

Owner's manual

OSTC3

Open Source Tauch Computer



heinrichs  weikamp



Thank you for choosing a heinrichs weikamp dive computer.

Using open source software for full transparency, combined with state-of-the-art hardware and a robust housing made of aluminum, OSTC3 is your instrument of choice for technical diving. Both at scuba diving and rebreather diving the OSTC3 assists you with extensive functions and options. For trimix diving you can use up to five gases, in the rebreather mode you can choose between fixed setpoints or the monitoring with an external sensor.

You can fit the deco models to your own needs. They also use the calculation with gradient factors, which has become the standard for technical diving. In addition the OSTC3 offers an apnea and gauge mode as well as a digital compass.

The development of the dive computer of heinrichs weikamp is permanently going on. Use the firmware updates to keep your OSTC3 always up to date. Get it for free at:

www.heinrichsweikamp.com

Your OSTC3



We hope you enjoy diving with your new OSTC3 dive computer!

You can use the OSTC3 intuitively. But to become familiar with its functions and to use it in the best way, we recommend you to read this manual carefully.

Contact

For any questions relating to your OSTC3, please contact us via...

- internet forum:
forum.heinrichsweikamp.com
- E-Mail:
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Common advices

Technical status

This manual corresponds to the technical status of OSTC3 and its firmware as of November 2014.

OSTC3, its firmware and the documentation are subject to technical changes without notice.

The OSTC3 firmware (integrated software) is an ongoing development. To make the best use of OSTC3, we advise you to use the latest stable firmware available on the heinrichs weikamp website: www.heinrichsweikamp.com

How to update the firmware, please read page 88.

Standard settings

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

For important settings, the OSTC3 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 OSTC3 user.

Terms of use

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Functions overview

Your dive computer OSTC3 assists you with the following functions:

Display

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

Oxygen surveillance in CCR diving (using the optional hw HUD or the ppO2 monitor)

Additional informations (e.g. tilt-compensated compass, average depth, stopwatch, 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

```
▶ 1 28.12 25.0m 2'  
2 28.12 102.0m 14'  
3 28.12 44.0m 21'  
4 11.01 49.8m 6'  
5 08.02 3.6m 9'
```

```
Next Page  
Exit Logbook
```

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:

It is necessary that your diving education also included decompression diving. 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 OSTC3. 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 OSTC3 and take it with you when diving.

Make sure that your OSTC3 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 OSTC3.

Configured correctly?

Check the settings of your OSTC3. If necessary, adjust the settings according to your dive plan and equipment.

Battery full?

Check the battery status using the battery indicator on the display. To ensure reliable performance throughout your dive, the battery must be sufficiently high. A new lithium primary cell (SAFT LS14500) allows up to 50 hours of diving, a quality alkaline AA battery (e.g. Duracell Ultra Power) about 20 hours, a lithium 1,5V AA battery (e.g. Energizer E2) about 30 hours.

Device waterproof?

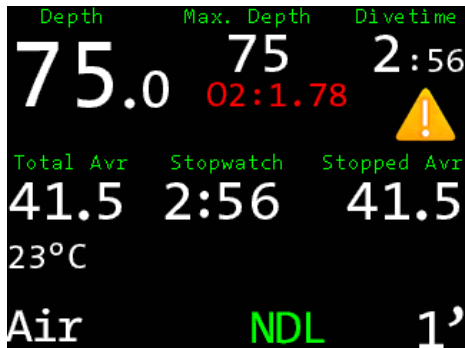
Ensure that the battery compartment and the USB interface are properly closed and watertight. Check the housing for cracks or damages which might allow water to intrude.

Safely attached?

Make sure that your OSTC3 can be fastened safely using either the bungees or a suitable alternative.

Display messages?

Check the signals of OSTC3. 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 OSTC3.

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

A correct calculation of tissue saturation requires that your OSTC3 is:

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



Take a sufficiently long surface break before diving again.

The OSTC3 doesn't indicate how long to wait before the next dive. Please follow the guidelines you were taught during your dive training.

Caution

Saturation data is lost when updating the OSTC3 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 OSTC3

Do not modify the hardware. Modifications to the hardware of OSTC3 can damage its proper function and can damage the watertightness of its housing.

Only the bungee backplate and the caps of the battery compartment and the USB interface can be removed. There is no other way to open the housing without damaging the device.

Only open the battery compartment when the battery has to be replaced.

Keep your OSTC3 out of children's reach. Small parts such as the USB cap may represent a choking hazard.

Caution

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



Environmental conditions

Store the OSTC3 in a cool, dry place.

Permissible temperature range for use and storage: between -5 °C and 40 °C.

Make sure that the used battery is suitable for the ambient temperature to be expected in your dives. For cold water diving (under 10°C) we recommend the use of a Lithium battery.

Note

Decompression calculations and depth display are always based on the actual surface pressure. So if you are diving in **mountain lakes**, no further settings are needed. OSTC3 automatically adapts to the actual surface pressure.

Before first use



heinrichs weikamp delivers the OSTC3 ready for use with a high quality lithium battery (Saft LS14500). If the OSTC3 has not been used for a long time (more than one year), it may be necessary to replace the battery first.

Before diving, you need to adjust some settings as described in this manual. Familiarize yourself with the OSTC3. It is recommended that you read this manual carefully.



Handling

Operate the OSTC3 with the two 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. You can push and hold the button in order to change a data. You always have to push only one button.



SET/MENU

ENTER

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. You can also hold-down the ENTER button in order to change a value.

Wet connector system (optional):
Connect up to three oxygen sensors using the hwHUD or the ppO2 monitor. The connection is based on a fibre optic cable that can be removed and connected also under water.





Modes of operation

OSTC3 has three modes of operation and switches automatically between them: Surface mode, dive mode and sleep mode.

Surface mode

To wake up the OSTC3, 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.

In surface mode you can adjust the settings for the next dive, adjust the base settings of the OSTC3 and read recorded dive data.

Dive mode

The OSTC3 automatically switches into dive mode when it is at least 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 setpoint or the values of the sensors), 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

The integrated simulator allows you to get familiar with the functions of the dive mode even before your first dive (look for page 51).

When the OSTC3 isn't operated at the surface, it switches into sleep mode after two minutes to save battery.

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

Modes of diving

In the main menu you can choose under **Deco mode**, if you want to use the OSTC3 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 pre-set on your OSTC3.

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

The decompression calculation model is Bühlmann ZH-L16 without or Bühlmann ZH-L16+GF with gradient factors (read more on page 54). You can switch from ZH-L16 to ZH-L16+GF under **Decotype**.

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

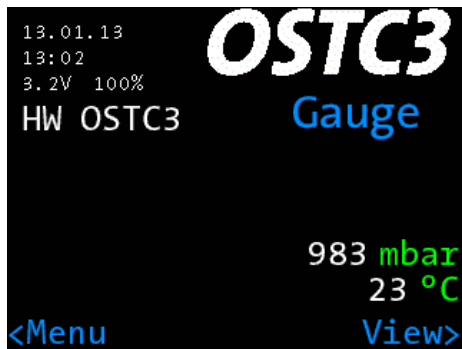
In apnea mode the OSTC3 serves as a depth gauge. Additionally displayed are ambient temperature and elapsed time since starting the dive. Decompression and saturation calculation are switched off. In apnea mode the OSTC3 remains



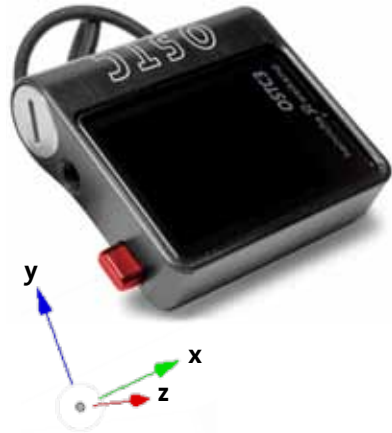
in dive mode even when diving at low depths. You can switch into surface mode at any time by pushing SET/MENU. Push ENTER to confirm the **QUIT?** question.

The OSTC3 switches automatically from apnea mode into surface mode after a 15 minutes delay and above a depth of 1 meter.

Gauge: With this divesetting, OSTC3 serves as a depth gauge. Decompression and saturation calculation are switched off.



Compass calibration



OSTC3 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.

Note

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

It is recommended to compensate the compass after battery change (it is not necessary if you use the same battery type) or your dive computer shows big deviations in the heading reading. During the calibration routine the OSTC3 shows X-, Y- and Z-axis.

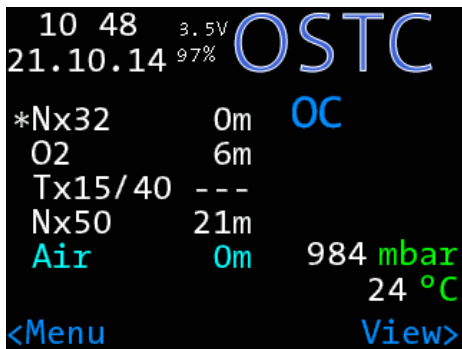
After starting the calibration menu, move the dive computer slowly around

each axis. Do this a number of times within 60 seconds. After this while the calibration ends automatically. The order of the axis rotation is not important. Keep OSTC3 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 OSTC3 shows the following items permanently:

- ambient pressure, clock, date
- temperature
- battery level
- dive mode: Open circuit (OC), Clodes Circuit (CC), Gauge or Apnea
- sensor data (CCR diving)
- after the dive: 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 (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 OSTC3 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 OSTC3.

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

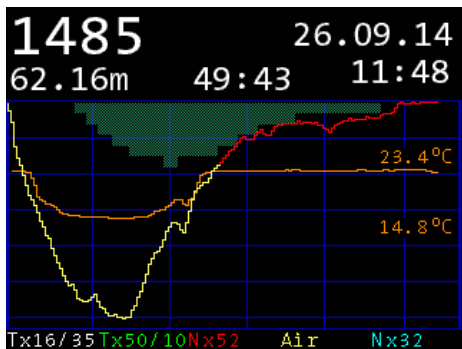
Exit: Exit the main menu

Note

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



Logbook



The OSTC3 records data during every dive. It can be retrieved from the logbook. The OSTC3 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 OSTC3 via USB to a computer and readout the data (page 88).

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, press ENTER. The dive profile and details page shows up. The details page also shows position index, date, maximum diving depth, duration, minimum ambient 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 64).

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 **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**. I

f 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.

In the view the first gas is marked with *. 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 OSTC3 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 (or hold down the ENTER button) until the required value is displayed. For reference, the OSTC3 displays the calculated maximum operating depth (**MOD**) and equivalent narcotic depth (**END**) for 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**: Setup the first gas. Enable one other gas as deco and setup your gas mix. Disable the remaining gases.

Dive with **two decompression gases**: Setup 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. 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 calculation you can use fixed setpoint or sensor readings.

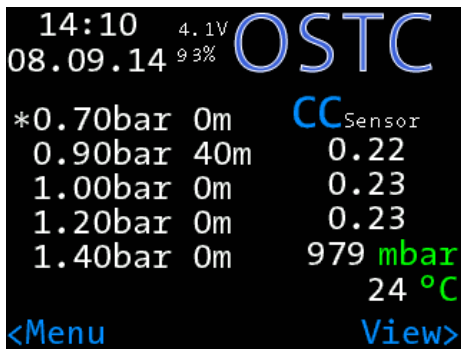


CCR Mode

Fixed Sp: The OSTC3 will calculate the decompression using up to five fixed setpoints.

Sensor: Using the optional hwHUD or the ppO2 Monitor, the OSTC3 can monitor up to three O2 sensors. Sensor readings are also used for decompression calculations.

You can switch between **Fixed Sp** and **Sensor** mode even while diving.



CCR sensor:



The CCR sensor shows ppO₂ readings of each sensor attached with a hwHUD or a ppO₂ monitor (via optical input). Additionally you can read mV voltages out of each sensor and see the battery level.

In case of a sensor blackout, you can activate the **fallback** (Fallback: Yes). When you have a sensor blackout while diving, there is a fallback warning and the dive computer switches to calculation with fixed setpoints. It starts automatically with the first setpoint. Manually you can choose another one.



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 *.

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 OSTC3 monitors the fitting gas.

Setup of the diluents is the same as for OC gas setup (page 36).

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 OSTC3 will not indicate the change depth. Decompression calculation uses always the actual setpoint.

Calculations in mode Fixed Sp always start with SP1. It is marked additionally with an asterisk *.



Note

You can configure the bailout gases in the **OC Gas Setup**. The gases you configure for scuba diving can be used as bailout when you have to change from closed to open circuit.

Simulator

Use the simulator to simulate the dive mode of the OSTC3 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.

```
    Simulator
  ↪ Start Simulator
    Interval : 0'
    Bot. Time: 31'*
    Max Depth: 51m*
    Calculate Deco
    Exit

<Next      #2332 v1.60      Enter>
```




Calculate decoplan

As a planning aid, the OSTC3 can calculate decompression stops in advance to planned dive. Hereby all settings of the OSTC3 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 (or hold down the ENTER button) 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 some moment. While calculating, the green LED is blinking.

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 OSTC3. 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.

Change diving depth: In the simulator you can also change the depth 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

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.

Note

The OSTC3 stays 90 minutes in the simulation mode until it switches to sleep mode. Stop the dive mode manually not to waste battery.



Deco mode

In **deco mode** you can configure the dive mode of your OSTC3 (OC, CC, gauge or apnea) and select important settings for the decompression calculation.

```
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>
```

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

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 OSTC3 is pre-set 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. OSTC3 is set up 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 OSTC3 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 you the total time to surface (TTS) in 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 in the standard Bühlmann model (60 to 100%, default 90%)



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%)

Last deco: Setting for depth of last decompression stop. Choose here if the OSTC3 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.

 **Warning:**

Only change values for decompression calculation if you are aware of their meanings. The pre-settings of the deco parameters are 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.

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

Information

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

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 OSTC3. You can set up time and date with the ENTER button.

Note

You can also set up time and date with your personal computer.

Choose a date format:

YYMMDD: year, month, day

DDMMYY: day, month, year

MMDDYY: month, day, year



Display settings

Settings for display and other settings.

Brightness: Display brightness in OSTC3 is controlled automatically with an ambient light sensor. The three settings Eco, Medium and High set different maximum and minimum values for this control loop. In most cases the default Eco is recommended. Only if OSTC3 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. With rotating the screen, you can put the sensor connector cable from the left or right side to your dive computer.

Language

The OSTC3 can be set up in four languages: English, German, French and Italian. Choose your language with the ENTER button

More (more settings)

Under the menu item **more** you find more settings, like salinity or calibrating the compass.

Compass calibration: In this menu you can calibrate your digital compass. How to do exactly, look for page 27.

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 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 press 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.

Reset menu

In the **reset menu** you can put the settings of the OSTC3 to its default values and start the dive computer from new. You can cancel your decompression information, clear the logbook and change the information for the battery.

Reboot: During a firmware update it may be required to reboot the OSTC3. 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 deco data and push ENTER. You`ll be prompted to confirm the action. For the next dive the OSTC3 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.

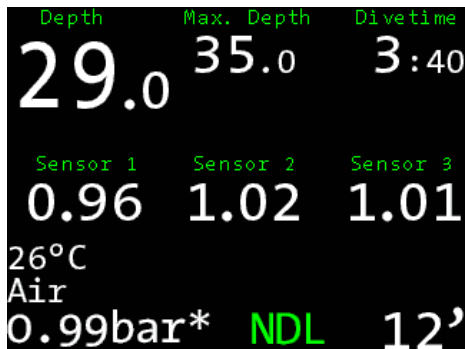
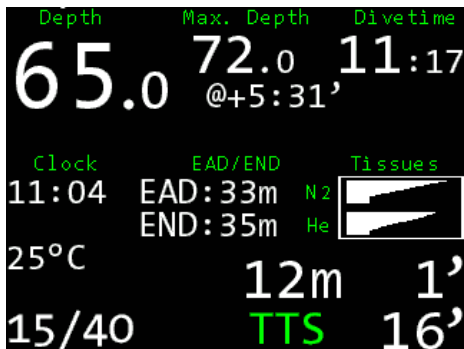
Caution

Reset all really resets **all** settings in the OSTC3 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 stay on the dive computer.

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 (page 62).

Reset battery: When replacing the battery you have to choose the battery type. If you were wrong, you can correct your information in this menu (how to change the battery, page 81).

Dive mode



Displays in dive mode

Permanently shown information

In dive mode the OSTC3 shows the following items permanently on the display:

- depth in meter or feet
 - maximum depth
 - divetime in minutes and seconds
 - NDL (No Deco Limit) or TTS (Time To Surface including all decostops) in minutes.
 - actual used gas (in CCR mode: the actual setpoint or the average value of the sensor data)
- 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 OSTC3 is in deco and no longer in the NDL (NO Deco Limit).



Selectable information

Selectable items can be monitored on the center of the display. You can scroll through 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, MOD/END and graphical indication of tissue saturation
- current gradient factors or saturation factors and the alternative GF• pair
- Display of up to three sensor readings (using the optional hwHUD or the ppO2 monitor)
- 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
- fallback warning when the sensor has a blackout



Depth	Max. Depth	Dive time
25.0	25 02:1.75	3:57 
Sensor 1	Sensor 2	Sensor 3
1.00	0.99	1.09
24°C		
Nx50		
Bailout	NDL	110'

Menu functions

In dive mode (OC) you can select your preset gases (**gaslist**) und reset the calculation of your average depth (**reset avr./stopwatch**). During CCR diving you can choose setpoints and bailout gases and switch to decompression calculation via O₂-sensors. 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 OSTC3 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 change and select the actual gas. You can choose the gas mixes that you prepared in **gas setup** in the surface mode. The actual gas 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.

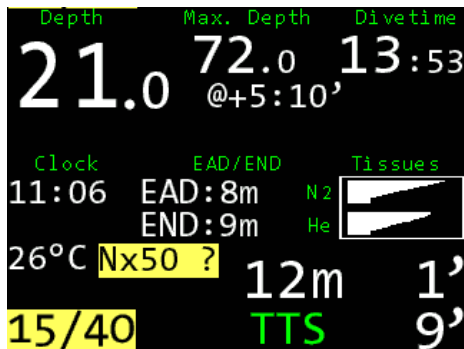
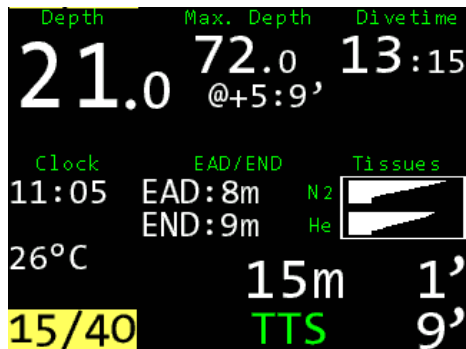
Note

Gases in **red** have too high 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 fitting gas (e.g. Nx62?). So you see at once which gas you shall use. Just confirm with ENTER.





Setpoint change

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.

If O2 sensors are connected via the hwHUD or the ppO2 monitor, the sensor readings can be used for the decompression calculation too. Choose **CCR sensor** for this.

Bailout

If you have to switch from closed circuit diving 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

Restarts the stopwatch and calculates the average depth from new.

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).

Maintenance



Housing

Wash your OSTC3 after every dive with fresh water, especially after diving in seawater. If the housing is very dirty, put

your OSTC3 over night in fresh water. Don't use any cleaning agents or solvents.



Warning

If there is some sea water in the battery compartment or in the USB port, rinse it immediately with fresh water. Let it dry completely before using the OSTC3 again.

Bungee

The OSTC3 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 1cm and use a lighter to melt the small remains of nylon.

The bungees are hand washable and can be replaced if necessary. In order to replace the bungee, remove the four screws (2mm Allen key) and detach the lower housing plate. Align the new bungee in the compartment and put the ends through the two holes in the lower housing plate. Only use the screws supplied with the OSTC3 (M3x10 and M3x6). They are non-corrosive.



Replacing the battery

You can easily replace the battery of the OSTC3 by yourself.

Note

When you replace your battery, the desaturation time and no-fly-time are still remaining. You can change the battery between two dives without losing any important information. After a replacement of battery please check time and date.

Open the battery compartment and remove the old battery.

Insert a new battery of the size AA with the plus pole ahead.

Check the battery compartment o-ring. From time to time apply a very small amount of o-ring grease to it.

Close the battery cap until it is completely inserted in the housing.

After the replacement the menu **new battery** appears on the display. Select if you have inserted the old battery again, a new 3,6V battery or a new 1,5V Battery. With this information the OSTC3 can calculate the remaining battery capacity.

Note

If you put in wrong value, you can change it in the menu **reset** under **reset battery**.

Important: Only use good quality AA Batteries, e.g. Lithium (“Photo”) or Alkali-Mangan (“Alkaline”) batteries. Simple Zinc–Carbon batteries should be avoided. Leaking Zinc–Carbon batteries may permanently damage the OSTC3 battery compartment.

Note

AA-Lithium batteries with 1.6 or 1.7V voltage can be used as well.

Spare parts

Bungees, batteries (Saft LS14500 3.6V) and caps for the battery compartment are available in the online shop of heinrichs weikamp or at your dealer.



Readout the dive computer

USB connection

You can connect your OSTC3 easily via USB to your personal computer or notebook. So you can upload software and readout your logbook.

The USB cover can easily removed and closed with the help of a micro-USB connector. Make sure the USB connector is closed after downloading your dive data. Don't apply force when closing the USB cover.

The OSTC3 doesn't load up batteries via USB.

Warning

Diving without the USB cap can damage the OSTC3.

If there is moisture in the USB compartment, apply some water dispersant (e.g. WD40) to avoid corrosion.



Note

When connecting our OSTC3 to a computer the first time, you will need a device driver. In most cases the driver will install automatically. But it may be required to install the driver manually:

Download the FT232R interface driver:
www.ftdichip.com

Unpack the zip archive to a directory

Connect the USB interface of OSTC3 with your computer. It will be recognized

as new device. When Windows asks for a driver medium, point to the directory containing the unpacked driver software.

When installation is finished, you can see OSTC3 interface in the COM&LPT ports section of the windows-device-manager (COM x). For MAC OS is a Disk-Image-file (.dmg) available.

Software for the OSTC3

Data transfer with the OSTC3 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 OSTC3.

On our website you'll find a list of all OSTC3 supporting programs and applications:

www.heinrichsweikamp.com/ostc

Note

For programmers, we have the OSTC3 interface description available.



Updating the firmware

The OSTC3 firmware (integrated software) is in a constant process of improvement. To make the best of your OSTC3, use the latest stable firmware that is available at the heinrichs weikamp website

www.heinrichsweikamp.com/ostc

Note

We recommend you to upgrade the firmware regularly - at least ones a year. Updates for the OSTC3 are free of charge, of course. On the homepage you can download the **OSTC companion**. With this software you can upload the newest firmware easily.

Warning

Only install firmware for the OSTC3 from trusted sources.

Technical data

Display	High resolution IPS LCD monitor with ambient light sensor, field of view: 160°, Resolution: 320 x 240 pixel, status display: 2 LEDs
Connections	USB, digital optical input for hwHUD and ppO2 Monitor
Sensor	Combined depth/temperature sensor 3D compass (fully tilt-compensated)
Power supply	AA battery of any type Up to 50 hours of operation, 1+ year standby
Operating elements	Two push buttons
Housing	Milled from a single block of alloy. Scratch resistant ceramic-glass panel
Dimensions	64 mm x 62 mm x 22 mm
Weight	160 gr.
Max. usage 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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