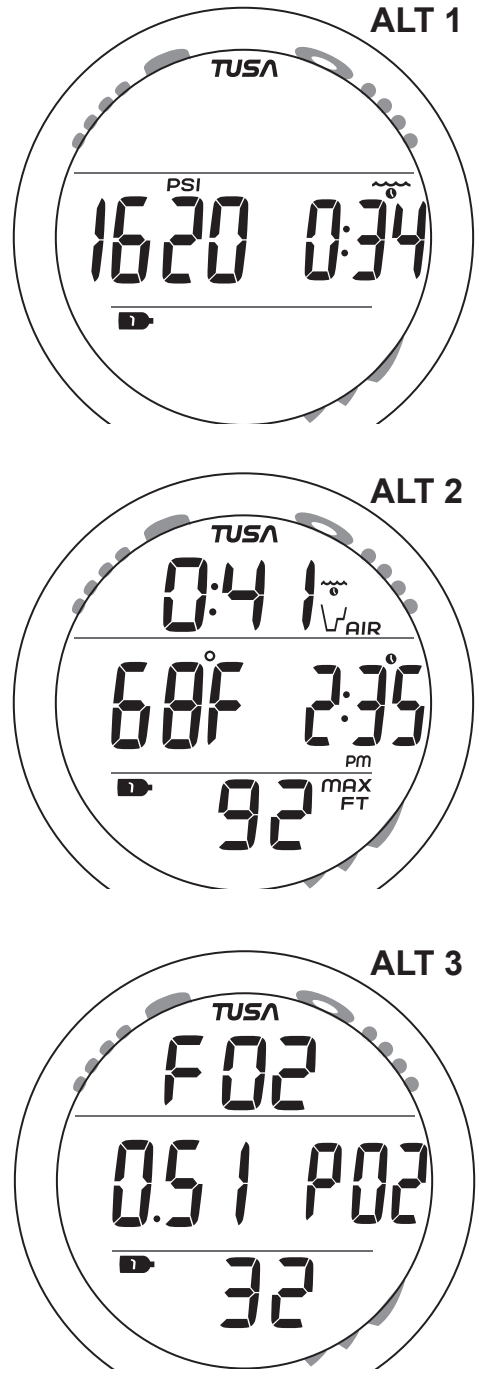


Fig. 79 - DS ALTS

No Deco Safety Stop (Fig. 80)
Upon ascending to 20 FT (6 M) on any No Deco dive in which Depth exceeded 30 FT (9 M), a Safety Stop (SS) screen will appear displaying a recommended Stop at 15 FT (4.5 M) with a Countdown Timer that counts down from 03:00 to 0:00 (min:sec).

The SS will be displayed until the countdown times out, or you descend below 30 FT (9 M) during the countdown, or you surface during the countdown.

- Like the DS, there is no Penalty for surfacing prior to completing the SS.
- There is no Preview screen associated with the Safety Stop.

SS Main display information includes DTR (hr:min) with mode icon, Stop Depth (15 FT or 4.5 M) with STOP icon, Countdown Timer (min:sec) with clock icon, Tank icon (Gas 1, 2, or 3), Current Depth with FT (or M) icon, and applicable bar graphs.

- A (< 2 sec) to view ALTs (similar to those for DS).
- M (2 sec) to access Gas/TRT Switch Routine.
- L (press) to activate Backlight.

Fig. 80 - SS MAIN

CAUTIONARY MODES

DECOMPRESSION

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

Upon Entry into Decon, the Audible will sound until acknowledged or 0 seconds. While it is sounding, the UP Arrow icon, Stop Bar icon, and full NiBG will flash to alert you.

Deco Entry information includes (Fig. 81)

- > Full NiBG (flashing), O2BG and ASC if applicable.
- > TAT** (hr:min) with Deco mode icon (wave/clock/profile/stop bar), stop bar flashing until the audible is silenced.
- > Stop Depth required with FT (or M) and STOP icons.
- > Stop Time (hr:min) required clock icon.
- > Tank icon, Gas/TRT in use (1, 2, or 3).
- > Current Depth with FT (or M) icon.
- > The UP Arrow icon will flash until you ascend to within 10 FT (3 M) below the Stop Depth indicated, then it will be blank.
- S (< 2 sec) to acknowledge/silence the Audible.
- L (press) to activate Backlight.

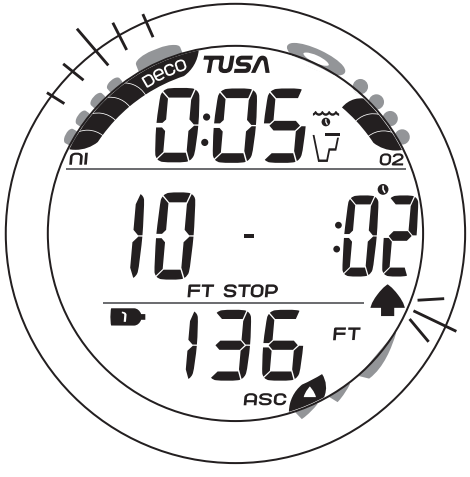


Fig. 81 - DECO ENTRY

***TAT represents Total Ascent Time which includes time required for all deco stops plus vertical ascent time to the surface.*

NOTE: Upon entry into Deco, the Deep and Safety Stop features are disabled for the remainder of that dive, even if No Deco status is regained.

Managing Decompression Stops

To fulfill your decompression obligation, you should make a safe controlled Ascent to a depth slightly deeper than, or equal to, the Stop Depth indicated and decompress for the Time indicated.

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

Deco Stop Main, information includes (Fig. 82) -

> Full NiBG (solid), O2BG if applicable.
> TAT (hr:min) with Deco mode icon (Stop bar solid).
> Stop Depth with FT (or M) and STOP icons.
> Stop Time (hr:min) with clock icon.
> Tank icon (Gas 1, 2, or 3).
> Current Depth with FT (or M) icon.

- A (< 2 sec) to view ALTs (similar to those for DS).
- M (2 sec) to access the Gas/TRT Switch Routine.
- S (< 2 sec) to acknowledge/silence alarms.
- L (press) to activate Backlight.

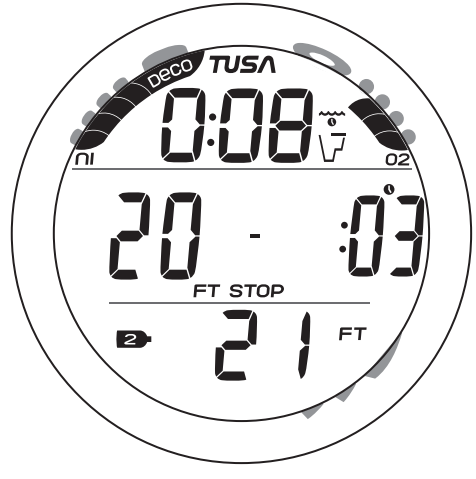


Fig. 82 - DECO STOP MAIN

CONDITIONAL VIOLATION (CV)

If you ascend shallower than the calculated Deco Stop Depth, no off gassing credit will be given. If you descend below the Stop Depth before 5 minutes have elapsed, operation will continue to function in Deco and off gassing credit will resume.

CV Main, information includes (Fig. 83) -

> Full NiBG (solid), O2BG if applicable.
> TAT (hr:min) with Deco mode icon (stop bar flashing).
> Stop Depth with FT (or M) icon and STOP icon (flashing).
> Stop Time (hr:min) with clock icon.
> Down Arrow icon (flashing).
> Tank icon (Gas 1, 2, or 3).
> Current Depth with FT (or M) icon.

- A (< 2 sec) to view ALTs (similar to those for DS).
- M (2 sec) to access the Gas/TRT Switch Routine.
- S (< 2 sec) to acknowledge/silence alarms.
- L (press) to activate Backlight.

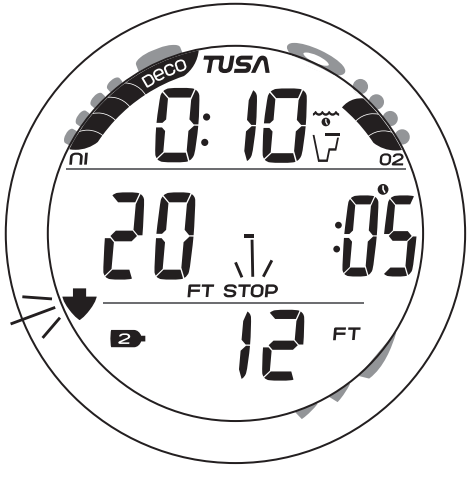


Fig. 83 - CV MAIN

NOTE: Upon entry into the following Violation modes, the Alarm will sound, even if set Off. When these events occur, the Alarm cannot be acknowledged (silenced) by pressing S.

DELAYED VIOLATION #1 (DV1)

If you remain above the required Deco Stop Depth for more than 5 minutes, the full NiBG will flash until you descend below the required Stop Depth. This is a continuation of CV.

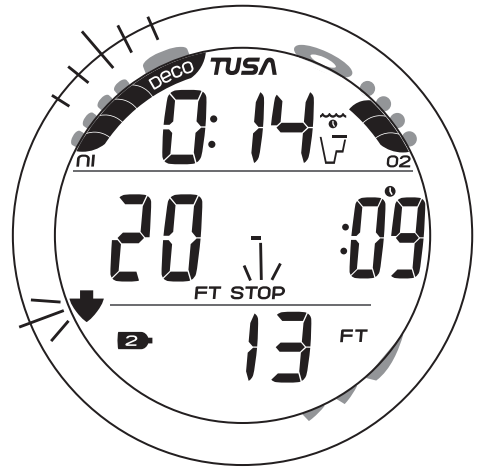


Fig. 84 - DV1 MAIN

DV1 Main, information includes (Fig. 84) -

> Full NiBG (flashing).
> O2BG, if applicable
> TAT (hr:min) with Deco mode icon (stop bar flashing).
> Stop Depth with FT (or M) icon and STOP icon (flashing).
> Stop Time (hr:min) with clock icon.
> Down Arrow icon (flashing).
> Tank icon (Gas 1, 2, or 3).
> Current Depth with FT (or M) icon.

- A (< 2 sec) to view ALTs (similar to those for DS).
- M (2 sec) to access the Gas/TRT Switch Routine.
- S (< 2 sec) to acknowledge/silence alarms.
- L (press) to activate Backlight.

DELAYED VIOLATION #2 (DV2)

If Decompression requires a Stop Depth between 60 and 70 FT (18 and 21 M), the full NiBG and TAT digits will flash. When this occurs, you must make a controlled ascent to just deeper than, and stay as close as possible to, 60 FT (18 M) without causing the NiBG and TAT to flash. When the Deco Stop Depth indicates 50 FT (15 M), etc., you can ascend to those Stop Depths and continue decompressing.

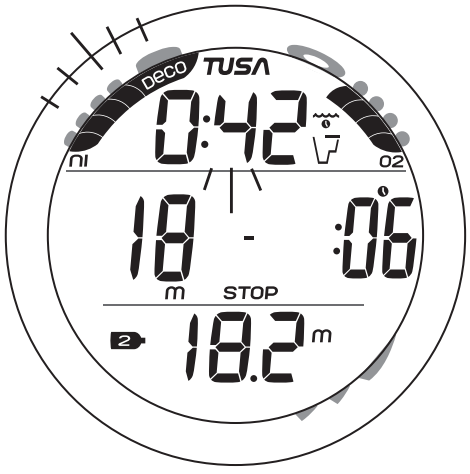


Fig. 85 - DV2 MAIN

DV2 Main, information includes (Fig. 85) -

> Full NiBG (flashing).
> O2BG if applicable.
> TAT (hr:min) flashing with Deco mode icon.
> Stop Depth with FT (or M) icon and STOP icon.
> Stop Time (hr:min) with clock icon.
> Tank icon (Gas 1, 2, or 3).
> Current Depth with FT (or M) icon.

- A (< 2 sec) to view ALTs (similar to those for DS).
- M (2 sec) to access the Gas/TRT Switch Routine.
- S (< 2 sec) to acknowledge/silence alarms.
- L (press) to activate Backlight.

DELAYED VIOLATION #3 (DV3)

If you descend deeper than the MOD (Max Operating Depth) of 330 FT (99.9 M), the Up Arrow icon will flash, and the Current Depth will only display 3 dashes (- - -) flashing signifying that you are Out of Range. Max Depth on the ALT screen will only indicate 3 dashes (- - -).

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

DV3 Main, information includes (Fig. 86) -

> NiBG, O2BG, ASC - if applicable.
> DTR as 0:00 (hr:min) with wave/clock/profile icon.
> EDT (hr:min) with wave/clock icon.
> Tank icon (Gas 1, 2, or 3).
> Up Arrow icon (flashing).
> Current Depth as 3 dashes (- - -) (flashing) with FT (or M) icon.

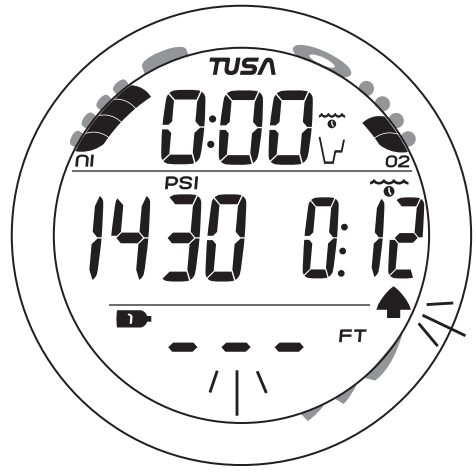


Fig. 86 - DV3 MAIN

- A (< 2 sec) to view ALTs (similar to those for No Deco).
- M (2 sec) to access the Gas/TRT Switch Routine.
- S (< 2 sec) to acknowledge/silence alarms.
- L (press) to activate Backlight.

VIOLATION GAUGE MODE (VGM)

If calculations require a Deco Stop Depth greater than 70 FT (21 M), or if Deco is entered while operating in FREE Mode (described later), operation will enter Violation Gauge Mode (VGM) for the remainder of that dive and for 24 hours after surfacing.

VGM turns the ZEN AIR into a digital instrument without any nitrogen or oxygen calculations or monitoring functions or displayed information until 24 contiguous hours elapse on the surface with no dives.

VGM Main, information includes (Fig. 87) -

> Full NiBG and full O2BG, all segments flashing.
> Graphic VIO, flashing until the audible is silenced then solid.
> EDT (hr:min) with wave/clock icon.
> Tank icon (Gas 1, 2, or 3).
> Current Depth with FT (or M) icon.
> Up Arrow icon, flashing until on surface.

- A (< 2 sec) to view ALTs (similar to those for No Deco).
- M (2 sec) to access the Gas/TRT Switch Routine.
- S (< 2 sec) to acknowledge/silence alarms.
- L (press) to activate Backlight.

The ZEN AIR will also enter VGM 5 minutes surfacing from a dive in which a Delayed Violation (1, 2, or 3) occurred.

Fig. 87 - VGM DIVE MAIN

Once on the surface, VGM does not allow access to the Set F, Plan, Fly, and Dsat features/screens.

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

VGM Main (on surface), information includes (Fig. 88) -

> Full NiBG and full O2BG, all segments flashing.
> Surface Interval Time (hr:min) with clock/wave icon.
> Graphics Vio and Nor alternating.
> Tank (Gas 1) icon.
> Dive number with # icon.
> Battery icon if low battery condition.

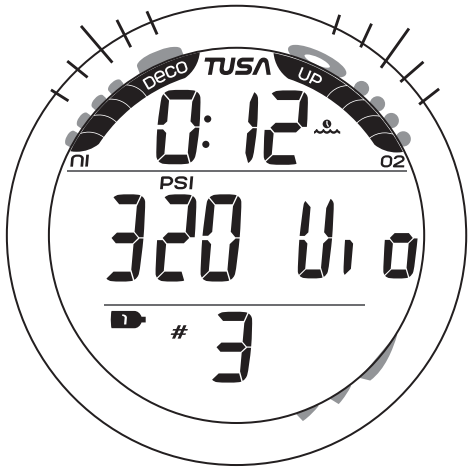


Fig. 88 - VGM SURF MAIN

- A (2 sec) will access SURF ALT.
- A (< 2 sec) will access Log Mode, then again History.
- A and S (simultaneously 2 sec) will access the Set Menu.
- M (2 sec) will access GAUG Surface Main, then another 2 seconds FREE Surface Main.
- M (< 2 sec) will revert to the Watch Default Time.
- S (< 2 sec) will access Time to Fly*.
- L (press) will activate the Backlight.

**The countdown timer that appears when you access Fly is only provided to inform you of the time remaining before normal Dive Computer operation can resume with full features and functions.*

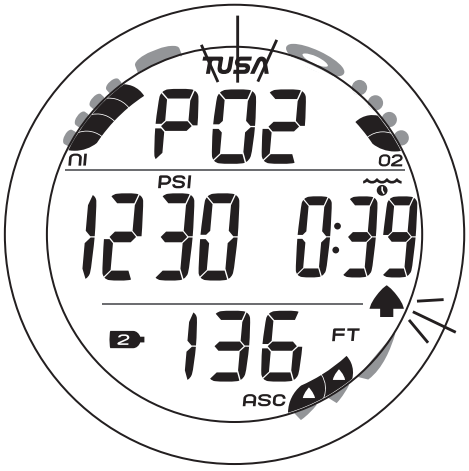


Fig. 89A - HIGH PO2 MAIN
(during Audible)

HIGH PO2

When partial pressure of oxygen (PO2) increases to 0.20 (ATA) less than the PO2 Alarm value set*, the Audible will sound.

**While in Deco, High PO2 will only alarm at 1.60.*

> The graphic PO2 and Up Arrow icon will be displayed flashing on the Main (Fig. 89A) until the Audible is silenced, then the graphic PO2 will alternate with NDC time (Fig. 89B) until PO2 decreases 0.2 (ATA) below the alarm Set Point.

> The value of PO2 can be viewed on ALT 2.

- S (< 2 sec) to acknowledge/silence the Audible.
- A (< 2 sec) to view ALTs.
- M (2 sec) to access the Gas Switch Routine.
- L (press) to activate Backlight.

> When PO2 reaches the Alarm Set Point, the Audible will sound again.

> The Up Arrow icon will flash on the Main screen until PO2 decreases 0.20 (ATA) below the alarm Set Point.

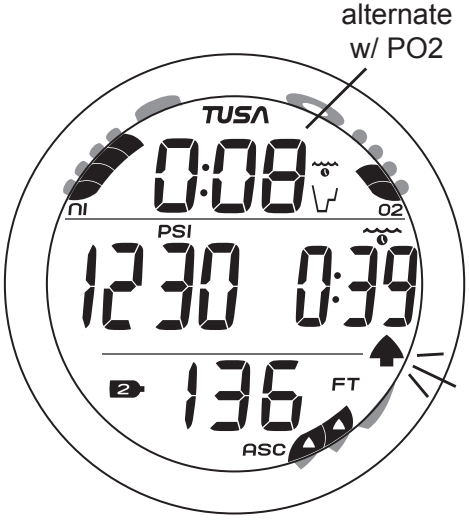


Fig. 89B - HIGH PO2 MAIN
(after Audible)

HIGH O2

The O2BG represents oxygen accumulated as a result of the repetitive Nitrox dives you have conducted during that operating period. The O2BG lets you monitor how close you are coming to the limits of oxygen exposure.

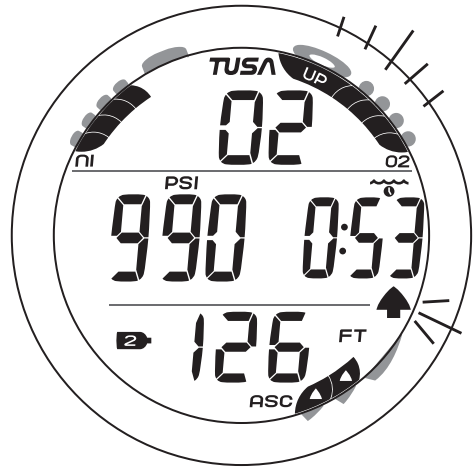


Fig. 90 - HIGH O2

If the theoretical amount of oxygen accumulated reaches the limit for a single exposure, or 24 hour period (300 OTU = 100%), the Audible will sound during which the graphic O2 flashes in place of NDC time and the full O2BG and Up Arrow icon will be displayed flashing (Fig. 90).

When the audible is acknowledged/silenced, the O2 graphic becomes solid until O2 decreases below 100%.

- S (< 2 sec) to acknowledge/silence the Audible.
- A (< 2 sec) to view ALTs.
- M (2 sec) to access the Gas Switch Routine.
- L (press) to activate Backlight.

Upon surfacing, operation will lock in to NORM mode until the O2BG recedes to 4 segments. Access to Watch Mode is allowed but access to GAUG and FREE is blocked.

RESPONSIBLE COMPUTER DIVING

- **Plan each dive, and dive your plan. The ZEN AIR 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 ZEN AIR before every dive. If it shows any signs of damage or abnormal function, DO NOT dive with it until it has received factory prescribed service.**
- **Make a Safety Stop at 15 to 20 FT (4.5 to 6 M) at the end of every dive. It's important, don't forget it.**
- **You should make every effort to complete all of your ascents with the Nitrogen Bar Graph inside the normal No Decompression zone.**
- **If you inadvertently entered Decompression, you should not complete your ascent until the Nitrogen Bar Graph is at least inside the No Decompression Caution Zone.**
- **While you cannot provide a guarantee against the occurrence of decompression sickness, you may choose your own personal zone of caution based upon your individual age, physique, excessive weight, training, experience, etc. to reduce the statistical risk. By not pushing the limits, you can establish and adjust your personal level of conservatism and margin of safety.**

SWITCHING GAS MIXES AND TRTS

SWITCHING (NORM)

During NORM Dives, the ZEN AIR can be manually switched from Gas 1 to Gas 2 to Gas 3, changing FO2 displays and calculations, and if TRTs (Transmitters) are used, changing Pressure related displays and calculations from TRT 1 to TRT 2 to TRT 3.

Switching from one Gas (and TRT) to another cannot be performed while on the surface.

Every dive begins with Gas 1, and 10 minutes after surfacing from a multiple gas dive, operation defaults to the Gas 1 FO2.

Access to Switching screens can only be accomplished during the time that a Dive Main screen is being displayed and cannot be performed during the time that an Alarm is sounding.

If a Switch to a new Gas would expose the diver to a prohibitive PO2 level of 1.60 ATA or greater, the Audible will sound during which a message will be displayed (Fig. 91).

Fig. 91 - DON'T SWITCH GAS ALARM

Due to the possibility that sufficient air may not be available in the Switch From tank to complete the dive, the Switch to the prohibitive mix can still be made. If the Switch is made to the prohibitive mix, the High PO2 Alarm will activate.

Switching of Gas mixes can only to be performed during the time that a Gas Switch Preview screen is being displayed. These are accessed from a Dive Main screen.

- M (2 sec) while viewing a Dive Main will access the Gas/ TRT 1 Switch Preview screen.
- Operation will revert to the Dive Main after 10 seconds of no further M button action.

Gas/TRT 1 Switch Preview, information includes (Fig. 92) -

> Graphics FO2 and - 1.
> Tank 1 Pressure with PSI (or BAR) icon, if TRT1 is active.
> FO2 Set Point for Gas 1.
> Tank (Gas/TRT) 1 icon.

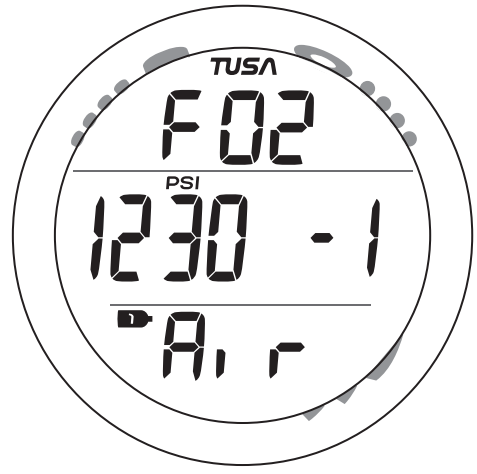


Fig. 92 - GAS/TRT 1 PREVIEW

- M (< 2 sec) to access the Gas/TRT 2 Switch Preview.
- M (2 sec) to switch to Gas/TRT 1, after 3 sec, then revert to the Main with calculations/displays based on Gas/TRT 1.

Gas/TRT 2 Switch Preview, information includes (Fig. 93) -

> Graphics FO2 and - 2.
> Tank 2 Pressure with PSI (or BAR) icon, if TRT2 is active.
> FO2 Set Point for Gas 2.
> Tank (Gas/TRT) 2 icon.

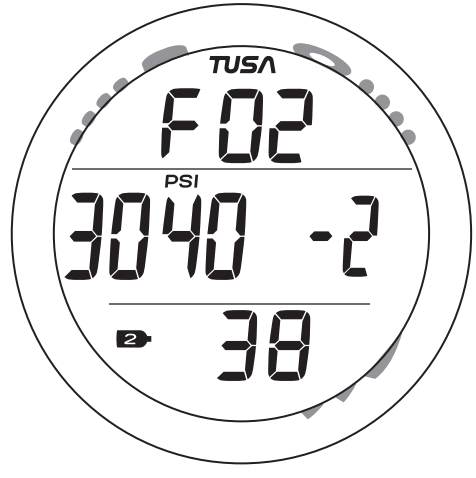


Fig. 93 - GAS/TRT 2 PREVIEW

- M (< 2 sec) to access the Gas/TRT 3 Switch Preview.
- M (2 sec) to switch to Gas/TRT 2, after 3 sec, then revert to the Main with calculations/displays based on Gas/TRT 2.

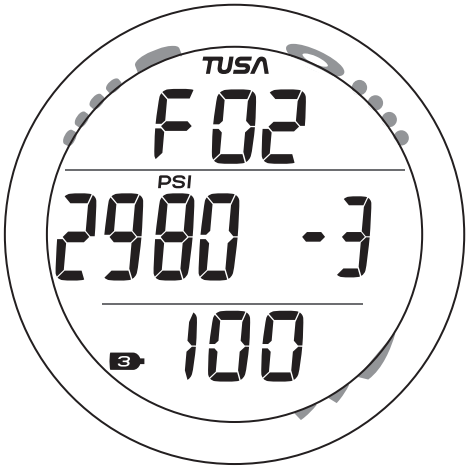


Fig. 94 - GAS/TRT 2 PREVIEW

Gas/TRT 3 Switch Preview, information includes (Fig. 94) -

> Graphics FO2 and - 3.
> Tank 3 Pressure with PSI (or BAR) icon, if TRT3 is active.
> FO2 Set Point for Gas 3.
> Tank (Gas/TRT) 3 icon.

- M (< 2 sec) to access the Gas/TRT 1 Switch Preview.
- M (2 sec) to switch to Gas/TRT 3, after 3 sec, then revert to the Main with calculations/displays based on Gas/TRT 3.

NORM POST DIVE MODES

POST DIVE FIRST 10 MINUTES ON SURFACE

When you ascend to 2 FT (0.6 M) for 1 second, the Surface Main screen will be displayed. If you descend during the first 10 minutes after surfacing (referred to as the Transition Period), time underwater will be considered a continuation of that dive. The time at the surface (if less than 10 minutes) will not be added as Dive Time.

NORM Surface Main, information includes (Fig. 95) -

- > NiBG, and O2BG (if Nitrox).
- > Surface Interval Time (hr:min), colon flashing, with clock/ wave icon.
- > Tank 1 (default on surface) Pressure with PSI (or BAR) icon, if active.
- > Graphic Nor.
- > Tank (Gas/TRT 1) icon, default on surface.
- > Number of that dive with # icon.
- > Battery icon if a Low Battery condition, flashing if Too Low.

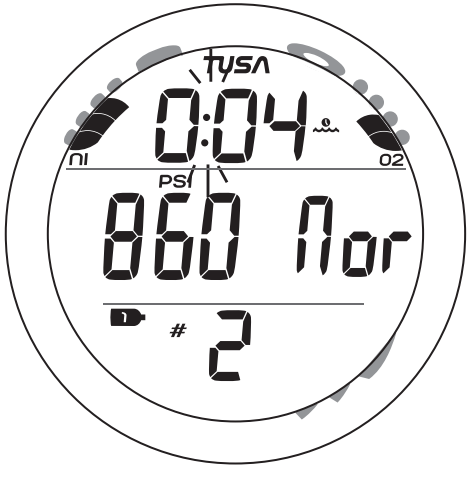


Fig. 95 - NORM SURF MAIN
(< 10 min after surfacing)

- A (< 2 sec) to access the Log Preview for that dive.
- A (2 sec) to access Surface ALT*.
- M (< 2 sec) to access Watch Default Time.
- L (press) to activate Backlight.

**Other modes (e.g., Plan, Fly, Sat, Set) are only accessible after 10 minutes elapse on the surface.*

POST DIVE AFTER 10 MINUTES ON SURFACE

Once 10 minutes have elapsed, the Surface Interval time colon will stop flashing indicating that the Dive and Transition Period are completed, and a subsequent descent will be considered a new dive. Operation will revert to Watch Default Time.

The NORM Surface Main screen can be then be accessed by depressing the M button 2 seconds. You will then have full access to other DC surface modes (e.g., Plan, Fly, Sat, Set, etc.).

- S (< 2 sec) to access Plan Mode.
  > Adjusted NDLs will be displayed based on residual nitrogen and accumulated oxygen calculated to be remaining from the previous dives.

- A (< 2 sec), while viewing the first Plan screen, to access Time to Fly (Fig. 96), then again to access Time to Desaturate (Fig. 97).
  > The Dsat counter provides calculated time for tissue desaturation at sea level.
  > If a Violation occurred during the dive, the Dsat screen will not be displayed.

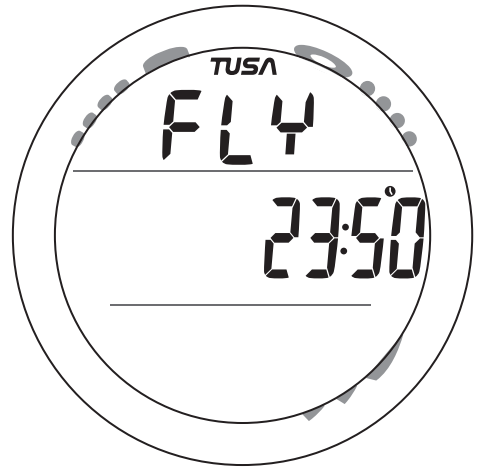


Fig. 96 - TIME TO FLY

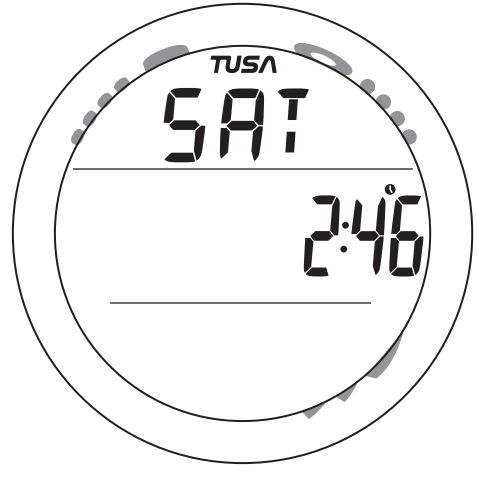


Fig. 97 - DSAT TIME

UPLOADING SETTINGS AND DOWNLOADING DATA

The ZEN AIR is configured with a Data Port that enables it to be connected to a PC USB port using a special Interface Cable available as a separate option.

A USB Driver is provided as part of the interface system, a separate option.

The Settings Upload portion of the program can be used to set/change Main Time, Date, Set A group (Alarms), and Set U group (Utilities). The Set F group (FO2) and FREE Mode Alarms must be entered using the ZEN AIR's button controls.

Information available for retrieval (DownLoad) from the ZEN AIR to the PC Download portion of the program includes dive number, surface interval time, maximum depth, elapsed dive time, start date, start time, lowest temperature underwater, sampling rate, dive profile, Set Points, NiBG, O2BG, start/end Pressure, and Gas/TRT Switching events.

The ZEN AIR checks for the presence of an interface device connection to the Data Port once every second while in Watch Default Time mode. Checks are not made if the Wet Activation contacts are wet. Upon sensing an interface connection, the requesting device (PC) connects to the ZEN AIR and is prepared for Upload of settings or Download of data which are then initiated using the PC program.

Prior to attempting to Download data from your ZEN AIR or Upload Settings to it, review the Help section of the interface program. Recommended is to print those sections of Help that you consider appropriate for your Interface activities.

NOTE: Once a dive is made in Digital Gauge Mode, you must wait 24 contiguous hours after surfacing before the ZEN AIR resets and will operate as an Air or Nitrox dive computer in NORM Mode or FREE Dive Mode.

GAUGE OPERATING MODE

DIGITAL GAUGE MODE

When Digital Gauge Mode (GAUG) is selected as the operating mode, the ZEN AIR will operate as a Digital Depth Gauge/Timer with Pressure and ATR without performing nitrogen and oxygen calculations.

- M (2) times (2 sec each time) while the Watch Default Time screen is displayed; or (1) time while the NORM Surface Main screen is displayed, will access Gauge Mode.
- M (< 2 sec), while the graphic GAU is flashing, will select Gauge as the operating dive mode. The graphic GAU becomes solid and Gauge Mode is selected.
- If no Gauge dive has been conducted, M (2 sec) will access Free Surface Main.

Gauge Surface Main, information includes (Fig. 98) -

> Surface Interval Time (hr:min) with clock/wave icon.
> Tank 1 (default on surface) Pressure with PSI (or BAR) and Tank (TRT) 1 icon, if active.
> Graphic GAU, flashing if not previously selected.
> Number of the recent dive conducted, 0 if no dive yet that period, with # icon.
> Battery icon if a Low Battery, flashing if Too Low.

Fig. 98 - GAUG SURF MAIN

- A (< 2 sec) to access Log, then again to access History.
- A (2 sec) to access SURF ALT (Altitude, Temperature, Time).
- A and S (2 sec) to access the Set menu (F >> A >> U).
- S (< 2 sec) to access Time to Fly, if a dive was conducted.
- L (press) to activate Backlight.

Gauge Dive Main information includes (Fig. 99) -

> Graphic GAU.
> Tank Pressure with PSI (or BAR) and Tank (TRT 1, 2, or 3) icon, one in use.
> Elapsed Dive Time (hr:min) with wave/clock icon.
> Current Depth with FT (or M) icon.
> ASC, when ascending.

- A (< 2 sec) to access Dive ALT.
- M (2 sec) to access TRT Switch Routine, if TRTs in use.
- S (< 2 sec) to acknowledge/silence Alarms.
- L (press) to activate Backlight.

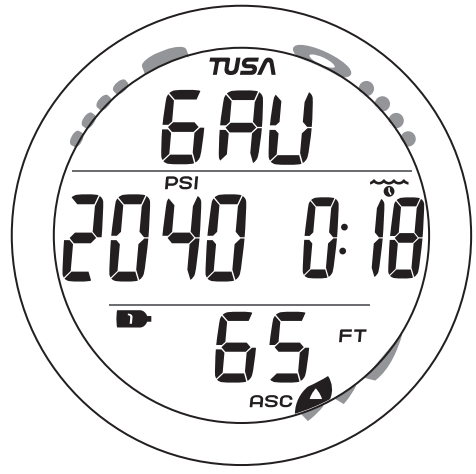


Fig. 99 - GAUG DIVE MAIN

Gauge Dive ALT information includes (Fig. 100) -

> ATR (hr:min) with wave/clock/profile and AIR icons, if a TRT is in use.
> Temperature with degrees icon and graphic F (or C).
> Time of Day (hr:min) with clock and AM (or PM) icons.
> Max Depth with MAX and FT (or M) icons.

- A (< 2 sec) to revert to the Main, or after 5 seconds if A is not pressed.
- L (press) to activate Backlight.

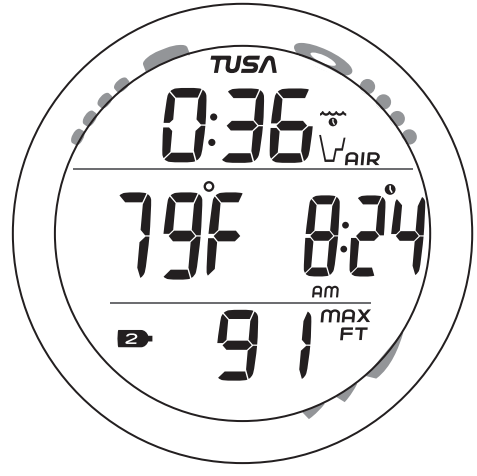


Fig. 100 - GAUG DIVE ALT

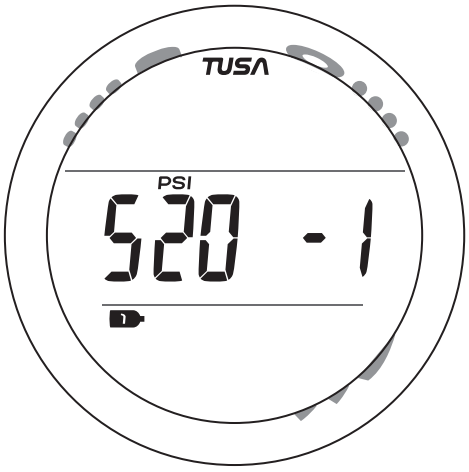


Fig. 101 - TRT SWITCHING

TRT 1 Switch Preview*, information includes (Fig. 101) -

> Graphic - 1.
> Tank 1 Pressure with PSI (or BAR) icon, if TRT1 is active.
> Tank (TRT) 1 icon.

- M (< 2 sec) to access the TRT 2 Switch Preview.
- M (2 sec) to switch to TRT 1, after 3 sec, then revert to the Main with calculations/displays based on TRT 1.

**TRT 2 and 3 Preview and switching are similar.*

If you descend deeper than the MOD (Max Operating Depth) of 330 FT (99.9 M), Delayed Violation 3 (DV3) will be activated, similar to that described for NORM.

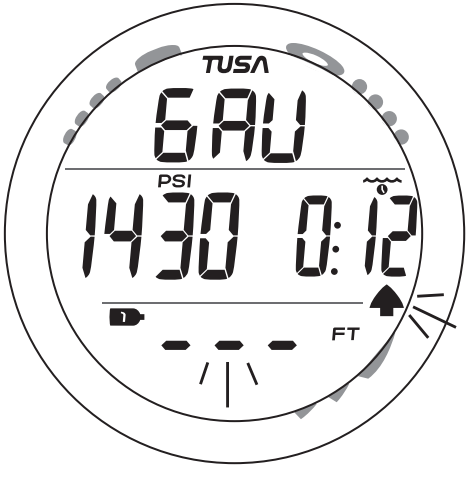


Fig. 102 - GAUG DV3

DV3 Main, information includes (Fig. 102) -

> Graphic GAU.
> Tank Pressure with PSI (or BAR) and Tank 1, 2, or 3) icons.
> EDT (hr:min) with wave/clock icon.
> Up Arrow icon (flashing).
> Depth as 3 dashes (- - -) flashing with FT (or M) icon.
> ASC, if ascending.

- S (< 2 sec) to acknowledge/silence Audible.
- A button (< 2 sec) to access ALT.
- L (press) to activate Backlight.

FREE DIVE OPERATING MODE

FREE DIVE MODE

When Free Dive Mode is selected, Nitrogen loading is calculated based on a default FO2 of AIR and the amount remaining during 24 hours is carried over between FREE and NORM operating modes.

- M (3) times (2 sec each time) while the Watch Default Time screen is displayed; or (1) time while the GAUG Surface Main screen is displayed, will access Free Mode.
- M (< 2 sec), while the graphic FRE is flashing, will select Free as the operating dive mode. The graphic FRE becomes solid and Free Mode is selected.
- If no Free dive has been conducted, M (2 sec) will access NORM Surface Main.

Free Surface Main, information includes (Fig. 103) -

> Graphic FRE.
> Graphic tot with Total number of repetitive Free dives conducted (0 if none yet) in that series with # icon.
> Surface Interval after the most recent dive (min:sec to 59:59, then hr:min) with clock/wave icon (above, next to FRE).
> Battery icon if a Low Battery condition exists

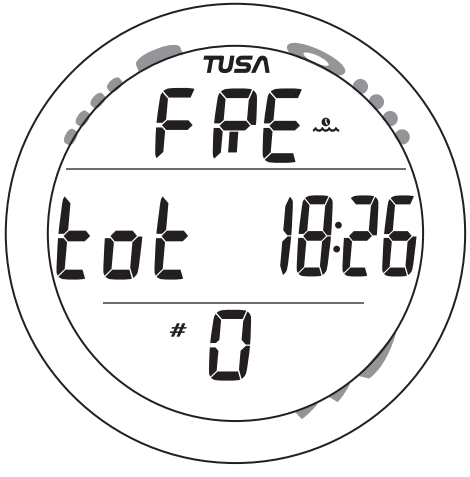


Fig. 103 - FREE SURF MAIN

- A (< 2 sec) to access SURF ALTs.
- A (2 sec) to access CDT Status and Set.
- A and S (2 sec) to access the Set Alarms.
- M (< 2 sec) to access Watch Default Time.
- L (press) to activate Backlight.

Free Surface ALT 1, information includes (Fig. 104) -

> Surface Interval prior to last dive (min:sec) with clock/wave icon.
> Graphic LASt.
> EDT (min:sec) of last dive with wave/clock icon.
> Max Depth of last dive with MAX and FT (or M) icons.

- A (< 2 sec) to access ALT 2.
- Revert to Main after 5 seconds if A is not pressed.
- L (press) to activate Backlight.

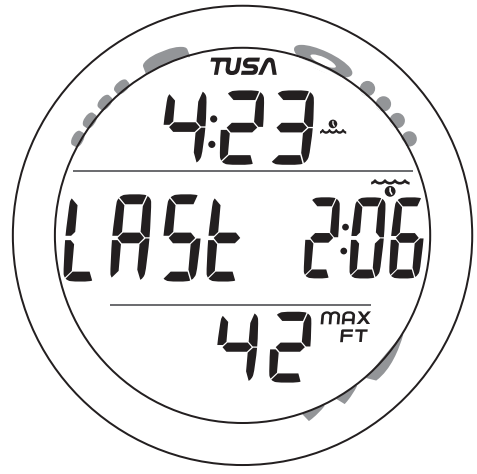


Fig. 104 - FREE SURF ALT 1

Free Surface ALT 2, information includes (Fig. 105) -

> Temperature with degrees icon and graphic F (or C).
> Time of Day (hr:min) with clock and AM (or PM) icons.

- A (< 2 sec) to revert to the Main, or after 5 seconds if A is not pressed.
- L (press) to activate Backlight.

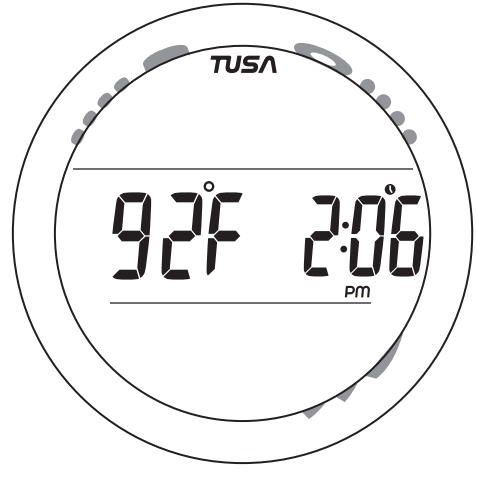


Fig. 105 - FREE SURF ALT 2

FREE Mode uses the NORM/GAUG settings for >> Time/Date, Wet Activation, Units, Conservative Factor, and Backlight Duration.

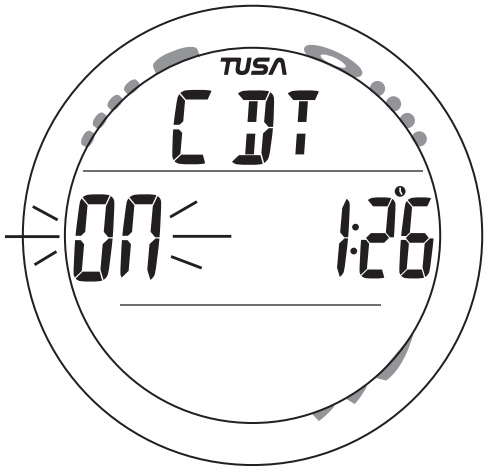


Fig. 106 - CDT STATUS
(On, Running)

FREE MODE COUNTDOWN TIMER (CDT)

After accessing the Free CDT Status screen from the Free Surface Main screen, the CDT can be started, stopped, and set.

The Status screen, displaying the graphics CDT and ON if running with Countdown Time (min:sec) remaining (Fig. 106), or OFF flashing and the previously Countdown Time set, or OFF (solid) and 0:00 if no time was previously set.

Once set ON, a Countdown will run in the background until it counts down to 0:00, or it is set OFF, or a Dive is made at which time it will default to OFF and the value previously set.

When a set Countdown Time reaches 0:00, the Audible will sound during which the graphic CDT will flash (Fig. 107).

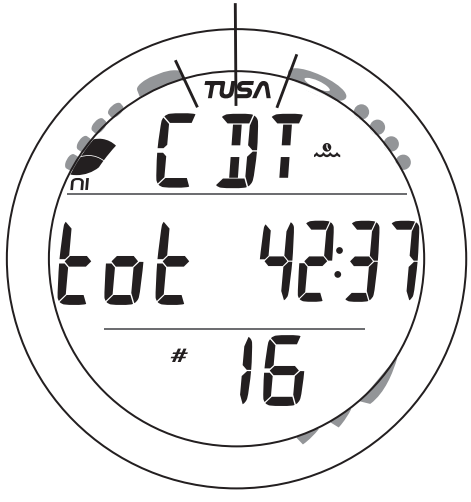


Fig. 107 - FREE SURF MAIN
(during CDT Alarm)

- S (< 2 sec) will toggle between ON and OFF. A toggle to ON will Start the CDT if a Time has been set.
- A and S (2 sec) will access Set Free CDT.
- S (< 2 sec) will revert to Free Surface Main.
- M (2 sec), or if no button is pressed during a period of 2 minutes, operation will revert to Free Surface Main.
- L (press) will activate Backlight.

Once the CDT has been Set and Started (by selecting ON), it will continue to run in the background while on the surface until turned OFF (stopped) or the Time reaches 0:00 at which time the Alarm will strike, the graphic CDT will be displayed, and the Timer will revert to OFF.

> Upon descending to 5 FT/1.5 M (i.e., entry into Free Dive mode), CDT operation will continue, if in progress.
> During a dive, the CDT can be turned OFF (stopped) and ON (started), but not Set.

Set Free CDT

Upon access, the Set CDT screen displays the graphics CDT and SEt with the CDT (min:sec) with clock icon, the Minute Set Point flashing (Fig. 108).

- S (hold) will scroll upward through the Minute Set Points in 1 Minute increments at a rate of 8 per second.
- S (< 2 sec each time) will step upward through Minute Set Points one at a time.
- A (< 2 sec) will save the Minute Set Point and flash the Seconds digits.
- S (hold) will scroll upward through the Seconds Set Points in 1 Second increments at a rate of 8 per second.
- S (< 2 sec each time) will step upward through Seconds Set Points one at a time.

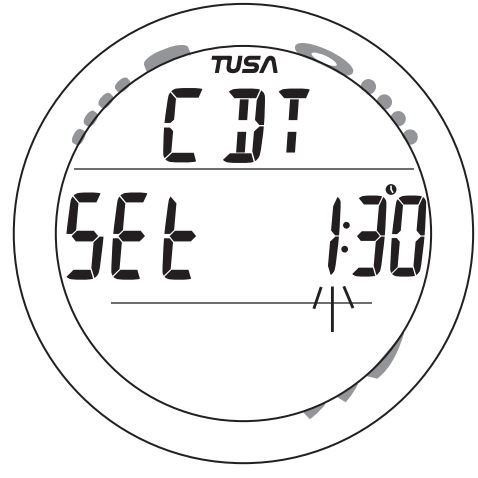


Fig. 108 - SET FREE CDT

Fig. 109 - CDT STATUS
(Set, ready to start)

- A (< 2 sec) will save the Seconds Set Point and revert to the CDT Status screen with the graphic OFF (flashing) in place of the graphic SEt (Fig. 109).
- S (< 2 sec) will toggle from OFF to ON and Start the Timer.
- M (2 sec), or if no button is pressed during a period of 2 minutes, operation will revert to Free Surface Main.

FREE DIVE EDT (ELAPSED DIVE TIME) ALARM

The Free EDT Alarm is factory set for 30 seconds. When set ON, the Alarm will sound 3 short beeps and the graphic EDT and Time digits will flash every 30 seconds.

- A and S (2 sec), while viewing Free Surface Main, to access Set Free EDT Alarm.

> The EDT Alarm can only be Set while on the Surface and can not be changed during a Dive.

Fig. 110 - SET EDT ALARM

Set Free EDT Alarm, information includes (Fig. 110) -

> Graphics EDT, 30 with clock icon, and SEC.
> Set Point graphic OFF (or ON) flashing.

- S (< 2 sec) will toggle between OFF and ON.
- A (< 2 sec) will save the setting and access Set DA 1.
- M (2 sec), or if no button is pressed during a period of 2 minutes, operation will revert to Free Surface Main.

FREE DIVE DEPTH ALARMS (DA)

Free Dive mode features 3 Depth Alarms (DAs) that can be Set at progressively deeper Depths and turned OFF/ON.

> If Alarm 1 is set OFF, then Alarms 2 and 3 will be disabled.
> If Alarm 2 is set OFF, Alarm 3 will be disabled.

When each alarm Depth set is reached during a dive, 3 short beeps will sound 3 times and the graphic DA1 (DA2, DA3) and Depth digits will flash.

- A (< 2 sec), while viewing the Set Free EDT Alarm screen to access Set DA1 (Depth Alarm 1). DA2 and DA3 similar.

Set Free DA1, information includes (Fig. 111) -

> Graphic DA1.
> Set Point OFF (or ON) flashing.
> Depth digits, flashing if ON is selected, with MAX and FT (or M) icons.

- S (< 2 sec) will toggle between OFF and ON.
- A (< 2 sec) will save the ON/OFF setting.

> If OFF is selected, operation reverts to Free Surface Main.
> If ON is selected, the Depth digits will flash allowing them to be set.

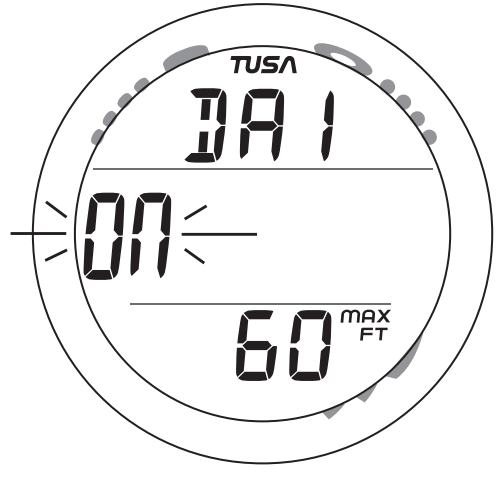


Fig. 111 - SET FREE EDT ALARM

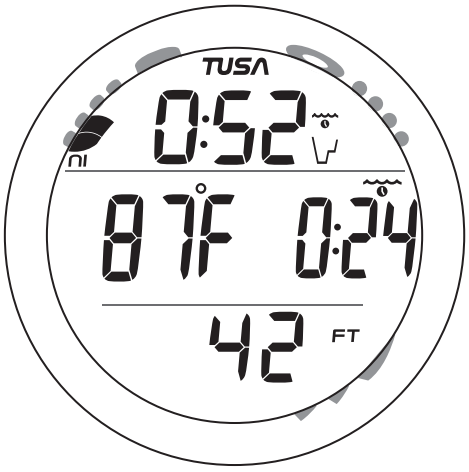


Fig. 112 - FREE DIVE MAIN

- S (hold) will scroll upward through the Depth Set Points from 30 to 330 FT (10 to 100 M) in increments of 10 FT (1 M) at a rate of 8 per second.
- S (< 2 sec each time) will step upward through the Set Points one at a time.
- A (< 2 sec) will save the setting and access Set DA2 (or DA3); or after setting DA3 revert to Free Surface Main.
- M (2 sec), or if no button is pressed during a period of 2 minutes, operation will revert to Free Surface Main.

Free Dive Main, information includes (Fig. 112) -

> NiBG, if any after NORM or FREE dives.
> NDC Time (hr:min) with wave/clock/profile icon.
> Temperature with degrees icon and graphic F (or C).
> EDT (min:sec) with wave/clock icon.
> Current Depth with FT (or M) icon.

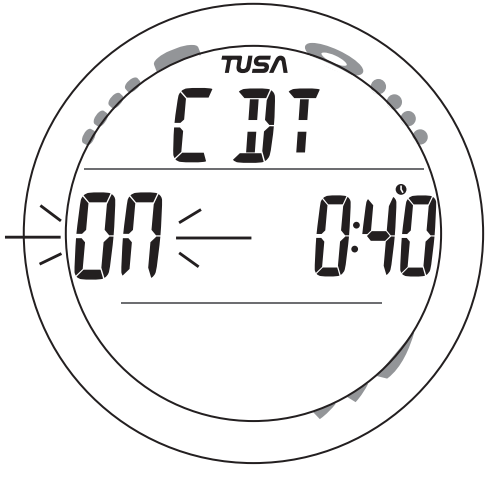


Fig. 113 - FREE DIVE ALT 1

- A (< 2 sec) to access ALT 1 (Free CDT Status).
- L (press) will activate Backlight.

Free Dive ALT 1 (CDT), information includes (Fig. 113) -

> Graphics CDT, and ON (or OFF) flashing.
> CD Time (min:sec), colon flashing and clock icon if ON and a CD in progress; OFF and 0:00, colon flashing if no time remains. If OFF, the CD Time previously set will be displayed indicating that it is set and ready to Start.

- S (< 2 sec) to toggle ON/OFF (Start/Stop).
- A (< 2 sec) to access ALT 2.
- If no button is pressed during a period of 10 seconds, operation will revert to the Main.
- L (press) to activate Backlight.

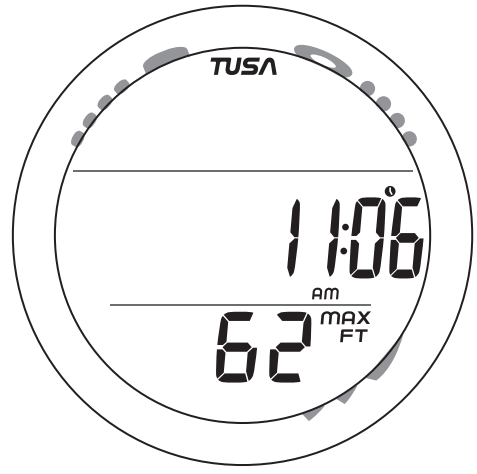


Fig. 114 - FREE ALT 2

Free Dive ALT 2, information includes (Fig. 114) -

> Time of Day (hr:min) with clock and AM (or PM) icons.
> Max Depth with MAX and FT (or M) icons.

- A (< 2 sec) to revert to the Main, or after 5 seconds if A is not pressed.
- L (press) to activate Backlight.

FREE DIVE ALARMS

Free Dive alarms sound 3 short beeps (1 or 3 times) as an indication that an event is occurring and as a reminder to view the display to identify an event.

As the Audible sounds, a graphic identifying the event will flash in place of NDC Time.

Free Dive alarms are separate and unaffected by NORM/GAUG mode alarm settings, and the Alarms that occur in those modes are separate and unaffected by Free Dive alarms.

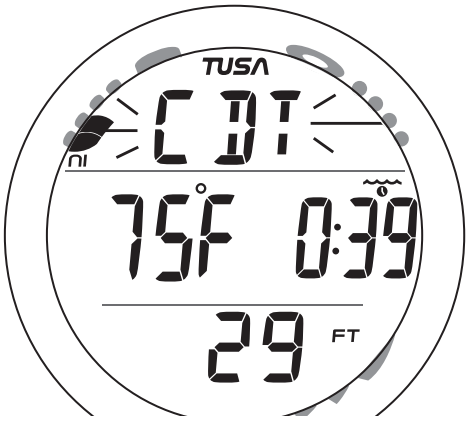


Fig. 115 - CDT ALARM

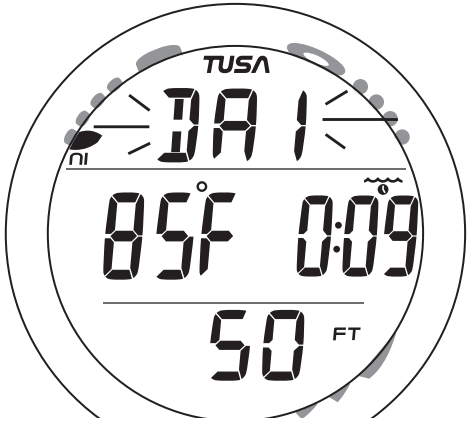


Fig. 116 - DEPTH ALARM

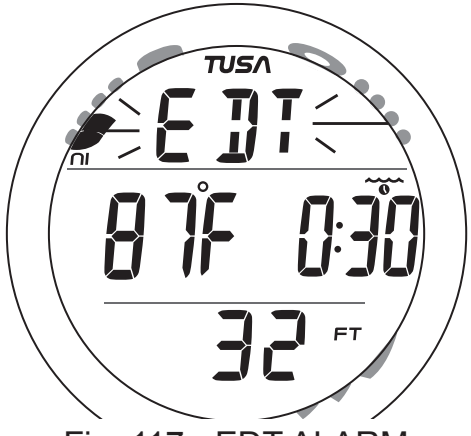


Fig. 117 - EDT ALARM

Free CDT Alarm

When the Free CDT decreases to 0:00 (min:sec), 3 short beeps will sound 3 times during which the graphic CDT will flash (Fig. 115), then NDC will be restored.

Free Depth Alarms

When Depth reaches the Alarm 1 Set Point, 3 short beeps will sound 3 times during which the graphic DA1 will flash (Fig. 116), then NDC will be restored.

The audible and flashing graphic will be repeated when Depth reaches the DA 2 and DA 3 Set Points, if set ON.

If Ascent is made above a Free Depth Alarm Set Point and then a descent is made below it, the respective Alarm (DA) will reset and sound again.

Free EDT Alarm

When the Free EDT Alarm is set ON, 3 short beeps will sound during which the graphic EDT will flash (Fig. 117), then NDC will be restored.

The Free EDT Alarm is factory set to repeat every 30 seconds when it is set ON prior to the dive.

Free NiBG Alarm

While operating in Free Dive mode, residual Nitrogen remaining from the Free Dives and any previous NORM SCUBA Dives conducted within 24 hours is displayed as the NiBG.

When Nitrogen loading increases to the Caution level, 3 short beeps will sound 3 times; and 4 NiBG No Deco segments, the Up Arrow icon, and the graphic NBG (in place of NDC) will be displayed (flashing) (Fig. 118).

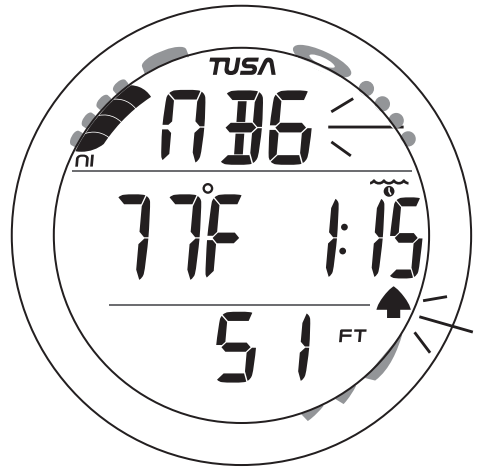


Fig. 118 - NiBG ALARM

After the beeps, the flashing will continue until the NiBG recedes to 3 segments at which time the NDC will be restored and the Up Arrow icon will be removed. In the event that Nitrogen loading increases to the Deco level, operation will enter Violation Gauge Mode for 24 hours.

Entry into Deco (Violation)

Upon entry into Deco, 3 short beeps will sound 3 times, the full NiBG and O2BG with the graphic VIO will flash (Fig. 119).

Upon surfacing, the Up Arrow icon will be removed, then after 10 minutes the NiBG and O2BG will be removed. The graphic VIO will then alternate with FRE for 24 hours during which dive computer operation will lock into Violation Gauge Mode with access to Watch Mode allowed. Access to NORM or GAUG will be blocked.

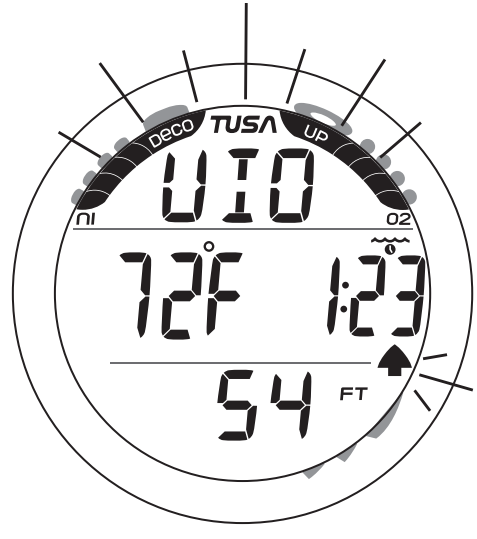


Fig. 119 - VIOLATION (DECO)

ADDITIONAL INFORMATION PERTAINING TO FREE DIVE MODE

Although breathing apparatus is not utilized for FREE Dive activities, nitrogen tissue loading remains a factor. Nitrogen loading is calculated based upon a fixed FO2 of AIR. Since a user has the option of alternating between NORM (SCUBA) and FREE Dive activities within a 24 hour period, nitrogen calculations and the displayed value of NDC Time are carried over from one operating mode to the other, which permits the user to maintain awareness of nitrogen absorption and off gasing status.

The mathematical model currently used in the ZEN AIR is based on no decompression/decompression multilevel repetitive dive schedules. This algorithm does not take into account the physiological changes associated with the high pressures that competitive type Free diving can expose a diver to.

⚠ WARNINGS:

- **Ensure that you know which Operating Mode is selected (NORM, GAUG, or FREE) prior to commencing any dive.**
- **Conducting Free dives within a 24 hour period after conducting SCUBA dives, combined with the effects of multiple rapid Free Dive ascents, increases your risk of decompression sickness. Such activities may result in accelerated entry into decompression which could cause serious injury or death.**
- **Combining competitive type Free dive activities that involve multiple descents/ascents with activities utilizing SCUBA during the same 24 hour period is not recommended. Presently, there is no data relating to such activities.**
- **It is highly recommended that anyone planning to become involved in competitive type Free dive activities obtain proper instruction and training from a recognized Free Diving trainer. It is imperative that the physiological affects be understood and the diver is physically prepared.**

REFERENCE

CARE AND CLEANING

Protect your ZEN AIR from shock, excessive temperatures, exposure to chemicals, and tampering. Protect the lens against scratches with a Instrument Lens Protector. Small scratches will naturally disappear underwater.

- Soak and rinse the ZEN AIR in fresh water at the end of each day of diving, and check to ensure that the areas around the Low Pressure (Depth) Sensor (Fig. 120a), PC Interface Data Port (Fig. 120b), and Buttons are free of debris or obstructions. Soak and rinse the Regulator(s) with the Transmitter(s) attached.
- To dissolve salt crystals, use lukewarm water or a slightly acidic bath (50% white vinegar/50% fresh water). After removal from the bath, place the ZEN AIR and the Regulator(s) with Transmitter(s) unit under gently running water and towel dry before storing.
- Transport your ZEN AIR system cool, dry, and protected.

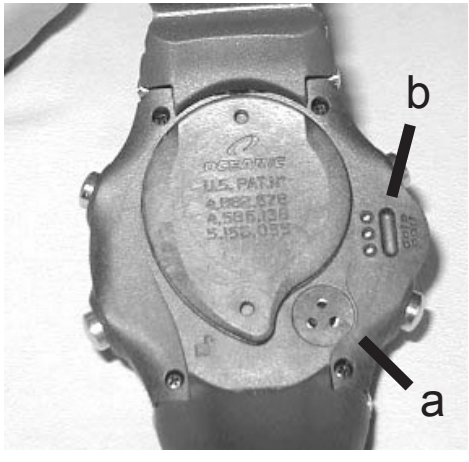


Fig. 120 - CASE BACK

INSPECTIONS AND SERVICE

Your ZEN AIR should be inspected annually by an Authorized TUSA 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).

TUSA recommends that you continue to have an inspection performed every year to ensure it is working properly. The costs of annual inspections are not covered under the terms of the 2 year limited warranty.

To Obtain Service:
Take your ZEN AIR system to an Authorized TUSA Dealer.

ZEN AIR BATTERY REPLACEMENT

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

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.

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

Inspect the Buttons, Lens, and Housing to ensure they are not cracked or damaged. If there is any sign of moisture in the ZEN AIR, DO NOT attempt to use it for diving (NORM, GAUG, or FREE) until it receives proper factory service by TUSA.

NOTE: When the old battery is removed, settings and calculations for repetitive dives will be retained in non volatile memory for subsequent operations.

Fig. 121 - BATTERY HATCH REMOVAL (Tool)

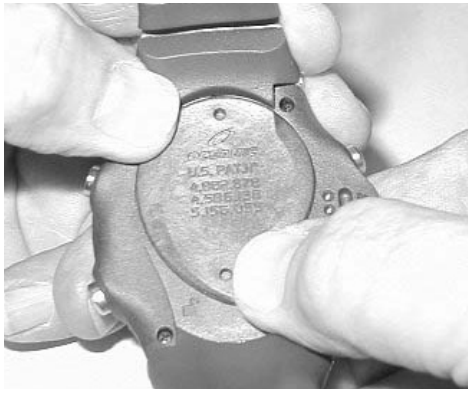


Fig. 122 - ALTERNATE HATCH REMOVAL

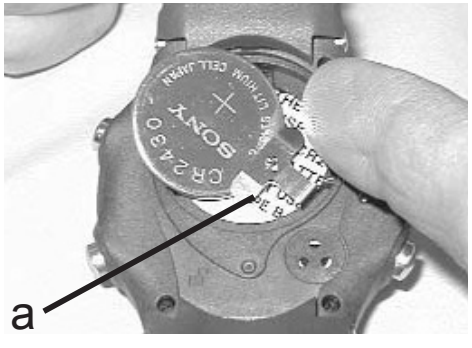


Fig. 123 - ZEN AIR BATTERY REMOVAL

⚠ CAUTION: Damage due to improper Battery replacement is not covered by the product's warranty.

Battery Removal

- Locate the Battery Compartment on the back of the unit.
- Rotate the Battery Hatch clockwise 10 degrees using the special Battery Hatch Tool provided (Fig. 121), or - by pushing the lower portion to the left while pushing the upper portion to the right using your fingers (Fig. 122).
- Lift the Hatch with O-ring up and away from the Housing.
- Using care not to damage the Battery Contact (Fig. 123a), slide the Battery up and out of the left side of the Battery Compartment.
- Discard the Battery according to local regulations governing disposal of Lithium batteries.

⚠ CAUTION: DO NOT allow a metal object to short circuit the top of the Battery which is positive (+) to the negative (-) contact of the Battery Compartment.

Inspection

- Closely check all of the sealing surfaces for any signs of damage that might impair proper sealing.
- Inspect the Buttons, Lens, and Housing to ensure they are not cracked or damaged.
- 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.
- To ensure proper sealing, O-ring replacement is highly recommended each time a Battery is replaced.
- Closely examine the Battery Hatch and Housing for any signs of damage that might prevent proper sealing.
- Closely examine the inside of the Battery Compartment for any signs of corrosion indicating entrance of moisture into the unit.

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

Battery Installation

- Slide a new 3 volt type CR2430 Lithium Battery, negative side down into the cavity of the compartment. Slide it in from the left side (Fig. 124) and ensure that it slides under the contact clip on the lower/right rim of the cavity.

Fig. 124 - BATTERY INSTALLATION

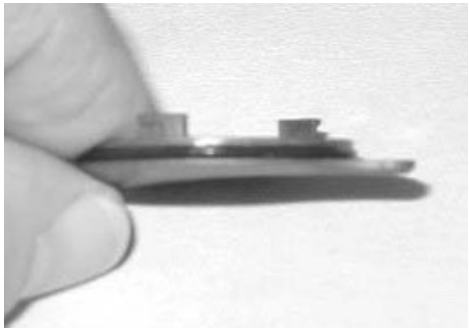


Fig. 125 - HATCH O-RING

- Lightly lubricate the new Hatch O-ring with silicone grease and place it on the inner rim of the Battery Hatch. Ensure that it is evenly seated (Fig. 125).

NOTE: The Hatch O-ring must be a genuine TUSA part that can be purchased from an Authorized TUSA Dealer. Use of any other O-ring will void the warranty.

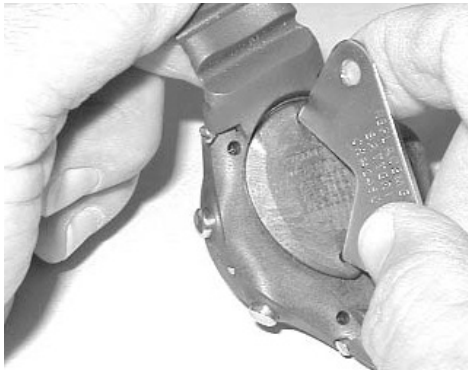


Fig. 126 - BATTERY HATCH INSTALLATION

- Carefully place the Battery Hatch (with O-ring) into position on the rim of the Battery Compartment, then press it evenly and completely down into place.
- Maintain the Hatch securely in place and turn it counter clockwise 10 degrees using the Hatch tool (Fig. 126), or by pushing the lower portion to the right while pushing the upper portion to the left using your fingers (Fig. 127).

Fig. 127 - ALT BATTERY HATCH INSTALLATION

Testing

- Activate the unit and observe the LCD is consistently clear and sharp in contrast throughout the screen.
- Set the Watch functions.
- Verify all Set Points prior to diving.
- If any portions of the display are missing or appear dim, or if a Low Battery condition is indicated, return your ZEN AIR to an Authorized TUSA Dealer for a complete evaluation before attempting to use it.

TRT (Transmitter) Battery Removal_

Locate the Battery Hatch on the End of the Housing:

- Apply a coin to the recessed slot of the Hatch and turn it counter clockwise out of the Housing (Fig. 128).
- Remove the Battery from the Battery Compartment and discard according to local regulations governing disposal of Lithium batteries.

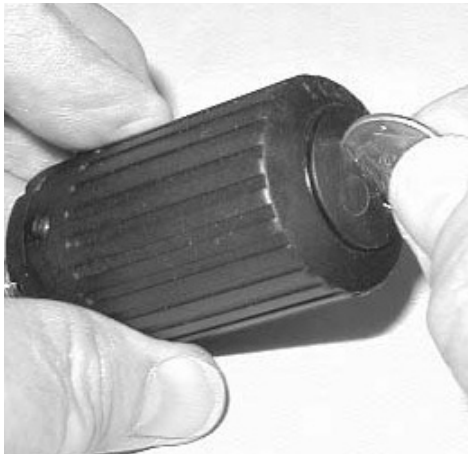


Fig. 128 - TRT BATTERY HATCH REMOVAL

Inspection

- Closely check all of the sealing surfaces for any signs of damage that might impair proper sealing.
- Inspect the Housingto ensure it is not cracked or damaged.

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

- 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.
- To ensure proper sealing, O-ring replacement is highly recommended each time a Battery is replaced.
- Closely examine the threads of the Battery Hatch and Housing for any signs of damage that might prevent proper threading.

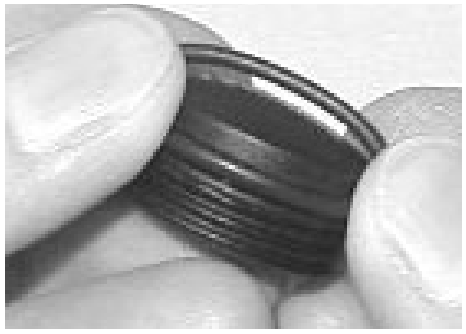


Fig. 129 - TRT O-RING INSTALLATION

- Closely examine the inside of the Battery Compartment for any signs of corrosion indicating entrance of moisture.
- If corrosion is found, return the TRT to an Authorized TUSA Dealer, and DO NOT attempt to use it until it has received factory service.
- If moisture is found, it is best to have the unit inspected and cleaned by an Authorized TUSA Dealer.

TRT Battery Installation

- Lightly lubricate the new Battery Cap O-ring with silicone grease and install it onto the Battery Cap. DO NOT roll the O-ring over the threads, instead stretch it slightly to work it down over the slotted end of the Cap into the groove at the base of the threads (Fig. 129).

△ **NOTE: The TRT's O-ring must be a genuine TUSA part that can be purchased from an Authorized TUSA Dealer. Use of any other O-ring will void the warranty.**

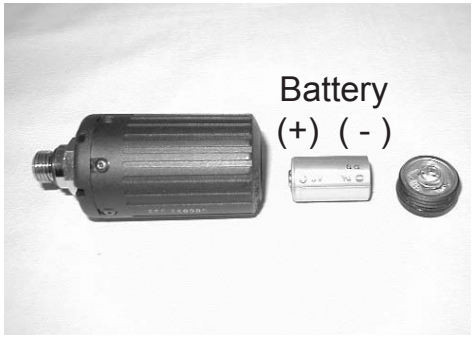


Fig. 130 - TRT BATTERY ORIENTATION

- Place a new 3 volt, CR2, Lithium Battery (Duracell model DL-CR2 or equivalent) positive (+) side down into the Battery Compartment with the negative end facing up/out (Fig. 130).
- Ensure that the Battery is properly oriented and the Hatch O-ring is evenly seated around the Battery Hatch.

- Carefully place the Battery Hatch with Spring into the Housing and turn clockwise slowly by hand to ensure proper threading. Apply a coin and tighten until secure. The outer surface of the Battery Hatch should be flush with the outer surface of the Housing (Fig. 131).

Fig. 131 - TRT BATTERY HATCH INSTALLED

ZEN AIR System Testing

- Pressurize the Regulator Assembly (and Transmitter).
- Verify that the Link icon is displayed.
- Press the S button for 2 seconds to check the Status screens.
- If a Low Battery Condition is indicated, return your ZEN AIR with TRT to an Authorized TUSA Dealer for a complete evaluation before attempting to use it.

INSTALLING A TRANSMITTER ON A REGULATOR

To install the TRT on the Regulator First Stage:

- Remove the existing Pressure Gauge and High Pressure Hose, or the High Pressure Port Plug from the port marked HP using the proper size hex key.
- Lightly lubricate the O-ring and threads of the Transmitter fitting with a halocarbon based lubricant such as Christo-Lube MCG111 (provided in TUSA Battery Kits).
- Thread the Transmitter clockwise by hand into the Regulator's HP Port (Fig. 132) and tighten until secure with a 5/8" open-end wrench.

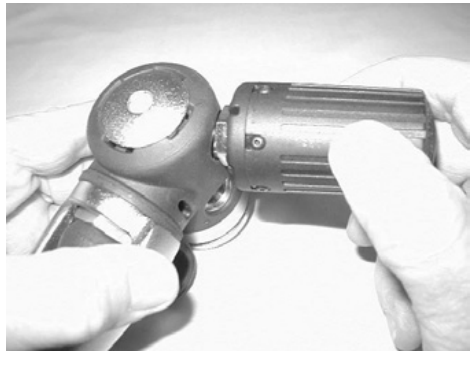


Fig. 132 -INSTALLING A TRT ON A REGULATOR

- Attach the Regulator First Stage to a full SCUBA Tank and pressurize by slowly opening the tank valve, listening for any indication of air leaking around the Fitting.
- If air leakage is present, DO NOT use, take the complete regulator assembly to an Authorized TUSA dealer for inspection and service.

TRANSMITTER COMPATIBILITY WITH NITROX

When packaged and shipped from the factory, TUSA ZEN AIR Transmitters are rated for use with compressed Air and/or nitrogen-oxygen (Nitrox) breathing gas mixtures containing up to 99% O2 by volume and with 100% O2.

ALTITUDE SENSING AND ADJUSTMENT

Prior to the first dive of a series of repetitive dives, Altitude (i.e., Ambient Pressure) is measured upon activation of Dive Surface Mode and every 15 minutes until a dive is made or operation reverts to Watch Default Time.

- While it is operating in Watch mode after a dive, measurements are taken every 15 minutes during the 24 hour period after surfacing.
- Measurements are only taken when the unit is dry.
- Two readings are taken, the second reading 5 seconds after the first. The readings must be within 1 foot (30 cm) of each other to record that Ambient Pressure as the current Altitude.

The Mathematical Model in the ZEN AIR accounts for the reduced No Deco Dive Times (NDLs) available based on National Oceanic and Atmospheric Administration (NOAA) guidelines.

When diving in high altitude waters from 3,001 to 14,000 feet (916 to 4,270 meters), the ZEN AIR automatically adjusts to these conditions providing corrected Depth, reduced No Deco Dive Times, and reduced Oxygen Accumulation Times at Altitude intervals of 1,000 feet (305 meters).

No adjustments are made during any time that the Wet Contacts are wet.

At an elevation of 3,001 feet (916 meters), Depth Calibration automatically changes from feet of seawater to feet of fresh water. This is the first adjustment to the Algorithm.

When the Conservative Factor feature is set On, allowable dive times are calculated based upon the next higher 3,000 foot (915 meter) Altitude. All adjustments for Altitudes greater than 11,000 feet (3,355 meters) are then made to allowable dive times for 14,000 feet (4,270 meters). If the Conservative Factor is set On while at Sea Level, calculations are based upon an Altitude of 6,000 feet.

The ZEN AIR will not function as a Dive Computer above 14,000 feet (4,270 meters).

OXYGEN EXPOSURE LIMITS
(from NOAA Diving Manual)

PO2	Max Duration Single Exposure		Max Total Duration 24 Hour Day	
(ATA)	(min)	(hr)	(min)	(hr)
0.60	720	12.0	720	12.0
0.70	570	9.5	570	9.5
0.80	450	7.5	450	7.5
0.90	360	6.0	360	6.0
1.00	300	5.0	300	5.0
1.10	240	4.0	270	4.5
1.20	210	3.5	240	4.0
1.30	180	3.0	210	3.5
1.40	150	2.5	180	3.0
1.50	120	2.0	180	3.0
1.60	45	.75	150	2.0

PZ+ ALGORITHM >> NDLS (HR:MIN) AT ALTITUDE (IMPERIAL)

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

PZ+ ALGORITHM >> NDLS (HR:MIN) AT ALTITUDE (METRIC)

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

SPECIFICATIONS

CAN BE USED AS

- Watch
- Air Computer
- Nitrox Computer
- Digital Depth Gauge/Timer
- Free Dive Depth Gauge/Timer

DIVE COMPUTER PERFORMANCE

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

WATCH MODES

- Default Time (selected for current location)
  >> ALT (Altitude, Temp, Date)
  >> Set Time, Date, Format
- Alternate Time (remote location)
  >> Set by hour differential
- Countdown Timer
  >> Start, Stop, Set
- Chronograph (Stop Watch/Lap Timer)
  >> Start, Stop, Lap Recall, Reset
- Daily Alarm
  >> On, Off, Set

DIVE COMPUTER SURFACE SEQUENCE/MODES

- NORM >> GAUG >> FREE Surface Main
- SURF ALT (Altitude, Temp, Time)
- Plan (30 to 190 FT, 9 to 57 M) - NORM only
- Time to Fly - NORM/GAUG
- Time to Desaturate - NORM only
- Dive Log >> History - NORM/GAUG
- Set >> FO2, Alarms, Utilities - NORM/GAUG

NORM/GAUG SET MODES

- Set F Group (FO2 items):
  - FO2 GAS 1 (Air, 21 to 50%)
  - FO2 GAS 2 (Air, 21 to 100%)
  - FO2 GAS 3 (Air, 21 to 100%)
  - FO2 Default (On/Off)
- Set A Group (Alarms):
  - Audible (On/Off)
  - Max Depth (30 to 330 FT, 10 to 100 M)
  - Elapsed Dive Time (:10 to 3:00 hr:min)
  - NiBG (1 to 5 segments)
  - Dive Time Remaining (:00 to :20 min)
  - Turn Pressure (1000 to 3000 PSI, 70 to 205 BAR)
  - End Pressure (300 to 1500 PSI, 20 to 105 BAR)
  - PO2 (1.20 to 1.60 ATA)
- Set U Group (Utilities):
  - Wet Activation (On/Off)
  - Units of Measure (Imperial/Metric)
  - No Deco Deep Stop (On/Off)
  - No Deco Safety Stop (On/Off)
  - Conservative Factor (On/Off)
  - Backlight Duration (0, 5, 10 seconds)
  - Sampling Rate (2, 15, 30, 60 seconds)
  - TRT 1, 2, 3 Link Code (SN)

SPECIFICATIONS (CONTINUED)

NUMERIC DISPLAYS:	Range:	Resolution:
• Dive Number	0 to 24	1
• Depth (Current, Max)	0 to 330 FT (99.9 M)	1 FT (.1 M)
• Gas 1 FO2 Set Point	Air, 21 to 50 %	1 %
• Gas 2, 3 FO2 Set Point	Air, 21 to 100 %	1 %
• PO2 Value	0.00 to 5.00 ATA	.01 ATA
• Dive Time Remaining	0:00 to 9:59 hr:min	1 minute
• No Deco Deep Stop Time	2:00 to 0:00 min:sec	1 second
• No Deco Safety Stop Time	3:00 to 0:00 min:sec	1 second
• Deco Stop Time	0:00 to 9:59 hr:min	1 minute
• Deco Total Ascent Time	0:00 to 9:59 hr:min	1 minute
• Norm/Gaug Elapsed Dive Time	0:00 to 9:59 hr:min	1 minute
• Free Elapsed Dive Time	0:00 to 59:59 min:sec	1 second
• Surface Interval Time	0:00 to 23:59 hr:min	1 minute
• Free Surface Interval Time	0:00 to 59:59 min:sec	1 second
	1:00 to 23:59 hr:min	1 minute
• Dive Log Surface Interval	0:00 to 23:59 hr:min	1 minute
• Time to Fly	23:50 to 0:00 hr:min* (* starting 10 min after the dive)	1 minute
• Time to Desaturate	23:50 max to 0:00 hr:min* (* starting 10 min. after the dive)	1 minute
• Temperature	0 to 140°F (-9 to 60°C)	1°
• Tank Pressure	0 to 5000 PSI (345 BAR)	5 PSI (1 BAR)
• Time of Day	0:00:00 to 23:59:59 hr:min.sec	1 second
• Watch Countdown Timer	23:59 to 0:00 hr:min	1 minute
• Free Countdown Timer	59:59 to 0:00 min:sec	1 second
• Chronograph	0:00:00.00 to 99:59:59.99 hr:min:sec.1/100 sec	1/100 second

• Depth Out of Range (- - -)	=> 330 FT (99.9 M)
• Violation Countdown Timer	23:50 to 0:00 hr:min (after surfacing)

SPECIFICATIONS (CONTINUED)

BAR GRAPHS

Nitrogen Bar Graph	segments
• No Deco Normal zone	3
• No Deco Caution zone	1
• Deco Warning zone	1

Oxygen (O2) Bar Graph:	segments
• Normal zone	3
• Caution zone	1
• Danger zone	1

Ascent Rate Indicator:	60 FT (18 M) & Shallower			Deeper than 60 FT (18 M)		
	segments	FPM	MPM	segments	FPM	MPM
	0	0 - 10	0 - 3	0	0 - 20	0 - 6
• Normal Zone	1	11 - 25	3.5 - 7.5	1	21 - 50	6.5 - 15
• Caution Zone	2	26 - 30	8 - 9	2	51 - 60	15.5 - 18
• Too Fast Zone (flashing)	3 (all)	> 30	> 9	3 (all)	> 60	> 18

OPERATIONAL PERFORMANCE

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

Dive Counter:
- NORM/GAUG displays Dives #1 to 24, FREE displays #1 to 99 (0 if no dive made yet)
- Resets to Dive #1, upon diving (after 24 hours with no dives)

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

SPECIFICATIONS (CONTINUED)

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

Conservative Factor:
- Reduces NORM/FREE NDLs to those for the Altitude 3,000 feet (915 meters) higher.

Power:

• Battery	(1) 3 vdc, CR2430, Lithium battery
• Shelf life	Up to 7 years (when shipped from factory in Deep Sleep mode)
• Replacement	User replaceable (annual recommended)
• Use Life	1 year or 300 dive hours if (2) 1 hour dives per dive day

Battery Indicator:
- Warning - icon on solid at 2.75 volts, Battery change recommended
- Alarm - icon on flashing at 2.50 volts, change the Battery

Dive Computer Mode Activation:
- Manual - push button (recommended), required if Wet Activation is set OFF.
- Automatic - by immersion in water (if set ON)
- Cannot be manually activated deeper than 4 FT (1.2 M), if Wet Activation is set OFF.
- Cannot operate as a Dive Computer at elevations higher than 14,000 feet (4,270 meters)
- Reverts to Watch Default Time if no dive is made within 2 hours after entry into a Surface Mode.
- Reverts to Watch Default Time 10 minutes after dive.

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

SPECIFICATIONS (CONTINUED)

- 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 unit and its battery with body heat before diving.

Storage Temperature:

- Out of the water (in storage case provided) >> between 14 °F and 158 °F (-8 and 70 °C).

PC requirements:

- IBM®, or compatible, Personal Computer with Mouse, USB Port, CD drive, and printer
- Intel® Pentium 200 MHz or better microprocessor
- Microsoft® Windows® 98 Second Edition, ME, NT, 2000, XP, or Vista
- Super VGA card or compatible video graphics adaptor (256 color or greater) with a minimum 800 X 600 pixel screen area of display settings
- 20MB of available hard drive storage
- 16MB of available RAM

WARNING: If your ZEN AIR stops working for any reason while operating as a Dive Computer, it is important that you have anticipated this possibility and are prepared for it. This is an important reason for not pushing the no decompression and oxygen exposure limits, and a critical reason to avoid entering decompression. If you dive in situations where your trip would be ruined or your safety would be jeopardized by losing the use of your ZEN AIR, a backup instrument system is highly recommended.

FCC ID: MH8A

FCC COMPLIANCE:
This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: 1.) this equipment may not cause harmful interference, and 2.) this equipment must accept any interference received, including interference that may cause undesired operation.

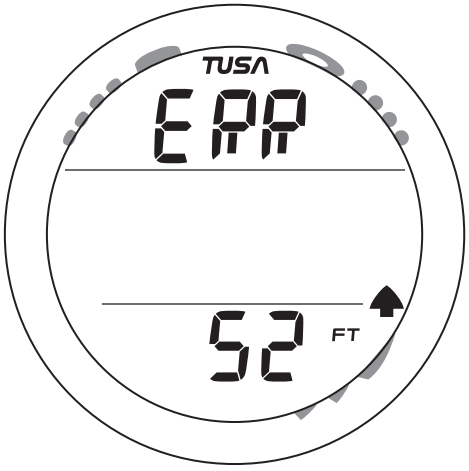
FCC INTERFERENCE STATEMENT:
This equipment has been tested and found to comply with the limits for an Intentional Radiator, a Class B Digital Device, pursuant to Part 15 of FCC Rules, Title 47 of the Code of Federal Regulations. These rules are designed to provide reasonable protection against harmful interference in a commercial or residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

There is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician.

Warning: Changes or modifications to this unit not expressly approved by TUSA/2002 Design could void the user's authority to operate the equipment.

ERROR (RESET DURING A DIVE)



ERROR WHILE DIVING

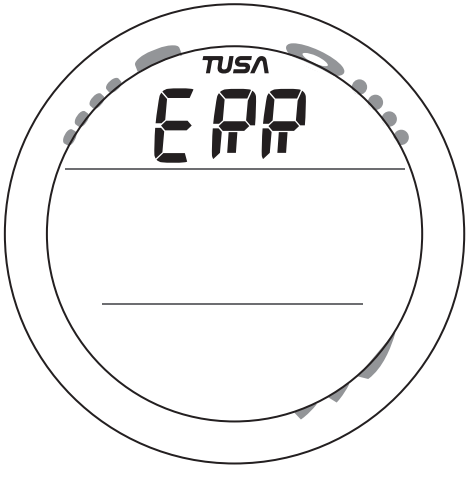
If for any reason, the ZEN AIR shuts Off then turns On again for any reason during any Dive, the message ERR (Error) will be displayed with the Up Arrow and current Depth.

If this occurs, it is highly recommended that you terminate the dive and begin a safe ascent to the surface.

Upon surfacing, and any time thereafter, when access to Dive Computer Operating Mode is attempted from Watch Mode, only the message ERR will be displayed.

No Dive Computer Modes/screens will be accessible.

If this occurs, the ZEN AIR must be returned to the factory for evaluation/service prior to any further use for diving activities.



SURFACE AFTER ERROR DURING A DIVE

INSPECTION / SERVICE RECORD

ZEN AIR Serial Number: _____

ZEN AIR Firmware Revision: _____

Transmitter #1 Serial Number: _____

Transmitter #2 Serial Number: _____

Transmitter #3 Serial Number: _____

Date of Purchase: _____ Purchased from: _____

Below to be filled in by an Authorized TUSA Dealer:

Date	Service Performed	Dealer / Technician

TUSA INTERNATIONAL CONTACTS

Tabata USA, Inc
2380 Mira Mar Avenue
Long Beach, CA 90815
Tel: 562-498-3708
Fax: 562-498-0415
www.tusa.com
info@tusa.com

Tabata Europe Corporation B.V.
Den Brielstraat 2 B, 1055 RV
Amsterdam, The Netherlands
Tel: 31-(0)20 68 15 955
Fax: 31-(0)20 68 24 527
www.tusa.nl
info@tusa.nl

Tabata Australia PTY Ltd.
4D James Ruse Business Park, 6
Boundary Road
Northmead, N.S.W. 2152 Australia
Tel: 61-(0)2-9890-4555
Fax: 61-(0)2-9890-5222
www.tusa.com.au
info@tabata.com.au

Tabata Co. Ltd. Japan
1-3-17 Higashikomagata, Sumida-ku
Tokyo, Japan 130-0005
Tel: 81-(0)3-3624-2816
Fax: 81-(0)3-3623-9902
www.tusa.net
info@tabata.co.jp

Tabata Taiwan Co. Ltd.
54-8 Hsutsogang, Nankang Vil.
Tayuan Hsiang, Tao Yuan Hsien
Taiwan R.O.C.
Tel: 886-(0)3-386-5100
Fax: 886-(0)3-386-5103
info@mail.tabata.com.tw

TUSA QUALITY

Worldwide Contacts:

Tabata USA, Inc. www.tusa.com
Tabata Australia Pty Ltd. www.tusa.com.au
Tabata Europe Corporation B.V. www.tusa.nl
Tabata Mfg. Co. Ltd. www.tusa.net
Tabata Co. Ltd. Japan. www.tusa.net

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