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I Cover



SYMBIOS TANK POD

Preliminary User Manual 1.1.1

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II Introduction



Thank you for purchasing the SYMBIOS TANK POD . The SYMBIOS TANK POD is an advanced digital SPG for measuring scuba tank gas pressure as well as the position of the diver and transmitting those informations to a compatible dive computer.

Features:

- ✓ High resolution digital tank pressure sensor
- ✓ 3 axis accelerometer to measure the position of the diver (tilt)
- ✓ Sophisticated transmission protocol based on a 125kHz magnetic carrier, allows high data rates and short transmission packages, in order to avoid data collisions when multiple wireless devices are used simultaneously.
- ✓ User replaceable CR123 battery

III Safety Considerations

Before using the SYMBIOS TANK POD you must read and understand the information provided in this manual in its entirety. Be aware, that diving has many inherent risks. A dive computer considerably increases your diving safety but it does not eliminate the remaining risk of serious injury, or death caused by decompression sickness, Oxygen toxicity or some other inherent risk of scuba diving.

Do not use this SYMBIOS TANK POD if you are not aware of those risks, or you do not accept those remaining risks.

In this manual the following precautionary symbols are used to indicate the following important precautionary statements. Those statements provide information about potential hazards and proper procedures. Three different safety signs are used to rank their importance: red stands for vital information, which shall not be ignored under any circumstances; yellow advises for caution; blue indicates technical or other recommendations for safe and reliable operation of the device.

WARNING

WARNING statements describe potentially hazardous situations, if not avoided, could result in death, or serious injury. Avoid these situations under any circumstances.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE statements are used to notify the user of information regarding installation, operation, maintenance, performance, general important tips, or statements describing a procedure, or situation that might cause damage to the device but is unrelated to physical injury.

IV Warnings

WARNING

Although the SYMBIOS TANK POD is very reliable, it may still eventually fail. In such a case, there may be no or incorrect pressure information transmitted to the dive computer. In such cases, the dive computer might report a too high or a too low tank pressure. Always use a backup analog SPG.

WARNING

Before using the SYMBIOS TANK POD, read the manual in its entirety and get familiar with all the functions of the device.

⚠ WARNING

If you do not fully understand how to use the SYMBIOS TANK POD , or if you have any questions, contact your instructor or your authorized dealer before diving with it.

⚠ WARNING

Divers must have successfully completed a course in scuba diving. They must have knowledge about the potential risks and hazards of scuba diving.

V Installation

The SYMBIOS TANK POD features a 7/16"-UNF port and can be connected to a high pressure port of a first stage scuba pressure regulator. A 19mm wrench can be used.

**⚠ WARNING**

Make sure, that the flow restrictor is inserted. In the case of a mechanical pressure sensor failure, the flow restrictor can limit the maximum gas flow through the SYMBIOS TANK POD.

**⚠ WARNING**

Use a first stage with two high pressure ports, so that next to the SYMBIOS TANK POD , also a backup SPG can be connected.

NOTICE

Installation torque should be hand-tightened, excessive force is not needed.

NOTICE

To optimize the reliability of the data transmission, install the tank transmitter on the same side, where you also wear your dive computer.

VI Operation

As soon as the SYMBIOS TANK POD with more than 2 bar, it will start transmitting tank pressure as well as position data.

- Tank pressure is transmitted approximately each 4s.
- Position data are transmitted in 1s intervals.

Pairing

Pairing of SYMBIOS TANK POD is done in two steps.

1. Pressurize the SYMBIOS TANK POD. Pair the SYMBIOS TANK POD to a Gas setting in menu/SETTINGS/PAIRING/TANK POD/GAS TABLE or alternatively to an independent tank pressure transmitter setting in menu/SETTINGS/PAIRING/TANK_POD/TO NUMBER on the dive computer.
2. Pair the SYMBIOS TANK POD tilt sensor in menu/SETTINGS/PAIRING/TILT SENSOR

For further information please refer to the dive computer manual.

Replacement of the battery

The CR123 battery can be replaced by the user.

1. detach the SYMBIOS TANK POD with more than first stage pressure regulator
2. remove the 3 screws with a TORX T10 screwdriver.



3. replace the battery
4. slightly lube a new o-ring 26x2-NBR70 o-ring with silicon grease
5. replace the o-ring 26x2 NBR 70 o-ring



6. install the cap and secure it with the 3 screws.



Enabling or disabling position data transmissions

Position data transmission can be enabled or disabled. There are several situations where the diver might prefer to have no transmission of position data:

- If one uses the SYMBIOS TANK POD with stage tanks, where position information may not make much sense
- If the diver uses several wireless devices simultaneously and wants to reduce data traffic
- If the diver wants to preserve battery power

Position data transmission is enabled/disabled by installing the battery in 2 orientations.

If the positive terminal of the battery is oriented towards the high pressure port, the position data transmission is disabled.



If the negative terminal of the battery is oriented towards the high pressure port, the position data transmission is enabled



NOTICE

When the SYMBIOS TANK POD is not pressurized, it will neither transmit pressure nor position data to reduce power consumption.

NOTICE

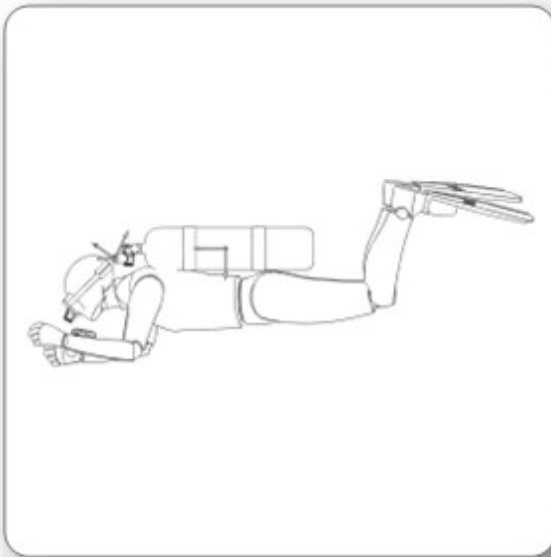
Depressurize the SYMBIOS TANK POD on the surface in order to reduce the power consumption.

VII Diver Position

Divers often try to achieve a horizontal to slightly positive tilted body position in the water. The SYMBIOS TANK POD in combination with a Symbios dive computer can measure the divers tilt.

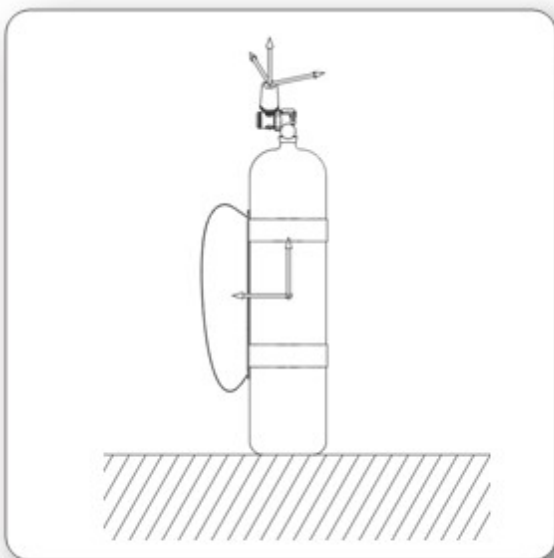
It includes a 3-axial accelerometer which allows measurement of the vector of the earth gravity, and from this calculate the divers tilt.

1. the SYMBIOS TANK POD measures tri-axial acceleration in respect to the spatial orientation of the electronic board of the SYMBIOS TANK POD
2. the information is transmitted to the dive computer
3. the dive computer uses a sophisticated mathematical model to calculate the divers tilt

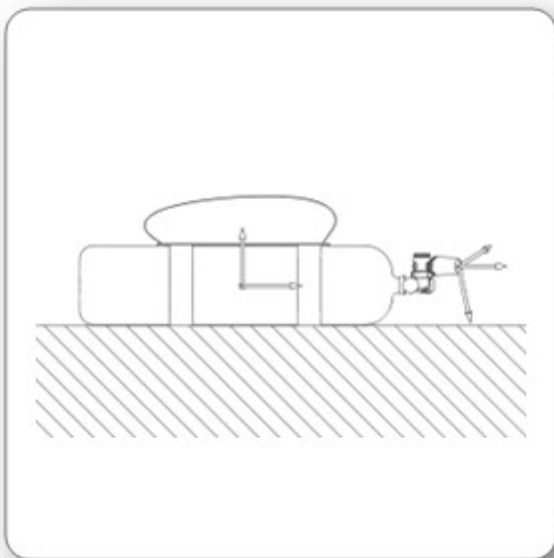


To calculate tilt accurately, the system needs to be calibrated in a 2 step procedure.

1. Pressurize the SYMBIOS TANK POD and bring the tanks in a vertical position. Navigate on the dive computer menu/SETTINGS/TRIM SENSORS/VERTICAL to perform the vertical calibration.



2. Lie down the tanks on the back in horizontal position. Navigate on the dive computer menu/SETTINGS/TRIM SENSORS/HORIZONTAL to perform the horizontal calibration.



NOTICE

A calibration is only possible, when the trim function is paired and the SYMBIOS TANK POD is pressurized.

VIII Care and Maintenance

The SYMBIOS TANK POD is built from high quality seawater resistant materials. The SYMBIOS TANK POD is designed to withstand diving harsh conditions. However, you should still protect your SYMBIOS TANK POD from shock, excessive temperatures, chemicals and mechanical tampering.

NOTICE

After diving, rinse the SYMBIOS TANK POD in fresh water to avoid corrosion.

! CAUTION

Protect your SYMBIOS TANK POD during transportation and from mechanical shocks and excessive temperatures.

! CAUTION

Never try to repair the SYMBIOS TANK POD yourself.

! CAUTION

The SYMBIOS TANK POD should be inspected for mechanical damage and cracks before, and after each dive to ensure it is working properly.

NOTICE

Failure to observe the above precautions leads to loss of warranty and any product-related liability of HALCYON DIVE SYSTEMS.

IX General specifications

- Maximum operational depth: 120m
- Digital Pressure Sensor, 350 bar maximum pressure
- 3 axial accelerometer, with 1° tilt resolution
- User replaceable battery - CR123
- Housing made from Glass fiber reinforced Polyamide

X Limitations of Liability

WITH THE PURCHASE OF THE SYMBIOS TANK POD YOU HEREBY AGREE TO THE FOLLOWING EXCLUSIONS AND LIMITATIONS OF HALCYON DIVE SYSTEMS' S LIABILITY TO YOU.

YOU AGREE AND UNDERSTAND THAT SCUBA DIVING IS A HIGH RISK, POSSIBLY LIFE-THREATENING ACTIVITY AND THE USE OF THE SYMBIOS TANK POD IS IN NO WAY A SUBSTITUTE FOR PROPER SCUBA TRAINING AND CERTIFICATION.

BECAUSE OF THE NUMBER OF VARIABLES AND THE VARYING DEGREES TO WHICH THEY MAY AFFECT INDIVIDUALS ENGAGED IN SCUBA DIVING, HALCYON DIVE SYSTEMS DOES NOT WARRANT OR GUARANTEE THAT USE OF THIS PRODUCT WILL PREVENT DECOMPRESSION SICKNESS, OR ANY OTHER CONDITION, OR INJURY INCURRED WHILE USING THIS PRODUCT.

THESE INFLUENCING VARIABLES MAY INCLUDE, BUT ARE NOT LIMITED TO, DEHYDRATION, OBESITY, AGE, OLD INJURIES, OR OTHER PHYSICAL CONDITIONS OF THE DIVER, OR ENVIRONMENTAL EXTREMES OF HEAT OR COLD, OR POOR TRAINING, OR DIVING PRACTICES, ANY OF WHICH MAY PROMOTE THE ONSET OF DECOMPRESSION SICKNESS OR OTHER HARMFUL EFFECTS.

THE SYMBIOS TANK POD WAS TESTED ACCORDING TO EN13319 AND WAS EVALUATED IN NUMEROUS TEST DIVES. HOWEVER THERE MAY STILL BE ERRORS IN THE SOFTWARE, THAT WERE NOT IDENTIFIED YET AND THAT MAY LEAD TO MALFUNCTIONS OF THE SYMBIOS TANK POD. THEREFORE, HALCYON DIVE SYSTEMS SUGGESTS TO ALWAYS CARRY AND USE A BACKUP DIVE COMPUTER OR A DIVE TABLE IN COMBINATION WITH A DEPTH GAUGE AND A WATCH.

YOU AGREE THAT YOU UNDERSTAND AND ACCEPT ALL RISKS ASSOCIATED WITH DIVING, AND THAT HALCYON DIVE SYSTEMS , ITS ELECTED AND APPOINTED OFFICIALS, EMPLOYEES, VOLUNTEERS OR OTHERS WORKING ON BEHALF OF HALCYON DIVE SYSTEMS ARE NOT LIABLE TO YOU OR ANY OTHER PERSON, INCLUDING YOUR HEIRS, EXECUTORS OR PERSONAL REPRESENTATIVES, FOR ANY LOSS, DAMAGE, COST, EXPENSE OR CLAIM ARISING OUT OF, CAUSED BY OR RELATING TO YOUR PERSONAL INJURY OR DEATH WHILE DIVING, EVEN IF YOUR PERSONAL INJURY OR DEATH IS CAUSED, IN WHOLE OR IN PART, AND DIRECTLY OR INDIRECTLY, BY THE PURCHASE OF THE SYMBIOS TANK POD OR YOUR USE THEREOF, OR ARISING FROM BREACH OF THE WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT, OR ANY OTHER LEGAL OR EQUITABLE THEORY, EVEN IF HALCYON DIVE SYSTEMS KNEW, OR SHOULD HAVE KNOWN OF THE LIKELIHOOD OF SUCH DAMAGES, AND REGARDLESS OF WHETHER OR NOT THE HEAD UP DIVING COMPUTER FUNCTIONED PROPERLY OR WAS DEFECTIVE IN ANY WAY. HALCYON DIVE SYSTEMS SHALL NOT BE LIABLE FOR DELAY IN RENDERING SERVICE UNDER THE LIMITED WARRANTY, OR LOSS OF USE DURING THE TIME THE PRODUCT IS BEING REPAIRED.

YOU HEREBY IRREVOCABLY WAIVE AND RELEASE HALCYON DIVE SYSTEMS , ITS ELECTED AND APPOINTED OFFICIALS, EMPLOYEES, VOLUNTEERS OR OTHERS WORKING ON BEHALF OF HALCYON DIVE SYSTEMS FROM ANY LIABILITY OR OBLIGATION TO YOU OR YOUR HEIRS, EXECUTORS OR PERSONAL REPRESENTATIVES FOR ANY LOSS, DAMAGE, COST, EXPENSE OR CLAIM ARISING OUT OF, CAUSED BY OR RELATING TO YOUR PERSONAL INJURY OR DEATH WHILE DIVING, EVEN IF YOUR PERSONAL INJURY OR DEATH IS CAUSED, IN WHOLE OR IN PART AND DIRECTLY OR INDIRECTLY, BY THE SYMBIOS TANK POD OR YOUR USE OF THE SYMBIOS TANK POD, OR ARISING FROM BREACH OF THE WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT, OR ANY OTHER LEGAL OR EQUITABLE THEORY, EVEN IF HALCYON DIVE SYSTEMS KNEW, OR SHOULD HAVE KNOWN OF THE LIKELIHOOD OF SUCH DAMAGES, AND REGARDLESS OF WHETHER OR NOT THE SYMBIOS TANK POD FUNCTIONED PROPERLY OR WAS DEFECTIVE IN ANY WAY.

YOU MUST READ AND ACCEPT THE AGREEMENT FOR ALL LIMITATIONS AND EXCLUSIONS OF HALCYON DIVE SYSTEMS 'S LIABILITY TO YOU.

XI Warranty

HALCYON DIVE SYSTEMS LIMITED WARRANTY

HALCYON DIVE SYSTEMS warrants that during the warranty period HALCYON DIVE SYSTEMS or a HALCYON DIVE SYSTEMS authorized service center will, at its sole discretion, remedy defects in materials or workmanship free of charge either by repairing, replacing or refunding, subject to the terms and conditions of this limited warranty.

Warranty period

- The limited warranty period starts at the date of original purchase
- The warranty period is 2 years for products unless otherwise specified
- The warranty period is 1 year for accessories
- The warranty period is 6 months year for rechargeable batteries

The limited warranty does not cover:

- normal wear and tear such as scratches, abrasions, alteration of the color
- defects caused by rough handling
- defects or damage resulting from use contrary to intended or recommended use, improper care, negligence, and accidents such as dropping or crushing
- printed materials and packaging

The limited period is not enforceable if the product or accessory:

- has been opened
- has been repaired using unauthorized spare parts
- has been repaired by an unauthorized service center
- has been exposed to chemicals including, but not limited to sunscreen and mosquito repellents

XII CE

The EC Type examination of the SYMBIOS TANK POD was conducted by: SGS . Notified Body No. 0598

The SYMBIOS TANK POD is in conformity with:

- EN250:2014 – respiratory equipment - open-circuit self-contained compressed air diving apparatus – requirements, testing and marking – clause 6.11.1 Pressure Indicator.
- Regulation (EU) 2014/53, Radio Equipment Directive
- EN 300 330:2017 V2.1.1 (Radio spectrum), Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU.
- EN 55032:2015 + A1:2020 + A11:2020 (EMC), Electromagnetic compatibility of multimedia equipment - Emission requirements

XIII 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.

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

NOTE: 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.

XIV INFO_HALCYON

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