

User manual

OSTC 2

Open Source Dive Computer



heinrichs  weikamp

Contact



For any questions relating to your OSTC 2, please contact us via...

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Your OSTC 2

Thank you for choosing a heinrichs weikamp dive computer.

The new OSTC 2 follows the well-proven concept of the 2 series and is also characterized by a strong battery and a big display. In the fourth generation the classical has been extended by many modern features.

The OSTC 2 works totally wireless: Data are transferred with Bluetooth and the recharging works inductive (Qi standard). For recharging the battery just put the dive computer on the delivered charging pad.

Also in the new version of the OSTC 2 the battery is powerful: It offers up to 60 hours in dive mode. While diving the big LCD display is illuminated permanently. So you don't lose sight of things even in darkness.

The OSTC 2 works with the firmware hwOS that offers various possibilities for configuration. For technical diving the whole trimix program with five gases is available. Rebreather divers can use fixed setpoints for the calculation. In addition the OSTC 2 offers an apnea and gauge mode as well as a digital compass.

The development of the dive computers of heinrichs weikamp is permanently going on. Use the firmware updates to keep your OSTC 2 always up to date. Get it for free at

www.heinrichsweikamp.com

You can use the OSTC 2 intuitively. But to become familiar with its functions and to use it in the best way, we recommend to read this manual carefully.



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Common advices

Technical status

This manual corresponds to the technical status of OSTC 2 and its firmware as of December 2015.

OSTC 2, its firmware and the documentation are subject to technical changes without notice.

The OSTC 2 firmware (integrated software) is an ongoing development. To make the best use of OSTC 2, we advise you to use the latest stable firmware available on our website:
www.heinrichsweikamp.com

Standard settings

Unless noted differently, the information in this manual refers to OSTC standard settings.

For important settings, the OSTC 2 shows an asterisk * behind the current setting, if the current setting is different from the default setting.

About this manual

Special markings

Warning

indicates a situation that carries a significant risk or injury

Caution

indicates a situation that carries a risk of damage to the device

Note

indicates additional information for advanced OSTC 2 user

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Functions overview

Your dive computer OSTC 2 assists you with the following functions:

Display

Diving depth and duration according to EN 13319, maximum diving depth, ambient temperature, ambient pressure, bottom time, duration and depth of planned decostops, time to desaturation based on diving depth and duration

Additional informations (e.g. tilt-compensated compass, average depth, stop-watch, ppO₂, CNS)

Planning

Configure and check gas mixtures as well as setpoints and sensor data in CCR mode, calculate a decoplan in the simulator

Record

Time, duration, depth profile, temperature, reference pressure and time of desaturation

Safety advices



Requirements

The most important factor for safe diving is a competent and well trained diver.

This dive computer is intended for experienced divers. That implies:

A diving education including decompression diving is mandatory. Sufficient knowledge about the laws of physics in diving is required. It may harm your health if you rely on a wrong configured dive computer. Do not use this dive computer, if you don't know or understand the settings and displayed information of OSTC 2.

If necessary, you must be able to finish your dive safely without a dive computer.

Don't adjust decompression parameters if you are not aware of their meanings.



Before every dive

Plan your dive.

Set up a dive plan independently from OSTC 2 and take it with you when diving.

Make sure that your OSTC 2 is ready for use and correctly configured.

Always confirm the following questions before diving:

Stable firmware?

Use only stable firmware provided by heinrichs weikamp. It has been tested and allows a proper and reliable performance of OSTC 2.

Configured correctly?

Check the settings of your OSTC 2. If necessary, adjust the settings according to your dive plan and equipment.

Battery full?

Check the battery status using the indicator on the display. To ensure reliable performance throughout your dive, the battery must be sufficiently loaded. We advise to recharge it at the latest when the capacity is on 20%. The integrated lithium ion battery offers 60 hours of diving in eco mode. It takes seven hours to recharge it completely.

Device waterproof?

The OSTC 2 is completely closed and has no openings that could cause leakages. But for safety check the housing for cracks or damages which might allow water to intrude.

Safely attached?

Make sure that your OSTC 2 can be fastened safely using either the bungees or a suitable alternative.

Display messages?

Check the screen of OSTC 2. Do not dive if your dive computer displays a warning. Check the cause of the warning.



While diving

Take a backup system with you

While diving, always carry a backup system to measure duration and depth of your dive independently from OSTC 2.

Take a sufficiently long surface break before diving again.

The OSTC 2 doesn't indicate how long to wait before the next dive. It just shows the the duration time of the interval. Please follow the guidelines you were taught during your dive training.

Take the OSTC 2 with you on every repeat dive – don't lend it to anyone.

A correct calculation of tissue saturation requires that your OSTC 2 is:

- configured correctly
- used on every dive
- only used during your own dives (and not shared with other divers)

Caution

Saturation data is lost when updating the OSTC 2 firmware or in the unlikely event of a failure. In these cases, do not dive any further until tissue saturation has returned to normal level.

Safe use of the OSTC 2

Do not modify the hardware. Modifications to the hardware of OSTC 2 can damage its proper function and the watertightness of its housing.

Only the bungee backplate can be removed. There is no other way to open the housing without damaging the device.

Caution

Surpassing the maximum water depth of 120 meters may cause malfunction or permanent damage of the device.

Environmental conditions

Store the OSTC 2 in a cool, dry place. Permissible temperature range for use and storage: between -5 °C and 40 °C.

Note

Decompression calculations and depth are always based on the actual surface pressure. So if you are diving in **mountain lakes**, no further settings are needed. OSTC 2 automatically adapts to the actual surface pressure.



Before first use



heinrichs weikamp delivers the OSTC 2 ready for use with a high quality rechargeable lithium battery. Anyway we recommend to load the OSTC 2 completely before you use it the first time.

Before diving, you need to adjust some settings as described in this manual. Familiarize yourself with the OSTC 2. It is recommended that you read this manual carefully.

Handling



SET/MENU

ENTER

Operate the OSTC 2 with the two piezo buttons SET/MENU and ENTER on the left and right side of the housing. The force required to push the buttons is independent to ambient pressure. Push the left button to scroll through the menu, use the right button to confirm. You always have to push only one button.

Push the left button SET/MENU to enter the menu. To select a menu entry, push SET/MENU repeatedly until the cursor marks the required menu item. From the item on the bottom, the cursor jumps

back to the top with the next push. To confirm push ENTER.

In some menus you will find the entry **more**. Select this entry to access the next menu page with more menu items.

To change the setting of a menu item, push ENTER repeatedly until the required value is displayed.

Modes of operation

OSTC 2 has three modes of operation and switches automatically between them: Surface mode, dive mode and sleep mode.

Surface mode

In surface mode you can adjust the settings for the next dive, adjust the base settings of the OSTC 2 and read recorded dive data.

To wake up the OSTC 2, push one of the buttons SET/MENU or ENTER.

In surface mode the display shows general information as time, date, temperature, ambient pressure and battery status. After a dive the display also shows tissue saturation and the no fly time.



Dive mode

The OSTC 2 automatically switches into dive mode when it is at 1,6 meter below the surface for five seconds.

Note

For a pre-dive-check of the functions and settings, we recommend to switch on the dive computer manually before every dive.

In dive mode the display shows current diving depth, dive time, maximum depth, the currently selected gas (in CCR diving the setpoints), decompression information and additional information.

It is not possible to switch underwater from dive mode to surface mode. You cannot change the base settings while diving. Note that exceptions apply to the **apnea mode**.

Sleep mode

When the OSTC 2 isn't operated at the surface, it switches into sleep mode after two minutes to save energy.

In sleep mode the display is turned off. Ambient pressure is measured at regular intervals. After diving, decompression calculation continues.



Modes of diving

In the main menu you can choose under **Deco mode**, if you want to use the OSTC 2 for scuba diving, rebreather diving, apnea diving or as depth gauge. The chosen dive mode is shown permanently on the main display (OC, CC, apnea, gauge)

OC (open circuit): Use this dive setting with regular dive equipment (open circuit). This setting is preset on your OSTC 2.

CC (closed circuit): Use this dive setting with a closed circuit rebreather.

The decompression calculation model for open and closed circuit is Bühlmann ZH-L16 without or Bühlmann ZH-L16+GF with gradient factors (read more on page 58). You can switch from ZH-L16 to ZH-L16+GF under **Decotype**. With **Deco parameters** you can adjust the saturation factors and gradient factors.

Apnea: Use this dive setting for apnea diving or snorkeling.

In apnea mode the OSTC 2 serves as a depth gauge. Additionally displayed are ambient temperature and elapsed time

since starting the dive. Decompression and saturation calculation are switched off. In apnea mode the OSTC 2 remains in dive mode even when diving at low depths. You can switch into surface mode at any time by pushing SET/MENU. Push ENTER to confirm the **QUIT?** question.

The OSTC 2 switches automatically from apnea mode into surface mode after a 15 minutes delay and above a depth of 1 meter.

Gauge: With this dive setting, OSTC 2 serves as a depth gauge. Decompression and saturation calculation are switched off.

Compass calibration



OSTC 2 has a tilt-compensated electronic compass. Like all other electronic compasses it must be calibrated before use. The calibration compensates aberration that can be caused by the battery. It is recommended to compensate the compass if your dive computer shows big deviations in the heading reading.

Start the calibration with **Settings > More > Compass Calibration**.

For an exact heading, the calibration of the compass is absolutely necessary.

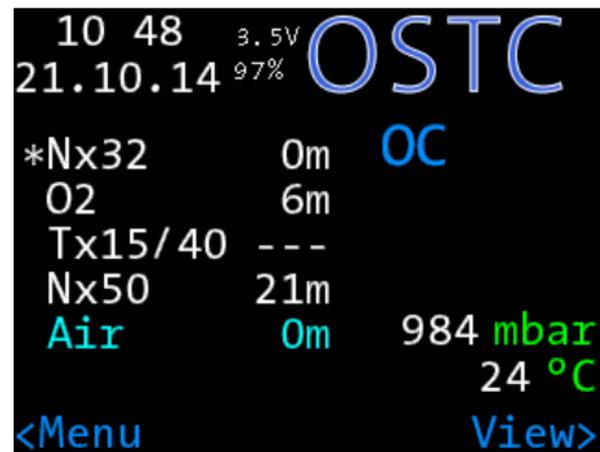
After starting the calibration menu, move the dive computer slowly around each axis. Do this a number of times within 60 seconds. After this while the calibration ends automatically. During the calibration routine the OSTC 2 shows X-, Y- and Z-axis.

Note

The order of the axis rotation is not important. Keep the dive computer away from any metallic object during the calibration process (at least 50 centimeters).

Surface mode

Display in surface mode



Permanent items

In the surface mode the OSTC 2 shows the following items permanently:

- ambient pressure, clock, date
- temperature
- battery level
- dive mode: Open circuit (OC), Closed Circuit (CC), Gauge or Apnea
- first gas for diving
- after diving: No fly time, desaturation and surface interval. Warnings for missed deco and too high CNS

Selectable items

In the middle part of the display you can see extra information in the custom view. You can switch them with the right button.

- personal text (up to 60 characters)
- compass
- gaslist (OC) or setpoints, diluent and bailout (CC)
- current settings: deco type, gradient or saturation factors, time of future TTS, last deco, salinity

- desaturation diagram (After the dive, you can see the approximate tissue saturation in the desaturation diagram. The 16 types of tissue according to the Bühlman model are arranged horizontally. The fastest tissue is on top, the slowest is below. When the line is longer, the tissue is more saturated.)

Menu functions

In surface mode you can adjust the settings to prepare the next dive, adjust the base settings of OSTC 2 and review your dives in the logbook.

To open the menu in surface mode push SET/MENU. With the left button you can scroll through the menu. To select an item push ENTER.

Logbook: Recorded data from recent dives

OC Gas setup: Set up your gas mix for scuba diving or your bailout gases for CCR diving. You can configure up to five gases (air, helium, oxygen up to 100 percent)

CCR Setup: Settings for rebreather diving (CCR). Configure setpoints and diluent gases

Simulator: Calculate deco and simulate the dive mode

Deco mode: Settings for deco calculation and dive modes (open circuit, closed circuit, gauge or apnea) of the OSTC 2

Settings: Settings for time, language, display brightness, compass

Exit: Exit the main menu

These functions are described in the following chapters of this manual.



Logbook

The OSTC 2 records data during every dive. It can be retrieved from the logbook. The OSTC 2 stores data of up to 255 dives with a total duration of 500 to 1000 hours. The exact number of records depends on the overall size of data. If the memory is full, existing records will be overwritten, starting with the oldest.



Note

If you want to secure your recorded dive data, you can connect the OSTC 2 via Bluetooth to a personal computer and readout the data (page 74).

Logbook entries are sorted in chronological order, starting with the most recent entry. Every entry shows position index, date, maximal depth and dive time.

To see details of the selected dive, push ENTER. The dive profile and details page show up. The details page also shows position index, date, maximum diving depth, duration, minimum and maximum temperature, ambient pressure above water, desaturation time, the used gases and additional information of the dive. Switch from depth diagram to details page with the left button.

Note

Via **Settings** > **Display Settings** > **Logbook Offset** you can put in your own number of dives. It will be shown instead of the numbers of dives which are stored in the dive computer (page 57).

OC gas setup

```
OC Gas List
→ Gas1: *Nx32      0m
  Gas2: O2          6m
  Gas3: Tx15/40    ---
  Gas4: Nx50       21m
  Gas5: Air        0m
  Exit
<Next      #2332 v1.60      Enter>
```

Use **OC gas setup** to configure presets for up to five gases for scuba diving as well as bailout gases for rebreather diving. You can switch between these presets when you change your gases while diving.

The presets are marked like this: **Air** for compressed air (21% oxygen) and **Nx** for Nitrox (e.g. a mix of Nitrox 31 is shown as Nx31). 100% oxygen is shown as **O2**. If the oxygen value is lower than 21% and no helium is added, the warning **Err** appears. This gas mix is unusual.

Choose a gas in the menu **OC gas setup** and push ENTER to see details or to change values.

Type

Each mix can be set to the following type:

First: The first gas which is used when the dive starts. Only one gas can be marked as first. If there is only one gas active, it will be automatically first gas. Additionally the first gas is marked with a *. Each gas can be marked as first gas.

Travel: Gases used for descending or as bottom gas

Deco: Gases used for decompression

Disabled: Gas is disabled and is not taken into account for the decompression prognosis

Disabled gases are shown in blue letters.

Note

The first gas is used when starting the dive. All gases (even disabled ones) can be chosen underwater.

The OSTC 2 always computes the tissue load and the decompression scheme using the selected gas. It takes all deco gases in account for the decompression phase.

The change of deco gases with configured change depth will be advised underwater.



Setup mix

For every gas you can set the percentage of oxygen and helium.

Select **O2+** or **O2-** to change the percentage of oxygen or **He+** or **He-** to change the percentage of helium. Repeatedly push ENTER until the required value is displayed. For reference, the OSTC 2 displays the calculated maximum operating depth (**MOD**) and equivalent narcotic depth (**END**) of your mix.

Change depth

To set the operation depth for your deco gases, select **Depth+** or **Depth-**. The chosen operation depth will be shown in the first line of the display. It will turn red if the change depth is larger than the maximum operation depth (**MOD**). Use **Reset to MOD** to reset the value to the MOD. The change depth can only be configured for deco gases, not for travel gases.

Examples

Dive with only **one gas**: Configure one gas, for example gas 1 as first. Set up the mix using the submenu “setup mix”. Disable the other gases (Type: disabled).

Dive with **one additional decompression gas**: Set up the first gas. Enable one other gas as deco and setup your gas mix. Disable the remaining gases.

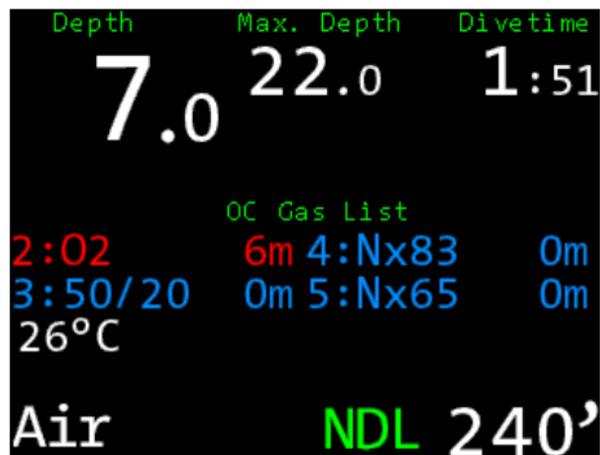
Dive with **two decompression gases**: Set up another gas to deco and configure the second deco mix.

Dive with **two decompression gases** and **one travel/bottom gas**: Additionally to the first gas and the two decompression gases, configure a fourth gas as travel. Disable the unused gas.

Note

In surface mode the actual gas list is shown via the custom view (right button), also in dive mode. You can easily see which gas fits to the current depth (dynamic gaslist). Gases with a too high or too low ppO₂ are marked red.

To change the gas while diving open the menu (left button SET/MENU) and go to **gaslist**.



CCR setup

In **CCR setup** you can configure all settings you need for diving with a closed circuit rebreather. For deco calculation you can use fixed setpoints.

Diluent setup

In the **diluent setup** the five diluents gases are named as gas 6 to gas 10. The starting diluent (**first**) is marked with an asterisk *.

Type (Setup diluent type)

Every diluent can be one of the following type:

First: The starting diluent which is used in the loop when starting the dive. Only one diluent can be marked as **first**. If you use only one diluent, it is marked automatically as **first**

Normal: Additional diluents which can be chosen underwater

Disabled: The diluents is disabled and is not taken into account for decompression calculation. But it can be chosen underwater too

Disabled diluents are shown dimmed (in blue). In dive mode you can make a quick gas change (better diluent). Close to the configured change depth the OSTC 2 shows the better gas.

Setup of the diluents is the same as for OC gas setup (page 35).

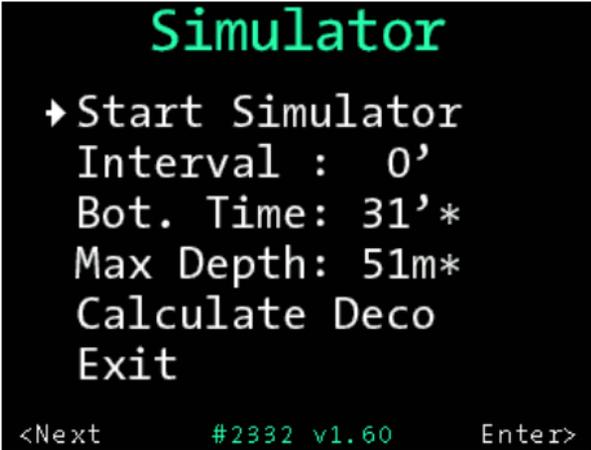
Fixed setpoints

You can configure up to 5 fixed setpoints for the decompression calculation. Each setpoint can be set between 0,5 bar and 1,6 bar, in 0,1 bar increments. You can also configure the change depth for each setpoint. But in dive mode OSTC 2 will not indicate the change depth. Decompression calculation uses always the actual setpoint.

Calculations with fixed setpoints always start with SP1. It is marked additionally with an asterisk *.

Simulator

Use the simulator to simulate the dive mode of the OSTC 2 or to calculate the decoplan for your next dive. Using the simulator you can get familiar with your dive computer even before the first dive.

A screenshot of the simulator menu on a black background. The title 'Simulator' is at the top in green. Below it is a list of options: 'Start Simulator', 'Interval : 0'', 'Bot. Time: 31'*', 'Max Depth: 51m*', 'Calculate Deco', and 'Exit'. At the bottom, there are navigation instructions: '<Next' in green, '#2332 v1.60' in green, and 'Enter>' in white.

```
Simulator
→ Start Simulator
Interval : 0'
Bot. Time: 31'*
Max Depth: 51m*
Calculate Deco
Exit
<Next #2332 v1.60 Enter>
```

Calculate decoplan

As a planning tool, the OSTC 2 can calculate decompression stops in advance to planned dive. Hereby all settings of the OSTC 2 and the tissue load of previous real dives are taken into account.

If you are planning a repetitive dive, set up the surface interval in minutes.

First set the values for **bottom time** and **maximum depth**. Select the menu entry and push ENTER until the required value is displayed.

To start calculation, select **calculate deco** and push ENTER.

Wait while the calculation is going on. Depending on the bottom time, the calculation can take a moment.

When the calculation is finished, the display shows the decoplan with the planned decostops. Depth is displayed in meters, duration in minutes.

The duration is additionally represented graphically. If there are more than eight stops, more stops can be shown with the ENTER button.

Interval: Increase interval in 10 minutes steps up to 240 minutes

Bottom time: Can be increased in steps of 2 minutes up to a maximum of 59 minutes

Maximum depth: Can be increased in steps of 3 meters up to a maximum of 120 meters



Start simulator

Simulated dives can be maximum 90 minutes long and are not stored in your logbook. Simulated dives don't affect any settings of the OSTC 2. Of course there will be no influence on the tissue loads from real dives.

Select the **maximum depth** and select **start simulator** to start the simulation of the dive mode.

Changedivingdepth: In the simulator you can also change the depth and divetime while the dive computer is in dive mode. Push repeatedly SET/MENU to get into the

depth menu. Select the desired value with SET/MENU and confirm with ENTER.

Sim: -1m: descend 1 meter

Sim: + 1m: ascend 1 meter

Sim: +5': longer the divetime for 5 minutes

Quit?: Quit dive mode simulation.
The simulation will stop after a short delay.

All other functions are similar to the dive mode and are described there (p. 61.).

Note

The OSTC 2 stays 90 minutes in the simulation mode until it switches to sleep mode. Stop the dive mode manually to save energy.



Deco mode

In **deco mode** you can configure the dive mode of your OSTC 2 (OC, CC, gauge or apnea) and select important settings for the decompression calculation.

Dive mode: There are several dive modes for open circuit (OC), closed circuit rebreather diving (CCR), gauge mode or apnea diving.

```
Deco Mode
→ Dive Mode:OC
Decotype:ZH-L16+GF
ppO2 Settings
Safety Stop:Yes
Future TTS: 5'*
Deco Parameters
Exit
<Next #2332 v1.60 Enter>
```

Decotype: Toggles between decompression calculation using the Bühlmann ZH-L16 algorithm or the Bühlmann ZH-L16+Gf with gradient factors.

The classical algorithm Bühlmann **ZH-L16** calculates with maximum values (M-values) which should not be exceeded. As safety margin to the M-values (100 percent) this decomodel uses saturation factors. The OSTC 2 is preset to a value for saturation of 110 percent and a value for desaturation of 90 percent. Thereby

there is a safety margin of 10 percent to the M-value.

The more modern algorithm Bühlmann **ZH-L16+GF** with gradient factors calculates with deeper decostops and a much bigger safety margin to the M-value. So you have less micro bubbles in your tissues. The **GF low** controls the allowed saturation for the deepest decostop, the **GF high** does it with the highest decostop. OSTC 2 is preset to a GF low of 30 percent and a GF high of 85 percent (GF 30/85). With a GF low of 30 percent, you start your decompression

with a safety margin of 70 percent to the M-value. The GF high comes closer with 85 percent, until you can finish your dive. We suggest using the algorithm ZH-L16+GF with gradient factors.

ppO2 settings: Settings for maximum and minimum value of oxygen partial pressure (ppO2). You can set up the **ppO2 min** between 0,16 and 0,21 bar, the **ppO2 max** between 1,20 and 1,60 bar.

Safety stop: The safety stop can be switched on or off. After a dive within the no deco limit (NDL) the OSTC 2 shows

a safety stop of 3 minutes in 5 meter. It is displayed as a countdown split to the second.

Future TTS: The future TTS makes a deco forecast. You can set this value between 0 (disabled) or 10 minutes. It shows the total time to surface (TTS) in xx minutes if you stay on the actual depth. For example: “Future TTS @5” shows your TTS in five minutes.

Deco parameters

The menu **deco parameters** contains settings for gradient factors (when using decompression calculation ZH-L16+GF) as well as settings for the saturation and desaturation factors (when using decompression calculation ZH-L16).

GF low: Lower value of the GF-pair in percent (10 to 100%, default 30%)

GF high: Upper value of the GF-pair in percent (70 to 110%, default: 85%)

Saturation: Multiplier for saturation process in the standard Bühlmann model without gradient factors (100 to 140%, default 110%)

Desaturation: Multiplier for desaturation process (60 to 100%, default 90%)

Last deco: Setting for depth of last decompression stop. Choose here if the OSTC 2 shall calculate its last stop at 3, 4, 5 or 6 meter (default: 3m). If you have heavy waves, a deeper last decostop can be better.

Alternative GF: Settings for an alternative GF-pair which can be switched while diving (toggle GF).

aGF selectable: *Yes:* the GF-pair can be toggled underwater. *No:* the GF-pair cannot be toggled.

aGF low: alternative value for the GF low in percent (60 to 100%, default 60%)

aGF high: alternative value for the GF high in percent (80 to 120%, default 85%)

Warning

Only change values for decompression calculation if you are aware of their meanings. The presettings of the deco parameters are well established and proven. Changes have direct influence on the decompression calculation and modify the conservatism of the Bühlmann model. Combinations for example a last stop at 6 meters and a low GF high (70%) need a matching diveplan and deco gases.

Settings

In this menu you can set up basic configurations, calibrate your compass and reset settings.

Information

Shows some device specific information like serial number, number of total dives and the actual used firmware.

```
Settings
Information
Set Time & Date
→ Display Settings
Language: English
Reset Menu
More...
Exit
<Next #2332 v1.60 Enter>
```

Set time and date

Menu to set time and date. With **set time** you can set the time, with **set date** you can set the date of the internal clock of the OSTC 2. You can change the values for time and date with the ENTER button.

Choose a date format:

YYMMDD: year, month, day
DDMMYY: day, month, year
MMDDYY: month, day, year

Note

You can also set up time and date with your personal computer. With a computer you can also personalise the text on the start screen.

Display settings

Brightness: The OSTC 2 uses a fixed brightness in three different settings. The three settings **Eco**, **Medium** and **High** set different brightness levels. In most cases the default **Eco** is recommended. If the OSTC 2 is used often in low depths and bright sunlight, a higher setting is recommended.

Colour scheme: Choose the colour of display in dive mode. You can choose the schemes red, green, blue and standard.

Rotate screen: The display can be also shown upside down.

MOD warning: When this menu is activated, the diving depth turns red when it is under MOD.

Variable speed: The warning for the rate of ascent is adjusting to the depth. It varies from 7 to 20 meter per minute.

Speed graph: Shows the ascent rate in a graph, otherwise only in numbers.

Language

The OSTC 2 can be set up in four languages: English, German, French and Italian. Choose your language with the ENTER button

More settings

Compass calibration: In this menu you can calibrate your digital compass. How to do exactly, look for page 26.

Logbook offset: With the **logbook offset** you can adjust the dive number shown in the logbook to match your actual number of dives. In the detail view of the

logbook the last dive isn't shown as dive number 1 but as number 349, if you have made 349 dives in total yet. This value will be increased after every dive automatically (Not for simulated dives).

Units: Display of depth and temperature in metric (m/°C) or imperial (ft/°F) units.

Sampling rate: the logbook sampling rate is adjustable from 2 to 10 seconds.

Salinity: This setting allows you to adjust salinity of water, used for calculating the actual and maximum depth. The default salinity is 0%. To increase this value, select the **salinity** menu and push ENTER



repeatedly until the required value is displayed. The value range is from 0% to 4%.

Note

Decompression information is based on absolute pressure and not on relative pressure. Therefore **salinity** does not effect this calculation.

Bluetooth mode: Starting the Bluetooth connection.

Buttons (right/left): For every piezo button you can adjust its sensitivity and how strong you have to push the

button. The higher the value, the harder you have to push. Push ENTER until the required value is displayed (from 20% to 100%, default: 40%)

Reset menu

In the **reset menu** you can put the settings of the OSTC 2 to its default values and start the dive computer from new. You can cancel your decompression information and clear the logbook.

Reboot: During a firmware update it may be required to reboot the OSTC 2. Choose **reboot** and push ENTER. You`ll be prompted to confirm the action. A reboot also deletes the current decompression data.

Reset deco: To delete the current decompression data choose reset decodata and push ENTER. You`ll be prompted to confirm the action. For the next dive the OSTC 2 starts decompression calculation from new, without any data of former tissue load.

Caution

Use **reboot** and **reset decodata** only, if you don`t plan a repetitive dive within the next 48 hours.



Reset all: Resets all settings (not time and date) to factory defaults. You'll be prompted to confirm the action. Dives in the logbook and the dive counter will not be reset.

Reset logbook: Deletes all data in the logbook. The counter starts again with zero. If you want your personal number of dives to be shown in the logbook, you have to set up (again) the number via logbook offset.

Caution

Reset all really resets **all** settings in the OSTC 2 to their factory defaults, it also occurs to the compass calibration and the personal text. Once confirmed this can't be undone! Saturation and no fly time will remain.

Dive mode

Displays in dive mode

Permanently shown information

In dive mode the OSTC 2 shows the following items permanently on the display:

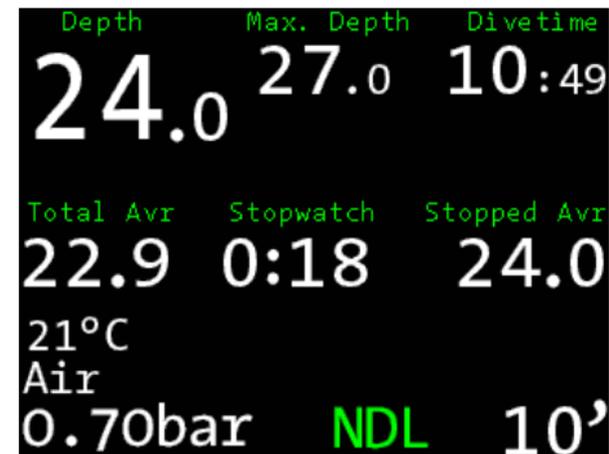
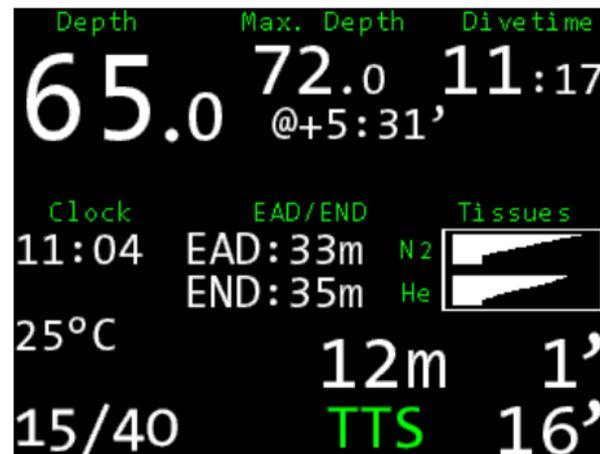
- depth in meter or feet (also the maximum depth)
- divetime in minutes and seconds
- NDL (No Deco Limit) or TTS (Time To Surface including all decostops) in minutes.
- currently used gas (in CCR mode the current setpoint)
- water temperature in °C or °F
- Future TTS (@+xx): shows your deco in xx minutes at the same depth. Future TTS is only displayed, when the OSTC 2 is in deco and no longer in the NDL (NO Deco Limit).

Selectable information

Selectable items can be shown in the center of the display. You can toggle through these with the right button.

- Stopwatch with average depth
- Decoplan: Display of all decompression stops. If there are no decostops necessary, there will be displayed “---“. If there are decostops, the next decostop is permanently shown on the main display.

- time, EAD/END and graphical indication of tissue saturation
- current gradient factors or saturation factors and the alternative GF-pair
- compass
- ceiling (the ceiling is corresponding to the GF high, without consideration of GF low)
- no information

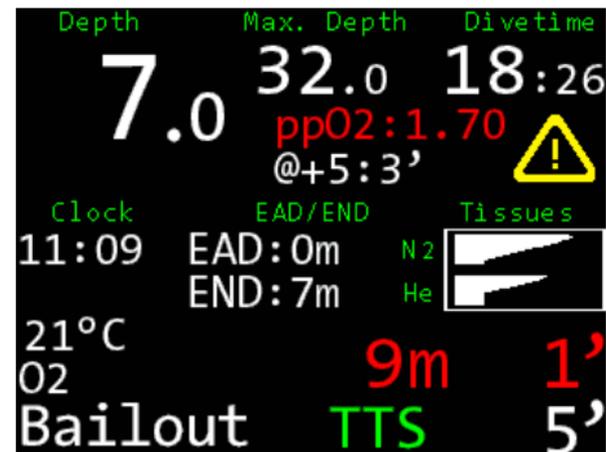
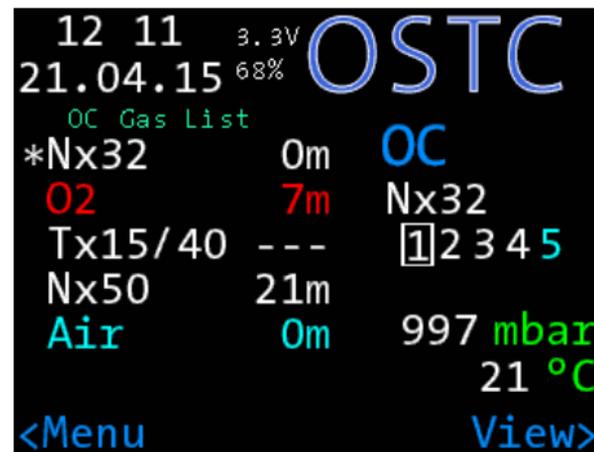


Warnings

Warnings appear permanently on the display. Up to two warnings are shown simultaneously. If there are more than two warnings, the warning display toggles every two seconds. If there are critical warnings, a yellow warning sign is displayed additionally. Warnings are shown for the following items:

- low battery level
- ppO2 too high or too low
- CNS warning (danger of oxygen poisoning)

- too high gradient factors and missed decocstop (the missed decocstop is marked red)
- too fast ascent
- when the decompression calculation is based on the alternative GF-pair



Menu functions

In dive mode (OC) you can select your preset gases (**gaslist**) and reset the calculation of your average depth (**reset avr./stopwatch**). During CCR diving you can choose setpoints and bailout gases. You can also use the alternative GF-pair for decompression calculation.

To open the menu, push the left button SET/MENU. On the display appears **Menu?**. Push ENTER to confirm. The pre-menu **Menu?** avoids that you push the button by accident. Confirm within

five seconds or the OSTC 2 returns to normal display.

Note

In the dive mode **apnea** there are no menu functions available.

Gaslist

In the menu **gaslist** you can make your gas changes and select the current gas. You can choose the gas mixes that you have prepared in **gas setup** in the surface mode. The current gas always appears on the main display.

If you have forgotten to configure a gas on the surface you can catch this up while diving. Go to **gaslist** and then to **more**. This new gas (gas 6) will be used as current gas in the decompression calculation.

Note

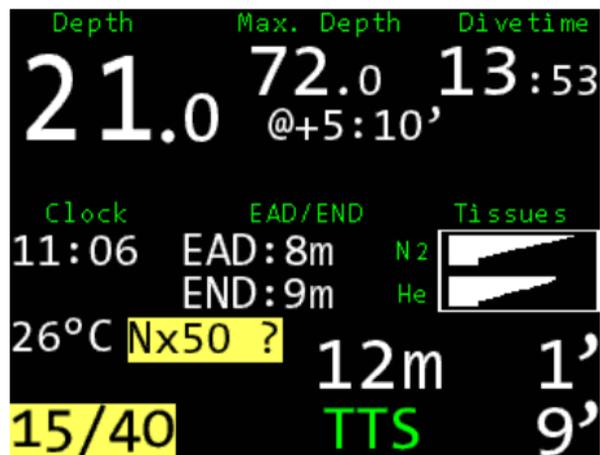
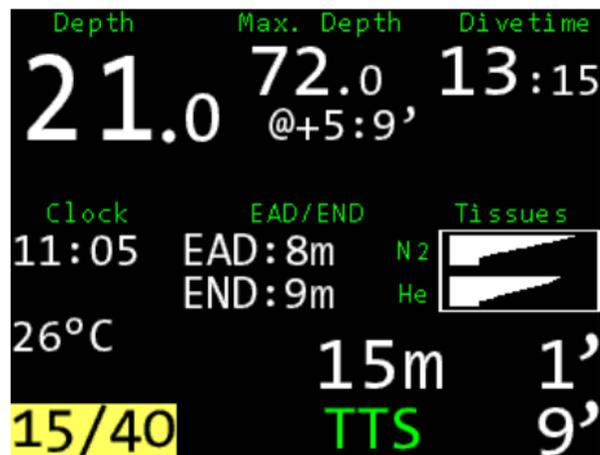
Gases in red have too high or low ppO₂ to be used in the current depth (they can be selected by the user anyway).

Gases in blue are disabled (they can be selected by the user anyway, but they haven't been part of the decompression calculation).

A gas turns yellow, when you get close to the configured change depth of the gas. Then push SET/MENU and the dive



computer proposes you the better gas (e.g. Nx50?). So you see at once which gas you shall use. Just confirm with ENTER.



Setpoint change

While diving in CCR mode you can choose between the five setpoints that have been configured in surface mode. Choose **setpoint** in the menu (SET/MENU) and conform the selected value with ENTER.

Bailout

If you have to switch from closed circuit to open circuit diving, you can select your bailout gases in the menu (SET/MENU). You can choose between the five gases that were configured in **OC gas setup** in surface mode. The mix of the current gas is shown on the main display.

Reset Avr (stopwatch)

In dive mode you can select the average depth and stopwatch with the right button. **Total avr** indicates the average depth since the start of the dive. **Stopped avr** indicates the average depth for a period of time that you choose.

The stopwatch starts with the beginning of the dive. While diving you can restart it in the **menu** function **reset avr**. The stopwatch starts from new and shows the average depth since the start of the stopwatch (stopped avr).

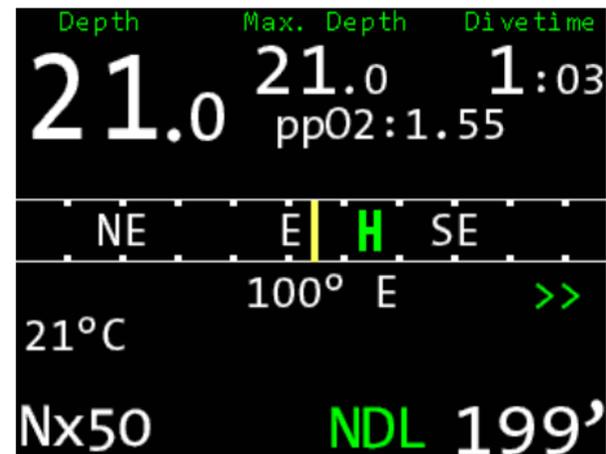


Bearing

To make a bearing with the compass at first go to the compass view with the right button. Then push the left button twice until **bearing** is displayed. With the right button you confirm the compass course you want to use. It will be marked green. The opposite heading will be marked red.

You can also make a bearing in the surface mode, just before diving. Put the custom view to compass and push the left button. It appears **Bearing**. Push the button another time to store the actual

bearing. But it only is stored as long as the dive computer is on.



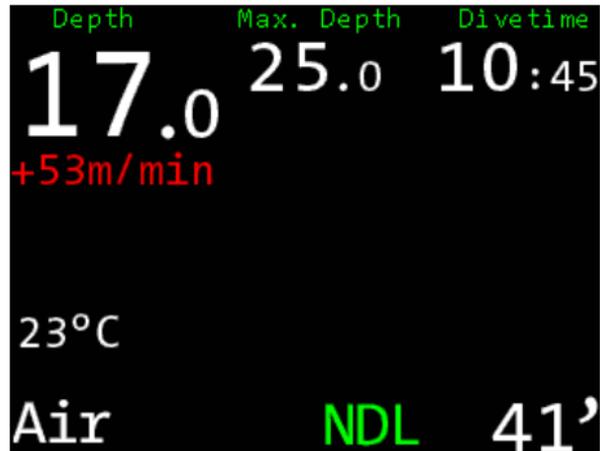
Maintenance



Rate of ascent

The rate of ascent is displayed when it is higher than six meter per minute (e.g. +7/min). When the rate of ascent is higher than 10 m/min it is displayed in red as warning. The rate of descent is displayed when it is higher than 6 m/min (e.g. -15m/min). Settings for the display of the rate of ascent can be done in display settings (page 56).

After diving the OSTC 2 shows a countdown of five minutes. When you descend again within this period, the whole time of diving will be saved in the logbook as only one dive.



Housing

Wash your OSTC 2 after every dive with fresh water, especially after diving in seawater.

If the housing is very dirty, put your OSTC 2 over night in fresh water. Don't use any cleaning agents or solvents.



Bungee

The OSTC 2 is delivered with bungees. The bungee wristband can be set to your arm diameter individually. To tighten the bungee, make a reef-knot above the circular cavity (tighten knot very strong). Cut remaining bungee after about one centimeter and use a lighter to melt the small remains of nylon.

The bungees are hand washable and can be replaced if necessary.

Charging the battery

The OSTC 2 has a high-capacity rechargeable battery. In eco mode it offers up to 60 hours of divetime. It takes up to seven hours to recharge it completely.

Recharging the OSTC 2 works wireless via inductive charging (Qi standard). Connect the delivered charging pad to the power supply and put your dive computer with the backside on it. Start the OSTC 2 and watch the battery indicator. When the battery sign is permanently marked yellow the dive computer is recharging optimally.

It might be possible that you have to move the dive computer a little bit to find the right charging position.

The wireless transfer of the charging power leads to a warming of the dive computer. This is normal and harmless. If the temperature gets too high the charging stops automatically.

Note

When the battery is totally empty, the desaturation time and no fly time are still remaining. But check time and date after restarting the dive computer.

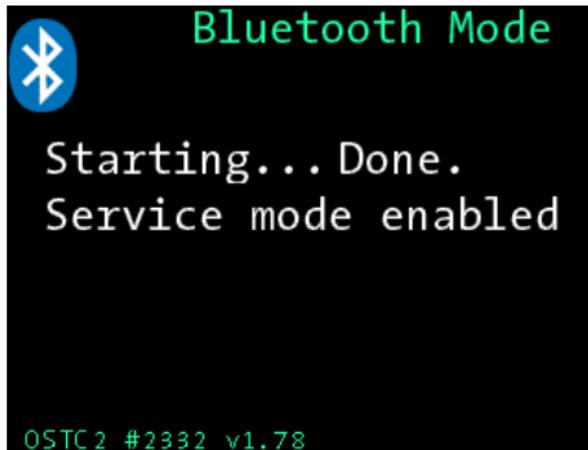
Accessories

Accessories like bungees, bungee wristbands, backplates, display protective sheets or Bluetooth adapter are available in the online shop of heinrichs weikamp (shop.heinrichsweikamp.com) or at your dealer.



Readout the dive computer

You can connect your OSTC 2 easily via Bluetooth to your smartphone, personal computer or notebook. So you can upload software and download your logbook. All you need is a Bluetooth capable computer. The OSTC 2 works with Bluetooth “Smart Ready”, depending on the receiver it activates Bluetooth 2.0 or Bluetooth 4.0.



Bluetooth connection

Activate the Bluetooth interface in the main menu with **start bluetooth**. After a short while the Bluetooth is active. After activating you have two minutes to connect the OSTC 2 with your computer. When there is no connection, the Bluetooth menu stops automatically. You can also stop it with the right button ENTER.

When connecting your OSTC 2 to a computer the first time, you need to do some settings. The Bluetooth pin you need is 0000 (four Zeros). This process depends on the operation software of

the computer. In Windows: Click the Bluetooth symbol in the system tray and select the option “add device”.

When the connecting is done, the PC creates a virtual COM-port. Via this the PC software communicates with the OSTC 2. You don't need any special drivers.

Software for the OSTC 2

Data transfer with the OSTC 2 is supported by many software applications for all common platforms. The applications provide easy-to-operate functions for transferring recorded dive data and for configuring and remotely controlling your OSTC 2.

On our website you'll find a list of all OSTC 2 supporting programs and applications:

www.heinrichsweikamp.com

Note

OSTC 2 is a open source dive computer and works with the firmware hwOS. For programmers, we have the OSTC 2 interface description available.

Updating the firmware

The firmware hwOS is in a constant process of improvement. To make the best of your OSTC 2, use the latest stable firmware that is available at the heinrichs weikamp website
www.heinrichsweikamp.com

⚠ Warning

Only install firmware for the OSTC 2 from trusted sources.

Note

We recommend you to upgrade the firmware regularly - at least ones a year. Updates for the OSTC 2 are free of charge, of course. On the homepage you can download the **OSTC companion**. With this software you can easily upload the newest firmware.

You can also upload the firmware with the logbook software **Subsurface** (free of charge).

Technical data

Display	High resolution TFT monitor with 2,4“ (6,1 cm), field of view: 170°, Resolution: 320 x 240 pixel, 65 000 colours, status display: 2 LEDs
Connections	Bluetooth Smart Ready (2.0 and 4.0)
Sensor	Combined depth/temperature sensor 3D compass (fully tilt-compensated)
Power supply	Lithium battery Up to 60 hours of operation, 2 years standby
Operating elements	Two piezo buttons
Housing	ABS-housing, scratch resistant borosilicate-glass panel
Dimensions	80 mm x 68 mm x 34 mm
Weight	260 gr.
Max. Depth	120 Meter





Disposal

According to the European WEEE directive, electrical and electronic devices must not be disposed with consumer waste. It's components must be recycled or disposed apart from each other. Otherwise contaminative and hazardous substances can pollute our environment. You as the consumer are committed by law to dispose electrical and electronic devices to the producer, the dealer or public collecting points at the end of the lifetime for free. Particulars are regulated in national right.





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