
SUUNTO EON

User guide


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1 SAFETY

1.1 Types of safety precautions


 **WARNING:** is used in connection with a procedure or situation that may result in serious injury or death


 **CAUTION:** is used in connection with a procedure or situation that will result in damage to the device

 **NOTE:** is used to emphasize important information

 **TIP:** is used for extra tips on how to utilize the features and functions of the device.

1.2 Safety precautions

 **WARNING:** ONLY DIVERS TRAINED IN PROPER USE OF SCUBA DIVING EQUIPMENT SHOULD USE A DIVE COMPUTER! No dive computer can replace the need for proper dive training. Insufficient or improper training may cause a diver to commit errors that may lead to serious injury or death.

 **WARNING:** THERE IS ALWAYS A RISK OF DECOMPRESSION SICKNESS (DCS) FOR ANY DIVE PROFILE EVEN IF YOU FOLLOW THE DIVE PLAN PRESCRIBED BY DIVE TABLES OR A DIVE COMPUTER. NO PROCEDURE, DIVE COMPUTER OR DIVE TABLE WILL PREVENT THE POSSIBILITY OF DCS OR OXYGEN TOXICITY! An individual's physiological make up can vary from day to day. The dive computer cannot account for these variations. You are strongly advised to remain well within the exposure limits provided by the instrument to minimize the risk of DCS. As an added measure of safety, you should consult a physician regarding your fitness before diving.

1.3 EU, FCC and IC compliance

FCC:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This product has been tested to comply with FCC standards and is intended for home or office use. **FCC WARNING:** Changes or modifications not expressly approved by Suunto could void your authority to operate this device under FCC regulations.

IC:

Suunto EON
Model: DW141

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

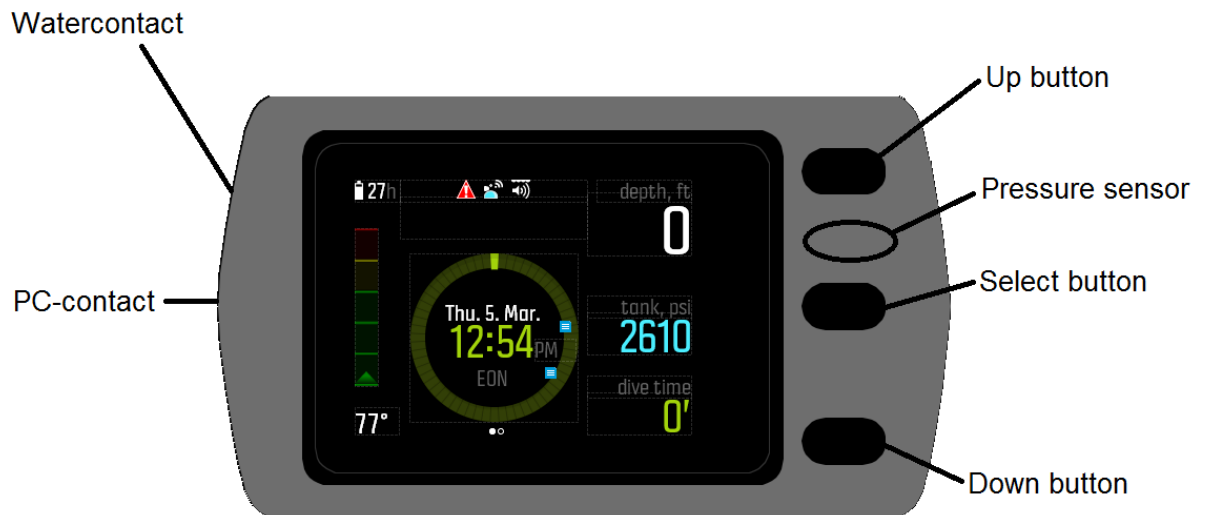
- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.


CE:

Suunto Oy hereby declares that this heart rate belt is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

2 EON STEEL AT A GLANCE

2.1 EON Steel overview



 **NOTE:** If no button is pressed for 1 minute in main views, the dive computer goes automatically to standby mode and shuts down the display to save battery. From menus it will go back to main views after 30 seconds if no button is pressed.

2.2 Accessories

The following accessories are included with EON Steel:



Connecting cable. Use USB cable to connect your EON Steel to computer or charge.



Bungee cord and adapter. Use for optional mounting of EON Steel.



Suunto CD. Use Suunto CD to find this manual and DM5 PC/Mac compatible software.



Wireless Tank POD. Use this to get wireless tank pressure information from your scuba tank(s). Tank POD could be purchased as a separate accessory. EON Steel works with multiple tank PODs.

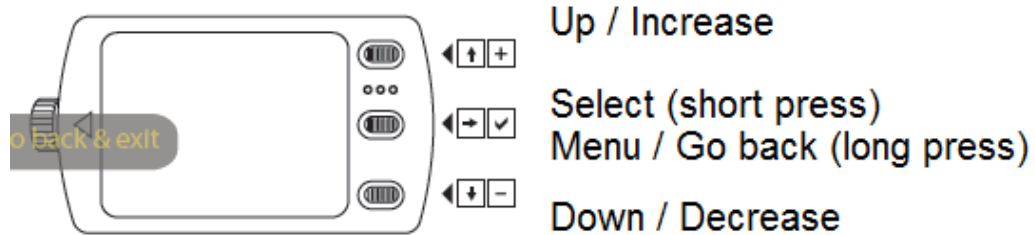


Suunto USB power adapter. Use with USB cable to charge the EON Steel battery. Separate accessory could be purchased from <http://www.suunto.com>.

ADD PICTURE HERE

Scratch guard. Separate scratch guard could be added on top of class to protect glass from scratches.

2.3 Buttons



THIS PICTURE COULD BE WITH EON STEEL OVERVIEW?

2.4 Icons

The icons in the display gives information about EON Steel:

Status icon	What it means
	No fly time icon.
	Surface (interval) time icon.
	Shows the EON Steel battery level or charging status. Number on the side of battery icon tells either how many hours approximately device could run with this charging level or when charging how long it will take until battery is fully charged.

3 GETTING STARTED

To get the most out of your EON Steel, use some time to personalize it. EON Steel is a very user-friendly dive computer, and you will quickly become familiar with its functions. Make absolutely sure that you know your computer and have it set up as you want, before getting into the water.

3.1 Set up EON Steel

First connect your EON Steel to your computer USB port with PC-cable. This will wake-up your EON Steel and you will be guided through the initial setup.

Initial setup guides you through following steps:

- Units settings.
- Time format (12h/24h)
- Date format (dd.mm / mm.dd)
- Optionally connect with DM5

After initial setup you will be redirected to main view. With select-button you could change the main views.

3.2 Calibrating the compass



On compass main view you need to first calibrate the compass by slowly rotating the unit in your hand with large infinite 8 loop about 15 seconds. When graphical compass appears you know calibration is done successfully.



NOTE: If the calibration fails several times in a row, it is possible that you are in an area with sources of magnetism, such as large metal objects, power lines or electric appliances. Move to another location and try to calibrate the compass again.



NOTE: Because of changes in the surrounding magnetic field, compass needs to be re-calibrated occasionally. During the calibration process, the compass adjusts itself to the surrounding magnetic field. As a basic rule, you should calibrate the compass whenever it does not seem to operate properly.

3.3 Installing scratch guard

Pictures here ?

3.4 Connect EON Steel to DM5

plaa

4 BASICS

4.1 Main views

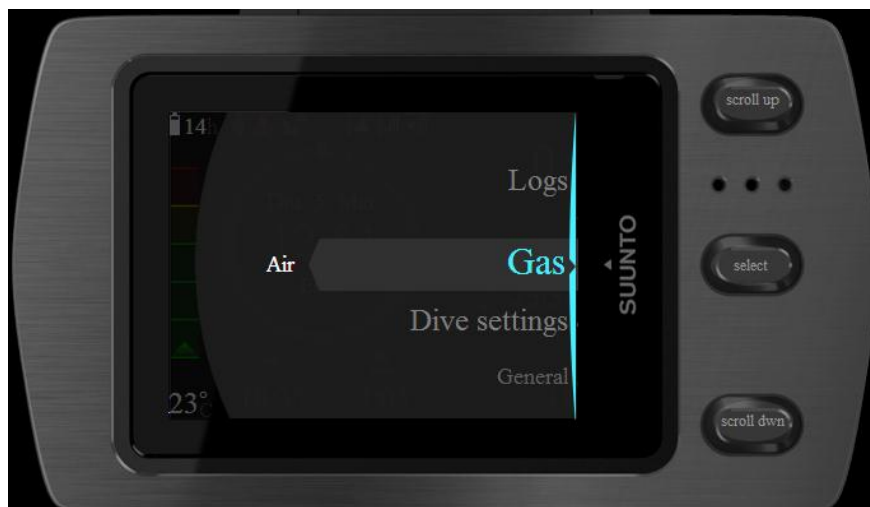
EON Steel has three main views: time/no deco, tank pressure and compass view. Changing the views can be done by pressing the select –button.



NOTE: Main views could be fit to everyone's personal likings (see customization in section 9.5).

4.2 Menus

From main views menu could be entered by keeping select –button down for 2 seconds.



Up/down –buttons could be used to scroll and select –button to go deeper in the menu. Going backwards in the menu is done by keeping select –button down for more than 2 secs.







NOTE: While diving only gas selection menu is available. Hence dive settings can be done only while on surface.

4.3 Charge and monitor the battery

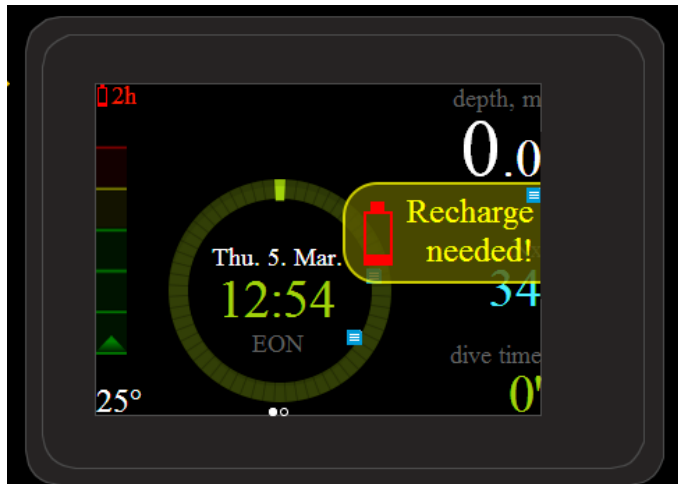
EON Steel has an internal lithium-ion, rechargeable battery. Charging the battery could be done by connection EON Steel to power source with included USB cable. As a power source use either your computer USB port or separate power adapter accessory.

The battery icon on the upper-left corner of the display shows the battery status. On the right of the battery icon is shown estimated dive time left in hours.

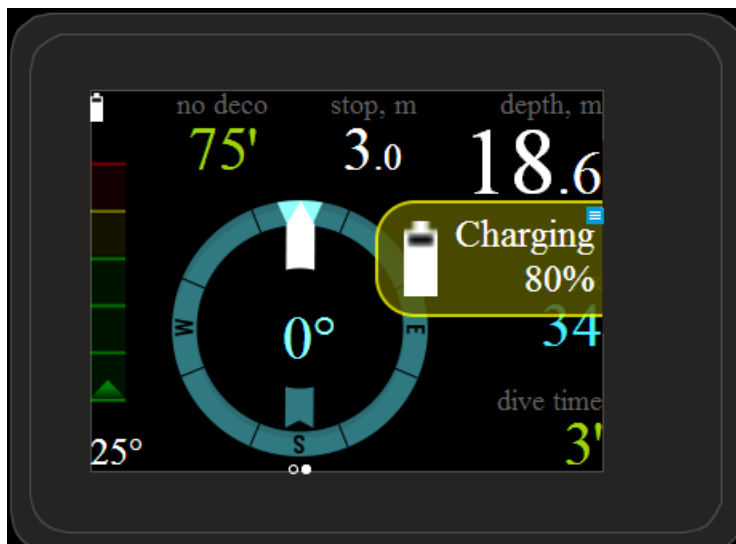
Icon	What it means
	Battery icon is white and it has estimated 27h of dive time left before need to recharge.
	Battery icon and hours in red. When estimated dive hours becomes three (3) hours or less it is shown red as a sign for a need to recharge.
	When estimated dive hours left is less than hour, “low” text is shown on the right of the battery icon.
	When battery icon is green and animation is running on then battery is charged.



NOTE: EON Steel won't start diving when estimated dive hours is less than 2 hours. Instead the device recommends you to recharge it, like following:



When cable is connected to charge, EON Steel informs user with the following notification:



4.4 Other

Following are presented some useful settings/info that user could go through.

Brightness of the display can be adjusted from the menu in path: “General > Device settings > Brightness”.

Tones can be adjusted in menu “General > Device settings > Tones”

Info about the EON can be found on menu path “General > About EON”. For example history of the device, software version etc...

5 BEFORE DIVING



NOTE: EON Steel is on surface mode always, when below 1.2m/4ft.

5.1 Dive modes

As a default EON Steel has three (3) different dive modes: Nitrox, Trimix and Gauge (bottom timer). You could pick one matching your diving. Dive mode selection is found on menu path “Menu > Dive settings > Mode”.



NOTE: You could later customize these modes for any kind of diving or even add additional dive modes, depending the way you dive. This is delt later in section 9.5 (Customizing EON Steel).

Nitrox and trimix modes are intended for diving with decompression information, like no decompression stop time or decompression ceiling/ascent time. Decompression algorithm used in EON Steel is Suunto Fused RGBM. You can find more info about the algorithm in section x.x.

Gauge is a bottom timer mode and thus has no decompression information or calculation included.



NOTE: After diving in gauge mode, decompression calculation is locked for following 48 hours. This means that if during this time nitrox or trimix mode is selected, then their decompression calculation will not work.

5.2 Personal and altitude settings for algorithm

There are several factors that can affect your susceptibility to DCS. Such factors vary between divers and also for the same diver from one day to another. The personal factors which tend to increase the possibility of DCS includes things:

- cold exposure – water temperature less than 20 °C / 68 °F
- below average physical fitness level
- fatigue
- dehydration
- stress
- obesity
- patent foramen ovale (PFO)
- exercise before or after dive

The five-step personal setting is available for adjusting algorithm conservatism. You could find the personal setting in menu path “Menu > Dive settings > Parameters > Personal”.

Personal level	Explanation
----------------	-------------

More aggressive (-2)	Ideal conditions, excellent physical fitness, highly experienced with a lot of dives in the near past.
Aggressive (-1)	Ideal conditions, good physical fitness, well experienced with dives in the near past.
Nominal (0)	Ideal conditions.
Conservative (+1)	Some risk factors or conditions exist.
More conservative (+2)	Several risk factors or conditions exist.

Addition to personal setting EON Steel can be adjusted for diving at altitudes. This setting will automatically adjust the decompression calculation accordingly. Following altitudes can be set:

- 0 – 300 m / 0 – 1000 ft
- 300 – 1500 m / 1000 – 5000 ft
- 1500 – 3000 m / 5000 – 10000 ft



WARNING: Traveling to a higher altitudes can temporarily cause a change in the equilibrium of dissolved nitrogen in the body. It is recommended that you acclimatize to the new altitude by waiting at least three (3) hours before diving.

5.3 Gas(es)

If nitrox or trimix diving mode is selected, then you need to set the gas(es) for decompression algorithm to work properly. You could set the gases in menu by selecting “Menu > Gas(es)”. On nitrox mode, gas will have only oxygen (O₂%). Trimix mode makes helium (He%) available for gas and there’s also possible to choose multiple gases.



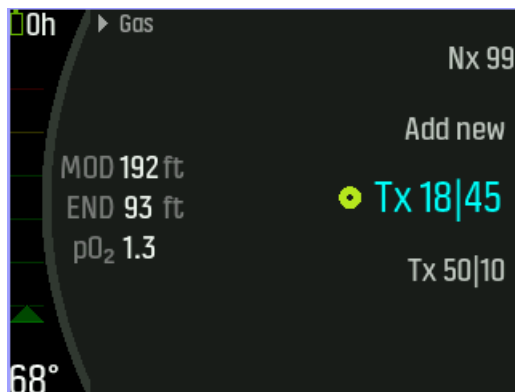
NOTE: When you have analyzed your gas, recommendation is not to round-up the result when entering it for EON Steel. For example if analyzed gas was 31.8% oxygen, then set the gas as 31%. This will make decompression calculations more safe. Oxygen calculations (pO₂, OTU, CNS%) are also kept on safe side, since used oxygen percent for those are O₂% + 1.



NOTE: Customization makes gas menu work differently. More from it in section x.x.

It’s important to understand how gas menu works on trimix mode, which has possibility to make multi-gas dives. On picture below is shown picture about the gas menu. It has three (3) gases and tx18/45 is chosen as the active

one. Important thing here is how algorithm (Suunto Fused RGBM) calculates the ascent time (during dive) using all these three gases.



5.4 Tank pressure

EON Steel can be used with multiple Tank PODs. To pair a tank POD it needs to be first installed to the tank via your regulator set first phase. Open the tank valve and see that the green LED on tank POD is flashing. After this take the EON Steel close (5-20cm) to tank POD.

1. Install Tank POD and open tank valve.

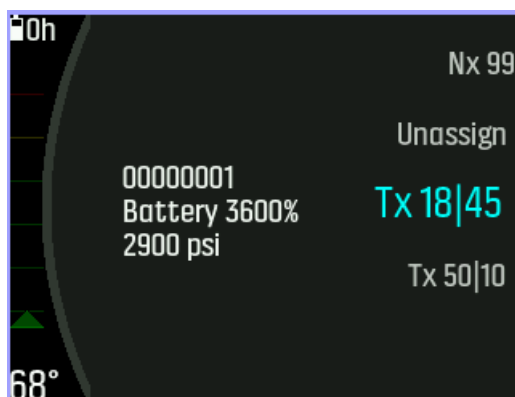


3. Wait for green LED on Tank POD to flash.



2. Hold your device close to the Tank POD.

Following screen pops out on EON Steel, when it is taken close to tank POD. Choosing to pair (listen) this tank POD, you need to choose the correct gas and then press select button.



On dive main views only one tank pressure is shown and corresponds to the active gas chosen. Hence when gas is changed, the shown tank pressure is also changed accordingly.

5.5 User adjustable alarms

There are three user configurable alarms: depth, dive time and tank pressure alarms. These alarm settings can be found on menu path "Menu > Dive settings > Alarms. Each of these alarms can be configured separately on or off and set the corresponding alarm limit.

6 DURING DIVE



NOTE: On depths greater than 1.2m/4ft EON Steel will start diving automatically.

6.1 Basic dive data

Following display shows EON Steel tank pressure main view. It is chosen to illustrate what a diver can see during a dive on a display:

- Present depth is 19.0m
- Active gas is Nitrox 32%
- Dive time is 22 minutes
- Tank pressure left is 120 bars
- No decompression stop time is 50 minutes
- Safety stop is ahead at 3.0 metres



6.2 Bookmark

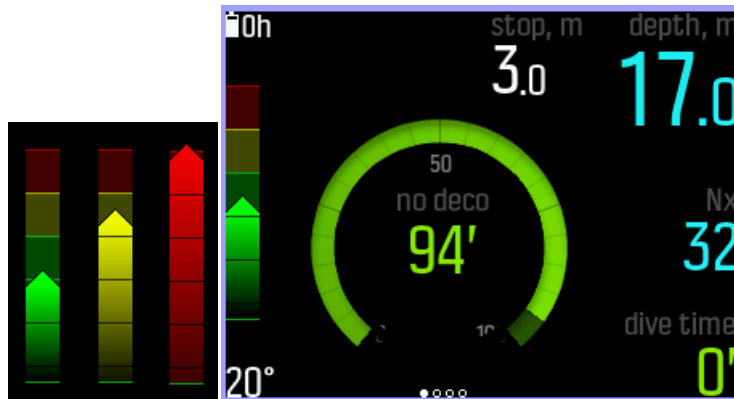
bookmark TBD

6.3 Ascent rate

Left bar describes ascent rate of the diver. One bar area corresponds to 2m/min rate:

- Green bar means ascent rate ok, <8m/min
- When the ascent bar changes to yellow diver ascent rate is between 8 to 10m/min
- If bar becomes red diver is ascending >10m/min

When maximum allowed ascent rate is broken alarm is generated. Continuous ascent rate violations will result longer safety stop times.



6.4 Safety stops and deep stops

A three (3) minute safety stop is always recommended for every dive over 10 meters. Safety stop is calculated down when diver is between 2.4 and 6 meters. This is presented with hourglass in front of the stop depth and safety stop calculation is shown in format m'ss. Safety stop might sometimes be more than 3 minutes and this is caused by too fast ascent on a dive.



Deep stops activates when diver goes deeper than 20 meters. Deep stops are presented like safety stops. You know you're in the deep stop area, when stop depth has hourglass visible and deep stop time is running.



6.5 Timer

EON Steel has stopwatch for various timing purposes. Short up –button press start/stops the timer. Pressing up –button for more than 2 seconds clears the timer.



6.6 Alarms, warnings and notifications

EON Steel has alarms, warnings and notifications. They each are shown visually on display with audible alarm (if tones are set on). Alarms requires always immediate action from diver. Alarms are presented on first table:

Alarm	Explanation
pO₂ high	Partial pressure of oxygen becomes >1.6. Immediately react to this by either ascending or change gas with lower oxygen percentage.
pO₂ low	Partial pressure of oxygen is <0.18. Change immediately to gas that has bigger oxygen percentage or descent.
Decompression ceiling broken	On a decompression dive, when ceiling is broken by more than 0.6m. Descent back below ceiling depth and continue to ascent normally.

Decompression ceiling broken alarm shown on EON Steel display.



Warnings in EON Steel.

Warning	Explanation
CNS100%	Central nervous system toxicity level reaches 100% limit.
OTU300	Recommended limit for OTU reached per one day.
Safety stop broken	Warning when safety stop depth is broken by more than 0.6m.
Ascent speed	Ascent speed is more than 10m/min for 5 secs.
Depth	Depth of the diver is bigger than user adjusted depth alarm limit.
Dive time	Dive time exceeds user adjusted dive time alarm limit.
Tank pressure	Tank pressure is less than user adjusted tank pressure limit.

Notifications in EON Steel.

Notification	Explanation
CNS80%	Central nervous system toxicity level reaches 80% limit.
OTU250	~80% from recommended limit for OTU reached per one day.
Better gas available	On multi-gas dive when ascending, notification is given, when it is safe to switch to next available gas for optimum decompression profile.
Low battery	Approximately 3h of battery time left.
Re-charge needed	Approximately 2h of battery time left. Re-charge is needed to make dive.
Tank POD low battery	Tank POD battery life has reached it's limits. Change of battery needed for tank POD.

6.7 Decompression dives

If you exceed no-decompression limit on a dive, EON Steel will provide the decompression information required for ascent. Ascent information is always presented with two (2) values:

- **Ceiling** depth that diver should not go above
- Optimum **ascent time** in minutes to surface with given gases

Typical decompression dive display in EON Steel showing ascent time and first required deepstop at 20.3 meters:



On a decompression dive, there could be three (3) kind of stops:

- Deep stops
- Decompression stop
- Safety stop



NOTE: You may brake, although not recommended, both deep and safety stops, but you may get penalty for doing that, either during the dive or on following dives.

EON Steel will show the ceiling value always from the deepest of these stops. Deep stop and safety stop ceilings are always at constant depth and those stops are counted down in seconds when diver is in stop area. Decompression stop ceiling instead is always decreasing while diver is near the ceiling depth, hence providing continuous decompression with optimum ascent time.

EON Steel display on deep stop:




EON Steel display on decompression stop:




EON Steel display on safety stop:



 **NOTE:** It is always recommended to keep close the decompression ceiling, if possible, when ascending.

Ascent time is always the minimum time needed to reach the surface. It includes:

- Time required to do deep stops
- Ascent time from depth at 10m/33ft per minute
- The time needed for decompression
- The time needed for extra safety stops, because of ascending too fast during the dive

 **WARNING:** Your actual ascent time may be longer, than displayed by EON Steel. It could be longer for following reasons: your ascending speed is slower than 10m/33ft per minute or you are doing decompression deeper than actual displayed ceiling. Take this into account, since it might increase the amount of required breathing gas to reach the surface.

6.8 Oxygen calculations

During a dive, EON Steel calculates central nervous system toxicity (CNS%) and pulmonary oxygen toxicity, tracked by OTU (oxygen toxicity units). The oxygen calculations are based on currently accepted exposure time limit tables and principles.

As a default CNS% and OTU values are not displayed on main views until they hit 80% of their recommended limits. To be precise CNS% is displayed and notification generated, when it hits 80% limit for a dive. After this the values can be seen normally on display. Similarly when OTU becomes 250, around 80% from recommended daily dosage, notification is generated and the value will be available on main views.



NOTE: CNS% and OTU could be set visible always with customization if wanted.

6.9 Multi-gas diving


EON Steel allows gas changes during a dive between gases found on gas menu. When ascending diver is notified to change gases always when available. For example diver has following gases, when planning to do a dive to 55 meters:

- tx18/45, MOD 58m
- tx50/10, MOD 21m
- oxygen, MOD 6m

While ascending from bottom, diver is notified to change gas both at 21 and 6 meters e.g. according their MOD (gas maximum operating depth).

Example how gas change is notified in EON Steel:



 **WARNING:** When diving with multiple gases, remember that algorithm ascent time is always calculated with the assumption that diver uses all the gases found on gas menu. So always check that you have only gases used on a dive set before you dive and remove the ones that is not used.

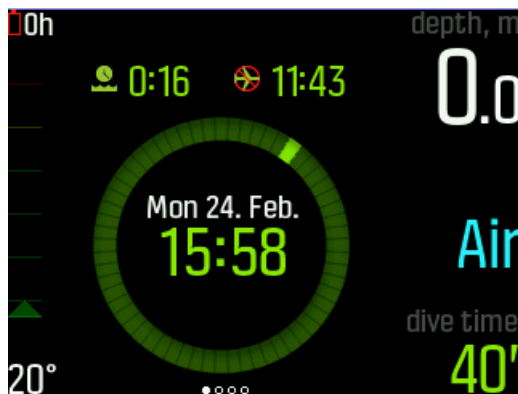
7 AFTER DIVING



NOTE: When dive is surfaced and dive is continued within 5 minutes, then it is counted as one dive.

7.1 Surface & no fly time

After a dive, EON Steel displays surface time from previous dive and has countdown for recommended no fly time. During no fly time, flying or traveling to higher altitude should be avoided.

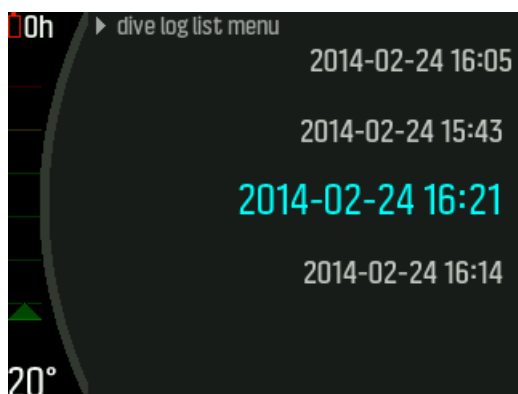


No fly time is always at least 12 hours or equivalent to desaturation time when it is more than 12 hours. For desaturation times lower than 70 minutes, no no fly time is given.

If decompression is omitted during dive, so that algorithm is locked (error mode), no fly time is then always 48 hours. Similarly if dive is done in gauge mode (bottom timer), no fly time becomes 48 hours.

7.2 Logbook

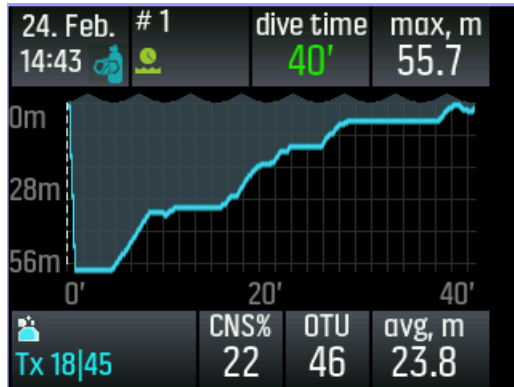
Dive logs can be found from menu path "Menu > Logs". They are ordered by date & time.



Dive log information and profile can be browsed by selecting the dive. Each dive log contains data samples with fixed 10 second intervals. Dive profile

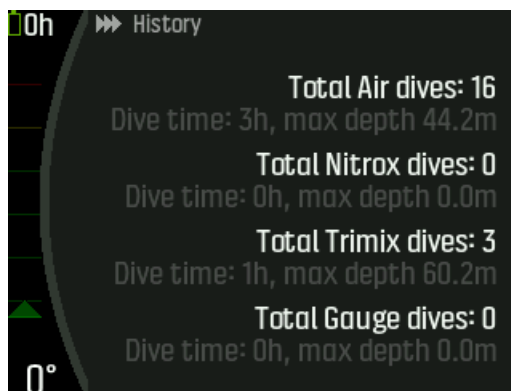
includes cursor for browsing logged data. For more detailed log browsing, download the dive(s) with DM5 (see section 9).

When logbook memory becomes full, the oldest dives are always removed to make space new ones.



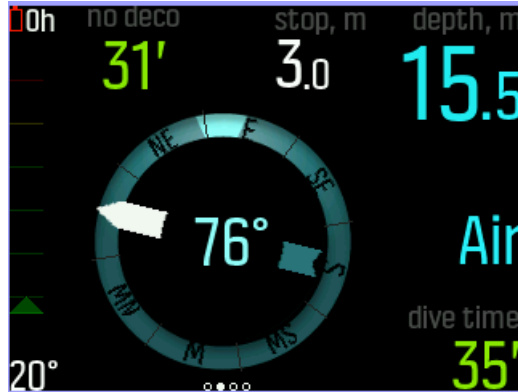
7.3 Dive history

Dive history is a summary of all the dives done with the EON Steel. History is divided by the type of dives done with the device: air, nitrox, trimix and gauge dives are logged separately. Each type of dive includes amount of dives done, cumulative dive hours and maximum depth.



8 COMPASS

EON Steel includes 3D digital compass. One of the main views includes graphical compass to be used for navigation.



Compass heading can be locked by pressing XXX –button. This helps you **stay on course** while diving.

Calibrating a compass can be done on compass main view any time. Calibrating is done by slowly rotating the unit in your hand with large infinite 8 loop about 15 seconds.

Because of changes in the surrounding magnetic field compass of EON Steel needs to be re-calibrated occasionally. During the calibration process, the compass adjusts itself to the surrounding magnetic field . As a basic rule, you should calibrate the compass whenever it does not seem to operate properly.

9 DM5 & MOVESCOUNT

Suunto DM5 software is PC and Mac compatible software for keeping your dive logbook up to date and planning your dives. With DM5 you could customize your EON Steel and update the latest firmware. You can download it from <http://www.suunto.com/dm5/>.



NOTE: Mono framework is required, when using DM5 in Mac.

Movescount is an online sports community that works with DM5. Through movescount you're able to share your dives with others.

9.1 Downloading logs from EON Steel

9.2 Customizing EON Steel

9.3 Updating firmware

10 SUUNTO FUSED RGBM

10.1 No decompression time

10.2 Safety stop

10.3 Deepstop

10.4 Decompression ceiling & ascent time

10.5 Breaking the ceiling

11 TAKING CARE OF EON STEEL

11.1 Maintenance

11.2 Maximizing battery life

Battery life means

11.3 Replacing the battery

Rechargeable batteries have a limited number of charge cycles and may eventually need to be replaced and disposed of. For products with built-in lithium-ion polymer batteries, the batteries should be replaced only by Suunto authorized service centers. Suunto authorized service centers ensures that old batteries are recycled properly, since batteries should always be recycled or disposed separately from household waste.

11.4 Warranty

Suunto warrants that during the Warranty Period Suunto or a Suunto Authorized Service Center (hereinafter Service Center) will, at its sole discretion, remedy defects in materials or workmanship free of charge either by a) repairing, or b) replacing, or c) refunding, subject to the terms and conditions of this Limited Warranty. This Limited Warranty is only valid and enforceable in the country of purchase, unless local law stipulates otherwise.

Warranty Period

The Limited Warranty Period starts at the date of original retail purchase. The Warranty Period is two (2) years for display devices. The Warranty Period is one (1) year for accessories and consumable parts, including but not limited to chargeable batteries, chargers, docking stations, straps, cables and hoses.

Exclusions and Limitations

This Limited Warranty does not cover:

1. a) normal wear and tear, b) defects caused by rough handling, or c) defects or damage caused by misuse contrary to intended or recommended use;
2. user manuals or any third-party items;
3. defects or alleged defects caused by the use with any product, accessory, software and/or service not manufactured or supplied by Suunto;
4. replaceable batteries.

This Limited Warranty is not enforceable if item:

1. has been opened beyond intended use;

2. has been repaired using unauthorized spare parts; modified or repaired by unauthorized Service Center;
3. serial number has been removed, altered or made illegible in any way, as determined at the sole discretion of Suunto;
4. has been exposed to chemicals including but not limited to mosquito repellents.

Suunto does not warrant that the operation of the Product will be uninterrupted or error free, or that the Product will work in combination with any hardware or software provided by a third party.

Access to Suunto warranty service

Register your item at www.suunto.com/register and save the purchase receipt and/or registration card. For instructions how to obtain warranty service, visit www.suunto.com, contact your local authorized Suunto service center, or call Suunto Contact Center +358 2 284 1160 (national or premium rates may apply).

Limitation of Liability

To the maximum extent permitted by applicable mandatory laws, this Limited Warranty is your sole and exclusive remedy and is in lieu of all other warranties, expressed or implied. Suunto shall not be liable for special, incidental, punitive or consequential damages, including but not limited to loss of anticipated benefits, loss of data, loss of use, cost of capital, cost of any substitute equipment or facilities, claims of third parties, damage to property resulting from the purchase or use of the item or arising from breach of the warranty, breach of contract, negligence, strict tort, or any legal or equitable theory, even if Suunto knew of the likelihood of such damages. Suunto shall not be liable for delay in rendering warranty service.

11.5 Disposal of the device

Please dispose of the device in an appropriate way, treating it as electronic waste. Do not throw it in the garbage. If you wish, you may return the device to your nearest Suunto representative.



12 SAFETY, HANDLING & SUPPORT

12.1 Important safety information

Handling Handle EON Steel with care, since it has sensitive electronic components inside. Dropping the device may cause it to get damaged. If you're concerned about getting scratches on the display, then use scratch guard provided with the device.

Repairing Don't try to open or repair the EON Steel by yourself. If you have problems with the device, then please contact your nearest Suunto authorized service center.

Battery Don't try to replace the EON Steel battery by yourself. Replacing the battery could be done only by Suunto authorized service center.

12.2 Safety precautions



WARNING: You must read the leaflet and user guide for your dive computer. Failure to do so may lead to improper use, serious injury or death.



WARNING: Allergic reactions or skin irritations may occur when product is in contact with skin, even though our products comply with industry standards. In such event, stop use immediately and consult a doctor.



WARNING: Not for professional use! Suunto dive computers are intended for recreational use only. The demands of commercial or professional diving may expose the diver to depths and conditions that tend to increase the risk of decompression sickness (DCS). Therefore, Suunto strongly recommends that the device not be used for any commercial or professional diving activities.





WARNING: ONLY DIVERS TRAINED IN PROPER USE OF SCUBA DIVING EQUIPMENT SHOULD USE A DIVE COMPUTER! No dive computer can replace the need for proper dive training. Insufficient or improper training may cause a diver to commit errors that may lead to serious injury or death.





WARNING: THERE IS ALWAYS A RISK OF DECOMPRESSION SICKNESS (DCS) FOR ANY DIVE PROFILE EVEN IF YOU FOLLOW THE DIVE PLAN PRESCRIBED BY DIVE TABLES OR A DIVE COMPUTER. NO PROCEDURE, DIVE COMPUTER OR DIVE TABLE WILL PREVENT THE POSSIBILITY OF DCS OR OXYGEN TOXICITY! An individual's physiological make up can vary from day to day. The dive computer cannot account for these variations. You are strongly advised to remain well within


the exposure limits provided by the instrument to minimize the risk of DCS. As an added measure of safety, you should consult a physician regarding your fitness before diving.


 **WARNING:** SUUNTO STRONGLY RECOMMENDS THAT SPORT DIVERS LIMIT THEIR MAXIMUM DEPTH TO 40 M/130 FT OR TO THE DEPTH CALCULATED BY THE COMPUTER BASED ON THE SELECTED O₂% AND A MAXIMUM PO₂ OF 1.4 BAR! Exposure to greater depths increases the risk of oxygen toxicity and decompression sickness.

 **WARNING:** DIVES WITH REQUIRED DECOMPRESSION STOPS ARE NOT RECOMMENDED. YOU SHOULD ASCEND AND BEGIN DECOMPRESSION IMMEDIATELY WHEN THE DIVE COMPUTER SHOWS YOU THAT A DECOMPRESSION STOP IS REQUIRED!

 **WARNING:** USE BACK-UP INSTRUMENTS! Ensure that you use back-up instrumentation, including a depth gauge, submersible pressure gauge, timer or watch, and have access to decompression tables whenever diving with the dive computer.


 **WARNING:** PERFORM PRE-CHECKS! Always activate and check the device before diving in order to ensure that display works, the device has not run out of battery power, and that the gas mixture, altitude, personal, and safety stops are correct.


 **WARNING:** YOU ARE ADVISED TO AVOID FLYING ANY TIME THE COMPUTER COUNTS DOWN THE NO-FLY TIME. ALWAYS ACTIVATE THE COMPUTER TO CHECK THE REMAINING NO-FLY TIME PRIOR TO FLYING! Flying or traveling to a higher altitude within the no-fly time can greatly increase the risk of DCS. Review the recommendations given by Divers Alert Network (DAN). There can never be a flying after diving rule that is guaranteed to completely prevent decompression sickness!


 **WARNING:** THE DIVE COMPUTER SHOULD NEVER BE TRADED OR SHARED BETWEEN USERS WHILE IT IS IN OPERATION! Its information will not apply to someone who has not been wearing it throughout a dive or sequence of repetitive dives. Its dive profiles must match that of the user. If it is left on the surface during any dive, the dive computer will give inaccurate information for subsequent dives. No dive computer can take into account dives made without the computer. Thus, any diving activity up to four days prior to initial use of the computer may cause misleading information and must be avoided.


 **WARNING:** DO NOT EXPOSE ANY PART OF YOUR DIVE COMPUTER TO ANY GAS MIX CONTAINING MORE THAN 40% OXYGEN!


Enriched air with greater oxygen content presents a risk of fire or explosion and serious injury or death.

 **WARNING:** THE DIVE COMPUTER WILL NOT ACCEPT FRACTIONAL PERCENTAGE VALUES OF OXYGEN CONCENTRATION. DO NOT ROUND UP FRACTIONAL PERCENTAGES! For example, 31.8% oxygen should be entered as 31%. Rounding up will cause nitrogen percentages to be understated and will affect decompression calculations. If there is a desire to adjust the computer to provide more conservative calculations, use the personal adjustment feature to affect decompression calculations or reduce the PO₂ setting to affect oxygen exposure according to the entered O₂% and PO₂ values. As a safety precaution, the oxygen calculations in the dive computer are made with an oxygen percentage of 1% + set O₂%.

 **WARNING:** SET THE CORRECT ALTITUDE SETTING! When diving at altitudes greater than 300 m/1000 ft, the altitude setting must be correctly selected in order for the computer to calculate the decompression status. The dive computer is not intended for use at altitudes greater than 3000 m/10000 ft. Failure to select the correct altitude setting or diving above the maximum altitude limit will result in erroneous dive and planning data.


 **WARNING:** SET THE CORRECT PERSONAL SETTING! Whenever it is believed that factors that tend to increase the possibility of DCS exist, it is recommended that you use this option to make the calculations more conservative. Failure to select the correct personal setting will result in erroneous dive and planning data.


 **WARNING:** DO NOT EXCEED THE MAXIMUM ASCENT RATE! Rapid ascents increase the risk of injury. You should always make the mandatory and recommended safety stops after you have exceeded the maximum recommended ascent rate. If this mandatory safety stop is not completed the decompression model will penalize your next dive(s).


 **WARNING:** YOUR ACTUAL ASCENT TIME MAY BE LONGER THAN DISPLAYED BY THE INSTRUMENT! The ascent time will increase if you:


- remain at depth
- ascend slower than 10 m/min / 33 ft/min or
- make your decompression stop deeper than at the ceiling
- forget to change the used gas mixture


These factors might also increase the amount of breathing gas required to reach the surface.


 **WARNING:** NEVER ASCEND ABOVE THE CEILING! You must not ascend above the ceiling during your decompression. In order to avoid doing so by accident, you should stay somewhat below the ceiling.


 **WARNING:** DO NOT DIVE WITH A CYLINDER OF ENRICHED AIR IF YOU HAVE NOT PERSONALLY VERIFIED ITS CONTENTS AND ENTERED THE ANALYZED VALUE INTO YOUR DIVE COMPUTER! Failure to verify cylinder contents and enter the appropriate O₂% into your dive computer will result in incorrect dive planning information.


 **WARNING:** DO NOT DIVE WITH A GAS IF YOU HAVE NOT PERSONALLY VERIFIED ITS CONTENTS AND ENTERED THE ANALYZED VALUE INTO YOUR DIVE COMPUTER! Failure to verify cylinder contents and enter the appropriate gas values where applicable into your dive computer will result in incorrect dive planning information.


 **WARNING:** Diving with gas mixtures exposes you to risks that are different from those associated with diving with standard air. These risks are not obvious, and require training to understand and avoid. Risks include possible serious injury or death.


 **WARNING:** Traveling to a higher elevation can temporarily cause a change in the equilibrium of dissolved nitrogen in the body. It is recommended that you acclimatize to the new altitude by waiting at least three hours before diving.


 **WARNING:** WHEN THE OXYGEN LIMIT FRACTION INDICATES THAT THE MAXIMUM LIMIT IS REACHED, YOU MUST IMMEDIATELY TAKE ACTION TO REDUCE OXYGEN EXPOSURE. Failure to take action to reduce oxygen exposure after the warning is given can rapidly increase the risk of oxygen toxicity, injury, or death.


 **WARNING:** If there are several divers using the dive computer with wireless transmission, always ensure that each diver is using a different code before starting the dive.


 **WARNING:** Personal adjustment setting P0–P-2 causes a high risk of DCS, or other personal injury, and death.

 **WARNING:** Using the Suunto Dive Planner software is not a substitute for proper dive training. Diving with mixed gases has dangers that are not familiar to divers diving with air. To dive with trimix, triox, heliox and nitrox or all of them, divers must have specialized training for the type of diving they are doing.


 **WARNING:** Always use realistic SAC rates and conservative turn pressures during dive planning. Overly optimistic or erroneous gas planning can result in the exhaustion of breathing gas during decompression or in a cave or a wreck.

 **WARNING:** ENSURE THE WATER RESISTANCE OF THE DEVICE! Moisture inside the device and/or battery compartment may seriously damage the unit. Only an authorized SUUNTO service center should do service activities.


 **WARNING:** Do not use Suunto USB Cable in areas where flammable gases are present. Doing so may cause an explosion.

 **WARNING:** Do not disassemble or remodel Suunto USB Cable in any way. Doing so may cause an electric shock or fire.


 **WARNING:** Do not use if Suunto USB Cable or parts are damaged.


 **CAUTION:** Only use at specified temperatures.

 **CAUTION:** Only use Suunto USB Cable with Suunto dive computers. Check compatibility before use.

 **CAUTION:** Only use a clean and dry Suunto USB Cable. Clean and dry the connector surfaces before use to prevent damage to the Suunto dive computer.

 **CAUTION:** Only attach Suunto USB Cable to the data transfer contact on the Suunto dive computer.

 **CAUTION:** Never lift or carry your cylinder by holding the wireless tank pressure transmitter as this may break the cover and cause flooding of the unit. If your cylinder falls down with the transmitter attached to the regulator first stage, ensure that the transmitter has not been damaged before diving with it.

 **NOTE:** After using dive computer in gauge mode the no-fly time is always 48 hours.

13 TECHNICAL INFORMATION

13.1 Technical specification

13.2 Suunto Fused RGBM algorithm

13.3 Oxygen exposure

14 INTELLECTUAL PROPERTY

Trademarks

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Patent notice

Patents have been issued or applied for one or several features of this product.

15 DISCLAIMERS

CE

The CE mark is used to mark conformity with the European Union EMC directive 89/336/EEC.

EN 13319

EN 13319 is a European diving depth gauge standard. Suunto dive computers are designed to comply with this standard.

EN 250 / FIOH

The tank pressure gauge and dive instrument parts used in measuring the tank pressure meet the requirements set in the section of the European Standard EN 250 that concern tank pressure measurements. FIOH, notified body no.0430, has EC type-examined this type of personal protective equipment.

16 GLOSSARY

Term	What it means
Altitude dive	A dive made at an elevation greater than 300 m/1000 ft above sea level.
Ascent rate	The speed at which the diver ascends toward the surface.
Ascent time	The minimum amount of time needed to reach the surface on a decompression stop dive.
CCR	Closed-Circuit rebreather. Scuba that recycles all exhaled gas.
Ceiling	On a decompression stop dive, the shallowest depth to which a diver may ascend based on computed inert gas load.
CNS	Central nervous system toxicity. Toxicity is caused by oxygen. Can cause a variety of neurological symptoms. The most important of which is an epileptic-like convulsion which can cause a diver to drown.
CNS%	Central nervous system toxicity limit fraction.
Compartment	See "Tissue group".
DM5	Suunto DM4 with Movescount, a software for managing your dives.
Decompression	Time spent at a decompression stop, or range, before surfacing, to allow absorbed nitrogen to escape naturally from tissues.
Decompression range	On a decompression stop dive, the depth range between the floor and the ceiling within which a diver must stop for some time during ascent.
DCS	Decompression sickness/illness. Any of a variety of maladies resulting either directly or indirectly from the formation of nitrogen bubbles in tissues or body fluids, as a result of inadequately controlled decompression.
Dive series	A group of repetitive dives between which the dive computer indicates some nitrogen loading is present. When nitrogen loading reaches zero the dive computer deactivates.
Dive time	Elapsed time between leaving the surface to descend,

	and returning to the surface at the end of a dive.
Floor	The deepest depth during a decompression stop dive at which decompression takes place.
He%	Helium percentage or helium fraction in the breathing gas.
MOD	Maximum operating depth of a breathing gas is the depth at which the partial pressure of oxygen (pO ₂) of the gas mix exceeds a safe limit.
Multi level dive	A single or repetitive dive that includes time spent at various depths and whose no decompression limits are therefore not determined solely by the maximum depth attained.
Nitrox (Nx)	In sports diving, refers to any mix with a higher fraction of oxygen than standard air.
No deco (No decompression stop time)	The maximum amount of time a diver may remain at a particular depth without having to make decompression stops during the subsequent ascent.
No decompression dive	Any dive which permits a direct, uninterrupted ascent to the surface at any time.
No dec time	Abbreviation for no decompression time limit.
OC	Open-circuit. Scuba that exhausts all exhaled gas.
OTU	Oxygen tolerance unit. Used to measure the whole-body-toxicity, caused by prolonged exposure to high oxygen partial pressures. The most common symptoms are irritation in the lungs, a burning sensation in the chest, coughing and reduction of the vital capacity.
O₂%	Oxygen percentage or oxygen fraction in the breathing gas. Standard air has 21% oxygen.
Partial pressure of oxygen (pO₂)	Limits the maximum depth to which the nitrox mixture can be safely used. The maximum partial pressure limit for enriched air diving is 1.4 bar. The contingency partial pressure limit is 1.6 bar. Dives beyond this limit risk immediate oxygen toxicity.
Reduced gradient bubble model (RGBM)	Modern algorithm for tracking both dissolved and free gas in divers.
Repetitive dive	Any dive whose decompression time limits are affected

	by residual nitrogen absorbed during previous dives.
Residual nitrogen	The amount of excess nitrogen remaining in a diver after one or more dives.
Semi-closed rebreather (SCR)	Scuba that recycles a portion of exhaled gas.
Scuba	Self-contained underwater breathing apparatus.
Surface time	Elapsed time between surfacing from a dive and beginning a descent for the subsequent dive.
Tissue group	Theoretical concept used to model bodily tissues for the construction of decompression tables or calculations.
Trimix	A breathing gas mix of helium, oxygen and nitrogen.