

Mares App for Smart View 80

Image – Smart View Housing

Instruction Manual

PREFACE

IMPORTANT WARNINGS

No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form without the written permission of HEAD Watersports S.p.A.

HEAD Watersports adopts a policy of continuing improvement, and therefore reserves the right to make changes and enhancements to any of the products described in this manual without notice.

Under no circumstances shall HEAD Watersports be held responsible for any loss or damage sustained by third parties deriving from the use of this instrument.

User assumes the risk of damage to smartphones or electronic devices used inside the Smart View 80 housing.

WARNING

A dive computer is an electronic instrument and as such it is not immune to failure. To protect yourself against the unlikely event of a failure, in addition to the dive computer, also use a depth gauge, a submersible pressure gauge, a timer or watch, and dive tables.

WARNING

The Smart View Housing & Mares app track & calculate your personal dive information. Do not share the housing with anyone else during a dive because the dive information will not calculate your information correctly. To do so could result in serious injury or death.

WARNING

Do not dive if the display appears unusual or unclear.

WARNING

The dive computer must not be used in conditions that preclude its use (e.g. low or no visibility, making it impossible to read the screen)

WARNING

The dive computer cannot ensure against possible decompression sickness.

DISCLAIMER

This manual describes how to operate an instrument and it describes the information provided by the instrument during a dive.

Neither this manual nor the instrument are a substitute for dive training, common sense and good diving practices.

How the information provided by the instrument is interpreted and put to use by the diver is not the responsibility of HEAD Watersports. Read the manual carefully and make sure you understand completely how the instrument works and the information it provides during a dive, including information on depth, time, decompression obligations and all warnings and alarms. Unless you fully understand how the instrument works and the information it displays and unless you accept full responsibility for using this instrument, do not dive with it.

WARNING

In particular, unless you fully understand the implications of certain features, you should not use them. Examples of features not to be used unless fully understood are;

- High oxygen content decompression mixes

PART 1 – OUT OF THE WATER

1. INTRODUCTION

1.1 DIVE COMPUTER GLOSSARY

ABBREVIATIONS & TERMINOLOGY	DESCRIPTION
AVG	Average depth, calculated from the beginning of the dive
CNS	Central Nervous System. CNS% is used to quantify toxic effects of oxygen
DECO	Decompression obligation
DTIME	Dive Time, the whole time spend below a depth of 1.2m/4ft
DESAT	Desaturation time. The time needed for the body to eliminate the nitrogen taken up during diving
GF	Gradient Factor
GF END	The value of GF@SURF at the end of the dive. This value is shown in the LOGBOOK
GF LOW	The gradient factor value determining the first stop during ascent in decompression dives. This value is set by the diver.
GF HIGH	The gradient factor determining the residual nitrogen at the end of the dive. This value is set by the diver.
GF NOW	The gradient factor of the leading tissue during the dive evaluated at ambient pressure. This is calculated by the algorithm and represents inert gas pressure in the leading tissue
GF SET	The gradient factor setting used by the computer to finish the dive.
GF@SURF	The gradient factor of the leading tissue during the dive evaluated at surface pressure. This is calculated by the algorithm and represents inert gas pressure in the leading tissue.
GF@+3	The prediction of GF@SURF 3 minutes ahead if the diver stays at the current depth. This is calculated by the algorithm and represents inert gas pressure in the leading tissue.
MAX	Maximum depth attained during the dive
MAIN GF	The gradient factor setting for the primary decompression calculation
MOD	Maximum Operating Depth. This is the depth at which the partial pressure of oxygen (ppO ₂) reaches a maximum allowed level (ppO ₂ max). Diving deeper than MOD will expose the diver to unsafe ppO ₂ levels.

NO DECO	This is the time that you can stay at the current depth and still make a direct ascent to the surface without having to perform mandatory decompression stops.
O ₂	Oxygen
O ₂ %	Oxygen concentration used by the computer in all calculations
OTU	Oxygen Toxicity Units
ppO ₂	Partial pressure of oxygen. This is the pressure of the oxygen in the breathing mix. It is a function of depth and oxygen concentration. A ppO ₂ higher than 1.6 bar is considered dangerous.
S.I.	Surface Interval. The time that has elapsed since the end of the dive
STime	Session Time. The complete time taken for a snorkel dive, including any Sub Dives.
TTS	Time To Surface. The time it takes to perform the ascent from your current depth to the surface in a decompression dive, including all decompression stops
TTS @+X	The overall ascent time inclusive of all decompression stops if the dive is extended by X-minutes at the current depth.
Ceiling	The depth at which you would exceed the permissible gradient factor. As you clear a stop and begin the next one, the ceiling is the same as or close to the stop depth itself. As the duration of the stop increases, so does the ceiling until it reaches the depth of the next stop
Gradient Factor	Reduction of Bühlmann's original value of maximum tolerated inert gas pressure. The term is used for settings in the algorithm. It is also used for the calculated value of inert gas pressure in a tissue so that it can be referenced to the settings in the algorithm.
Leading Tissue	The tissue with the deepest ceiling
Multigas	Refers to a dive in which more than one breathing gas is used
Nitrox	A breathing gas mix made of oxygen and nitrogen, with the oxygen concentration being 22% or higher.
Nitrogen bar graph	It represents nitrogen saturation (any amount in excess of the equilibrium state at the surface) in the leading tissue
NO-FLY	Minimum amount of time the diver should wait before taking a plane
POST DIVE	The computer on the surface at the end of a dive. This mode is available until there is remaining desaturation.

ppO ₂ max	The maximum allowed value of ppO ₂ . Together with the oxygen concentration it defines the MOD.
PRE-DIVE	The computer on the surface ready to dive
Sub Dive	A single dive spent below a depth of 1.2m/4ft during a Snorkel diving session.

1.2 OPERATING MODES

The functions of the Mares Housing App can be grouped into four categories, each corresponding to a specific mode of operation;

1.2.1 Surface mode with phone outside the housing

The Mares Housing App is open on your phone with the phone outside the housing. You can create & adjust your app subscriptions, change settings, review your logbook, use the dive planner, connect the phone to the housing via Bluetooth and onboard your phone to the Smart View housing.

1.2.2 Surface mode with phone inside the housing inside the housing

Your phone is inside the housing having completed the onboarding and the housing is on the surface. You can change settings, take photos and videos and pre-view your recent media. In addition you can offboard the phone from the housing and remove the phone from the housing.

1.2.3 Dive mode

The Mares housing app together with the Smart View housing monitors pressure (depth), time, temperature and performs all decompression calculations; dive mode itself can be broken down into 3 sub categories:

Pre-Dive;

The Mares housing app & Smart View housing are on the surface but actively monitoring ambient pressure, so that it can begin to calculate a dive the instant it is submerged below 1.2m / 4ft.

Dive;

The Mares housing app & Smart View housing are submerged 1.2m / 4ft below the surface and until it returns to 0.8m / 3ft.

Surfacing;

The Mares housing app & Smart View housing are on the surface at the end of a dive; dive time calculation is halted but if the diver submerges within a user defined time period (1-45 minutes) the dive is resumed including the time spent on the surface.

1.2.4 Post-Dive

After the user defined surfacing time, the Mares housing app closes the logbook and reverts to a display showing desaturation time, no-fly time and surface interval as well as the last dive summary. This lasts until the desaturation and the no-fly time both have been reduced to zero.

1.3 RECHARGABLE BATTERIES

The Smart View housing and your phone use rechargeable batteries. Depending on the phone model, usage and the temperature of the water the battery performance will be affected. Prior to diving both the housing and phone need to have a battery charge >30% to allow the onboarding process. If during usage either battery drops below 30% the Mares housing app will display a low battery alarm. When this appears, you should start your final ascent to the surface.

WARNING

- The Mares phone app will not let you perform the onboarding process if the battery levels are than 30%.
- Temperature can noticeably affect battery performance. A low battery warning may appear when diving in cold waters even if you think that the battery should have sufficient charge.
- It is advised that you fully charge the batteries if you intend to dive in cold water.
- Continuous usage of the camera mode & photo enhancement settings during diving will adversely affect the battery life of your phone.
- Different phone models and the age of your phone have different battery performances. Even if many different phone models have been tested for performance Head Watersports does not give advice on life. It is advised to always carry a back-up dive computer in addition to the Mares housing app & Smart View housing.

NOTE

When your phone is connected and inside the housing and on the surface, even with the sleep mode activated the Mares app continues to function and use the battery at a faster rate than when it is in its normal stand-by mode. To save battery power between multiple dives it is recommended to complete the off boarding and remove the phone from the housing.

During usage and connected to the housing to save additional battery power it is recommended to put your phone in Air Plane mode.

1.3.1 Charging the Smart View housing battery

Smart View housing charges the battery via the included USB cable connected to the charging port inside the housing.

1.4 BUTTON OPERATION

The Smart View housing has one Camera Shutter Button (**CSB**), two dedicated camera zoom buttons and four selection buttons, which we refer to as **U** (Up), **D** (Down), **L** (Left), **R** (Right). Each button can perform two operations, depending on whether it is pressed and released (short press – **SP**) or pressed and held for two seconds (long press – **LP**). A button operation is then defined, for instance, as **U-SP**; up-short press.

Image 1.4A – Housing with button labels & indications

The specific button operations vary depending on the dive mode and the current displayed screen. During operation, in the settings it is possible to turn on and off the Hints which shows an overlay of the button operations on the display. However, in general the buttons behave in a similar principle.

Image 1.4B – QSG Button image

Camera Shutter Button;

- CSB-LP; Turns on the housing
- CSB-SP; Navigates to the camera display and takes a photo
- In camera display CSB-LP; Starts a video recording, CSB-SP or CSB-LP stops a video recording

Zoom Buttons;

- Short Press – Zooms in or out in steps
- Long Press – Zooms in or out gradually
- Long Press both zoom button together – Turns off the housing

Selection Buttons;

- All buttons, short press are used to navigate in the settings.
- U-LP – Action button, action assigned by the user in the settings
- D-SP – Dismisses an alarm from the display
- D-LP – Opens the media preview file when in the camera display
- L-LP – Exits the camera and returns to the dive computer displays. Also used to start the offboarding process to remove the phone from the housing after diving
- R-LP – Enters the settings. Setting options are different depending if it is the dive computer displays or the camera display

1.5 CONNECTING VIA BLUETOOTH AND ONBOARDING

The Mares app is available for both Android and Apple operating systems. The app is available to download in both the Google Play Store

<https://play.google.com/store/apps/details?id=com.mares.app> and the Apple App Store <https://apps.apple.com/app/mares-app/id1625641063>

The Smart View Housing and Mares app has been tested with most common brands and models of smart phone. For a list of tested models please refer to the following webpage: <https://www.mares.com/underwater-phone-housing>

WARNING

Do not use the Mares app as a dive computer with a phone model that has not been previously validated. To protect yourself against the unlikely event of a failure, you should carry an additional dive computer or use a depth gauge, a submersible pressure gauge, a timer or watch, and dive tables.

Smart View housing communicates with the phone via Bluetooth. To initiate the connection, turn on the Smart View housing by pressing the camera shutter button, turn on Bluetooth in the phone, open the Mares housing app and select start scanning, select the housing that appears.

Image 1.5A – Onboarding

Head Watersports carries out rigorous testing and validation of the Mares app in combination with the operating system of the Ultra watch. Once we are sure the dive computer will operate as expected we allow the Mares app to be used for diving without additional messaging. However, if you do not have a valid combination app version and operating system a warning message will be displayed with information about which firmware needs updating. At the start of the onboarding process the Mares app validates if you have a tested combination of phone operating system and Mares app version installed on your phone. If you do not have a valid combination a warning message will be displayed. It is still possible for you to complete the onboarding process however, you will need to accept to dive at your own risk. It is highly recommended that you always use the latest public release of operating system and Mares app firmware version to ensure the best possible experience and that you also do not install beta versions of the operating system before they are publicly released.

WARNING

Using the Mares app without a valid combination of operating system and Mares app version is not recommended and using the dive computer in this way can lead to serious injury or death.

After connecting the phone to the housing press the onboarding button in the Mares housing app and follow the prompts from the app to put the phone inside the housing and carry out the vacuum process to ensure the housing is correctly sealed and watertight before putting submerging the housing in the water. At the end of the onboarding process there is a three minute countdown timer, where the housing checks the internal pressure inside the housing to ensure a vacuum is maintained. If this is successful the display will indicate Ready to Dive. If there are any issues during the checks the display provides an alert and further instructions. The door seal of the housing should be checked for damage or dirt and the onboarding process repeated. If the user continues to experience difficulties please contact your nearest Mares dealer or send an email to contact@mares.com

WARNING

To ensure a good watertight seal. Prior to closing the door of the housing always check that the door & o-ring seal is clean, free of dust & dirt and lightly greased with silicone based grease.

WARNING

Even after performing the onboarding process and checking the watertight seal using the vacuum process there can be a risk of water leakage. The user assumes the risk of damage to smartphones or electronic devices used inside the Smart View housing.

Any warranty does not cover smartphones or electronic devices used inside the Smart View housing.

1.6 DISPLAYS

1.6.1 Dive computer display – Pre-Dive mode

After putting the phone inside the housing and completing the onboarding process the Mares housing app switches to the dive computer display in Pre-Dive mode.

By pressing **R-LP** It is possible to change the dive & display settings.

Image 1.6.1A – Dive computer, Pre-Dive & show where the button pushes go (like Quad Ci manual)

1.6.2 Camera display

Pushing on the camera shutter button at any time changes the display to camera display and takes a photo. Depending on the dive mode different data will be displayed in the dive computer data fields.

By pressing **R-LP** It is possible to change the camera & display settings.

Image 1.6.2A – Camera display, Pre-Dive & show where the button pushes go (like Quad Ci manual)

1.6.3 Dive Computer display – Dive mode

Once the Smart View housing & Mares app is submerged below 1.2m the app functions in dive mode. When in dive mode the dive computer can display different information depending which dive computer display is selected;

- EZ Display shows all essential dive information with the maximum text size possible. By pressing **D-LP** the bottom right data field can be customized.
- Full Display shows all essential dive information as well as additional data relevant for diving. By pressing **D-LP** the bottom right data field can be customized.
- Dive Profile shows all essential dive information as well as a graphical representation of diving data for the entire dive. The type of data presented in the graph can be customized in the settings.

In all dive computer displays by pressing **R-LP** It is possible to change the dive & display settings.

Image 1.6.3A – Dive Computer, Dive mode & show where the button pushes go (like Quad Ci manual)

1.6.4 Dive Computer display – Post-Dive mode

Once the Smart View housing & Mares app returns to the surface the app ends the dive mode. A summary of the previous dive is shown along with information relevant for desaturation.

It is possible to change settings and perform additional dives with the Smart View housing & App without needing to remove the phone from the housing between dives.

Image 1.6.4A – Dive Computer, Post-Dive & show where the button pushes go (like Quad Ci manual)

2. SETTINGS

It is possible to change the settings before or after putting the phone inside the housing.

Before putting the phone inside the housing the settings are available in the home screen of the housing.

After completing the on boarding the settings can be accessed depending if the display is showing the dive computer or the camera.

2.1 Dive Computer Settings

Once the phone is in the housing and the onboarding process is completed and the display is on the dive computer it is possible to enter the dive computer settings by pressing the **R-LP** button.

To navigate settings menu and change any settings press the U-SP, D-SP, R-SP & L-SP buttons.

To exit the settings at any time press the L-LP button.

During Pre-Dive mode and Post-dive mode the same settings are available. During Dive mode certain settings are not available to change, for example the dive mode can only be changed prior to entering Dive mode.

2.2 Dive Computer Settings - Dive Mode

In this setting you define the type of diving you will carry out. You can choose between Scuba, Bottom Timer & Snorkeling mode.

Image 2.2a – Dive mode screen shot

In **Scuba** mode, the dive computer carries out decompression calculations and displays all information and alarms relating the scuba diving. Scuba mode includes selecting the type of gas you will breathing during the dive (Air, Nitrox, **Multigas Nitrox**).

In **Bottom Timer** mode, the dive computer will only show time, depth and temperature; It will not carry out any decompression calculations and it will only show ascent rate alarms.

In **Snorkeling** mode, the dive computer will only show basic data such as time, depth, temperature and distance; It will not carry out any decompression calculations and it will only show basic time and depth alarms.

2.3 Scuba & Bottom Timer Settings

2.3.1 Gas (Scuba only)

When using Scuba you can select the type of gas you will be breathing during the dive (**Air**, **Nitrox**, **Multigas Nitrox**).

Air is the equivalent of setting **Nitrox** to 21% O₂ and a ppO₂ max of 1.4bar.

When using Scuba Diving mode with **Nitrox** or **Multigas Nitrox**, it is possible to define the percentage of oxygen in the mixture (O₂%) and the maximum value oxygen partial pressure (PPO₂ max). The maximum possible value for ppO₂ max is 1.6 bar. Most training agencies recommend not to exceed a value of 1.4 bar.

Image 2.3.1a – Gas setting

WARNING

Diving with Nitrox may only be attempted by experienced divers after proper training from an internationally recognized agency.

Before every dive and after changing the tank, you must make sure that the set oxygen concentration in the dive computer settings corresponds to the oxygen concentration in the tank. Setting the wrong oxygen concentration can lead to serious injury or death.

2.3.2 Algorithm (Scuba only)

The Smart view housing & Mares app employs the unmodified Bühlmann ZH-L16C algorithm with gradient factors. Gradient factors are used to lower the maximum tolerated inert gas pressure in the tissues with respect to Bühlmann's original values. This results in less nitrogen in the body at the end of the dive, which under normal circumstances makes the dive safer. Gradient factors are expressed in pairs; the first value, also called **GF Low**, represents the reduction of the original Bühlmann value that defines the beginning of the final ascent (relevant only for decompression dives); the second value, also called **GF High**, represents the reduction of the original Bühlmann value that defines the residual nitrogen at the surface at the end of the dive. As an example GF 50/85 will get you to the surface with a 15% lower gradient factor with respect to Bühlmann's original maximum tolerated inert gas pressure and, if this was a decompression dive, your first decompression stop would have been at a depth such that you would not have exceeded 50% of the gradient factor with respect to Bühlmann's original value at that depth.

2.3.3 Warnings (Scuba & Bottom Timer)

In this setting the Smart View housing & Mares app allows you to customize certain optional alarms.

Max Depth alarm

Allows you to set a depth alarm independent of the MOD. The default value is OFF. You can set it between 10m / 30ft and up to the MOD in 1m / 5ft increments. Upon reaching the defined depth an alarm is triggered, with the message **MAX DEPTH REACHED**.

Image 2.3.3A – Max depth alarm

Dive Time alarm

Allows you to set a time alarm, triggering also a warning at half of the set time limit. The default value is OFF. You can set the value between 20 and 100 minutes in 2-minute increments. Upon reaching half of the set limit, the message **TURN AROUND** appears and stays on the display until you press **D-LP** button. Upon reaching the set time limit, the message **TIME LIMIT** appears and stays on the display until you press the **D-LP** button.

Image 2.3.3B – Turn Around alarm

Image 2.3.3C – Time limit alarm

2.3.4 Multigas Options

These settings are only available when the dive mode is set to Multigas Nitrox.

Predictive

When set to **ON**, the dive computer will consider all gasses in the decompression calculation, with switches carried out at the **MOD** of each gas. When set to **OFF**, the decompression calculation will consider the currently selected gas only. The default value is **ON**.

Switch Below MOD

When set to **ON**, the dive computer will allow a switch to a gas at a depth deeper than the **MOD** of the gas (resulting in an immediate **MOD** alarm). The default value is **ON**.

2.3.5 Ascent violation

If the ascent rate exceeds 120% of the allowed value over a depth change of more than 20m/66ft, due to the potential of harmful bubble formation, the Smart View housing & Mares app locks the computer for 48 hours in order to prevent you from diving again. In this menu, you have the option to disable the locking up of the computer in the event of an uncontrolled ascent.

WARNING

This feature is intended for very experienced divers only, such as dive instructors, who take full responsibility for the consequences of turning off this function.

An uncontrolled ascent increases your risk of decompression sickness (DCS)

2.3.6 Surfacing

In this menu you can set the duration of the interval from the moment you reach the surface to when the dive computer closes the dive. During this interval you can submerge again and resume the dive. This menu allows you to change the default 3-minute interval to any value between 1 minute and 45 minutes.

2.4 Snorkeling Settings

2.4.1 Warnings

In this setting the Mares app allows you to customize certain optional alarms.

Session Time alarm

Allows you to set a time alarm for the session time, triggering also a warning at half of the set time limit. You can set the value between 20 and 100 minutes in 2-minute increments. The default value is OFF. Upon reaching half of the set limit, the message **TURN AROUND** appears and stays on the display until you press the action button to acknowledge it. Upon reaching the set time limit, the message TIME LIMIT appears. The alarm can be dismissed by pressing the action button or it will automatically dismiss itself in 10 seconds without needing to press any buttons.

Image 2.4.1a – Dive Time

Repeat Session Time alarm

Allows you to set a repeating alarm for the session time, the alarm and haptics will repeatedly alert you at each set interval with the message REPEAT STIME. The alarm can be dismissed by pressing the action button or it will automatically dismiss itself in 5 seconds without needing to press any buttons. You can set the value between 2 and 100 minutes in 2-minute increments. The default value is OFF.

Distance alarm

Allows you to set a distance alarm. Upon reaching the set distance limit, the message DISTANCE LIMIT appears. The alarm can be dismissed by pressing the action button or it will automatically dismiss itself in 10 seconds without needing to press any buttons. You can set the value between 250m up to 5000m. The default value is OFF.

Repeat Distance alarm

Allows you to set a repeating alarm for the distance, the alarm and haptics will repeatedly alert you at each set interval with the message REPEAT DISTANCE. The alarm can be dismissed by pressing the action button or it will automatically dismiss itself in 5 seconds without needing to press any buttons. You can set the value between 100m up to 1000m in 50m steps. The default value is OFF.

Sub-Dive Time alarm

Allows you to set a time alarm during a sub-dive. The timer starts when submerged below the surface. Upon reaching the set time limit, the message TIME LIMIT appears. The alarm can be dismissed by pressing the action button or it will automatically dismiss itself in 10 seconds without needing to press any buttons. You can set the value between 30 seconds up to 300 seconds. The default value is OFF.

Repeat Sub-Dive Time alarm

Allows you to set a repeating alarm for the sub-dive time, the alarm and haptics will repeatedly alert you at each set interval with the message REPEAT DTIME. The alarm can be dismissed by pressing the action button or it will automatically dismiss itself in 5 seconds without needing to press any buttons. You can set the value between 10 seconds and 60 seconds in 5 second increments. The default value is OFF.

Max Depth

Allows you to set a depth alarm. Upon reaching the set depth limit, the message MAX DEPTH REACHED appears. The alarm can be dismissed by pressing the action button or it will automatically dismiss itself in 10 seconds without needing to press any buttons or you return above the set depth limit. You can set the value between 2 m and 38m. The default value is OFF.

Repeat Depth alarm

Allows you to set a repeating alarm for the depth, the alarm and haptics will repeatedly alert you at each set interval with the message REPEAT DEPTH. The alarm can be dismissed by pressing the action button or it will automatically dismiss itself in 5 seconds without needing to press any buttons. You can set the value between 2m and 10m in 1m increments. The default value is OFF.

2.4.2 Auto Stop Time

In this setting you can set the duration of the interval from the moment your Ultra watch last detected it was submerged in water to when the snorkel session ends. During this interval you can submerge the Ultra in water again and the session time will continue. This setting is a precaution in case you forget to manually end the snorkel session at the end of your dive. The default is 3 minutes. You can set the value between 1 minute and 45 minutes.

2.5 Common Dive Computer settings for all Dive Modes

2.5.1 Water

You can set the computer to fresh water, salt water or EN13319 calibration, depending on where you intend to dive. Setting the wrong water type entails an error in depth measurement of maximum 3% (i.e. at a depth of 30m/100ft, a computer set to salt water will show 29m/97ft in fresh water whereas a computer set to fresh water will show 31m/103ft in salt water). Note that this does not affect the proper functioning of the computer, since the computer performs all of the calculations based purely on pressure measurements. EN13319 corresponds to a water density of 1.0197kg/l and it is used in European Norm 13319.

2.5.2 Erase DESAT

The Smart View housing and Mares app allows you to reset the desaturation in the computer. Any tissue saturation information from a recent dive will be reset to zero and the computer treats the next dive as a non-repetitive dive. This is useful when the computer is loaned to another diver who has not dived in the last 24 hours.

WARNING

Diving after having reset the desaturation is extremely dangerous and is very likely to cause serious injury or death. Do not reset the desaturation unless you have a valid reason to do so.

Once inside the setting, you must enter the security code once you decide to proceed with the reset. The security code is 1234. After entering the security code you will get a confirmation of the successful completion of the operation.

2.6 Camera Settings (All operating modes)

Once the phone is in the housing and the onboarding process is completed and the display is on the camera it is possible to enter the camera settings by pressing the **R-LP** button. These settings are available in all operating modes.

To navigate settings menu and change any settings press the U-SP, D-SP, R-SP & L-SP buttons.

To exit the settings at any time press the L-LP button.

2.6.1 Shutter Control

This settings allows you to choose the type of photo action when pressing the CSB-SP. There are three options.

Single; Takes one photo at each press of the Camera Shutter Button.

Burst; Takes several photos with a single press of the Camera Shutter Button. In the sub-menu you can define the number of photos that are taken each time. Between 1 to 10 photos.

Timer Delay; Applies a delay before taking a single photo. The timer delay starts when the Camera Shutter Button is pressed and the photo is taken after the defined delay time. In the sub-menu you can define the delay time. Between 1 second to 10 seconds.

2.6.2 Exposure

This settings allows you to pre-define the exposure adjusting the light level of your cameras sensor. Changing this value determines how bright or dark an image appears. It can be set between -2.00 to +2.00.

2.6.3 Filter

This settings allows you to pre-apply an electronic filter to your images. There are three options; None, Red & Smart Underwater.

Red; Increases the level of red colour in the images.

Smart Underwater; Applies a smart algorithm to improve the overall colour & light balance of your images.

WARNING

The Smart Underwater filter significantly increases the amount of processing your phone performs and can negatively affect the battery life of your phone.

2.6.4 Focus

This setting allows you to choose different methods to focus the image;

Auto; The camera automatically adjusts the focus taking into account the entire image on the display.

Manual Focus; You can manually select the location in the image where the camera automatically adjusts the focus. R-SP & L-SP to change which is the focus location.

Image 2.2.4A – Manual focus grid

Center Focus; The camera automatically focuses at the center point of the image. A red circle is shown on the camera screen showing the center focus point.

Image 2.2.4B – Center Focus Point

2.6.5 Camera

Many phones offer more than one camera lens and depending on the phone model you are using it is possible to select which camera lens you can use. For example, Front camera lens to take images forwards. Back camera lens to take a selfie.

2.6.6 Media Quality

In this setting you can choose the quality of the media images you are taking. The settings available depend on the phone model you have. Using lower settings saves storage space but has a lower image quality. Using higher settings increases the quality and definition of the media but increases the image file size & therefore requires more memory to store it.

2.6.7 Video

There are two settings that can be changed in this menu;

Video stabilization; It is possible to apply a stabilization to videos which increases how smoothly the video appears when being played back. This setting can be On or Off.

Video FPS; It is possible to adjust the number of Frames Per Second (FPS) are recording when you take a video. Increasing the FPS increases the quality of a video but increases the file size and storage requirements. Decreasing the FPS reduces the video quality and also the file size.

2.7 Settings Common to all Displays & Operating Modes

Once the phone is in the housing and the onboarding process is completed in any display and operating mode certain settings are always available by pressing the **R-LP** button.

To navigate settings menu and change any settings press the U-SP, D-SP, R-SP & L-SP buttons.

To exit the settings at any time press the L-LP button.

2.7.1 Compass

This setting allows you to optionally display a compass on the display. This setting can be On or Off.

Image 1.3.1A – Compass ribbon

2.7.2 Show Hints

In this setting it is possible to turn on and off the hints displayed on the screen. The hints are icons shown in the display that can help show you which buttons perform functions when using the Smart View housing and Mares App. This setting can be On or Off.

Image 2.3.2 – With and without Hint icons

2.7.3 Action Button

During use it's possible to select different functions that are assigned to the action button. To operate the action button is U-LP. The different functions that can be assigned are;

Screenshot; Takes a photo of the current screen and saves it to the media.

Screen recording; Takes a video recording of the complete screen and saves it to the media. Pressing the U-LP button for the first time starts the recording. Pressing the U-LP button a second time stops the recording.

Bookmark; Places a bookmark in the dive log

Media Gallery; Opens the media gallery from any display screen.

2.7.4 Screen Brightness

In this setting you can select the brightness of the phone screen. The options are Low, Medium & High.

WARNING

Setting the screen to higher brightness uses more battery.

2.7.5 Sleep Mode

During use it is possible to set the phone to automatically go into sleep mode to conserve battery life. Non-essential functions are stopped and the screen is turned off. When in sleep mode the dive computer continues to perform dive calculations. Pressing any button will wake the phone. The settings are; Off & 1-100mins.

WARNING

Turning this setting Off will keep the phone awake and result in significant battery usage.

2.7.6 Device Orientation

This setting allows you to lock or unlock the phone rotation mode. To set the lock in the orientation you want; Rotate the phone to the desired orientation and select Lock. To unlock the rotation select unlocked.

3. LOGBOOK & MEDIA STORAGE

During a dive the Mares app records the dive information and dive profiles locally on the phone. Once connected to a data connection the dives are automatically synchronised to the Head Watersports database in the cloud.

Media is stored locally on your phone and can be viewed in either the dive log in context of the dive or directly in the camera roll.

To view the dive details select and click on the dive to have an overview. Click on individual elements for additional details. Logbook details include, date, time the dive started, depth, dive time, temperature & decompression information as well as location when a GPS signal was available at the start or finish of the dive. The information can also be viewed in a chart format.

Image 3A – Logbook images.

4. DIVE PLANNER

This function allows you to plan your next dive. In case you dived recently, you can enter an additional surface interval in 15-minute increments between now and when you intend to dive; the residual nitrogen load will be adapted accordingly. The Mares app will consider all active gases and set gradient factors.

Change the Max depth and Bottom Time to observe the NDL and decompression dive planner.

Image 4A – Dive planner

PART 2 – IN THE WATER

5. DIVING WITH SMART VIEW HOUSING & MARES APP

5.1 A Few Words About Nitrox

Nitrox is the term used to describe breathing gases made of oxygen-nitrogen mixes with an oxygen percentage higher than 21% (air). Because Nitrox contains less nitrogen than air, there is less nitrogen loading on the diver's body at the same depth as compared to breathing air.

However, the increase in oxygen concentration in Nitrox implies an increase in oxygen partial pressure in the breathing mix at the same depth. At higher than atmospheric partial pressures, oxygen can have toxic effects on the human body. These can be lumped into two categories:

- Sudden effects due to oxygen partial pressure over 1.4 bar. These are not related to the length of the exposure to high partial pressure oxygen, and can vary in terms of the exact level of partial pressure they happen at. It is commonly accepted that partial pressures up to 1.4 bar are tolerable, and several training agencies advocate maximum oxygen partial pressures up to 1.6 bar.
- Long exposure effects to oxygen partial pressures over 0.5bar due to repeated and/or long dives. These can affect the central nervous system, cause damage to lungs or to other vital organs.

The Mares app warns you with respect to these two effects in the following ways (as long as it is set to either AIR or NITROX):

- Against sudden effects: The Mares app has an MOD alarm set for a user-defined ppO_2 max. As you enter the oxygen concentration for the dive, Quad Ci shows you the corresponding MOD for the defined ppO_2 max. The default value of ppO_2 max from the factory is 1.4 bar. This can be adjusted to your preference between 1.2 and 1.6bar. Please refer to section 2.1 for more Information on how to change this setting. If Quad Ci is set to AIR, the ppO_2 max is set to 1.4 bar by default.
- Against long exposure effects: The Mares app "tracks" the exposure by means of the CNS % (Central Nervous System). At levels of 100% and higher there is risk of long exposure effects, and consequently the Mares app will activate an alarm when this level of CNS% is reached. The Mares app also warns you when the CNS level reaches 75%. Note that the CNS% is independent of the value of ppO_2 max set by the user.

5.2 Altitude

Atmospheric pressure is a function of altitude and of weather conditions. This is an important aspect to consider for diving, because the atmospheric pressure surrounding you has an influence on uptake and subsequent release of nitrogen. Above a certain altitude, the decompression algorithm has to change in order to account for the effect of the change in atmospheric pressure. Mares automatically adapts the algorithm by continuously monitoring the ambient pressure.

NOTE

We do not recommend diving at altitudes above 3700m / 12100ft. If you do, set the Mares app to bottom timer mode and find appropriate altitude dive tables.

5.3 Alarms

The Smart View housing & Mares app can alert you to potentially dangerous situations. There are six different alarms:

- Ascent rate alarm
- Exceeding a safe MOD/ppO₂;
- CNS = 75%;
- Missed decompression stop;
- Low battery during the dive, both the phone or housing;

WARNING

When in bottom timer mode, all warnings and all alarms are OFF aside for the ascent rate, low battery alarms and if set by the user, max depth and dive time.

NOTE

Alarms are visual, as described in detailed below.

Ascent rate alarm has priority over other alarms if they are triggered simultaneously.

5.3.1 Ascent Rate

As soon as depth decreases the Mares app activates the ascent rate control algorithm and displays the calculated value.

WARNING

A rapid ascent increases the risk of decompression sickness.

If the Mares app determines an ascent rate higher than set limits, the fast ascent alarm is triggered the message SLOW DOWN! is displayed on the screen.

Image 5.3.1A – Ascent rate warning

This persists until the ascent rate is reduced below the pertinent limit. The limits are dependent on the current depth as follows:

Depth in m	Speed in m/min	Depth in feet	Speed in ft/min
> 50 m	20	> 165 ft	60
30 – 50 m	15	100 – 165 ft	45
10 – 30 m	10	30 – 100 ft	30
< 10 m	5	< 30 ft	15

WARNING

If the ascent rate exceeds 120% of the allowed value over a depth change of more than 20m/66ft, The Mares app locks the computer in Bottom Timer mode for 48 hours in order to prevent you from diving again. You can disable this function in the menu ASCENT VIOL. This should only be done by highly experienced divers, who take full responsibility for the consequences of this action.

5.3.2 MOD/ppO₂

WARNING

Exceeding a ppO₂ of 1.6 bar can lead to sudden convulsions resulting in serious injury or death.

The MOD should not be exceeded. Disregarding the alarm can lead to serious injury or death.

When the diver reaches a depth at which the ppO₂ of the inspired gas exceeds the maximum limit entered in the corresponding setting (from 1.2 to 1.6bar), the depth is shown in red and the message MOD EXCEEDED is shown at the bottom of the display.

Image 5.3.2A – MOD Exceeded warning

The message is displayed until the situation has been corrected.

WARNING

When the MOD alarm is triggered, ascend immediately until the alarm stops. Failure to do so could result in serious injury or death.

5.3.3 CNS = 75%

WARNING

When the CNS reaches 100% there is danger of oxygen toxicity. The Mares app starts alerting you when you reach 75%.

Oxygen toxicity exposure is tracked on Mares by means of the CNS% based on currently accepted recommendations for exposure limits. This toxicity is expressed as a percentage value which ranges from 0% to 100%. When the value exceeds 75%, the message CNS >75% is displayed. The message is displayed until the situation has been corrected or a higher priority alarm is triggered such as ascent rate or missed deco stop.

Image 5.3.3A – CNS > 75% warning

If the oxygen toxicity reaches 75%, ascend to shallower depth to decrease oxygen loading and consider terminating the dive.

WARNING

Diving with oxygen toxicity at levels of 75% or greater may put you into a potentially hazardous situation, which could result in serious injury or death.

5.3.4 Missed Decompression Stop

WARNING

Violating a mandatory decompression obligation may result in serious injury or death.

If you ascend above the decompression stop depth by more than 0.3m (1ft), a visual alarm goes off and the message RETURN TO STOP DEPTH! is displayed at the bottom of the screen. This alarm remains active until you return to the correct depth.

Image – 5.3.4A Missed deco stop warning

WARNING

Never ascend above the displayed decompression stop depth.

If the stop depth is exceeded by less than 1m (3ft) for more than three minutes or by more than 1m (3ft) for more than 1 minute, The Mares app considers this a dive violation and the display will show DECO VIOLATION. Press the D-LP to acknowledge having seen the message.

Image – 5.3.4B Deco Violation alarm

In this case, if the diver attempts a repetitive dive after surfacing, The Mares app will function only as a depth gauge and timer, and it will display the message BOTTOM TIMER.

5.3.5 Low Batteries

WARNING

If before starting a dive the battery power level of either your phone or the housing is 30% or less, the Mares app will not allow you to complete the on boarding process.

When the battery power level of either your phone or the housing reaches 30%, the Mares app will show the message LOW BATTERY on the display and the battery percent level of the device in the top right corner of the display will turn red. Press the D-LP button to acknowledge having seen the message and the message will LOW BATTERY message will disappear but the battery percent level will remain red.

Image – 5.3.5A Low Battery warning

WARNING

When the LOW BATTERY warning appears, you should start your final ascent to the surface.

If the battery of your phone goes completely flat during the dive. No information will be displayed and you will have a blank screen.

If the battery of your housing goes completely flat during the dive. The last known diving information is displayed along with the warning LOST CONNECTION.

Image – 5.3.5b Lost Connection Warning

WARNING

If the battery is completely drained during a dive, the Mares app locks the computer in Bottom Timer mode for 48 hours in order to prevent you from diving again as we were unable to correctly calculate your diving information.

6. SCUBA DISPLAY INFORMATION

On the surface it is possible to view either the Pre-Dive display or the Camera display. In the dive computer display it is possible to adjust the dive settings by pressing the R-LP button whilst in that display. In the camera display it is possible to adjust the camera setting by pressing the R-LP button whilst in that display.

As you descend, the Mares app will enter diving mode and the dive computer can display different information depending which dive computer display is selected;

EZ Display shows all essential dive information with the maximum text size possible. By pressing **D-LP** the bottom right data field can be customized.

Image 6a – Dive computer EZ at depth

Full Display shows all essential dive information as well as additional data relevant for diving. By pressing **D-LP** the bottom right data field can be customized.

Image 6b – Dive computer Full at depth

Dive Profile shows all essential dive information as well as a graphical representation of diving data for the entire dive. By pressing R-LP the type of data presented in the graph can be customized in the settings.

Image 6c – Dive computer profile at depth

In all dive computer displays by pressing **R-LP** It is possible to change the dive & display settings.

Pressing the Camera Shutter Button changes to the camera display. The camera image occupies the majority of the display and all essential dive relating information is also shown.

Image 6d – Camera display at depth

In the camera display by pressing **R-LP** It is possible to change the camera & display settings.

6.1 Deco and Safety Stops

DECO stops are generated progressively as you stay at depth beyond the no deco time.

DECO stops are MANDATORY. As you approach the depth of a stop, the duration of the stop is gradually reduced. The duration itself is always shown in minutes, and is calculated as a function of the pressure gradient achieved at the stop depth itself. Hence the farther you are from the exact depth of the stop, the longer it will take for each minute to tick off.

Image 6.1a - Deco stop

A SAFETY stop is generated as soon as the depth of the dive exceeds 10m / 33ft. It has a duration of 3 minutes and it is carried out between depths of 6m / 20ft and 3m / 10ft at the end of a dive prior to surfacing. Such stop is NOT mandatory but HIGHLY RECOMMENDED. A safety stop is always shown as a 3-minute countdown in minutes and seconds.

Image 6.1b - Safety stop

WARNING

During all dives, perform a safety stop between 3 and 5 meters/10 and 15 feet for 3 minutes, even if no decompression stop is required.

6.2 Future Decompression

In case of a decompression dive, in the dive computer display, the D-LP button sequence also features TTS@+5. The value shown represents the total ascent time if you were to remain at the current depth for an additional 5 minutes. This is very useful since it allows you to estimate how decompression will be affected by remaining at the current depth a while longer.

Image 6.2a - TTS@+5 with deco and full display

It is also very useful because, as the slower tissues start accumulating nitrogen, you could find yourself in a situation in which the decompression time grows very quickly, so much so that you find yourself with insufficient gas to finish the dive.

6.3 Dive Profile

During the dive you can view the depth profile performed so far by pressing the L-SP or R-SP whilst in the dive computer displays. Essential dive information is also present in the dive profile display.

It is possible to include additional dive profile information such as GF@Surf by pressing the R-LP button to enter the settings and toggling on/off the profile items you wish to view.

Image 6.3a - Dive profile, including GF@surf

6.4 Compass

During the dive you can turn on the compass by pressing the R-LP button and entering the settings.

Image 6.4a – Dive computer with compass

With U-SP you can set a reference bearing. A red triangle will appear to indicate the set bearing. Additional symbols will appear as well; Squares at 90 degrees, triangles at 120 degrees and two parallel lines at 180 degrees, as an aid in navigation for square, triangular and reciprocal courses. The number at the bottom represents the deviation of the direction you are pointing at with reference to the set bearing. With U-SP the bearing will be erased.

7. AFTER THE SCUBA DIVE

Upon returning to the surface, the Mares app first goes into the so-called surfacing mode. This mode allows you to resume your dive after a brief period of orientation. The screen shows the surfacing mode countdown timer and dive time.

Image 7a – Surfacing display

If you submerge again before the countdown is over, the dive time will resume from where it left off, including the time spent on the surface. If you do not submerge before the end of the countdown, the Mares app considers the dive finished, records the data to the logbook and reverts to the so-called post-dive mode.

The post dive screen shows the following information;

Image 7b – Post dive

In POST DIVE mode, it shows the following information:

The remaining desaturation time (DESAT): this is calculated by the decompression model in the computer. Any dive started while there is remaining desaturation on your computer is considered a repetitive dive, meaning that Mares accounts for the pre-existing nitrogen load in your body.

The no-fly time (NO-FLY TIME): this is the time during which an exposure to the reduced pressure inside the cabin of an airplane could cause decompression sickness. Mares employs, as recommended by NOAA, DAN and other agencies, a standard 12-hour (no-deco non-repetitive dives) or 24-hour (deco and repetitive dives) countdown.

The DESAT TIME could be shorter than the NO-FLY TIME, which would imply that you cannot fly although you are desaturated. This is simply the consequence of the desaturation time being calculated by the algorithm based on the actual dive profile, while the no-fly time is an accepted standard in the diving industry. Since the real effect of flying after diving has never been fully investigated, this approach fits with our philosophy.

WARNING

Flying while the Mares app displays NO-FLY can result in serious injury or death.

The surface interval (S. I.): this is displayed from the moment the dive is closed for as long as there is remaining desaturation or no-fly time on the computer.

The display also shows the main data of the last dive; Max depth, temperature and dive time.

The dive computer display also shows the profile of the last dive.

7.1 Removing the Phone from the Housing

To remove the phone from the housing it is important to follow a sequence of events to ensure you do not damage the housing. The Mares app will automatically guide you through the process step by step. To initiate the process the Mares app must be in either the Pre-Dive or Post-Dive mode and in the dive computer display, then press the L-LP button.

WARNING

To prevent damage to the housing. It is important to rinse the housing in fresh water and dry the housing before attempting to remove the phone.

WARNING

It is necessary to fully release the vacuum inside the housing before attempting to open the housing. Opening the housing prior to releasing the vacuum will result in damage to the door and door locking mechanism.

8. DIVING WITH MORE THAN ONE GAS MIXTURE

Currently this feature is not available. But is planned for future app versions.

9. BOTTOM TIMER MODE

When the Mares app is set to BOTTOM TIMER mode, it will only monitor depth, time, and temperature, and will not carry out any decompression calculation. You can only switch to bottom timer mode if the computer is completely desaturated. After performing a dive in Bottom Timer mode you can only switch to Scuba mode after 48 hours or by erasing the desaturation. Alarms are limited to ascent rate, low battery and, if set by the user, max depth and dive time.

WARNING

Dives in bottom timer mode are performed at your own risk. After a dive in bottom timer mode you must wait at least 48 hours before diving using a decompression computer. If you perform additional dives in Bottom Timer mode the 48 hour restriction starts again.

During a dive in bottom timer mode, the following information is displayed;

Image 9a – Bottom Timer mode @ depth

- Current depth
- Dive time
- Temperature
- In case of an ascent: ascent speed (in m/min or ft/min).
- Max depth
- Avg depth

9.1 Dive Violation Induced Bottom Timer Mode

The following violations can occur during a dive;

- Ascent violation
- Missed deco stop violation

In case of a violation, the Mares app will restrict the use for 48 hours, and will only allow operation in Bottom Timer mode.

10. SNORKELING / FREEDIVING

The Mares app snorkelling mode has dedicated features for breath hold divers. In snorkel mode we differentiate between a snorkel session and sub dives. A session is a complete trip consisting of surface swimming and diving below the surface. A sub dive is an individual immersion below the surface until you return to the surface again. A single session can include multiple sub dives.

WARNING

The practice of freediving exposes divers to different hazards from those associated with scuba diving. The diver should be aware of these hazards and understand how to avoid them.

WARNING

Do not practice snorkeling below the surface within 24 hours of having performed a scuba dive.

10.1 Snorkeling with the Mares App

After successfully completing the onboarding and the phone is inside the housing having completed the vacuum check the Mares app is ready to start a snorkeling session. The snorkeling session can be started with either of two methods.

Method 1; Press the D-SP button.

Method 2; Submerge the housing and Mares app below 1.2m / 4ft.

10.1.1 Snorkel Data Information on the right side of the display

On the right hand portion of the display data regarding the snorkeling session are shown in both the snorkel computer display and the camera display as follows;

When on the Surface;

Top Row will display DISTANCE and will start to increase as the GPS in the Ultra watch detects a change in position.

Middle Row will display the Session Time (STime) and immediately start counting as soon as the session is started.

Bottom Row will show additional data that can be customized by the user by pressing the D-SP button. Any alarms that are shown will also be displayed in the bottom row of the data. The alarm can be dismissed using the D-SP button.

Image 10.1.1a – Snorkel surface dive screen

When submerged below 1.2m / 4ft

Top row data changes to display Depth.

Middle Row will display a timer for the Sub dive.

Upon returning to the surface the Sub Dive timer will stop and the display will show the Max depth and Sub-dive time for 15 seconds before reverting back to the surface display.

Image 10.1.1b – Snorkel dive screen

10.1.2 Snorkel Computer Display

The main portion of the display will show a map. The scale of the map can be zoomed in and out using the zoom buttons on the housing.

By pressing either the L-SP or R-SP button the information shown in the map section can be changed into the session profile graphic and back to the map.

NOTE

The maps shown in the Mares app can only be displayed if you have a data connection or the map was already generated and cached in the memory of the phone.

NOTE

The GPS location and distance is only updated when there is a good GPS signal received by the phone. When the housing and phone is submerged the GPS location cannot be updated.

10.1.2 Snorkel Camera Display

At any time the display can be changed to the Camera by pressing the CSB-SP button. The main portion of the display will now show the camera view.

Image 10.1.2a – Camera display

10.1.2 Ending a Snorkeling Session

A snorkelling session can be ended using either of two methods.

Method 1; Carry out the offboarding process and remove the phone from the housing.

Method 2; Pressing the L-LP button up to two times to first exit the camera display and 2nd to exit the computer display.

10.1.4 SWITCHING FROM SNORKELING TO SCUBA

It is commonly accepted that scuba diving after snorkeling/freediving diving is safe, but we take a slightly more conservative approach. The Mares app evaluates your snorkeling

activity and imposes a restriction before you can switch the dive computer from snorkeling to scuba based on your max depth in snorkeling in the preceding 24 hours:

- Up to 5m/15ft: no restriction
- Up to 10m/33ft: 2-hour restriction since the last free dive
- Up to 20m/66ft: 4-hour restriction since the last free dive
- Up to 30m/100ft: 6-hour restriction since the last free dive
- Over 30m/100ft: 8-hour restriction

PART 3 – TECHNICAL DETAILS & MAINTENANCE

11. TAKING CARE OF THE SMART VIEW HOUSING

11.1 Technical Information

Operating Altitude of the Mares App;

- With decompression – Sea level to approximately 3700 m / 12100 ft
- Without decompression (Bottom Timer mode) – At any altitude

Decompression Model used in the Mares App;

- Bühlmann ZH-L16C with gradient factors (16 tissues)

Depth Measurement from the housing;

- Max displayed depth; 80m / 262ft
- Resolution; 0.1m / 1 ft
- Accuracy; +/- 0.3m / 1 ft @ 0°C to 40°C

Temperature Measurement from the housing;

- Measurement range; -10°C to 50°C
- Accuracy; +/- 3°C

Operating & Storage Temperature of the housing;

- -10°C to +50°C / 14°F to 122°F

Battery of the housing;

- Lithium-ion rechargeable battery with battery charge indicator
- Operating temperature; -10°C to +50°C / 14°F to 122°F
- Charging temperature; 0°C to 45°C / 32°F to 113°F

Bluetooth of the housing;

Low Energy (BLE)

Frequency range 2400 MHz – 2483,5 MHz

RF Output Power < 10dBm

EU

This device is in compliance with the essential requirements and other relevant provisions of RED Directive (2014/53/EU).

FCC WARNINGS

- Model: Smart View 80 FCC ID: 2A1KS-SMART80
- 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 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.
- Responsible party's contact located in the United States: Head USA, 430 S Congress Ave, #1A Delray Beach, FL 33445 www.mares.com

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 0cm between the radiator and your body.

11.2 Maintenance

The Smart View housing is virtually maintenance free. All you need to do is the following;

- Rinse in fresh water and dry the housing after every dive. Avoiding any chemical products.
- Keep the door o-ring clean and free from dirt. Lightly grease the o-ring using silicone grease. A spare o-ring is included with the housing when new and additional o-rings can be purchased from your local Mares dealer.

WARNING

Do not use abrasive cleaning cloths or chemical on the housing. Doing so can cause damage to the lens.

To avoid possible problems with your Smart View housing the following recommendations will help assure years of trouble free service;

- Avoid dropping or jarring your Smart View housing.
- Do not expose the Smart View housing to intense, direct sunlight.
- Do not store your Smart View housing in a sealed container, always ensure free ventilation.

NOTE

If you notice signs of moisture on the inside of your Smart View housing immediately take it to an authorized Mares service center.

WARNING

Do not blow compressed air onto the Smart View housing because it could damage the pressure sensor.

10.2.1 Replacing the battery in the Smart View housing

The Smart View housing uses a rechargeable battery. It may last up to 500 charging cycles.

The battery can only be replaced by a Mares service center. Mares declines all responsibility for any damage caused by replacing the battery.

NOTE

Dispose of the old battery properly. Mares adopts a policy of respect for the environment, and urges use of the appropriate separated waste collection services.

12. WARRANTY

Mares products are guaranteed for a period of two years subject to the following limitations and conditions:

The warranty is non-transferable and applies strictly to the original purchaser.

Mares products are warranted free from defects in materials and workmanship: components that, upon technical inspection, are found to be defective, will be replaced free of charge.

Mares declines all responsibility for accidents of any kind that result from tampering or incorrect use of its products.

Any products returned for overhaul or repairs under warranty, or for any other reason, must be forwarded exclusively via the vendor and accompanied with a proof of purchase slip.

Products travel at the risk of the sender.

12.1 Warranty Exclusions

Damage caused by water seepage resulting from improper use (e.g. dirty seal, door compartment closed incorrectly, etc.).

Rupture or scratching of the case, glass or strap as a result of violent impact or blows.

Damage resulting from excessive exposure to elevated or low temperatures.

Damage caused by the use of compressed air to clean the housing.

Damage to products that are not manufactured by Head Watersports. For example; Smart phones or other electronic devices used inside the housing.

12.2 How to find the product serial number

The serial number is etched on the inside cover of the housing.

13. DISPOSAL OF THE DEVICE

Image 13a – Electronic disposal symbol

Dispose of this device as electronic waste. Do not throw it away with regular rubbish.

If you prefer, you can return the device to your local Mares dealer.