



hw Bottomtimer

hw Backup

Came to stay

Compact, bright and reduced to the essential. Due to its extraordinary design, the hw Backup is extremely handy and robust.

The new addition to heinrichs weikamp's light portfolio has a unique design that does its job and looks good at the same time: Due to its angular shape, the hw Backup is particularly easy to grip and can be held safely in the hand. It can be easily stowed away on the harness without being bulky.

High-quality materials, elaborate manufacturing and extremely simple handling ensure that the light is always ready when it is needed – whether for cave diving or on holiday.

Even during long dives the hw Backup will lead you safely back to the entrance. It provides at least 2 hours of light at constant brightness and another 6 hours at lower brightness.

The hw Backup will remain in production at least until 2030. Access to spare parts, service and accessories is thus guaranteed for at least 10 years after the product launch.

The hw Backup is delivered fully rigged and is immediately ready for use. For 185 euros in our online shop:

www.heinrichsweikamp.com

**Also available as team-pack!
5 backup lights for the price of 4**



Your hw Bottomtimer

Thank you for choosing the hw Bottomtimer from heinrichs weikamp!

Hardly any other product has been asked for more often in recent years, and now it's here: The hw Bottomtimer with razor-sharp IPS-LCD, easiest operation, long battery life (depending on display brightness setting up to 100h) and all that packed in an extremely robust aluminium case.

The hw Bottomtimer has a very large display of depth, dive time, maximum and average depth. A stopwatch with the average depth over the stopped time as well as temperature and ascent/dive speed round off the displays. Easy to read even in poor visibility and complete darkness.

Edgy and black - the hw bottom timer is only available in one version. As a backup, for ratio deco or mounted on the scooter (scooter console in preparation!): The compact hw Bottomtimer always fits.



The Bottomtimer is developed and produced entirely in Germany. It is the result of months of testing by technical divers all over Europe.

You can use the hw Bottomtimer intuitively. But to become familiar with its functions and to use it in the best way, we recommend you to read this manual carefully. Additionally you find some videos on our website and facebook page which offer some easy explanations (for example how to change the battery or change the bungees).

Contact

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1. Common advices

1.1. Technical status

This manual corresponds to the technical status of the depth meter hw Bottomtimer and its Firmware 1.02 as of October 2021.

1.2. About this manual

Read this manual carefully, so you can set up and use the hw Bottomtimer in the right way. Keep this manual so you can consult it also at a later time. You also find the latest version for download as PDF on our homepage.

Standard settings

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

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1.3. Functions overview

Your hw Bottomtimer assists you with the following functions:

Display: Diving depth and duration according to EN 13319, maximum diving depth, ambient temperature, average depth, stopwatch, stopped average

Record: Time, duration, depth profile, temperature and additional information.

2. Safety advices

2.1. Requirements

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

2.2. Before every dive

Plan your dive. Make sure that your hw Bottomtimer is ready for use and correctly configured.

Configured correctly?

Check the settings of your hw Bottomtimer. 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 status of the battery must be sufficiently high. We recommend to recharge/change it at 25 percent of performance at the latest.

Device waterproof?

Make sure that the openings of the hw Bottomtimer (battery compartment cover) are closed.

Safely attached?

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

Display messages?

Check the screen of the hw Bottomtimer. Do not dive if your device shows a warning. Check the cause of the warning.

2.3. 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 hw Bottomtimer.

Take a sufficiently long surface break before diving again.

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

2.4. Safe use

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

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

Caution

Surpassing the maximum water depth of 250 meters may cause malfunction or permanent damage of the device.

2.5. Environmental conditions

Store the hw Bottomtimer 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.

3. Before first use

heinrichs weikamp delivers the hw Bottomtimer ready to use. But nevertheless check the battery status before using it the first time.

The hw Bottomtimer is attached to the arm with a bungee. The bungee is already installed. To tighten the bungee, make a knot above the circular cavity. Cut remaining bungee and use a lighter to melt the small remains of nylon.

3.1. Depth gauge functions

The hw Bottomtimer is a depth gauge as used in technical diving as a backup. It displays depth, maximum depth, dive time, temperature, time, battery status, stopwatch and average depth when diving. In the menu there is the possibility to set the stopwatch and recalculate the average depth.



Language

The menu of the hw Bottomtimer is only available in English.

3.2. Operating

The hw Bottomtimer is operated with two buttons on the left and right side of the housing. To turn it on, press one of the two buttons.

From the start screen, you can access the menu with the left button (Menu). In the menu you can go through the items with the left button (NEXT) and select with the right button (ENTER). Only one button has to be pressed at a time. From the last entry, the cursor jumps back to the first.

To exit the menu or a submenu, select EXIT.

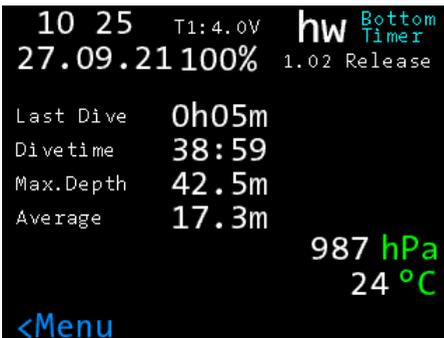


4. Surface mode

4.1. Display

On the start screen the hw Bottomtimer shows the following items:

- ambient pressure, clock, date
- temperature
- firmware
- battery: level, type and voltage
- after diving: last dive and intervall



From the start screen you can enter the menu.

4.2. Main menu

In the main menu you can adjust the base settings of the hw Bottomtimer and review your dives in the logbook.

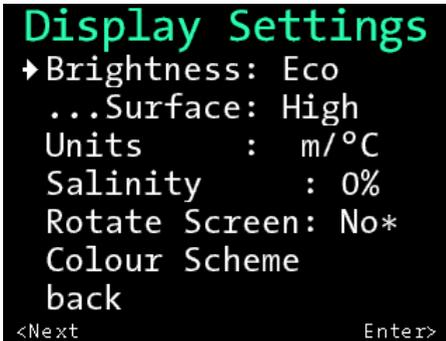
Sleep mode

When the hw Bottomtimer isn't operated at the surface, it switches into sleep mode after 4 minutes to save energy (when using 1.5 V batteries after 2 minutes).



In the menu you navigate with NEXT and ENTER.

4.3. Display Settings



Brightness

The display brightness of the hw Bottom-timer can be set to Eco, Medium, High and Cave. With »Brightness Surface«, a different value can be set for operation on the surface. In most cases the Eco setting is sufficient, only if the hw Bottomtimer is used frequently in shallow water and in direct sunlight is a higher setting recommended. »Cave« is only recommended for cave or night dives. Default: Eco

Units

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

Salinity

This setting allows you to adjust if you dive in salt water or in fresh water. This value has a slight effect on the display of the actual and maximum depth. To increase this value, push ENTER repeatedly until the required value is displayed.

For most seas the setting is 3%, for the Mediterranean and Red Seas 4% and for the Baltic Sea 1-2%.

Setting range: 0% – 4%

Default: 0%

Rotate Screen

If necessary, the display of the hw Bottom-timer can be turned upside down with »Rotate Screen«.

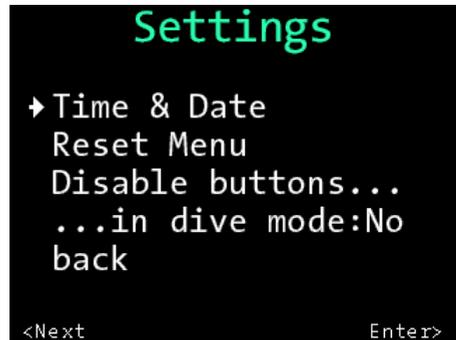
Default: Yes

Colour scheme

Choose the colour of the display in dive mode. You can choose the schemes red, green, blue and standard (white)

Default: Standard

4.4. Settings



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 hw Bottomtimer. You can change the values for time and date with the ENTER button.

Choose a date format:

YMMDD: year, month, day

DDMMYY: day, month, year (default)

MMDDYY: month, day, year

Disable buttons

With the function »disable buttons in dive mode« the buttons can be disabled for the time of the dive. This can be useful when

driving a scooter, for example. If the hw Bottomtimer is mounted on a console, the vibrations can cause the buttons to be pressed accidentally.
Default: No

Reset menu

In the reset menu you can put the settings of the hw Bottomtimer to its default values and start the device from new.

Reboot

Restarts the hw Bottomtimer

Reset Settings

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.

Reset Battery

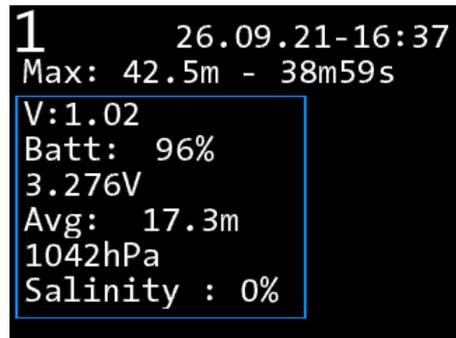
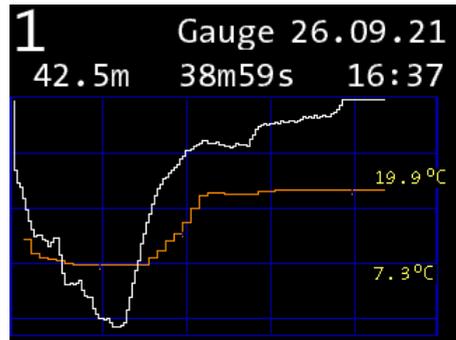
When replacing the battery you have to choose the battery type. If you were wrong, you can correct your information in this menu.

4.5. Information

Shows some device specific information like serial number, installed firmware version, number of total dives, type of battery and the total runtime.

4.6. Logbook

The hw Bottomtimer records data during every dive. It can be retrieved from the logbook. The hw Bottomtimer stores data of up to 250 dives. If the memory is full, ex-



Depth profile (top) and additional information (bottom) in the logbook. Switchable with the right button.

isting records will be overwritten, starting with the eldest.

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

To see details of a dive, press ENTER to select it. The first detailed view appears with a depth profile and an overview of the most important data (depth, dive time, date, clock, temperature).

With the right button ENTER you can call up further information such as charging status, average depth and surface pressure.

Use the left button to exit the view.

The logbook of your new hw Bottomtimer may contain the profile of a pressure chamber dive, it is clearly visible due to its angular shape. Each unit is tested in the pressure chamber at heinrichs weikamp before delivery.

4.7. Simulator

The simulator is intended to familiarise you with the displays in the diving mode.

To start the simulator, press »Start Simulator«. A simulated dive can last a maximum of 120 minutes and is not saved in the logbook.

Change depth

During the simulation you can change the depth. Press the left button repeatedly to display the menu items. Select the desired item with ENTER (right):

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

Sim: -1m: descend 1 meter

Sim: +1m: ascend 1 meter

Reset: restart stopwatch

All other functions are similar to the dive mode and are described there.

Note

The hw Bottomtimer stays 120 minutes in the simulation mode until it switches to sleep mode. Stop the simulation mode manually to save energy.



The menu in the simulator is opened with the left button.

5. Dive mode

The hw Bottomtimer automatically switches into dive mode when it is at 1,6 meter below the surface for 10 seconds (also when it is in sleep mode).

Note

We recommend that you manually turn on your hw Bottomtimer before the dive to check the settings.

It is not possible to switch underwater from dive mode to surface mode. You cannot change the base settings while diving.

5.1. Display in dive mode

In dive mode the hw Bottomtimer shows the following items:

- depth in meter or feet
- maximum depth
- divetime in minutes and seconds
- water temperature in °C or °F
- average depth
- stopped depth and stopwatch
- time, battery status, surface pressure

The important displays depth, time, maximum depth, average depth and temperature are permanently shown on the display. In the custom view in the middle you can display the stopwatch or additional information such as time, battery status and surface pressure.



Display in dive mode without additional information. The stopwatch and other information can be displayed with the right button.



Display with time, battery status and surface pressure.



Display with stopwatch and stopped average.

5.2. Stopwatch and stopped average

Average depth and stopwatch are displayed in the Custom View (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.



With »Reset« (left button) the stopwatch is restarted and the stopped average depth (Stopped Avr) is displayed.

The stopwatch starts with the beginning of the dive. With **Reset** (left button) you can restart it. The stopwatch starts from new and shows the average depth since the start of the stopwatch (stopped avr).

Note

Total Avg« is calculated for the dive below 1m. Very shallow passages are not considered for the »Total Avg«. Stopped Avg« also takes into account shallow passages between 0 and 1 m.

Rate of ascent

The rate of ascent is displayed when it is higher than six meters 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).

6. Maintenance

6.1. Housing

Rinse your hw Bottomtimer after every dive with fresh water, especially after diving in seawater.

If the housing is very dirty, put your hw Bottomtimer over night in fresh water. Do not use any cleaning agents or solvents.

6.2. Bungee

The hw Bottomtimer is delivered with bungees. The bungee wristband can be set to your arm diameter individually. To tighten the bungee, make a reef knot or a simple double knot above the circular cavity (tighten knot very strong). You can also use two bungees and fix them at the ends with figure eight knots. Cut the remaining bungee after about one centimetre and use a lighter to melt the small remains of nylon.

6.3. Changing the battery

You can use the hw Bottomtimer with any type of AA battery.

The use of a 1.2 V NiMH battery is not recommended due to the unfavourable voltage condition.

It is not possible to recharge batteries in the hw Bottomtimer. Nevertheless, you can also use rechargeable lithium batteries with 3.7 V and at least 0.8 Ah. Make sure that you only use fully charged batteries.

Open the battery compartment with a screw driver and remove the old battery. In-

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

Check the battery compartment o-ring (12,5 x 2 NBR 70A). From time to time apply a very small amount of o-ring grease to it. Close the battery cap until it is inserted in the housing. Do not close it with force.

The negative pole of the battery is electrically connected to the housing of the bottom timer via the battery cap. A good electrical contact between cap and housing is required. Therefore, turn the cap completely closed (screwdriver).

After replacing the battery the menu **New battery** appears on the display. Select if you have inserted the old battery again, a new 1,5V battery or a 3,7V lithium ion battery

The correct indication of the battery is important. This allows the hw Bottomtimer to measure and calculate the remaining battery status more accurately.

Overview menu »New battery«:

- Keep old
- 1,5V disposable(T0)
- 3,6 V disposable (T1)
- 3,7V chargeable (T2)

The selection made (e.g. T2) appears on the main screen.

Note

If you put in a wrong value for your battery, you can change it in the menu »Reset« with »Reset battery«.

Calculating the capacity of the battery

The percentage indication for 1.5 V batteries is based only on the measured cell voltage (whereas for 3.6 V batteries or re-

chargeable batteries it is calculated in a complex way). Fluctuations in cell voltage due to temperature effects, fluctuating current consumption (backlighting that adapts to the environment) or even contact problems lead directly to changed percentage values in the display. The reference battery is the Energizer E2 Lithium 1.5 V. The use of low cost (discounter) batteries is not recommended.

With a 3.7 V battery/rechargeable battery, the capacity is calculated because the voltage is very constant over the life of the battery and a (high-impedance) measurement does not have much significance. For this, it is necessary to specify the battery type correctly when inserting a new battery. If an empty battery is inserted but is declared as full, the percentage is not correct. In order to catch such cases, there are also 3 very rough voltage values for 3.6 V batteries, which are compared against the calculated percentage figure: 75 % (3.0 V), 50 % (2.9 V), 25 % (2.6 V) and 10 % (2.5 V). In such a case, there may be significant jumps in the percentage figure.

6.4. Accessories

Accessories and spare parts like bungees, backplates, screen protectors, rechargeable batteries, AA batteries and a mount for scooters are available in our online shop. www.heinrichsweikamp.com

Technical data

Usage	Depth Bottomtimer for depths up to 250 m
Housing	Aluminium, milled from a single block and hard-coated, borosilicate glass
Dimensions	68 mm x 67 mm x 20 mm
Weight	165 g
Display	High resolution IPS LCD, Resolution: 320 x 240 Pixel, Size: 2,4" (63 mm diagonal)
Sensor	Combined pressure/temperature sensor
Temperature range	-10° – 40°C
Battery	AA (14500) battery of any kind
Controls	Two integrated sensor buttons
Maximum diving depth	250 m
Scop of delivery	Bottomtimer, bungee (rigged for immediate use)
Accessories (opt.)	Display protection

Disposal

According to the European WEEE directive, electrical and electronic equipment must not be disposed of with household waste. At the end of its service life, please take the device to a suitable recycling facility. You can also return it to heinrichs weikamp for proper disposal.





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