



Libretto d'istruzioni

User's Guide

Bedienungsanleitung

Manuel d'utilisation

Manual de instrucciones

Manual de instruções

SURVEYOR



SURVEYOR DIVE COMPUTER USER'S GUIDE

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SURVEYOR DIVE COMPUTER

MARES is proud to introduce its SURVEYOR dive computer, a high-tech instrument based on the most recent scientific research. The SURVEYOR dive computer is designed to guarantee the maximum safety, efficiency, reliability and long life. In this manual, you will find all the instructions regarding its operation and functions. MARES thanks you for choosing this sophisticated instrument and recommends that you follow the strictest diving criteria in terms of safety and caution in order to fully enjoy your diving experience.

Important:

Any critical information or warnings that might affect the performance or result in the injury of the technician, COMPUTER SURVEYOR owner, or other persons are highlighted with the following symbols:



DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



WARNING

DO NOT attempt to use the SURVEYOR unless you are certified diver and have read and understood the instruction manual. Proper use of the SURVEYOR will reduce your risk of decompression sickness, but no computer or dive table can entirely eliminate that risk.

RULES FOR SAFE DIVING

- Plan every dive and dive your plan
- Never exceed the limits of your skill and experience
- Always start each dive by descending to the deepest planned depth of your dive first, and then gradually ascending during the course of the dive. Failure to do this will increase your risk of decompression sickness
- Check your computer readings often during your dive
- Comply with the ascent rate shown by the computer
- Always stop for at least 3 minutes at a depth of 10 to 16 feet (3 to 5 meters)
- After the safety stop, ascend very slowly to the surface
- Avoid yo-yo dives (repeated ascending and descending underwater)
- Avoid strenuous activity during your dive and for half an hour after ascending
- When diving in cold water or with any dive involving strenuous activity, start ascending well before reaching the NO DEC limits. For every dive involving decompression, prolong the decompression stop nearest to the surface by several minutes
- Surface intervals between your dives should never be shorter than 2 hours
- The deepest dive should be the first of the day
- Dive only after the computer has zeroed from any previous day's dive
- When making multiple dives over a number of days, take at least one day of rest with no diving per week. If decompression stops were necessary during the dives, it is recommended to take a day of rest with no diving every three days of diving
- Avoid planned decompression dives and do not dive deeper than 130 feet (40 meters) unless you have been specifically trained in this type of technical diving.
- Avoid repetitive "square profile" dives (dives to a single depth) deeper than 60 feet (18 meters)
- Always wait as long as possible before flying after a dive (at least 12 and preferably 24 hours), in accordance with the recommendations of the Divers' Alert Network.
- Every dive involves some degree of risk of decompression sickness. Even if it is used carefully and all safe diving practices are followed, neither the SURVEYOR nor any other dive computer can entirely eliminate the risk of decompression sickness
- Always dive well within the NO DEC limits of your SURVEYOR dive computer, unless you have been specially trained in this type of technical diving
- Always ascend several minutes before going into DEC mode, and allow yourself even more time in the case of cold water conditions, repetitive dives deeper than 60 feet (18m), or for any dive involving unusually high exertion. Failure to do this will increase your risk of decompression sickness

WARNINGS AND SAFETY RULES



WARNING

For the correct use of any dive computer, the diver must acquire an in-depth knowledge of all its features. Before diving with the SURVEYOR, read this instruction manual carefully and entirely to learn how it works.



WARNING

Every dive involves some degree of risk of decompression sickness. Even if used carefully and all safe diving practices are followed, neither the SURVEYOR nor any other diving computer can eliminate the risk of decompression sickness. The dive computer cannot take into account the ever-changing physical conditions of every diver. For your safety, undergo a complete check-up examination before diving.

Safe diving can only be guaranteed by accurate training.



WARNING

The SURVEYOR dive computer is designed for recreational and sport diving only. It must not be used for professional diving.



WARNING

The SURVEYOR dive computer is designed for recreational and sport diving only. It must not be used for professional diving.

Mares recommends to dive with a dive computer only after attending a specialized course at a diving school. Sport dives must be conducted no deeper than 130' (40 m).



WARNING

Sport divers should NOT dive deeper than 40m (130 ft.). Even though this computer will continue to give information for dives with compressed air deeper than 40m (130 ft.), the risk of nitrogen narcosis and decompression sickness (DCS) is greatly increased so this information should be considered advisory only.

 **WARNING**

NEVER dive deeper than 130 feet (40m) or do planned decompression dives with the SURVEYOR unless you are a trained and certified technical diver (IANTD, TDI, ANDI, PSA, etc.) familiar with the skills and risks of deep air diving, and licensed at least to the level of Deep Air diving for depths beyond 130 feet (40m). Even with this level of certification and experience, this type of technical dive entails a much higher risk of DCS, regardless of the dive table or computer used. You must be aware of and willing to accept these risks before attempting such a dive.

 **WARNING**

NEVER use your SURVEYOR or any other dive computer for repetitive "square profile" dives (dives to the same or nearly the same depth) deeper than 60 feet (18 m). This is an unsafe diving practice which will greatly increase your risk of DCS, regardless of what your SURVEYOR reads.

 **WARNING**

NEVER use your SURVEYOR for "yo-yo" dives (repeatedly ascending and descending underwater) as this will greatly increase your risk of DCS, regardless of what your SURVEYOR reads.

 **WARNING**

ALWAYS make a 3- to 5-minute "safety" stop at 15-20 feet (5-7 m) after every dive, regardless of what your SURVEYOR reads. This will further reduce your risk of decompression sickness

 **WARNING**

Do not dive if the <battery> icon indicates that the battery is low: replace the battery. **Do not** dive if the instrument warnings are irregular or not clear.

Diving deeper than 130' (40 m) is considered technical diving and should never be attempted by divers not specifically trained for such diving. Such diving greatly increases the risk of decompression sickness.

 **WARNING**

Dive at altitude only after checking that the appropriate altitude program is on.

**WARNING**

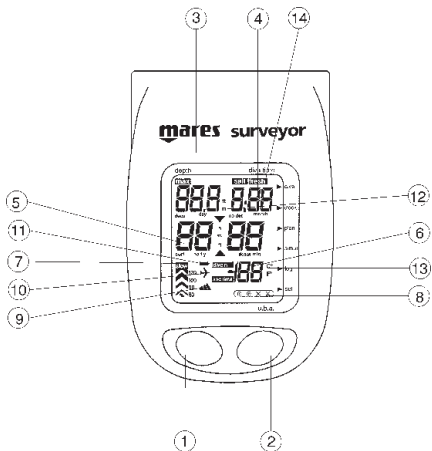
Do not fly for 24 hours following your last dive or, anyhow, wait until the <airplane> icon on your SURVEYOR goes off.

**WARNING**

Never use your SURVEYOR for dives with breathing gases other than atmospheric air.

A good diver is a responsible diver. You must strictly comply with all warnings in this manual and with the simple rules listed at the beginning of this guide to avoid increasing your risk of decompression sickness.

Do not compress your SURVEYOR in a hyperbaric chamber or "pressure pot" type testing device. The instrument may be seriously damaged if not immersed completely in water.



1 = <mode> button

2 = <->button

3 = Current depth
Max depth
Day (clock function)
Set (set function)

4 = Dive time
Month (clock function)

5 = No dec time
deco stops
Time (clock function)
Surface time
"No fly" time
Desaturation time

6 = Temperature (for no dec dives)
N° of dives (Log book function)
Year (clock function)

7 = Ascent rate

8 = UBA System

9 = Altitude level

10 = "No fly" warning

11 = Low battery warning

12 = Unit of measure of depth

13 = Unit of measure of temperature

14 = Display option
choose fresh/seawater programs

TECHNICAL SPECIFICATIONS AND FUNCTIONAL CHARACTERISTICS

| | |
|---------------------------------------|--|
| • Algorithm type | modified Haldane |
| • Number of sample tissues | 9 |
| • Half-saturation times | 2.5 to 480 minutes |
| • Maximum operating depth | 500 feet (150 meters) |
| • Resolution | 0.1 m (1 m if deeper than 100 m) |
| • Calibration (depth) | fresh water at 2% |
| • Altitude programs | 4: P0 (0-700m), P1 (700-1500m), P2 (1500-2400), P3 (over 2400m) |
| • Maximum decompression stop | 90 feet (24 meters) |
| • Ascent rate | 10 to 18 m/min. |
| • Audible alarms | low battery decompression stop violated excessive ascent rate NO DEC limits violated |
| • History memory | Total number of dives Total dive hours Maximum depth reached Minimum temperature |
| • Log book dives | 50 |
| • Stored data | year, month, day and time of the dive length of the dive maximum depth altitude program decompression stop violation DEC/NO DEC dive maximum ascent rate violated UBA |
| • Dive profiles | minimum temperature |
| • Profile points | 20 dives (max 20 hours) |
| • Data stored for every profile point | Every 20 sec. maximum depth reached at every minute violation of ascent rate violation of decompression stop |
| • UBA | 8 errors on 4 asterisks |
| • Scrolling of NO DEC limits | 12 to 48 m |
| • Dive simulators | Yes |
| • Clock | Year, month, date, hours, minutes |
| • Dive mode activation | Automatic |
| • Temperature display | °C/°F |
| • PC interface | with RS232 serial adapter |

- User-selectable parameters

clock adjustment

°C/°F

meters/feet

altitude program

uncontrolled ascent control (Yes/No)

residual nitrogen memory reset

salt/fresh

beeper on/off

one AAA alkaline 1.5 V battery

approx. 3 months or 50 hours of diving

with backlight permanently on 10 hours

- Power supply
- Battery life

SELF CHECK

The SURVEYOR dive computer can be switched on either by pressing the buttons or automatically, when the unit is in the water (wet contacts).

When switched on manually or after replacing the battery, the instrument carries out the autozero procedure (automatic calibration) and the low battery check; all the data shown on the display goes on for two seconds (fig. 1). The computer then carries out a self check and goes to Dive mode.

When switched on by wetting the contacts, the SURVEYOR keeps into account the most recent data of the last automatic calibration (last measurement of ambient pressure). It then goes to Dive mode. An automatic calibration is carried out automatically every minute also when the instrument is off.

BATTERY CHECK

If the battery is getting low (level 1), the battery icon goes on; however, it is still possible to conduct two dives. If the battery is as low as level 2, <LO> is displayed and all the functions are disabled (fig. 2).

During the dive, the computer periodically carries out the battery check. If a "level 1" low battery charge is detected, the battery icon will illuminate. If the backlight is on, it will be switched off after a series of warning blinks.



WARNING

The alkaline battery has a life of approximately 3 months or 50 hours of diving, with only occasional use of the backlight. The battery life with the backlight permanently on is 10 hours. However, even if the computer is not used, the battery should be replaced at least every 6 months. The data stored in memory is retained during battery change. For the battery changing procedure see the instructions on pg. 35.



WARNING

When handling for surface consultation, take particular care not to simultaneously touch the wet contacts situated on the side of the computer. In fact this will cause the computer to switch into <dive> mode, making it impossible to access its other functions.



WARNING

To avoid an excessive reduction of the battery life, when using the backlighting feature always switch off the backlight at the end of the dive.

AUTOMATIC SWITCH-OFF

When the SURVEYOR is not in Dive mode but in any of the other operating modes, the instrument and the display go <off> if no buttons are pushed for three minutes. When in <Simul> mode, switch-off takes place after 30 minutes (see "Dive Simulation").

DIVE

-Dive- mode is selected by pressing the <mode> button or wetting the external contacts, or is automatically activated by a change in pressure. It includes 2 different operating modes which are:

Wait status before the dive: when in Dive mode, the display shown in fig. 3 appears. If the computer, with dry contacts, is not taken to an actual depth of 4 feet (1.5 meters) minimum within 3 minutes, the unit goes off.

Dive status: after going beyond a depth of 4 feet (1.5 meters), the dive time chronometer starts counting.

The display will show the following data (fig. 4):

| | |
|--------------|---|
| <depth> | Value of actual depth (in "m" or "ft.") |
| <max. depth> | Value of the maximum depth reached. It is displayed for approximately 3 seconds after pressing the <mode> button. |
| <temp> | Value of water temperature measured (in °C or °F) |
| <dive time> | Time elapsed from the beginning of the dive, in minutes |

Recording of dive data in memory starts only after the diver has stayed underwater at a depth greater than 1.5m for at least 20 sec.

NO DEC Dive

When the diver remains within the NO DEC limits, <NO DEC> (no decompression) is displayed. The remaining no decompression time will thus be displayed (fig. 4) in <min> at the displayed <depth>. When the remaining NO DEC time is one minute, an audible signal is triggered. In this type of dive, if the depth reached exceeds 10 meters, the "Safety Stop" will be activated during ascent: the SURVEYOR will then recommend to perform a safety stop in the -3.5 m to -5 m depth range and the NO DEC time will be replaced by "St (stop) 3 min" (fig. 5). If the diver leaves the above mentioned depth range, the NO DEC time is displayed again, while the safety stop time count is stopped. When the diver goes back to the safety stop depth range, the safety stop count is resumed. If the diver then goes back below 10 meters, the safety stop does not consider the previous stop and starts counting down from 3 minutes again.

DEC Dive

If the diver does not ascend to a shallower depth when the NO DEC time has elapsed, an audible alarm is triggered and the <DEC> message is displayed. Instead of the remaining time, the display now shows the depth ("m") and the first decompression stop in minutes ("min"), as well as the total time expected for ascending ("asc time") (fig. 6). This value includes the ascent time and the times of the decompression stops to be performed at the various depths.

The SURVEYOR will also check that the decompression stops are not violated. Two icons, shown between the depth <m> and the decompression stop time <min>, will graphically display the next steps to be taken:

| | |
|---------------------|--|
| 2 triangles = | appropriate depth for decompression (fig. 8) |
| upward triangle = | decompression stop depth not reached: ascend! (fig. 9) |
| downward triangle = | decompression stop depth exceeded: descend! (fig. 10) |

This condition triggers an audible alarm which will go off only when the normal conditions are restored.

If the decompression stop depth is exceeded by more than 1 m and lasts for more than 3 minutes, the STOP VIOLATION mode will be entered and the first main asterisk will go on. If, after surfacing, the diver intends to conduct another dive, the SURVEYOR will only operate as a depth gauge and the STOP message will be displayed. This status will continue for 24 hours.

ASCENT

During the ascent, the display shows 4 percentage (%) rate values (60, 90, 100, 120) and the message <slow>. Each value indicates the current rate compared to the expected ascent rate.

The SURVEYOR provides four maximum ascent rates depending on depth:

60%/min. - 18 m/min from the -99 m to -20 m (65 ft.)

40%/min. - 12 m/min -20 m to -10 m (65 to 33 ft.)

33%/min. - 10 m/min -10 m (33 ft.) to the surface

For instance, if at a depth of 9 m (30 ft.) the diver ascends at 6 m/min. (20 ft./min.), the first value is displayed to indicate that the current rate is equal to 60% of the maximum allowed ascent rate. If the latter is exceeded by more than 20%, the values up to "120" are displayed as well as the message <slow>, and the audible alarm is triggered (Fig. 7).

UNCONTROLLED ASCENT

An "uncontrolled ascent" is any ascent conducted at a very fast rate, hence violating the prescribed ascent rate. This condition is signaled by an audible alarm and by the <slow> message. The SURVEYOR considers any ascent which exceeds by 20% the maximum ascent rate set for that depth and continued at least for 2/3 of the depth at which the audible alarm is triggered to be an uncontrolled ascent.

This only applies to the alarms triggered below a given depth, the value of which depends on the dive:

First dive:

Depth greater than 12 m (40 feet); if the depth is between 8 m and 12 m (26' and 40'), the uncontrolled ascent will occur only if the dive time exceeds 60 minutes.

Repetitive dives:

Depth greater than 8 m (26').

If the rapid ascent takes place only between 26' (-8 m) and the surface, this is not considered an "uncontrolled ascent", although it is highly recommended that your ascent be very slow for these last 26 feet (8 meters). If the ascent rate decreases and the audible alarm goes out, the U.B.A. system will not consider your ascent as an "uncontrolled ascent".

In case of an "uncontrolled ascent", the STOP message will be displayed after surfacing. If the diver intends to conduct another dive, the computer will only work as a depth gauge over the next 24 hours.

An uncontrolled ascent will also be signaled by the main asterisk being displayed.

The uncontrolled ascent control can be barred by modifying the setting in the <set> mode.

SURFACING

When the depth is shallower than 4 feet (1 m), the <dive time> is interrupted and the dive is over. If the diver does not descend below 5 feet (1.5 m) within 10 minutes, the SURVEYOR considers the dive to be terminated and its data can be read in the <log book>. Conversely, if the diver descends back beyond that depth, the "dive time" count is resumed and the calculation regarding the dive continues.

When the dive is over, the SURVEYOR switches from the <dive> function to <off> and displays the following (fig. 11):

- blinking airplane icon until the no fly time goes to zero
- "desat time" until the desaturation time goes to zero
- graphic UBA bar with the indication of any errors made.

BACKLIGHTING FUNCTIONS

When the computer is in <Dive> mode, the display backlight feature can be used in either temporary or permanent mode. For temporary lighting, press and release the <-> button to illuminate the display for about 10 seconds. To activate permanent lighting, hold down the <-> key for about 2 seconds until the beep. To subsequently turn off the backlight, press and release <->.

SURFACE FUNCTIONS (SURF TIME)

Press <mode> to switch the computer from <dive> to the surface functions (fig. 12). This status will remain active as long as the no fly indication is displayed.

The following is displayed:

| | |
|-----------------|---|
| <h><min> | Surface interval in hours and minutes |
| <temp> | Current air temperature in the selected unit (in C or °F) |
| <UBA> | Indication of any errors made during the dive on the graphic bar. |
| <airplane icon> | Flying is forbidden |
| <desat> | Push the <-> button to replace the information regarding surfacetime with the indication of the remaining desaturation time (<desat>) |
| <no fly> | Press <-> again to display the remaining no fly time. |

Press <-> to restore the initial surface time display.

TABLE OF DESATURATION AND NO-FLY TIMES

Even though the desaturation time has completely elapsed - as signaled by the computer based on a mathematical conservative calculation - the diver cannot be sure that there are no microbubbles in circulation. Consequently, it is recommended to comply with the "no fly" times indicated by the computer.

The "no fly" times given by the SURVEYOR are consistent with the guidelines of the major teaching associations of the world and are listed in the attached table. They depend on the type of dive conducted and on the desaturation times.

SURVEYOR DIVE COMPUTER

| | DESATURATION TIME | "NO FLY" TIME |
|-------------------------------------|-------------------|---------------------|
| "No dec" non repetitive dive | 0 ÷ 12 ore | 12 ore |
| | > 12 ore | = Desaturation time |
| "dec dive" or repetitive dive | 0 ÷ 24 ore | 24 ore |
| | > 24 ore | = Desaturation time |

Clock

From <-dive> or <surf time> (if the latter is active), press <mode> to access the <clock> function. The year, day, month, hour and minutes will be displayed (fig. 13). The clock function cannot be activated during a dive or when the wet contacts are activated.

SIMUL

From the <clock> mode, press <mode> to access the <simul> mode. In this mode, it is possible to simulate dives keeping into account the remaining tissue saturation level. Press <mode> if you wish to switch to the next mode (<plan>) and to skip <simul>. The following steps are provided:

Before the dive:

Key functions:

Press <-> to start.

During the dive:

Key functions:

Press <-> again to start a dive simulation. Toggle on the <-> key; each toggle corresponds to a descent of 1 meter. Press it at short intervals to simulate a descent rate of 12 m/min. (39 ft./min.). Keep it pressed to descend at a rate of 24 m/min. (40 ft./min.). Toggle on the <mode> key to ascend 1 meter (3 ft) each toggle toggling at short intervals to ascend at a rate of 12 m/min. (39 ft./min.). Keep <mode> pressed to ascend at a rate of 18 m/min. (60 ft./min.). The computer will thus display the dive times depending on the increase or decrease in depth.

Press <mode> and <-> simultaneously to quit the <simul> mode.

The computer simulation time ratio is 5 to 1 (5 actual seconds correspond to 1 second in the simulation).

Surfing (when the depth is less than 1 meter, the computer considers that the diver has reached the surface).

Press <mode> and <-> simultaneously to quit the <simul> mode.

Surface

When the simulated dive is over, time elapses more rapidly, based on a 12 minutes to 1 minute ratio. For approximately 1 minute, the computer will display the maximum depth reached and the dive time. The <surf time> (surface time) will then be displayed. Press <-> to display the <desat time> (desaturation time) and the <no fly time>.

To simulate a repetitive dive, wait until you reach the desired <surf time>, then press <mode> once and follow the same procedure as for the first dive, pressing <-> to start the new descent.

Press <mode> and <-> simultaneously to quit the <simul> mode.

STOP

If, during the dive, a safety stop is violated or an uncontrolled ascent occurs, the simulator is interlocked: STOP will be displayed.

To exit the interlock status, press <mode> and <-> simultaneously.

If the "uncontrolled ascent" function is disabled (see "set 7", page 33), the simulator will not be interlocked and the STOP message will not be displayed.

DIVE PLANNING (PLAN)

From <simul>, press <mode> to access the <plan> function (fig. 14).

It will then be possible to proceed to the no-stop planning of the dive which will automatically account for any residual nitrogen still contained in the diver's tissues from a previous dive.

Press <-> to scroll the no-stop dive date, i.e.

<depth> press <-> to cause actual depth to increase by three meter steps to 48 m.

<no dec> For each depth value, the time allowed before decompression is required will be displayed.

You cannot plan repetitive <deco> dives.

LOG BOOK

From the <plan> mode you can access the <log book> mode to display the history data, i.e., alternating, the total dives conducted and the minimum temperature reached at any time during a dive, the total dive hours and the maximum depth reached (fig. 15).

Press <-> to display the page shown in fig. 16 regarding your last dive. Fifty pages are provided. The first page will show the progressive dive number (n. 1 is the last dive conducted) and the day, month and time of the dive. Press <-> to go the second page (fig. 17). This page shows the maximum depth reached during the dive, its total duration, the UBA bar, the maximum ascent rate reached, any decompression stop violation, <no dec> for NO DEC dives and <deco> for DEC dives and the minimum dive temperature. A complete profile of the last twenty dives can be obtained. Keep <-> pressed for two seconds to view the profile of any dive you wish. Press <-> repeatedly to scroll the dive time and the related depth. To stop viewing this data and switch to the next dive, simply press <mode>.

The display has two modes of operation for viewing the dive profiles: one

corresponds to minutes, for example 0min, 1min, 2min, ...; and displays the following information (fig. 17a):

 sequential number of the dive, with the "dive n" icon

 depth

 minute of the dive to which the depth refers

 speed of ascent achieved, if any

 omitted decompression stops, if any

The second mode corresponds to fractions of a minute, e.g. 0min 20sec, 0min 40sec, 1min 20sec, 1min..40sec,; in this case the dive number display is replaced by either 20 or 40, corresponding to Xmin 20sec and Xmin 40sec respectively. The "dive n" icon will be turned off (fig. 17b).

Press and release the <-> button to scroll through all the dives. To exit, press the <mode> button.

SETUP

| | |
|---------|------------------------|
| <set 1> | clock |
| <set 2> | altitude |
| <set 3> | temperature unit |
| <set 4> | depth unit |
| <set 5> | fresh/seawater |
| <set 6> | beeper (audible alarm) |
| <set 7> | uncontrolled ascent |
| <set 8> | clear nitrogen memory. |

From <log book>, press <mode> to activate the SETUP function (fig. 18). If you wish to enter this function, press <mode> again for approximately two seconds until <set 1> is displayed, which indicates the clock function. To go to the next function (<dive> mode), press <mode> again and release the key immediately. The <set> mode provides the following operating options:

<set 1> Clock and date setup (fig. 19).

Press <mode> for approximately two seconds.

When the clock function is entered, the date, hour and minutes will be displayed and blink alternatively. Press <-> to increase the blinking digit. When you have reached the desired digit, press <mode> to store it. The digits indicating the hours will start blinking and the same procedure will have to be followed. After programming the clock, press <mode> to go to the next setting.

<set 2> Altitude setup (fig. 20).

Upon activation, <set2> is displayed together with the currently selected altitude P0: 0-700 m (0-2300 ft) - P1: 700-1500 m (2300-4900 ft) - P2: 1500-2400 (4900-7900 ft) - P3 more than 2400 m (more than 7900 ft). Press <-> to enable the next altitude value. Press <mode> to go to the next setting.

<set 3> Temperature unit setup (fig. 21).

Upon activation, the currently selected temperature unit will be displayed. Press <-> to change the unit (°C or °F).

Press the <mode> button to go to the next setting

<set 4> Depth unit setup (fig. 22).

Upon activation, the currently selected depth unit will be displayed. Press <-> to change the blinking digits (m. or ft.). Press <mode> to go to the next setting.

<set 5> Setup fresh/seawater (fig. 23).

When activated, the message <set 5> appears and the "fresh" or "sea" (fresh or seawater) icon starts blinking to reflect the current setting. Press the <-> button to toggle between the two options. Press the <mode> button to proceed to the next setup.

<set 6> Setup beeper (audible alarm) (fig. 24).

This setup disables or enables the audible alarm. When accessed, the message <bEEPEr> appears together with the option currently selected (on/off) for the beeper. Press the <-> button to toggle between the two options. Press the <mode> button to proceed to the next setup.

**WARNING**

Acoustic alarms must only be excluded by expert divers who take full responsibility for this operation.

<set 7> Setup stop in case of uncontrolled ascent (fig. 25).

When activated, the message <set 7> appears together with the ascent rate indicator and the currently selected option in case of uncontrolled ascent. "On" means the feature is enabled, and "off" that it is disabled. This allows disabling of the "stop" in case of uncontrolled ascent (pg. 29), and can be used - for example - when practicing emergency ascents. Press <-> to change function. Press <mode> to access next function. Press the <mode> button to go to the next setting

WARNING

This function should only be used by extremely well trained and expert divers who will be totally liable for disabling the <stop> function after an uncontrolled ascent.

<set 8> Remaining nitrogen memory reset (fig. 26).

To reset this value, keep <-> pressed for more than 3 seconds, until 0000 is displayed. When resetting the nitrogen memory, the <Setup> mode is exited and the next mode is accessed. You can quit the <Setup> mode and access the next mode (<dive>) by pressing <mode>.

WARNING

This function should only be used by trained and expert divers. The diver who uses the residual nitrogen memory reset function cannot use the instrument for repetitive dives. Do not dive after resetting the SURVEYOR if you have conducted any dives within the previous 24 hours.

INTERFACING TO PC

A special interface unit (optional) lets you download data from the dive computer's log memory onto a personal computer running the Windows operating system. The interface software guides you in setting up the connection between SURVEYOR and the PC. In particular, you should only place SURVEYOR inside its special interface unit after the program has instructed you to do so. Inserting the dive computer before that time will cause it to switch into <dive> mode rather than PC mode. When the dive computer switches into PC mode the message "PC" appears on the center left hand side of the display, and a beep is simultaneously sounded.

During data download, you will notice numbers (e.g. 84) appearing on the display; these numbers are control codes.

AFTER THE DIVE

ERROR SIGNALING - UBA SYSTEM

For your safety, the SURVEYOR's display features a graphic bar containing some asterisks. These correspond to specific diving errors. When the dive is over, the asterisks referring to any errors made are activated and are displayed until the next dive.

Main asterisks (referring to particularly serious errors) (fig. 27):

decompression stop violated, uncontrolled ascent.

Secondary asterisks (referring to unsafe practices for sport divers) (fig. 28):

repetitive dive conducted less than two hours after the previous dive, DEC dive, depth greater than 40 m (130'), repetitive dive deeper than the previous dive, repetitive dive with depth greater than 30 m (100'), excessive ascent rate. The log book will tell you which error you have made.

MAINTENANCE AND CARE

SURVEYOR is a particularly rugged instrument, designed to withstand the ordinary wear and tear of diving without problem. However, it should be given the usual attention deserved by precision instruments, including avoiding violent shocks, long exposure to sunlight and contact with sharp objects. For ordinary maintenance, just rinse it with fresh water at the end of every dive. If necessary, wash it with a neutral pH soap. Do not use detergents, alcohol, gasoline or sprayed compounds.

The pushbuttons need no special maintenance: do not lubricate them with oils or sprayed compounds.

If any malfunction occurs, do not use the instrument for diving and have it checked by an authorized MARES service center.

BATTERY REPLACEMENT



WARNING

DO NOT use your SURVEYOR if any malfunction occurs. Failure to follow this warning may greatly increase your risk of decompression sickness.



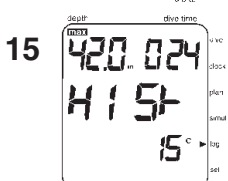
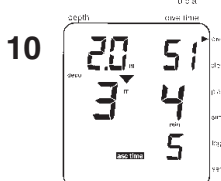
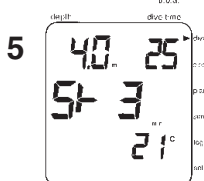
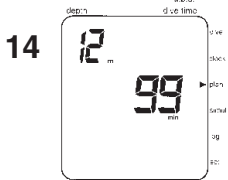
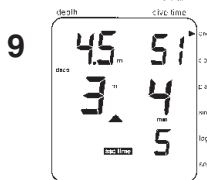
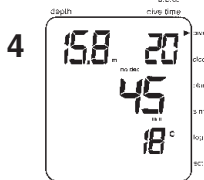
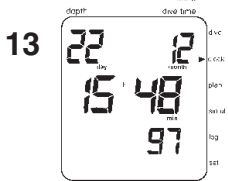
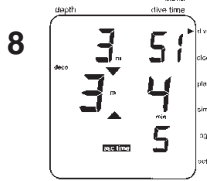
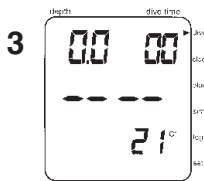
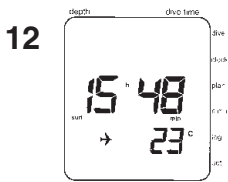
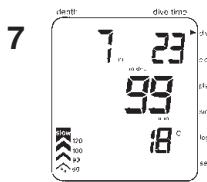
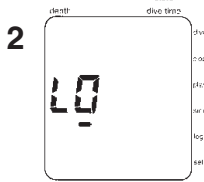
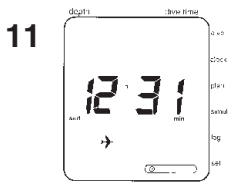
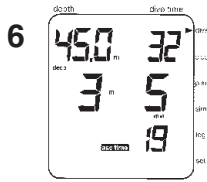
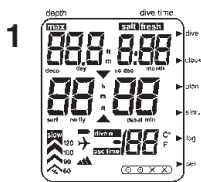
CAUTION

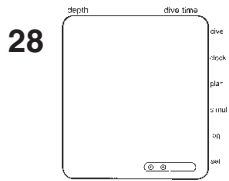
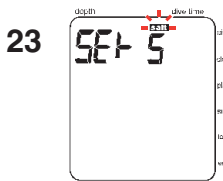
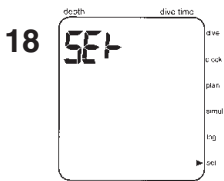
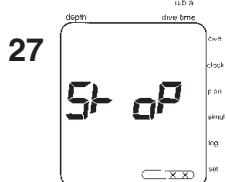
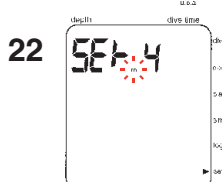
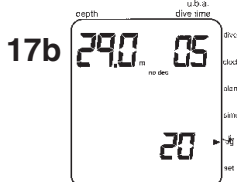
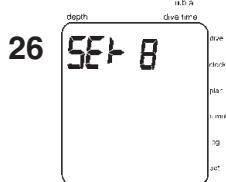
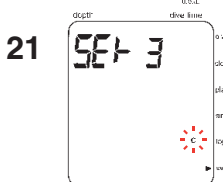
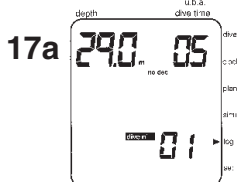
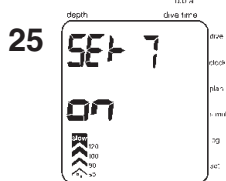
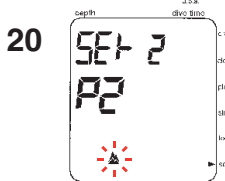
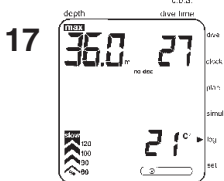
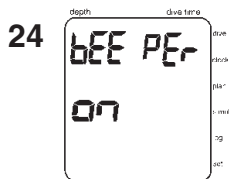
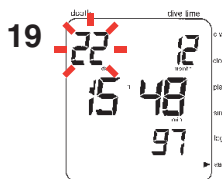
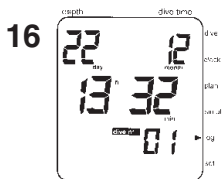
Do not replace the battery during the first 10 minutes after the dive. If the battery is replaced before that time, the data regarding this last dive will be lost. Remember that, after battery replacement, the information regarding residual nitrogen, desaturation time and no-fly time is lost. It is therefore recommended to write down this data before replacing the battery. Do not replace the battery between repetitive dives!

Battery replacement is a very simple operation which does not require the intervention of specialized personnel. Use a coin to unscrew the watertight cover and replace the battery. Be careful to insert it with the correct polarity. The battery compartment is watertight and does not communicate with the core of the instrument. If water leaks inside it, just dry it carefully to get rid of moisture before installing the battery. Before closing the battery cover, make sure that the O-ring is in good condition. Check that the O-ring is perfectly clean and grease it slightly with silicone grease. Do not throw the old batteries away at sea!



SURVEYOR FIGURES





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