SUUNTO

SUUNTO EON STEEL

DW141

Safety and Regulatory Information



Note: This document contains the safety and regulatory information relevant to the Suunto EON Steel device with updated software that includes the Bühlmann 16 GF algorithm.

EN

SAFETY AND REGULATORY INFORMATION

1 PRODUCT DESCRIPTION AND INTENDED USE

The Suunto EON Steel dive computer is designed for use as an optional diving equipment for recreational diving. Suunto EON Steel is intended for use in various types of scuba diving, for example, air, nitrox, trimix and CCR diving. In scuba diving use Suunto EON Steel dive computer displays important information before, during and after the dive to enable safe decision making. The most important pieces of information are dive depth, dive time and decompression information. In addition, EON Steel can show the user other dive related values, such as ascent speed, water temperature, and compass direction. It also helps the diver to plan the dive and to follow through the dive plan.

Suunto EON Steel can be used as a standalone product or in combination with the Suunto Tank POD, which measures the tank pressure and transmits the pressure reading information to the Suunto EON Steel dive computer. The combination of the EON Steel and the Tank POD is a Personal Protective Equipment under the EU Regulation 2016/425 and protects against risks listed under PPE Risk Category III (a). Backup instruments, for example, depth gauge, submersible pressure gauge, timer, or watch must be used. The diver must have access to decompression tables whenever diving with a dive computer.

2 SAFETY

⚠ WARNING: All computers experience failures. It is possible that this device may suddenly fail to provide accurate information during your dive. Always use a backup dive device and only dive with a buddy. Only divers trained in proper use of scuba diving equipment should use this dive device! YOU MUST READ all the printed information included with the product and the online user guide before diving. Failure to do so may lead to improper use, serious injury or death. We have lots of helpful information ready for you at suunto.com/support, including the complete user guide.

NOTE: Make sure your Suunto dive computer always has the latest software with updates and improvements. Check before every dive trip from suunto.com/support, if Suunto has released a new software update to your device. When it is available, you must install it before diving. Updates are made available to improve your user experience and are part of Suunto´s philosophy of continuous product development and improvement.

2.1 Safety precautions

⚠ WARNING: ONLY TRAINED DIVERS SHOULD USE A DIVE COMPUTER! Insufficient training for any kind of diving, including freediving, may cause a diver to commit errors, such as incorrect use of gas mixtures or improper decompression 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: If you have a pacemaker, we recommend you do not scuba dive. Scuba diving creates physical stresses on the body, which may not be suitable for pacemakers.

⚠ WARNING: If you have a pacemaker, consult a doctor before using this device. The inductive frequency used by the device may interfere with pacemakers.

⚠ 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: USE BACKUP INSTRUMENTS! Ensure that you use backup instrumentation, including a depth gauge, submersible pressure gauge, timer or watch, and have access to decompression tables whenever diving with a dive computer. Use only CE-marked equipment.

⚠ WARNING: For safety reasons, you should never dive alone. Dive with a designated buddy. You should also stay with others for an extended time after a dive as the onset of possible DCS may be delayed or triggered by surface activities.

⚠ WARNING: PERFORM PRE-CHECKS! Always check that your dive computer is functioning properly and has the correct settings before diving. Check that the display is working, the battery level is OK, tank pressure is correct, and so forth.

⚠ WARNING: Check your dive computer regularly during a dive. If you believe or conclude that there is any problem with any computer function, abort the dive immediately and safely return to the surface. Call Suunto Customer Support and return your computer to an authorized Suunto Service Center for inspection.

⚠ 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: 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 tank contents and enter the appropriate gas values where applicable into your dive computer will result in incorrect dive planning information.

⚠ WARNING: Using a dive planner software such as Suunto DM5 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 triox, heliox and nitrox or all of them, divers must have specialized training for the type of diving they are doing.

⚠ 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 Suunto USB cable if cable or parts are damaged.

⚠ WARNING: You must only charge your device using USB adapters that comply with the IEC 62368-1 standard and have a maximum output of 5 V. Non-compliant adapters are a fire hazard and a risk to personal injury and might damage your Suunto device.

⚠ CAUTION: DO NOT allow the connector pins of the USB cable to touch any conductive surface. This may short-circuit the cable, making it unusable.

2.2 Emergency ascents

In the unlikely event that the dive computer malfunctions during a dive, follow the emergency procedures provided by your certified dive training agency to immediately and safely ascend.

3 BEFORE YOU DIVE

Make sure that you fully understand the use, displays, and limitations of your dive instruments. If you have any questions about this manual or the dive instrument, contact your Suunto dealer before diving with the dive computer. Always remember that YOU ARE RESPONSIBLE FOR YOUR OWN SAFETY!

Before leaving on a dive trip, inspect your dive computer thoroughly to make sure everything is functioning properly.

At the dive site, perform your manual pre-checks on each device before entering the water.

3.1 Dive computer pre-check

Ensure that:

1. Suunto EON Steel is in the correct dive mode and the display is working as expected.
2. Altitude setting is correct.
3. Personal setting or Gradient Factor is correct.
4. Deep stops are set correctly.
5. Unit system is correct.
6. Compass is calibrated. Start the calibration manually to also confirm that the dive computer audible sounds are working. After successful calibration, you should hear a sound.
7. The battery is fully charged.
8. All primary and backup gauges for time, pressure, and depth (both digital and mechanical) are showing correct and consistent readings.
9. If Suunto Tank PODs are in use, check that Suunto Tank POD is properly installed and the tank valve is open. Please see the Suunto Tank POD User Guide for detailed information and proper use.

10. If Suunto Tank PODs are in use, check that connections are working and gas selections are correct.

NOTE: For Suunto Tank POD related information, please see the instructions provided with the product.

3.2 Selecting personal setting

There are several risk factors that can affect your susceptibility to DCS. Such risk factors vary between divers, as well as from one day to another.

The personal risk factors which tend to increase the possibility of DCS include:

- Exposure to low temperature – 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

⚠ WARNING: SET THE CORRECT PERSONAL SETTING! Whenever it is believed that risk 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.

Personal setting is available in Suunto Fused™ RGBM 2 dive algorithm. The five step personal setting can be used to adjust the algorithm conservatism to fit your DCS susceptibility. You can find the setting under **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
Default (0)	Ideal conditions (default value)
Conservative (+1)	Some risk factors or conditions exist
More conservative (+2)	Several risk factors or conditions exist

⚠ WARNING: Personal setting 0, -1 or -2 causes a high risk of DCS, or other personal injury, and death.

For Bühlmann 16 GF dive algorithm the conservative setting is adjusted using Gradient Factors. By default conservative setting is 30/70.

⚠ WARNING: Do not edit Gradient Factor values until you understand the effects.

3.2.1 Diver safety

Because any decompression model is purely theoretical and does not monitor the actual body of a diver, no decompression model can guarantee the absence of DCS. Experimentally it has been shown that the body adapts to decompression to some degree when diving is constant and frequent. Two personal adjustment settings (P-1 and P-2) are available for divers who dive constantly and are ready to accept greater personal risks.

⚠ CAUTION: Always use the same personal and altitude adjustment settings for the actual dive and for the planning. Increasing the personal adjustment setting from the planned setting as well as increasing the altitude adjustment setting can lead to longer decompression times deeper and thus to larger required gas volume. You can run out of breathing gas underwater if the personal adjustment setting has been changed after dive planning.

3.3 Selecting altitude setting

This setting automatically adjusts the decompression calculation according to the given altitude range. You can find the setting under **Dive settings » Parameters » Altitude** and select from three ranges:

- 0 – 300 m (0 – 980 ft) (default)
- 300 – 1500 m (980 – 4900 ft)
- 1500 – 3000 m (4900 – 9800 ft)

As a result, the allowed no decompression stop limits are considerably reduced.

The atmospheric pressure is lower at high altitudes than at sea level. After traveling to a higher altitude, you will have additional nitrogen in your body, compared to the equilibrium situation at the original altitude. This ‘additional’ nitrogen is released gradually over time and equilibrium is restored. It is recommended that you acclimatize to a new altitude by waiting at least three hours before making a dive.

Before high-altitude diving, you need to adjust the altitude settings of your dive computer so that the calculations take into account the high altitude. The maximum partial pressures of nitrogen allowed by the mathematical model of the dive computer are reduced according to the lower ambient pressure.

⚠ 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 before diving.

⚠ 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.

4 GASES

4.1 Compressed air

This device is recommended for use with compressed air. The compressed air supply must comply with the quality of compressed air specified in the EU standard EN 12021:2014 (requirements for compressed gases for breathing apparatus).

4.2 Enriched Air Nitrox diving use

This device can be used with nitrox breathing gases (also known as oxy-nitrogen). The maximum nitrox breathing gas oxygen concentration is 40%.

⚠ WARNING: Do not use nitrox gas mixtures if you do not have proper training. Appropriate training courses about nitrox and oxygen diving are essential prior to the use of this kind of equipment with oxygen content greater than 22%.

⚠ WARNING: In nitrox use, the maximum operating depth and exposure time are dependent on the oxygen content of the gas.

⚠ WARNING: There is a danger when using nitrox that contaminants may give rise to an oxygen ignition.

⚠ WARNING: The use of breathable air according to EN 12021 may contaminate the diving apparatus.

NOTE: To minimize the risk of oxygen ignition, pressure vessel valve(s) should always be opened slowly.

4.3 Oxygen calculations

The oxygen calculations are based on currently accepted exposure time limit tables and principles.

By default in Air/Nitrox dive mode, CNS% and OTU values are not displayed until they reach 80% of their recommended limits. When either value reaches 80%, Suunto EON Steel notifies you and the value stays in the view.

- Audible alarm when pO_2 value exceeds the preset limit (pO_2 high alarm)
- Audible alarm when pO_2 value is < 0.18 (pO_2 low alarm)

⚠ 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 a CNS%/OTU warning is given can rapidly increase the risk of oxygen toxicity, injury, or death.

NOTE: You can customize views to always show CNS% and OTU.

5 OPERATING CONDITIONS

- **Altitude range**: 0 to 3000 m (0 to 10000 ft))above sea level
- **Operating temperature**: 0 °C to 40 °C (32 °F to 104 °F)
  NOTE: Diving in freezing conditions may damage the dive computer. Make sure the device is not getting frozen when wet.
- **Storage temperature**: -20 °C to +50 °C (-4 °F to +122 °F)
  NOTE: Do not leave the dive computer in direct sunlight!
- **Recommended charging temperature:** 0 °C to +35 °C (32 °F to +95 °F)
- **Maintenance cycle**: 500 dives or two years, whichever comes first

⚠ WARNING: Do not expose the device to temperatures above or below the given limits, otherwise it might get damaged or you might be exposed to safety risk.

6 HANDLING GUIDELINES AND MAINTENANCE

Handle Suunto EON Steel with care. The sensitive internal electronic components may be damaged if the device is dropped or otherwise mishandled.

When traveling with this dive computer, ensure that it is packed securely in check-

in or carry-on luggage. It should be placed in a bag or other container where it cannot move around, be bumped or easily hit.

Do not try to open or repair Suunto EON Steel by yourself. If you are experiencing problems with the device, please contact your nearest authorized Suunto Service Center.

⚠ WARNING: ENSURE THE WATER RESISTANCE OF THE DEVICE! Moisture inside the device may seriously damage the unit. Only an authorized Suunto Service Center should do service activities.

NOTE: Thoroughly rinse the device with fresh water, mild soap, and carefully clean the housing with a moist soft cloth or chamois, especially after salt-water and pool dives.

Pay special attention to the pressure sensor area, water contacts, pushers, and USB cable port. If you use the USB cable before washing the dive computer, the cable (device end) should be rinsed as well.

⚠ WARNING: Do not use compressed air or high pressure water hoses to clean your dive computer. These can permanently damage the pressure sensor in your dive computer.

⚠ WARNING: Use only original Suunto accessories - damage caused by non-original accessories is not covered by warranty.

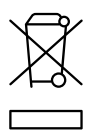
NOTE: Do not leave your Suunto EON Steel immersed in water (for rinsing). The display stays on under water and consumes battery life.

TIP: Remember to register your Suunto EON Steel at suunto.com/register to get personalized support.

6.1 Maintenance

Maintenance cycle is 500 hours of diving or two years, whichever comes first. Please bring your device to an official Suunto Service.

6.2 Disposal



Please dispose of the device in accordance with local regulations for electronic waste. Do not throw it in the garbage. If you wish, you may return the device to your nearest Suunto dealer.

7 TECHNICAL INFORMATION

7.1 Depth gauge

- Temperature compensated pressure sensor
- **Maximum depth of operation:** 150 m (492 ft) complying with EN 13319
- **Maximum static pressure:** 15 bar (complying with EN 13319 and ISO 6425)
- **Accuracy:** ± 1% of full scale or better from 0 to 150 m (492 ft) at 20 °C (68 °F) complying with EN 13319
- **Depth display range**: 0 to 300 m (0 to 984 ft)
- **Resolution**: 0.1 m from 0 to 100 m (1 ft from 0 to 328 ft); 1 m from 100 to 150 m (1 ft from 328 to 492 ft)

7.2 Radio transceiver

- **Bluetooth**®: Bluetooth® Smart compatible
- **Frequency band**: 2402 – 2480 MHz

- **Maximum output power:** <4 dBm
- **Range**: ~3 m/9.8 ft

Underwater radio receiver

- **Frequency band**: single channel 123 kHz
- **Range**: 1.5 m/4.9 ft

7.3 Battery

- Type: 3.7 V rechargeable lithium-ion
- Charging: USB: 5 Vdc, 0.8 A

The following conditions have an effect on the expected battery lifetime:

- The conditions in which the unit is operated and stored (for example, temperature/cold conditions). Below 10 °C/50 °F the expected battery lifetime is about 50 - 75% of that at 20 °C/68 °F.
- The quality of the battery. Some lithium batteries may exhaust unexpectedly, which cannot be tested in advance.

NOTE: Rechargeable batteries have a limited number of charge cycles and may eventually need to be replaced. Do not try to replace the battery by yourself! It should always be replaced by an authorized Suunto Service Center.

NOTE: Low temperature may activate the battery warning even though the battery has enough capacity for diving in water with higher temperatures (40 °C or less).

7.4 Device info

You can check the details of your device's software and hardware from the settings under **General » About EON » EON info**.

Long press the middle button to enter the menu. Press lower button for about 10 seconds to enter EON info.





7.5 Dive time calculations

Suunto EON Steel starts dive calculations (e.g. dive time) when the device is submerged, water contacts are activated and the dive computer is in dive mode at 1.2 m (4 ft) depth.

When ascending, dive calculations automatically stop at 1.2 m (4 ft) depth.

7.6 Display

Display backlight is on by default. The brightness of the display can be adjusted under **General » Device settings » Brightness**. The default value is 50%. Adjusting this value has direct impact on battery life.

TIP: You can significantly extend battery life by turning down the display brightness.

7.7 Date of manufacture

The manufacturing date can be determined from your device's serial number. The serial number is always 12 characters long: YYWWXXXXXXXX.

In the serial number, the first two digits (YY) are the year and the following two digits (WW) are the week within the year when the device was manufactured.

8 COMPLIANCE

8.1 CE

Hereby, Suunto Oy, declares that the radio equipment type DW141 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: suunto.com/EUconformity.

8.2 EU depth gauge standard

The European depth gauge standard EN 13319:2000 is applicable to the Suunto EON Steel product. The notified body no. 0078, Institut National de la Plongée Professionnelle, Entrée 3 Port de la Pointe Rouge, 13008 MARSEILLE, France, has tested the Suunto EON Steel product according to this standard.

8.3 FCC / ISED regulatory notices

Modification statement

Suunto has not approved any changes or modifications to this device by the user. Any changes or modifications could void the user's authority to operate the equipment.

Interference statement

This device complies with Part 15 of the FCC Rules and Industry Canada license-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.

Wireless notice

This device complies with FCC/ISED radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the ISED radio frequency (RF) Exposure rules. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC Class B digital device notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential

installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

8.4 CAN ICES-3 (B) / NMB-3 (B)

This Class B digital apparatus complies with Canadian ICES-003.

CUSTOMER SUPPORT

suunto.com/support

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