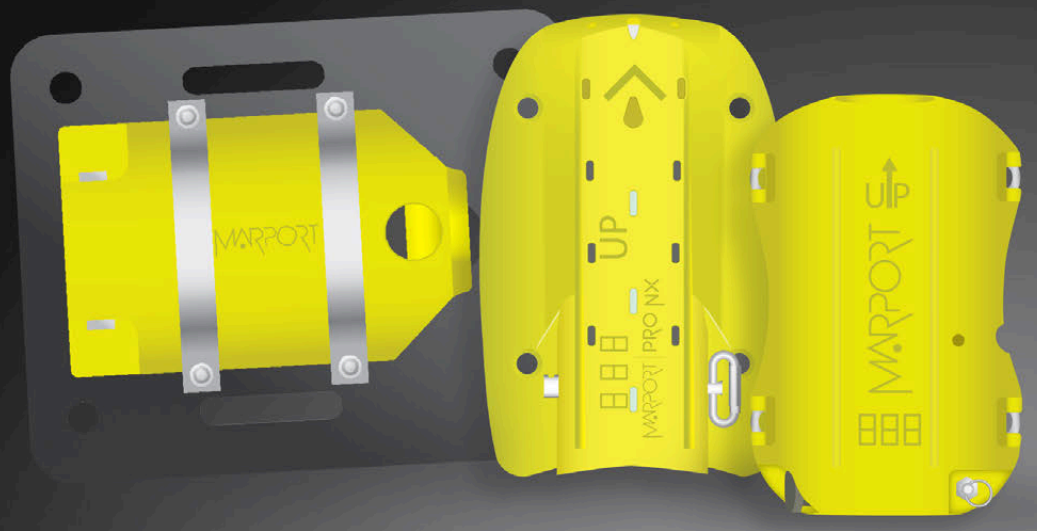
MARPORT | PRO

HEIGHT SENSOR NX

2026

USER MANUAL



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Legal

History

V1	09/21/26	First release

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Disclaimer

Marport endeavors to ensure that all information in this document is correct and fairly stated, but does not accept liability for any errors or omissions.

The present user guide is applicable for the following versions:

- Mosa2: 02.15.x
- Scala2: 02.20.x

If you use other versions, the visual interface and options may vary.

Introduction & Presentation

Introduction and Presentation

Get a basic knowledge of the sensor.

Introduction

The Height Sensor Pro NX monitors the headline height above the seabed and sends real-time data to the captain, for correct gear positioning during the tow. It is part of Marport's NX generation, built for improved robustness and easy sensor swap-out.

The sensor is mounted on the headline and is available in 3 housing types:

- A compact housing: smaller size, suited to smaller vessels and lighter gear setups.
- A board-mounted housing: fixed directly on the headline for a stable attachment.
- A hydrodynamic housing: shaped to minimize drag and water resistance during the tow.

It is compatible with the Rx2 receiver system only.

The sensor provides the following features:

- Height monitoring: real-time headline height data, to keep safe distance from the seabed and optimize trawl performance.
- Environmental data (optional): depth, pitch, roll, and battery level, for a complete view of gear behavior.
- Easy swap-out: the sensor can be removed for charging without removing the housing, saving time.
- User-configurable: fully programmable at sea, for easy setup and adjustment.

Safety Guidelines

Important: To ensure proper and safe use of this equipment, carefully read and follow the instructions in this manual.

Basic good practices

When using the product, be careful: strong impacts can cause damage to the electronic components inside.

Never place the product in a hazardous and/or flammable atmosphere.

Product installation and use

Install and use this product in accordance with this user manual. Incorrect use of the product may cause damage to the components or void the warranty.

Notice: Do not open the sensor bottle. Only qualified Marport technicians can do maintenance and repairs on internal components of the sensors.

Precautions

CAUTION: In case of water ingress in the product, do not charge it: battery may vent or rupture, causing product or physical damage.

Description

System Compatibilities

The Height Sensor Pro NX is compatible with the following versions of Marport's software and equipment.

Mosa2	02.15.10 or later
Scala2	02.20.02 or later
Rx2	01.00.09 or later
Dock	02.00.06 or later

Important: The Height Sensor Pro NX is currently not compatible with M3, M5, or M6 types of Marport systems. It can be installed on a **Rx2 system only**.

Sensor Features

This section describes the features available for the sensor.

Features and Options

The features and options are configurable according to the type of hardware and customer's choices.

Misc. options	Legacy Charger Compat.*
Measures	• Battery (always activated) • Temperature • Height • Depth • Pitch • Roll

*Legacy Charger Compatibility option: compatible only with sensor firmware version **F450-02.03.01 or later**. The sensors can be charged but the LED status color cannot indicate the charging level.

Technical Specifications

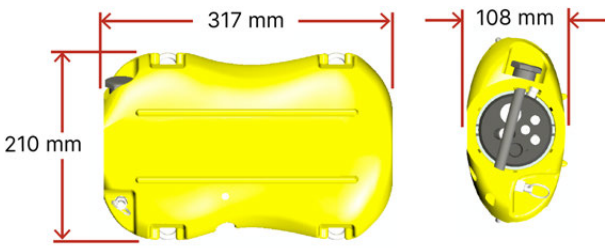
Uplink frequency	30 to 60 kHz
Range to vessel	up to 2500 m[1]

Data update rate	Height: 1-5 sec. - Depth: 2-10 sec. - Temp: 3-16 sec.
Height range	up to 100 m
Depth range	up to 2000 m
Temp measurement range	-5° C to +25° C
Temp accuracy	±0.1° C
Typical battery life	Approx. 8 days[2]
Charging time	4 hours[3]
Battery type	Lithium-Ion
Weight in air (with housing)	• Small: 7 kg • Board: 14.5 kg • Hydrodynamic: 7.7 kg
Weight in water (with housing)	• Small: 2.4 kg • Board: 3 kg • Hydrodynamic: 2.4 kg
Warranty	2 years (Sensor & Battery)[4]

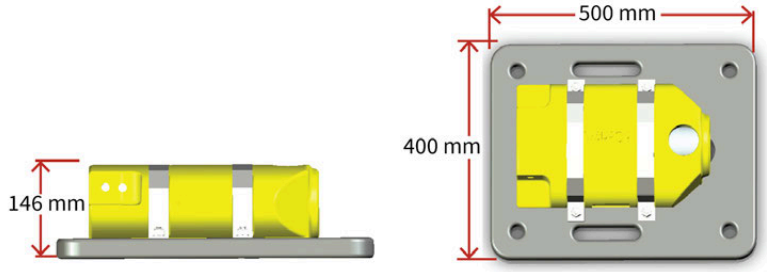
1. Reference only, depends on functions enabled. / 2. With D1, FH & B1 telegrams and a 33% uplink power level. / 3. Based on average charging time. / 4. Marport Standard Marine Limited Warranty

Dimensions and Weight

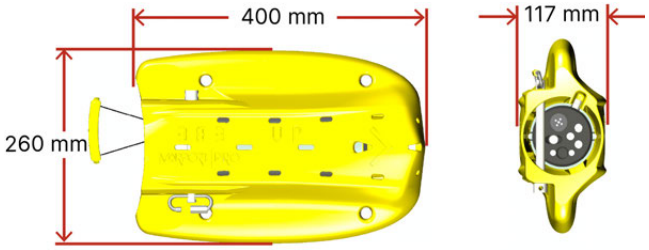
Small housing



Board housing

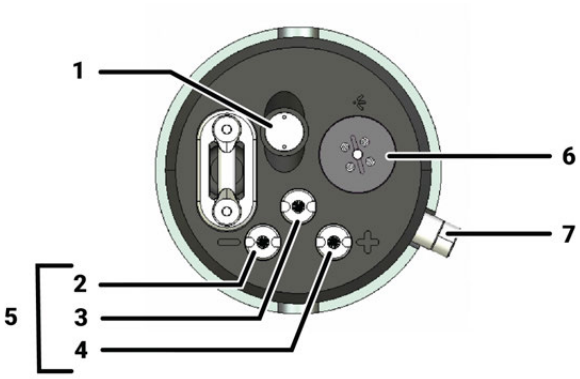


Hydrodynamic housing



Main Parts

External View



1. Temperature sensor

2. Negative charge

3. Water switch

4. Positive charge

5. Shoulder bolts

6. Pressure sensor

7. Alignment screw



1. Transducer

2. Locking pin

4. Stabilization board

5. End cap

3. Blocking rod

Operational Mode Indicator

A LED on the sensor's transducer indicates the operational mode of the sensor.

State	Situation	LED
Starting	• Sensor has been switched on in water or with water switch.	 • Startup sequence: LED blinks green/ off/red/off/green/red. • Then, fixed green for 1 sec.
Running	• Sensor is in water. • Water switch is on.	 • For 1 min.: LED blinks red at the beginning of each uplink communication cycle. • Or, LED blinks green / red if the product configuration is not valid.
Configuring	• Sensor is out of water. • User is testing and configuring using a Configuration Cable. • Sensor turns off after 10 min. without test or configuration operation.	 LED blinks green.
Charging	• Charger plug is connected. • User is configuring at the same time via the Dock.	 • LED blinks red. • If connected to an incompatible charger and not charging, the LED stops blinking after approx. 10 sec.
On deck	• Sensor has been hauled on deck. • The virtual water switch is on. • The sensor is locked in a low power state to not switch into running mode.	 LED blinks green every 4 sec.

Sensor Configuration

Sensor Configuration

Learn how to configure the sensor settings.

Note: This guide refers to the following versions of **Mosa2:** 02.15.x. If you use another version, the visual interface and options may vary.

Note: To configure the sensor on Mosa2: Press command + A or click **Menu** ☰ and click **User Mode > Advanced**.

Important: To save the changes, connect and disconnect the water-switch when you have finished configuring the sensor.

Connecting the Sensor to Mosa2

To configure the sensor, you need to connect it to Mosa2 application, using either the Dock or the Configuration Cable.

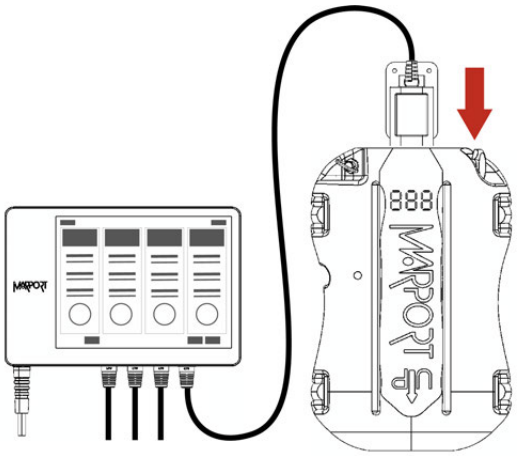
Using a Dock Charger Plug

About this task

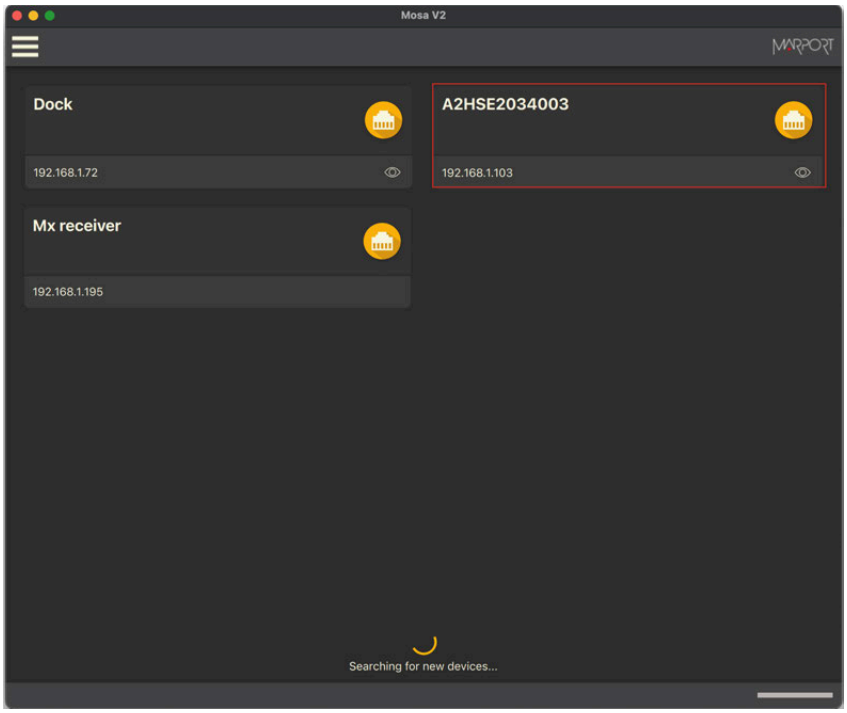
Tip: Refer to Dock user manual to have more details about the use of this product.

Procedure

1. Connect one Dock charging plug to the sensor's endcap.



2. Mosa2 discovery page opens. The sensor is displayed.



- Click  to open the sensor configuration page.
- Click  to show the deploy animation on the charger plug for 30 seconds.

Using the Configuration Cable

Connect the Configuration Cable from the computer to the sensor to display the sensor configuration page on Mosa2.

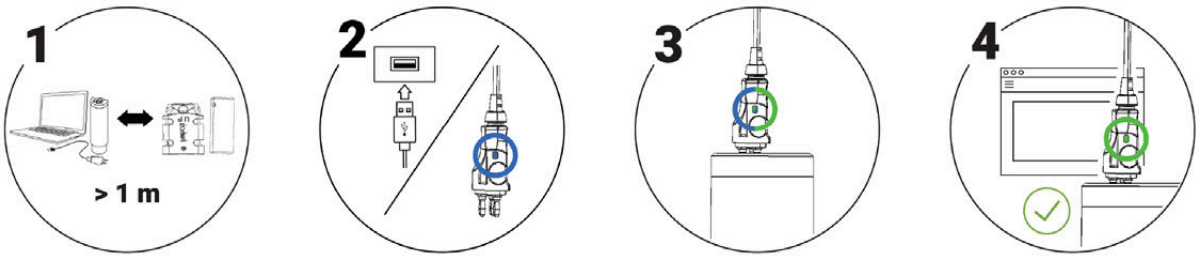
About this task

Tip: Refer to the Configuration Cable Quick Reference Guide available on our website for more details about the use of this product.

Procedure

1. Move other electrical devices minimum 1 m away from the computer.
2. Connect the USB connector directly to the computer.
   Mosa2 opens automatically and the startup wizard is displayed. The LED on the plug is solid blue.
3. Connect the three-pin plug to the sensor.
   The LED on the plug blinks alternatively blue and green.
4. Wait a few seconds. The configuration page of the sensor is displayed on Mosa2.
   The LED on the plug is solid green.

Example



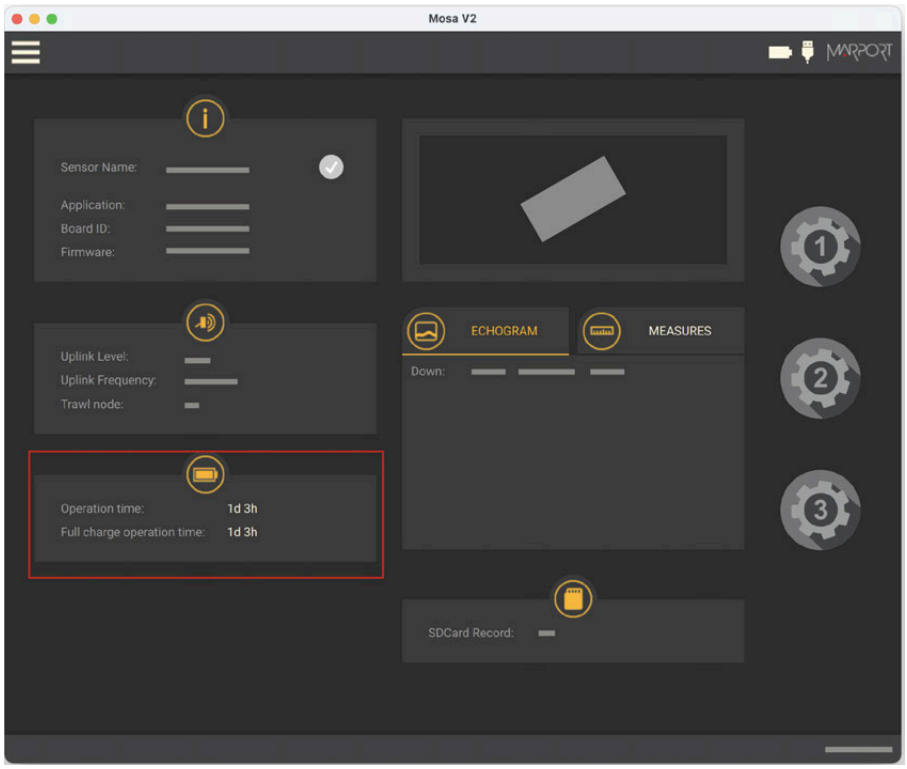
What to do next

You can now configure the sensor.

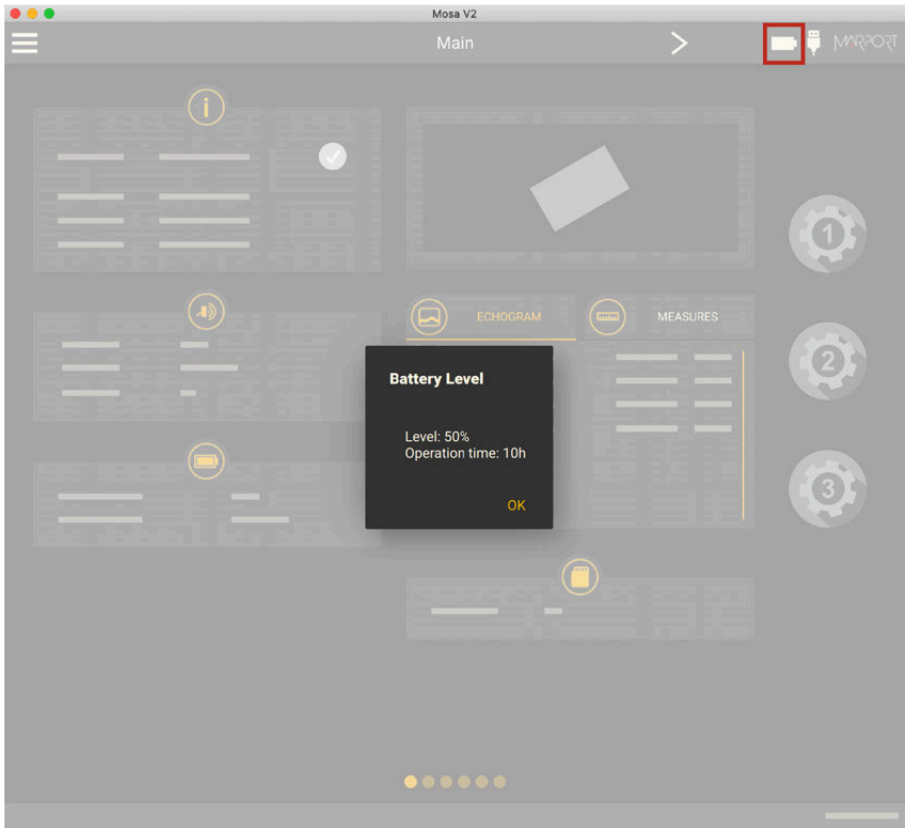
Note: You can keep the Configuration Cable continuously connected by USB, and virtually eject or connect it. When no sensor is connected to the Configuration Cable, click **Menu** ☰ **> Eject Config Plug** or **Connect Config Plug**. When ejected, you come back to the discovery page. It stays disconnected until you virtually connect to it or manually disconnect then connect it.

Battery Information

The battery lifetime is displayed on the first page.



You can also check the battery level at anytime from the top bar:

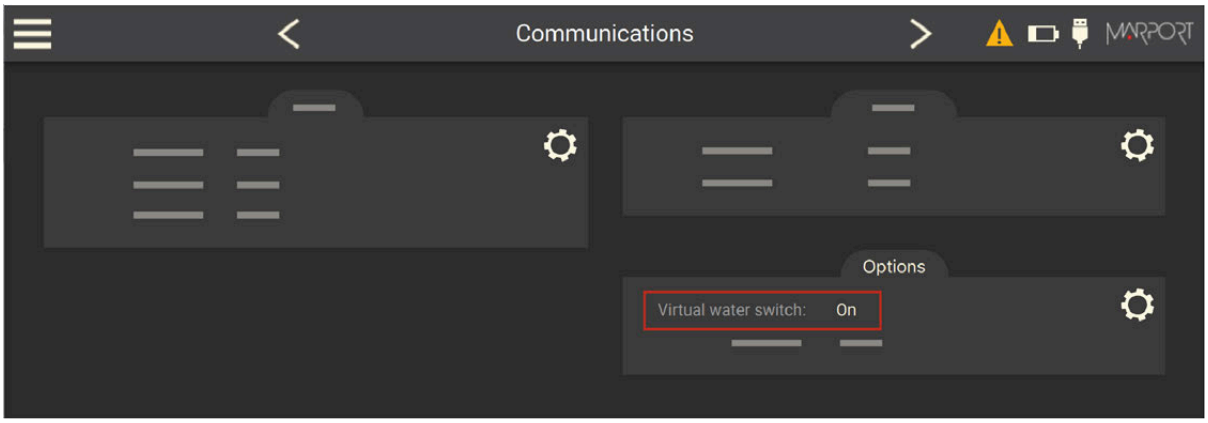


Note: When you change settings such as the uplink power or sounding range, it affects the battery consumption and remaining lifetime. The battery information will update after the sensor has been switched on and operating for 10 minutes.

About the Virtual Water Switch Option

Mosa2 has a virtual water switch option that changes the conditions under which the sensor is running.

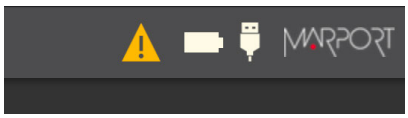
Note: The virtual water switch is available only for the **Pro** line of sensors, including the NX range (PCBA A2S Gen 2 and later, and all A2H and A2F versions). It is activated by default.



- When the virtual water switch is activated: the sensor runs when the depth is more than 2 meters and the water switch is in contact with water.

  We recommend to activate it to prevent the sensor from running outside water. For example, if the sensor is hauled on deck and stays inside the net, the water switch remains wet and keeps emitting. This will significantly reduce the battery lifetime.

  Note: When activated, an orange warning icon is displayed in the top bar.

- When the virtual water switch is deactivated: the sensor runs only when the water switch is in contact with water. The depth is not taken into account.

  We recommend to deactivate it if the sensor is operating close to the surface or if you need to test the sensor in the office.

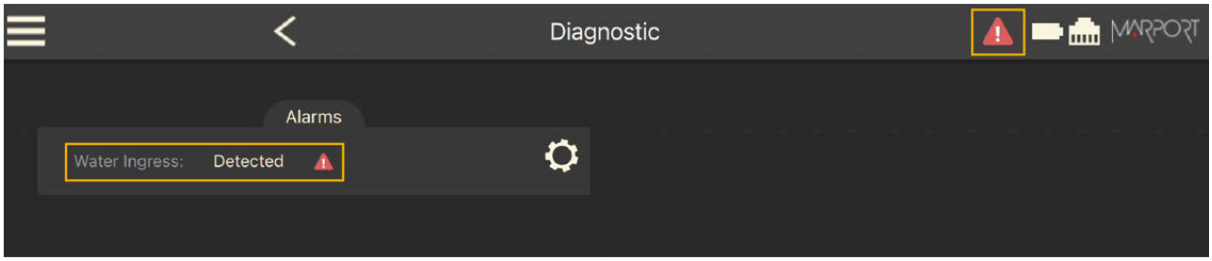
Diagnostic Information

Scala2 and Mosa2 applications warn the user in case of water ingress in the sensor.

Note: Diagnostic information is available for Marport Pro sensors (A2S and A2H PCBA versions), from the firmware version **F450-02.02.00 or later** and Mosa2 version **02.11.08**.

In case of water ingress in the sensor, alarms are displayed in Scala2 Virtual Charger Room, in Mosa2 and on the charger plug when connected to the sensor.

- In **Expert** mode, Mosa2 displays a dialog at the start of the application and warning icon in the toolbar and diagnostic page:



- The charger plug displays a warning icon:



When the alarm appears, take the sensor out of water immediately and contact Marport support.

WARNING: In case of water ingress in the product, do not charge it: battery may vent or rupture, causing product or physical damage.

Configuring the Trawl Node

You need to give a trawl node to the sensor. It is the number corresponding to the position of the sensor on the trawl.

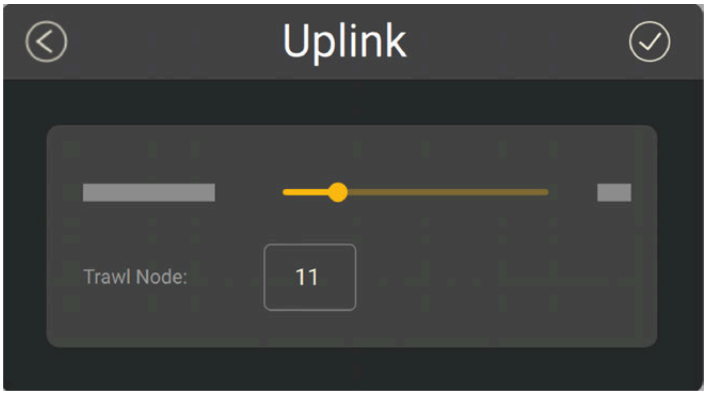
About this task

The trawl nodes corresponding to the positions on the headline are the following:

Trawl number	Node numbers
Trawl 1	10 to 13
Trawl 2	110 to 113
Trawl 3	210 to 213
Trawl 4	310 to 313
Trawl 5	610 to 613

Procedure

1. Go to the **Communications** page, then click ⚙ in **Uplink**.
2. Enter a node according to the position of the sensor on the trawl.



> **Important:** Make sure to put the same number when **adding the sensor to the receiver (on page 38)**. If not, change it accordingly.

3. Click ✓.

Configuring the Telegrams

You can change the telegram assigned to each type of data.

About this task

Telegrams are used to define the acoustic communication between the sensor and the receiver. Data (e.g. temperature, depth) are recognized by the receiver according to the type of telegram defined (e.g. TL, CL). The telegram defines intervals between pulses emitted by the sensor, and one interval represents one value. For example, if the interval between 2 pulses of a TL temperature telegram is 12 s, the temperature is 6.5 °C.

The telegrams that are sent depend on the sensor's features and options.

> **Important:** Make sure there is a minimum distance of 100 Hz between PRP telegrams and a minimum distance of 400 Hz with the uplink frequency of NBTE sensors. See **Frequency Plan (on page 56)** for a full list of boat/channel codes.

Procedure

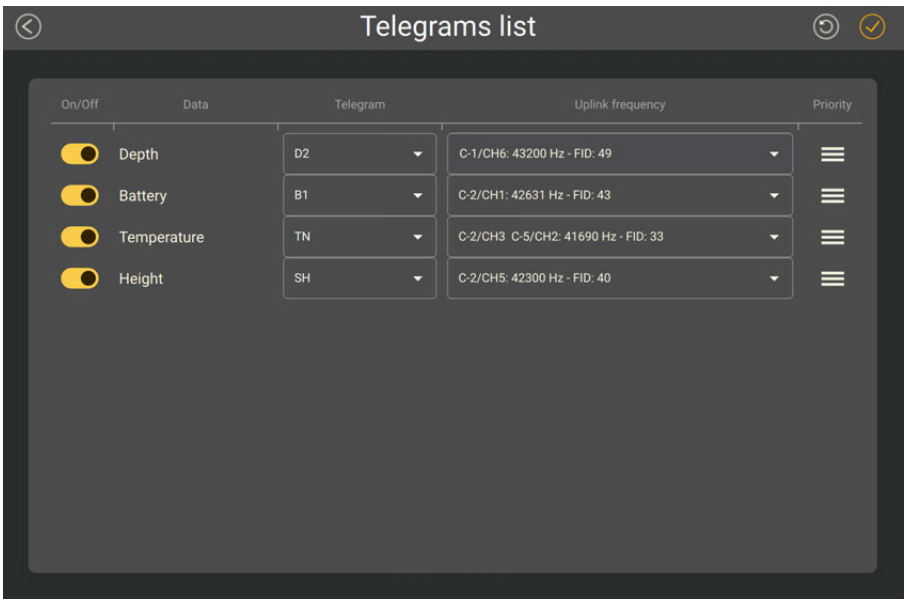
1. In **Communications** page, you can see the list of the telegrams sent by the sensor.
2. Click  in **Telegrams List**, then set a telegram.

Option	Telegram	Value and/or update rate
Depth	D1	100 m., every 1 to 2 sec.
	D2	150 m., every 3 to 8 sec.
	D3	300 m., every 3 to 8 sec.
	D3_MC	300 m., every 4 to 8 sec.
	D6	600 m., every 3 to 8 sec.
	D12	1200 m., every 3 to 8 sec.
	D18	1800 m., every 3 to 8 sec.
Temperature	TL	Every 11 to 16 sec.
	TL_MC	Every 8 to 11 sec.
	TN	Every 3 to 11 sec.
Battery	B1	Every 60 to 70 sec.
Height	FH	Up to 100 m., every 1 to 2 sec.
	SH	Up to 100 m., every 3 to 5 sec.
Height and depth	FHD1	◦ Height up to 100 m., every 1 to 2 sec. ◦ Depth up to 100 m., every 2.5 to 3.5 sec.
	FHD3	◦ Height up to 100 m., every 1 to 2 sec. ◦ Depth up to 300 m., every 2.5 to 5.5 sec.
	SHD1	◦ Height up to 100 m., every 3 to 5 sec. ◦ Depth up to 100 m., every 5 to 10 sec.
	SHD3	◦ Height up to 100 m., every 3 to 5 sec. ◦ Depth up to 300 m., every 5 to 10 sec.
	SHD6	◦ Height up to 100 m., every 3 to 5 sec. ◦ Depth up to 600 m., every 5 to 10 sec.
	SHD10	◦ Height up to 100 m., every 3 to 5 sec. ◦ Depth up to 1000 m., every 5 to 10 sec.

Option	Telegram	Value and/or update rate
	SHD20	◦ Height up to 100 m., every 3 to 5 sec. ◦ Depth up to 2000 m., every 5 to 10 sec.

Note: Using telegrams that send data more often reduces the battery life.

3. Set a frequency for each data, either manually or using a boat/channel code.
4. Click and drag it to change the order in which data are sent.



Configuring the Uplink Power

Configure the settings of the communication link between the sensor and the vessel.

Procedure

1. Go to the **Communications** page, then click in **Uplink**.
2. Drag the slider to change the power of the uplink signal. We recommend to set a level of 33%, since it works for most conditions.



Note: A higher level of uplink power reduces the battery lifetime.

Configuring the Down Sounding

If needed, you can change the frequency of the down sounding of the sensor.

Procedure

1. Go to the **Echo Sounder** page.
2. Click ⚙ in **A - Down Sounding**.
3. If no specific requirements, leave the default **Frequency (Hz)** at 165,000 Hz.
4. Select a **Pulse Type** to have an appropriate length of pulse according to the distance to the bottom:
    - **Short**: shallow waters (100 µs)
    - **Medium**: moderate depth (300 µs)
    - **Long**: deep waters (500 µs)

    Important: Pulse length is an important setting for the calibration of the sensor. If you change the pulse length on a sensor calibrated for target strength, you need to calibrate the sensor again.

5. Do not change the other settings.

Calibrating the Sensor for Target Strength Value

You need to calibrate the sensor to offset the variability of the sensor transducer and of sound transmission. The aim is to have all sensors displaying the same target strength value for the detected bottom.

Setting Up the Installation

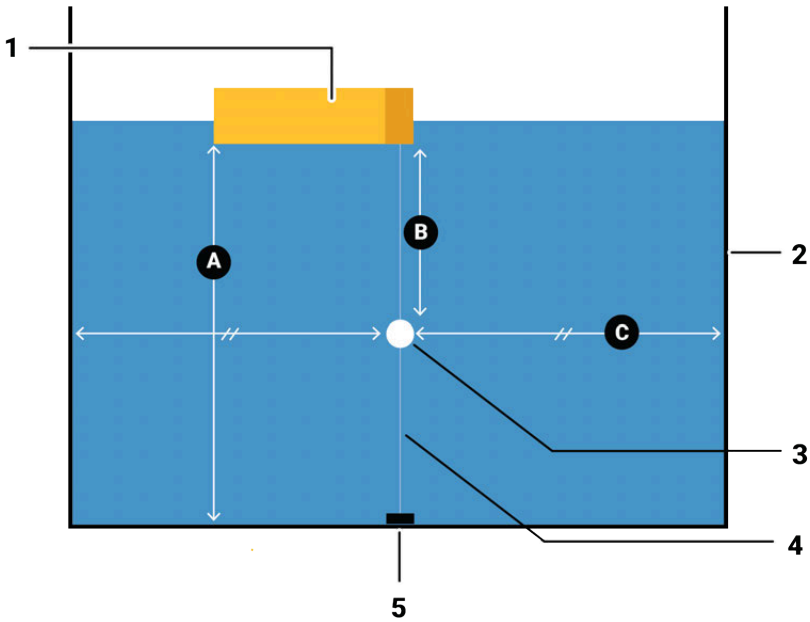
Before you begin

- Make sure you have correctly configured the sounder settings: .
- Make sure you have correctly configured the frequency and pulse length settings (**Configuring the Down Sounding (on page 23)**).
- You can calibrate the sensor with or without the housing on.
- You need a cable extension to immerse the sensor and connect it to Mosa2 with the Configuration Cable or a Dock charger plug.

Important: If you change the pulse length or frequency on a calibrated sensor, you need to calibrate it again.

Procedure

1. Set up the following installation.
    - Water needs to be still.
    - Use a very thin fishing line (0.1 mm thick) to hold the ping pong ball.



1. Sensor

2. Water tank

3. Ping pong ball

4. Fishing line

5. Counterweight

Recommended lengths

A. Min. 150 cm

B. Distance to target =min. 1 m.

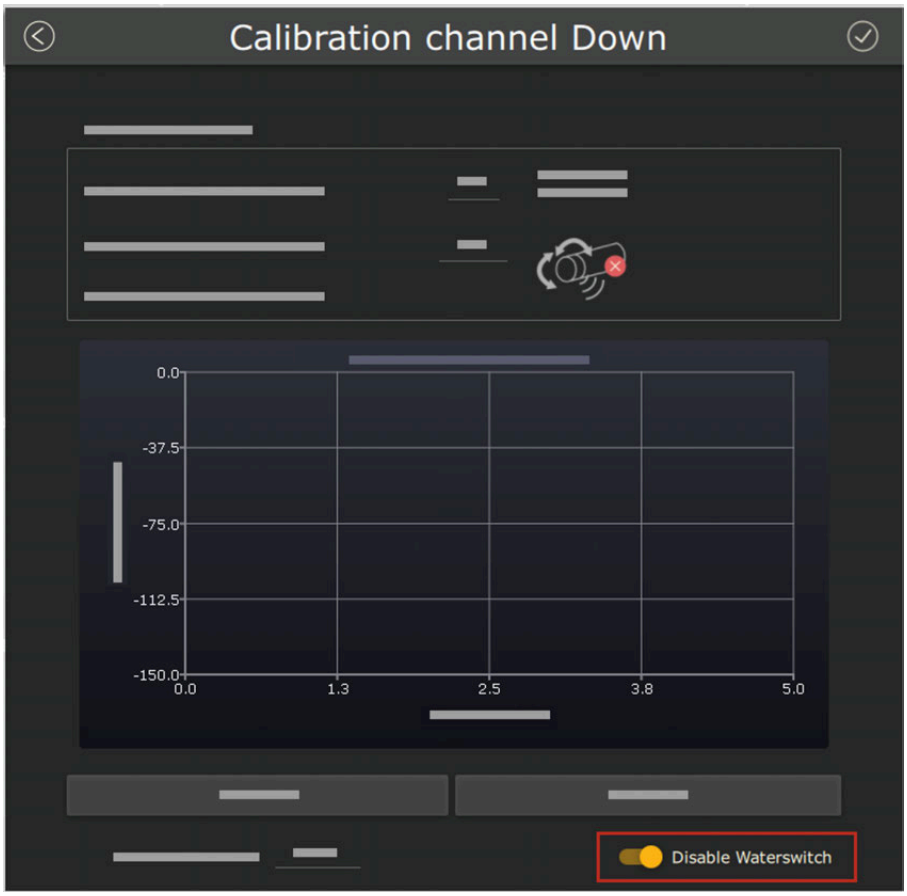
C. Min. 110 cm between ball and side walls

2. Before putting the sensor in water, connect the cable extension to the bottle.

3. Connect the Configuration Cable or a Dock charger plug to the other end of the cable extension. If applicable, connect the Configuration Cable to the computer.

⚠ **CAUTION:** The Configuration Cable and charger plugs are not waterproof: do not immerse them.

4. Wait for the sensor to connect to Mosa2.
5. Press command + E or click **Menu** ☰ and click **User Mode > Expert**.
6. In the **Echo Sounder** page click ⚙ in **A - Down Sounding**.
7.
8. Click **TS Calibration**.
9. Make sure **Disable Waterswitch** is activated. This prevents the sensor from switching into running mode when the endcap is wet or immersed.



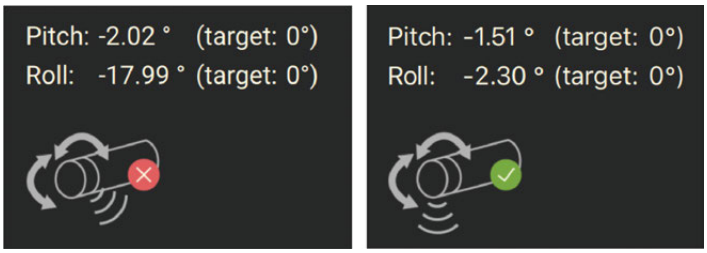
10. Now you can put the sensor into water.

Calibrating the Sensor in Mosa2

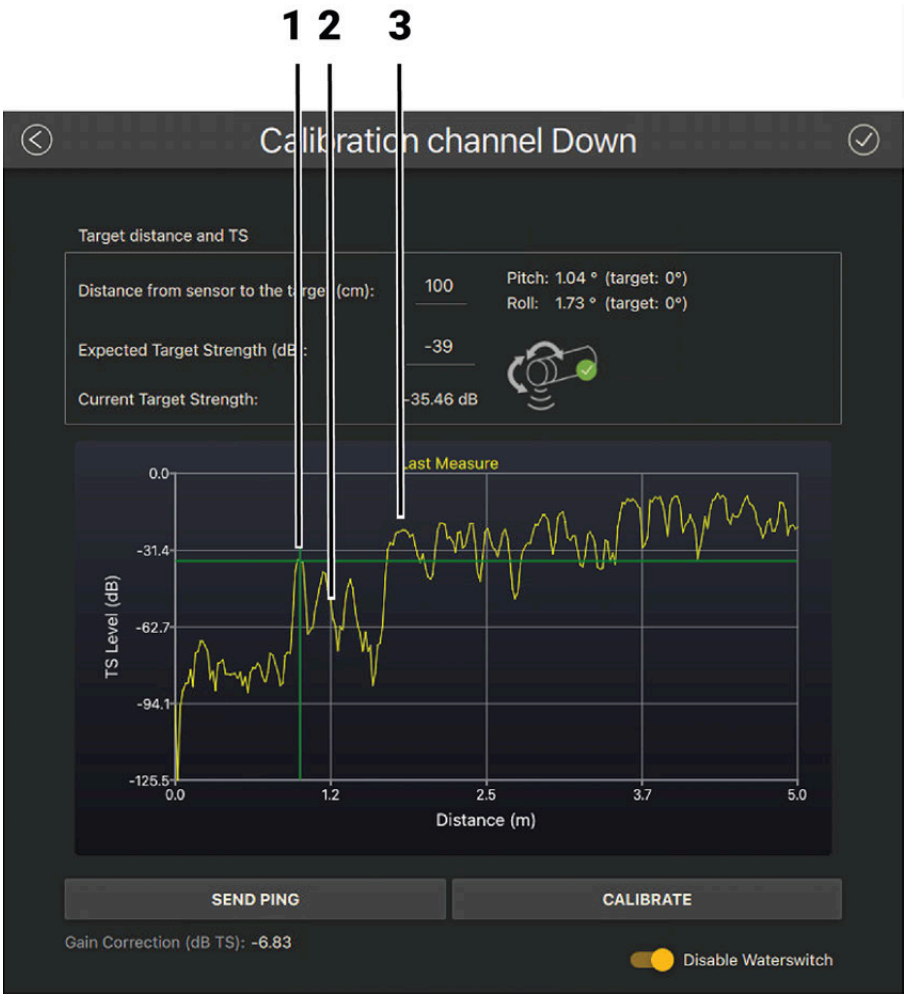
Procedure

1. Make sure the **Expected target strength (dB)** is -39 dB (target strength value of a ping pong ball of 39 mm diameter). In **Distance from sensor to the target (cm)** enter 90, or use the green markers after you send the ping.

2. Check that the pitch and roll of the sensor correspond to the target value, with a maximum difference of +/- 5°.

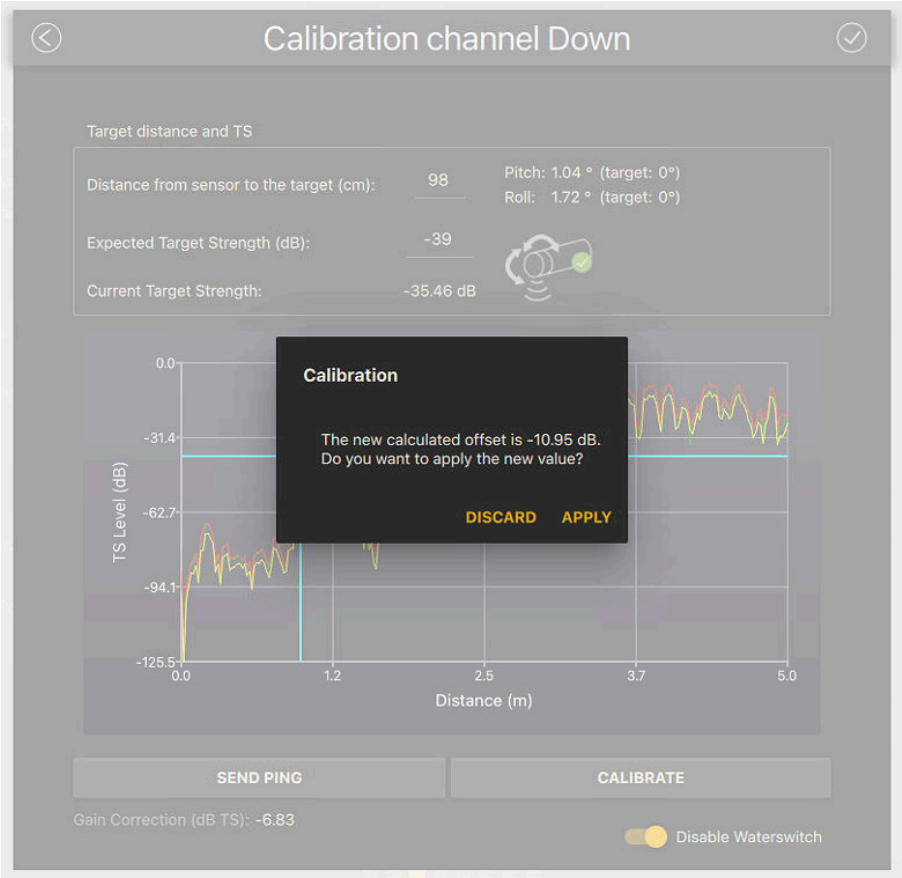


3. From the bottom of the screen, click **Send ping** to send one ping that will identify the distance to the target.
   A curve is displayed. Click anywhere on the graph to show the green markers. The horizontal line indicates the target strength and the vertical line indicates the distance. They must cross at the top of the curve corresponding to the ping pong ball. If not, drag the intersection point to the top of the curve. Scroll to zoom and double-click to come back to the default view.

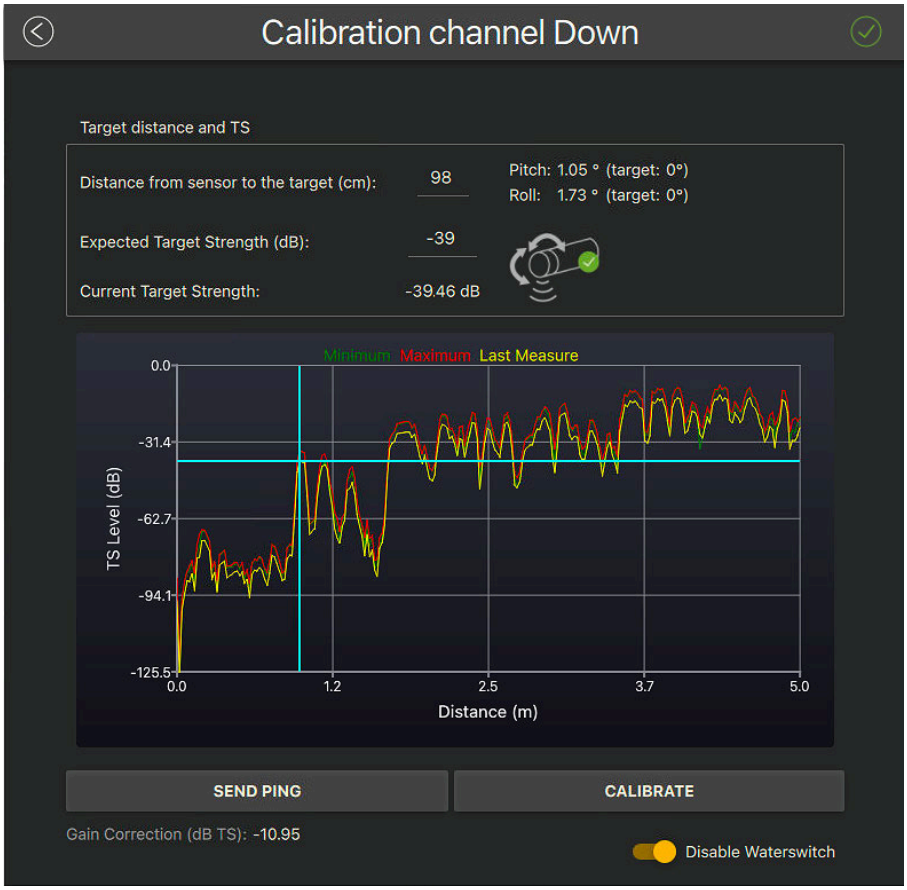


1. Ping pong ball / **2**. Side lobes (tank walls) /**3**. Bottom

4. From the bottom of the screen, click **Calibrate**.
   A new target strength offset is calculated.



5. Accept the new calibration settings suggested in the dialog box. The gain correction is auto-populated.
   The sensor sends 1 ping to check if the calibration settings are correct in comparison to the target strength set (e.g. -39 dB). If they are correct, calibration settings are saved.



If calibration settings are not correct, check the installation in the water tank. Then restart the calibration procedure.

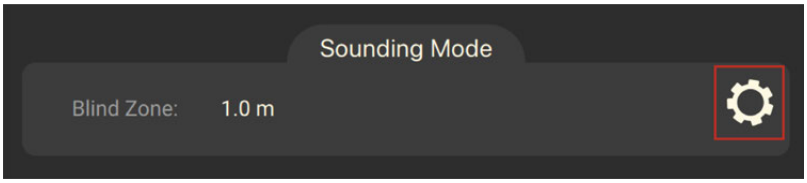
6. Click **Send ping** to check the target strength of the ball.
7. Click ✓.

Setting a Blind Zone Below the Sensor

Set a minimum distance below the sensor at which it does not detect the bottom.

Procedure

1. Go to the **Echo Sounder** page.
2. Click ⚙ in **Sounding Mode**.



3. Enter the minimum distance.

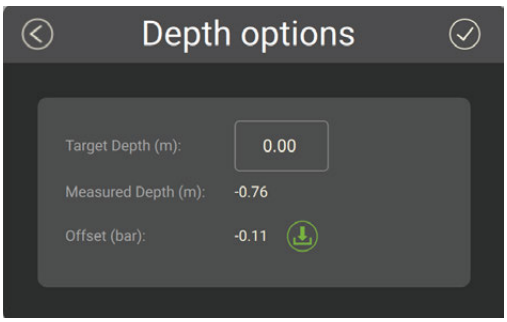
Important: Make sure to set a blind zone that is lower than the trawl opening.

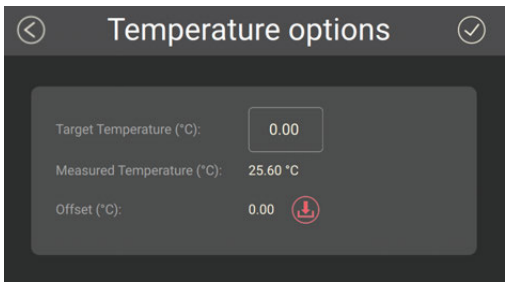
Applying Offsets to Measurements

You can apply offsets to temperature and depth measurements if the measured values do not correspond to the environment of the sensor.

Procedure

1. Go to **Measurements** page and click next to depth or temperature to apply offsets.
2. Enter a target value. Click .
   The measured value becomes the same as the target value. The value of the offset is displayed.





3. If you need to reuse offsets from a previous configuration, click then select the configuration file (*.A2C).

Testing Measures

You can test the measures taken by the sensor (e.g. battery level, temperature, depth) to check that there are no faults.

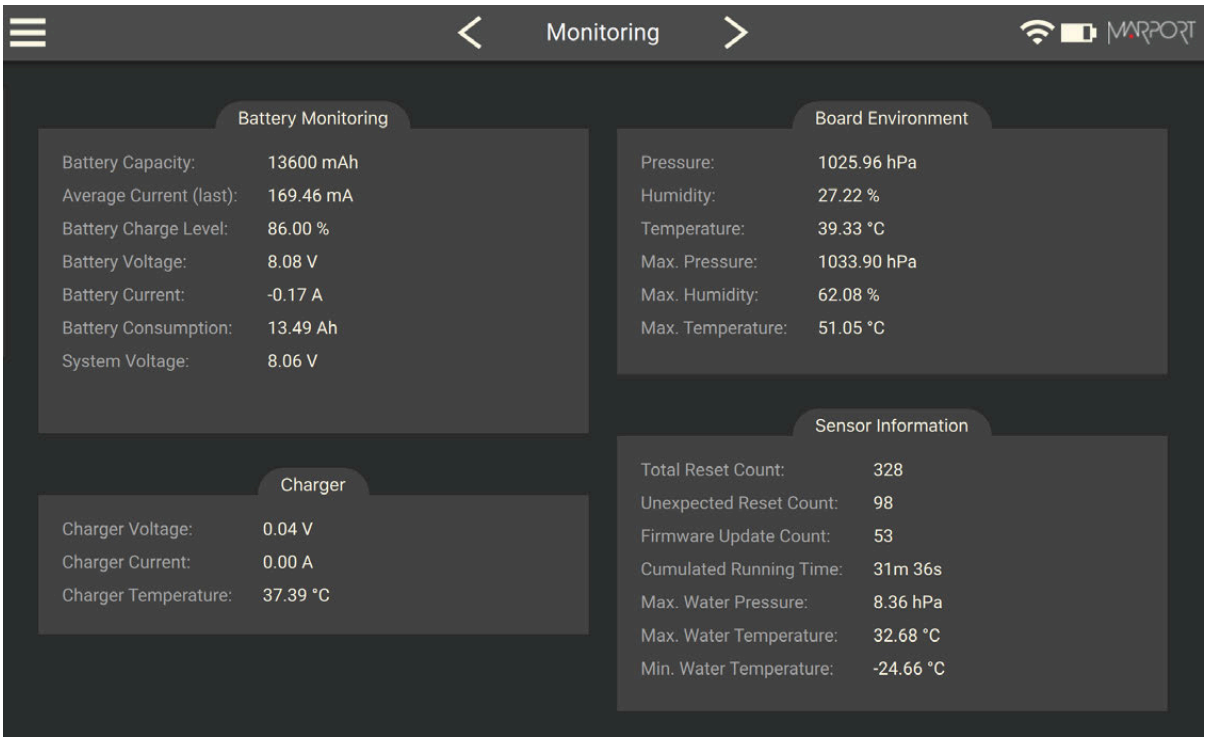
About this task

You can test the sensor in water or in air. In air, the following measures will be wrong: height, conductivity.

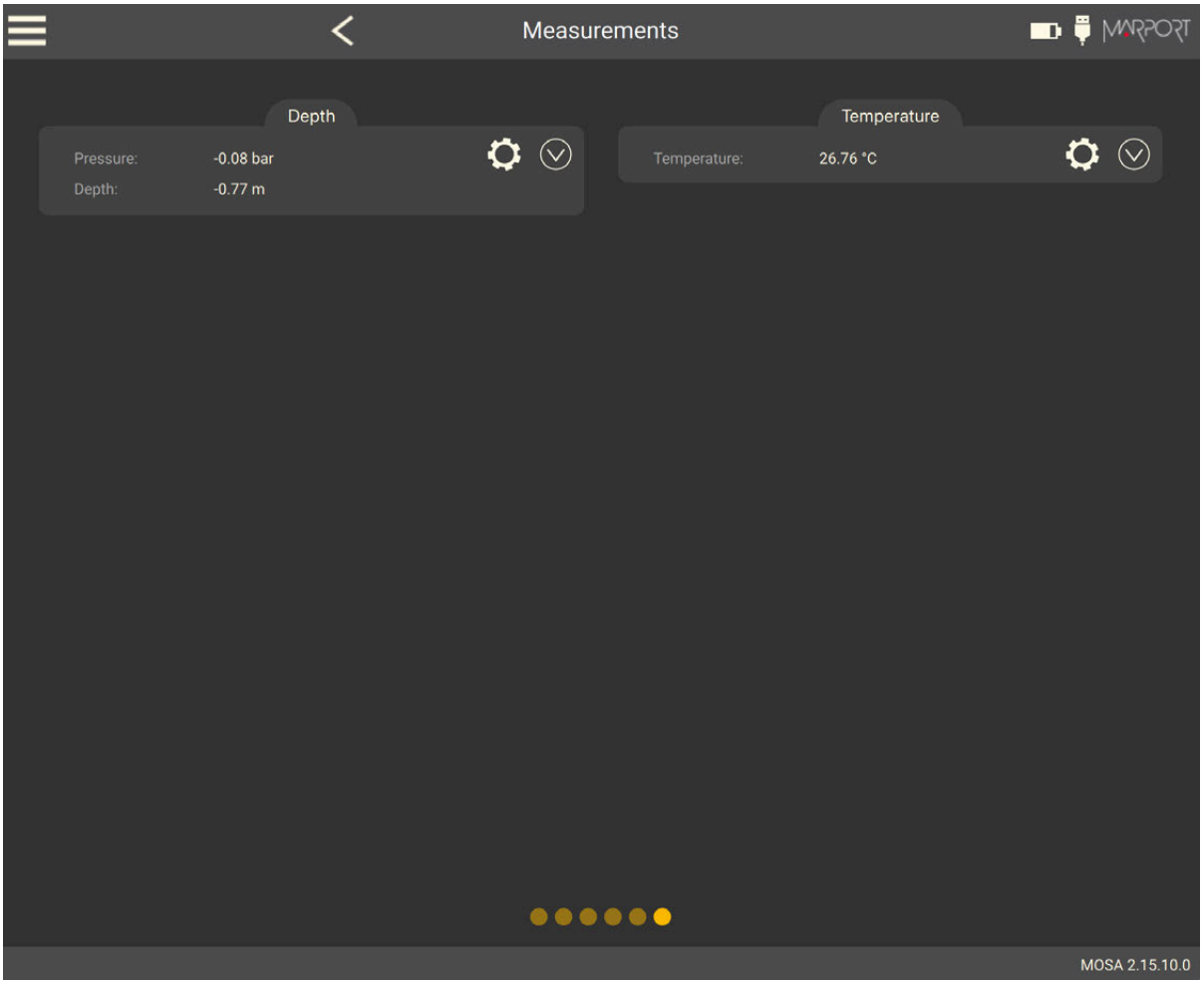
Procedure

1. Press command + A or click **Menu** and click **User Mode > Advanced**.
2. Go to the **Monitoring** page.

You can check information about the battery, board and sensor.



3. Go to the **Measurements** page.
   You can see the values of the activated measures, such as depth, temperature. If the sensor is working correctly, measures are updating.



4. Click ⚙ to check and, if necessary, adjust data measured by the sensor:
   - **Depth**: place your sensor on a desk or on the ground and enter 0 in **Target Depth**.
   - **Temperature**: enter the estimated temperature of your environment.

Saving a Configuration on Mosa2

You can save different configurations of the sensor to be able to quickly change the configuration when you change your fishing method.

Before you begin

- You have finished configuring the sensor.

About this task

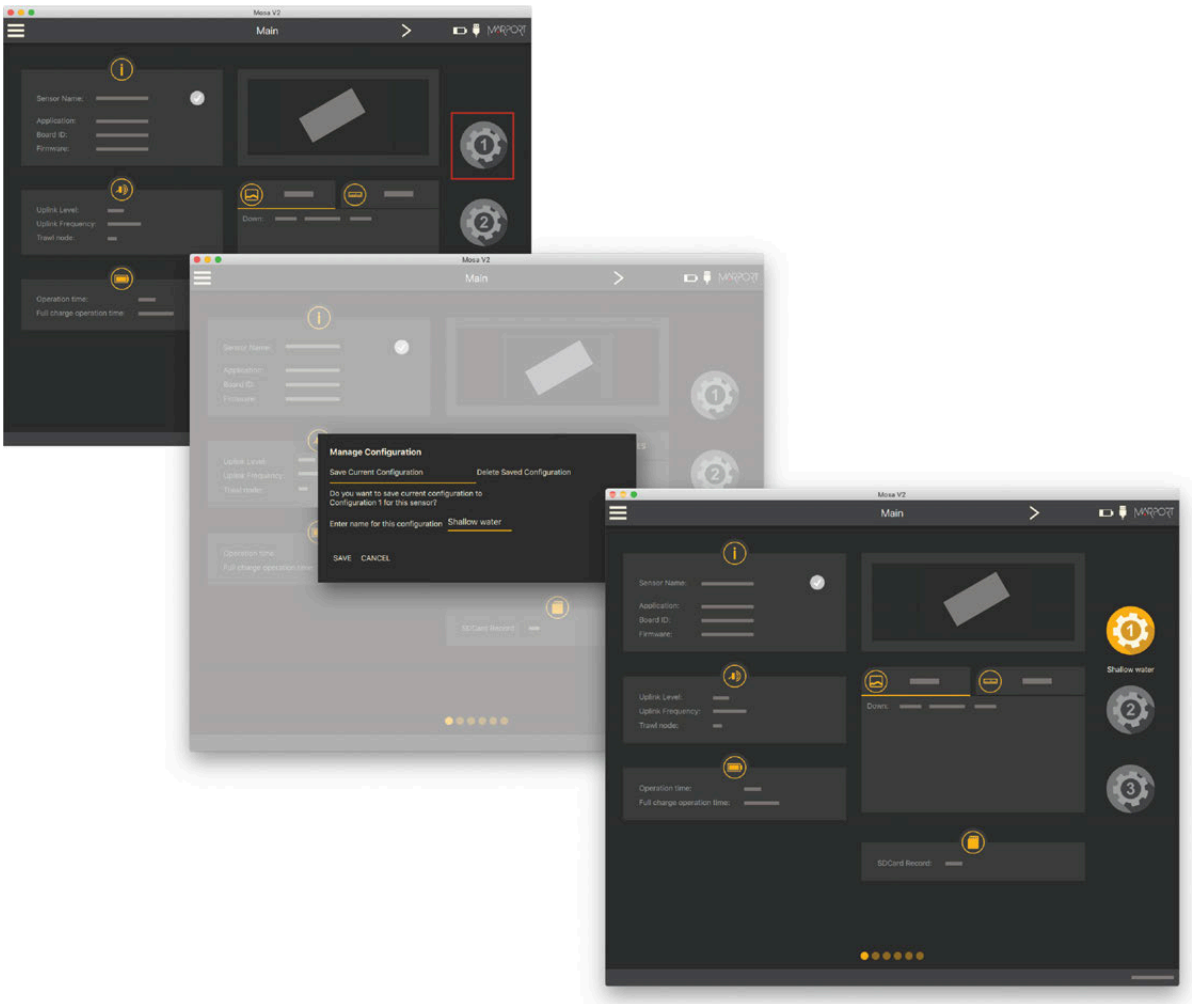
You can have up to three different configurations for the sensor. When you change your fishing method, you can apply a corresponding configuration in one click. For example:

- If fishing in shallow water, you can use a configuration with an uplink level of 33%, a short pulse and a short range.
- If fishing in greater depths, you can change for a configuration with an uplink level of 100%, a long pulse and a long range.

Procedure

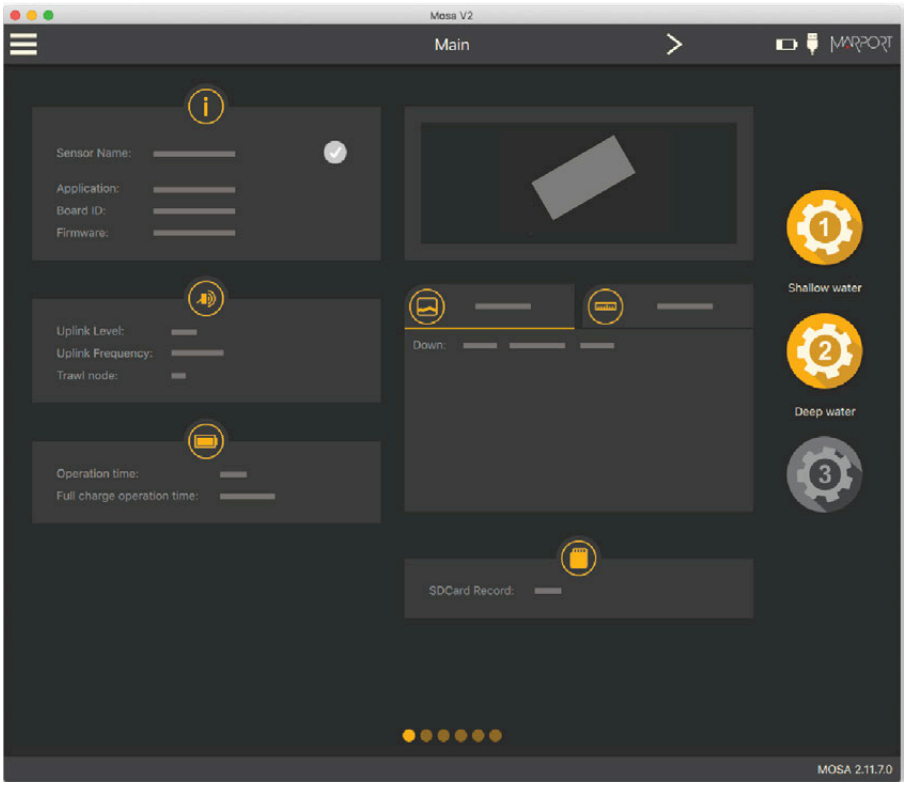
1. When you are finished configuring the sensor, for example to use the sensor in shallow water, click one of the wheel icon on the first page of Mosa2.

2. In the window that appears, enter a name for the configuration and save it.
   The wheel icon becomes orange and the name of the configuration is displayed underneath.



3. To create another configuration, for example this time to use the sensor in deep waters, change the settings of the sensor on Mosa2.

4. When you are finished, click the second wheel icon and save the configuration.



5. If you need to change the sensor configuration back to the first configuration (shallow water), click the corresponding wheel.
   The configuration is applied.

6. If you need to make changes to a configuration:
   a. Change settings.
   b. Maintain the click on the corresponding wheel until the **Manage Configuration** window appears.
   c. Click **OK** in **Save Current Configuration**.

7. To delete a configuration:
   a. Maintain the click on the corresponding wheel until the **Manage Configuration** window appears.
   b. Click **OK** in **Delete Saved Configuration**.

Exporting Sensor Configuration

You can export the sensor settings you configured on Mosa2 on a file. You can afterward use this file when configuring a similar sensor.

Before you begin

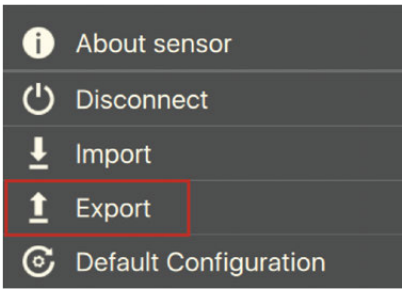
- You are finished configuring the sensor.

About this task

If you have issues with your sensor, send this file to support teams.

Procedure

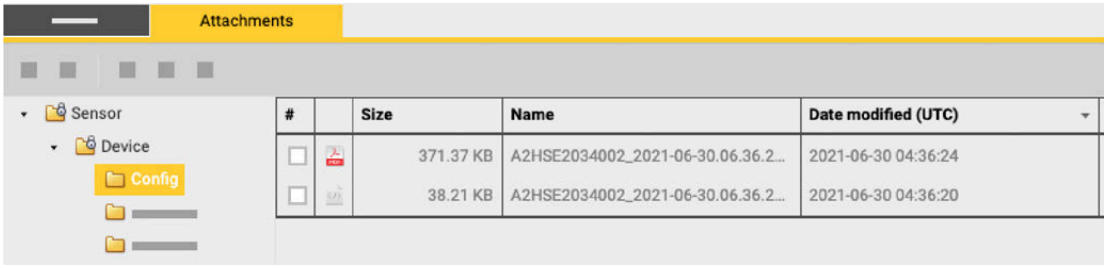
1. Click **Menu** ☰ **> Export**.



2. From the window that appears, choose a folder on your computer to save the file and click **Open**.

Results

The configuration file is exported and saved on your computer as an A2C file. If you are connected to the internet, it is also automatically sent to MASP in XML and PDF files.



Importing a Sensor Configuration

You can apply to a sensor a configuration that has already been made on another sensor.

Before you begin

- You have exported a configuration (see **Exporting Sensor Configuration (on page 34)**) and have the *.A2C or XML configuration file.

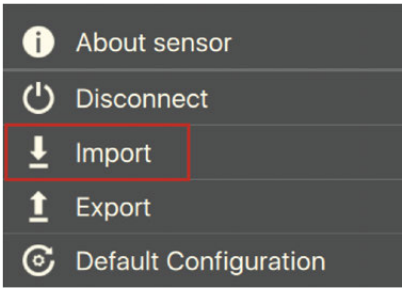
About this task

Only the following settings are imported: trawl node, recording settings (SD card, support logs), communication options (virtual water switch, simulation mode), uplink level and frequency, echo sounder settings.

Important: If the new configuration changes the echo sounder settings, you must re-calibrate the sensor for target strength value.

Procedure

1. Press command + A or click **Menu** ☰ and click **User Mode > Advanced**
2. Click **Menu** ☰ **> Import**.



3. From the window that appears, select the *.A2C or XML configuration file.

Results

The configuration is loaded into the sensor.

System Configuration & Display

System Configuration and Display

Learn how to configure the receiver to be able to receive and display Height Sensor Pro NX data.

Note: This guide refers to the following version of Scala2: 02.20.x. If you use another version, the visual interface and options may vary.

Adding the Sensor to the Rx2 Receiver

You need to add the sensor to the Rx2 receiver to be able to display its data on Scala2.

About this task

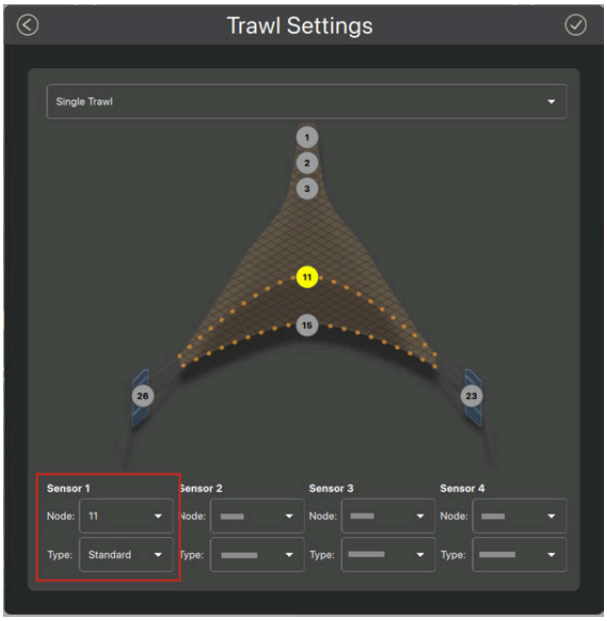
If you need more details about the Rx2 configuration, refer to the Rx2 user manual.

Procedure

1. Open Rx2 system configuration page on Mosa2.
2. To add the sensor to the trawl configuration:
   a. Click ⚙ in the fishing gear section.



   b. Select the node number corresponding the sensor's location on the fishing gear. This node must be the same as defined during the sensor configuration (**Configuring the Trawl Node (on page 19)**).

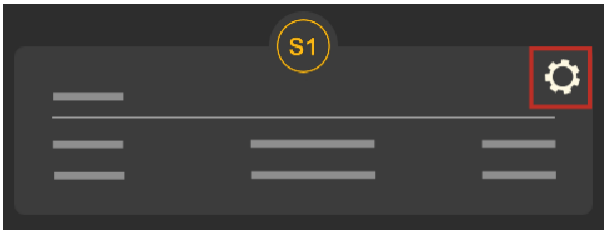


c. Make sure the type of sensor is **Standard**.

d. Click ✓ to save the changes.

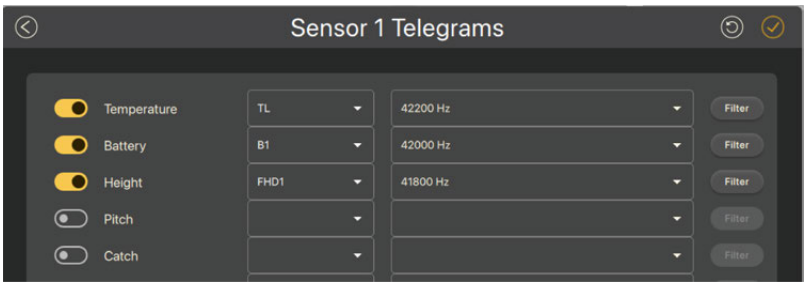
3. To configure the sensor's measurements:

a. Click ⚙ next to the sensor (S1, S2, S3, S4) you want to configure.



b. To activate data, turn on the corresponding toggle.

c. Select the type of telegrams and their frequency. These must be the same as defined during the sensor configuration (**Configuring the Telegrams (on page 20)**).



d. Optionally, you can apply filters to the sensor's incoming data. Click **Filter**, then set a **Minimum and maximum value** to remove data that is not coherent with the vessel's conditions. Change the **Filtering level** to apply more or less smoothing to the received data. Recommended level is **Medium**.

e. Click ✓ to save the changes.

Configuring Data Display in Scala2

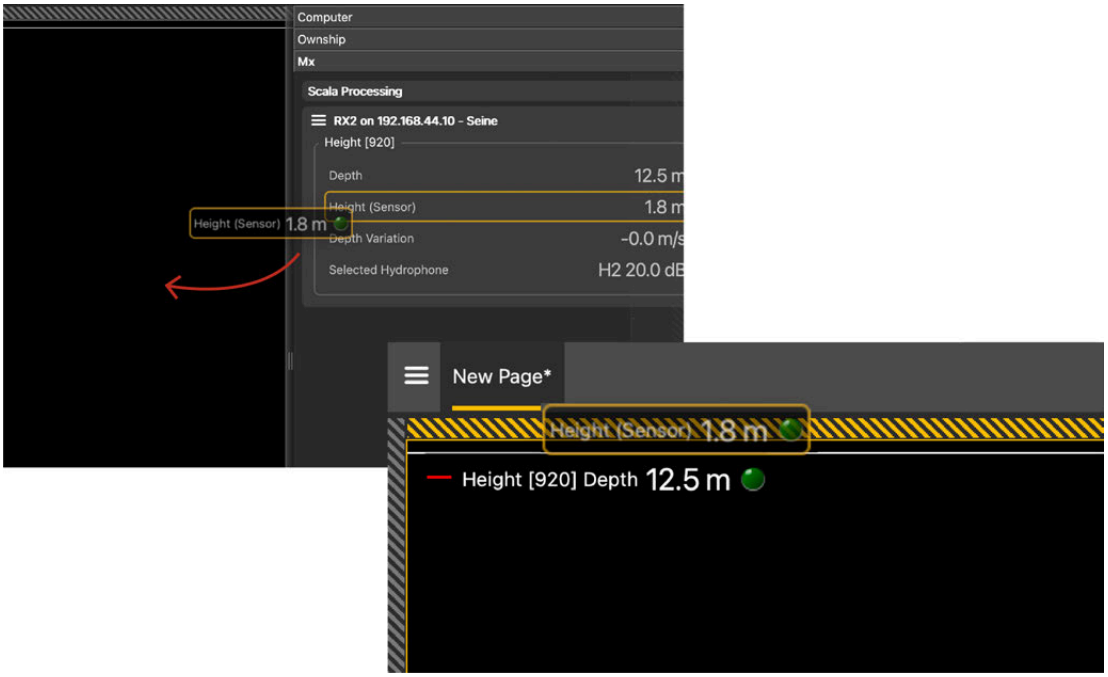
You can display the sensor's measurements on Scala2 pages.

Before you begin

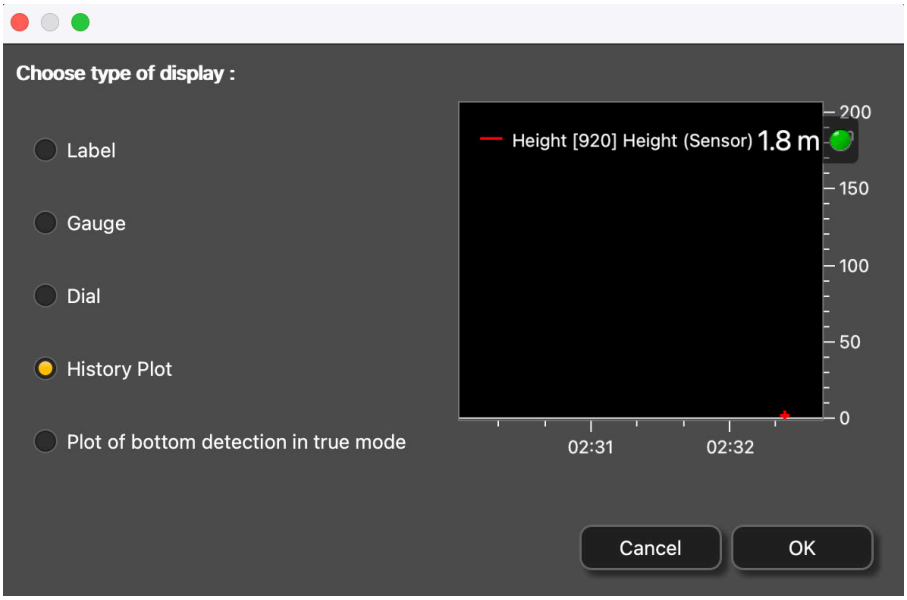
Connect in **Customize** mode to configure the display of data. From the top left corner of the screen, click **Menu** ☰ **> Customize** and enter the password `eureka`.

Procedure

1. Open the control panels and go to the **Mx** tab.
2. The data of the Height Sensor Pro NX are displayed under **Height**. Click + hold data such as temperature, height or depth and drag them to a page.



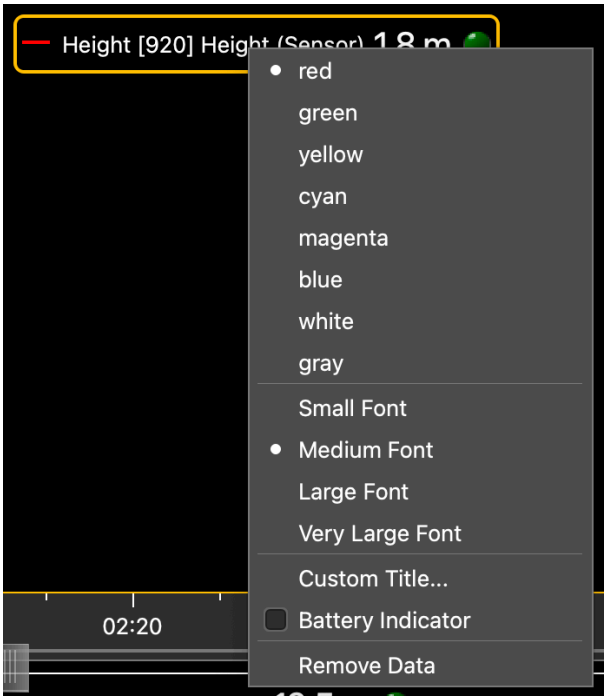
3. Select the type of display.



4. Drag the lines around the blocks of data to resize them.



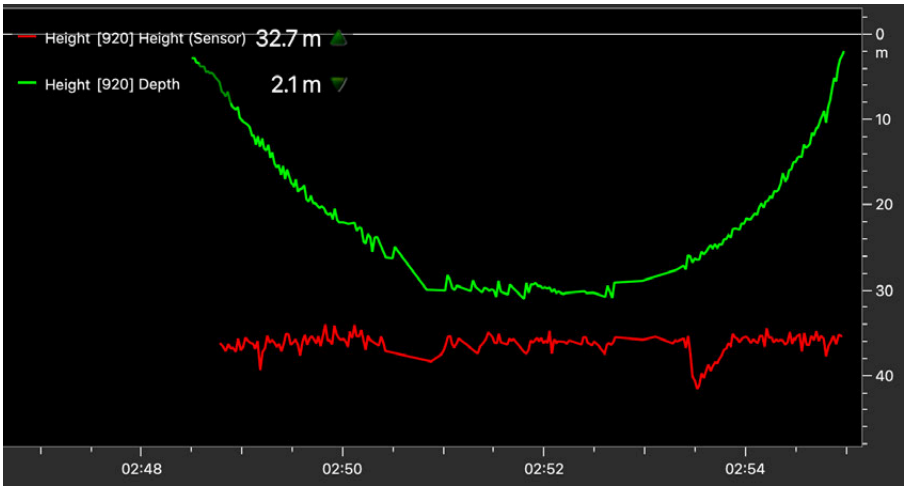
5. Right-click the title or the values of the data to display customization options.



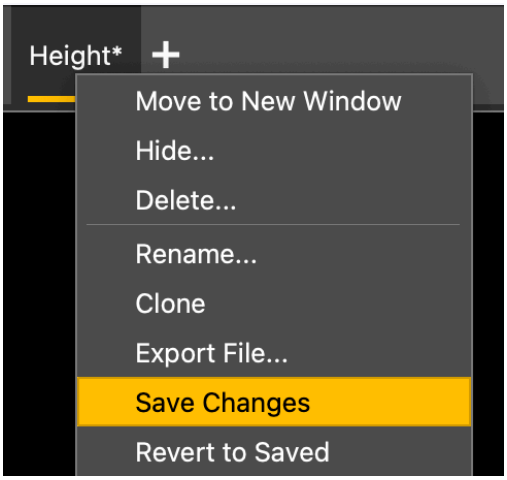
6. If the Height Sensor Pro NX has both height and depth measurements, you can display a plot showing the descent of the sensor:

a. Click + hold **Height (Sensor)** data and drag it to a page.

b. Select **Plot of bottom detection in true mode**.



7. To save the changes, right-click the tab with the name of the page and click **Save Changes**.



Installation

Installation

Learn how to install the sensor on the trawl gear.

Removing the Sensor from its Housing

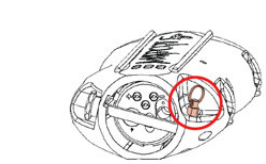
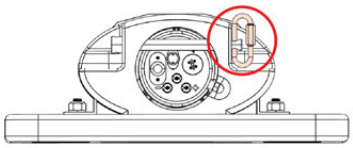
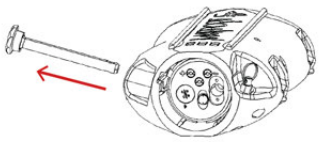
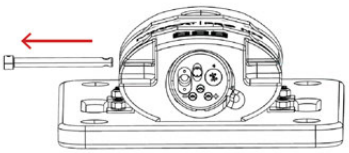
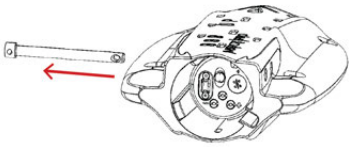
Learn how to remove the sensor from its housing and to put it back.

About

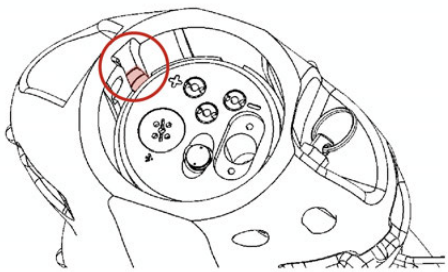
Once installed, the sensor housing can remain attached to the net and the sensor removed from the housing. This way, you can quickly replace discharged sensors by fully charged sensors.

Procedure

1. Pull the locking pin or remove the quick link to release the rod blocking the bottle, then slide out the rod.

Small	Board-mounted	Hydrodynamic
		
		

2. Remove the bottle from the housing.
3. After charging the sensor or completing maintenance procedures, put it back.
4. The bottle has a screw on the side of the end cap. Slide the bottle so the screw fits in the guide on the inner side of the housing. (Image example with the small model of housing.)

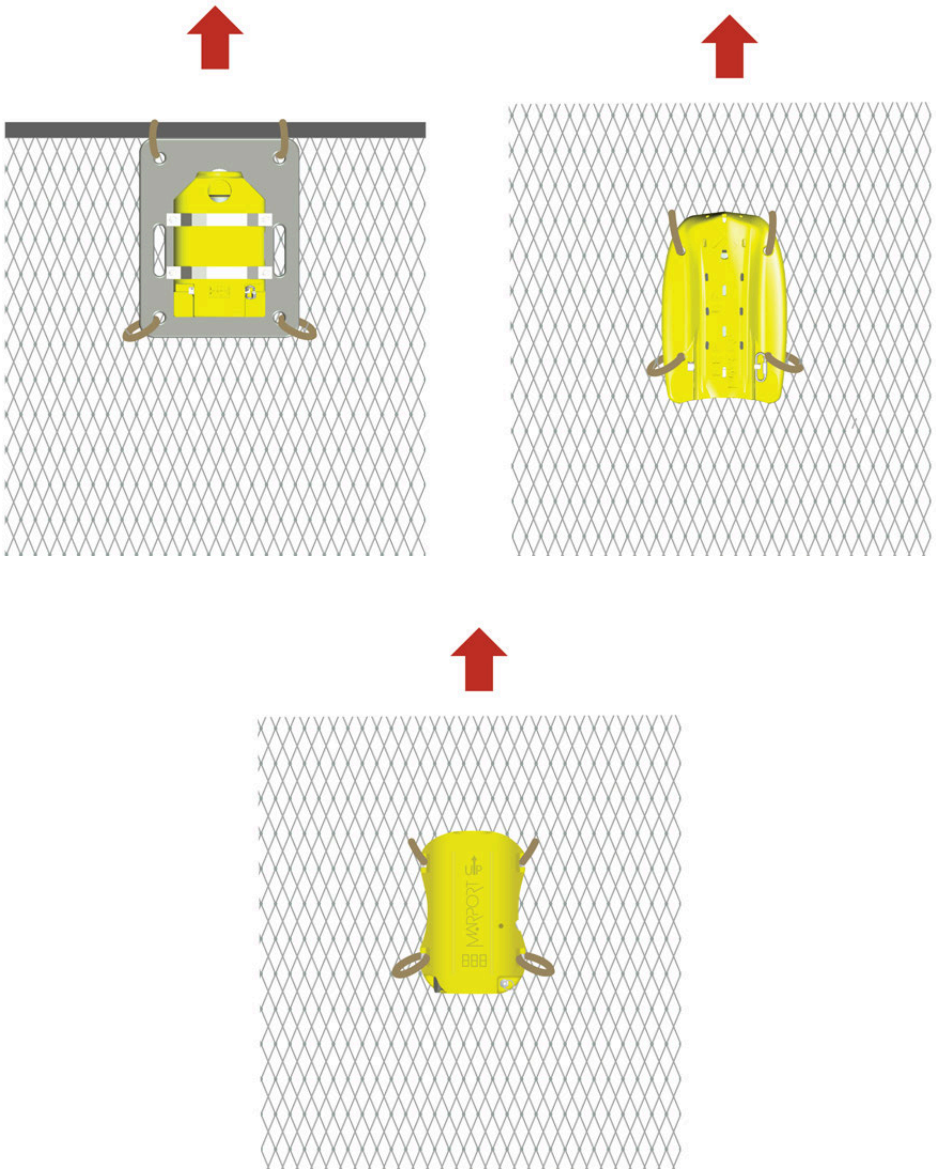


5. On a small housing, pull the locking pin then slide the rod through the housing.
6. On a board-mounted or hydrodynamic housing, slide the rod through the housing then put back into place the quick link.

Installing the Sensor on the Trawl

You can install the Height Sensor Pro NX on the headline the following way.

- Attach the stabilization board with rope to prevent rapid wear on the board.
- Use the four attachment lugs on the board or housings.
- The transducer must be oriented toward the vessel.



Maintenance & Troubleshooting

Maintenance and Troubleshooting

Read this section for troubleshooting and maintenance information.

Important: Only an approved Marport dealer can access the internal unit. Warranty will become void if anyone other than an approved dealer tries to do internal maintenance duties on the product.

Charging the Sensor with the Dock

Connect a sensor to one of the 4 charging connectors of the Dock to display its level of charge.

Before you begin

- Make sure the Dock is connected to a power supply and turned on.

About this task

WARNING: In case of water ingress in the product, do not charge it: battery may vent or rupture, causing product or physical damage.

Note: For Dock products with serial number before DOC2400000: Do not leave the sensors connected on a charger that is switched off. If the charger is not connected to the mains voltage, the sensor switches on and this will drain the battery.

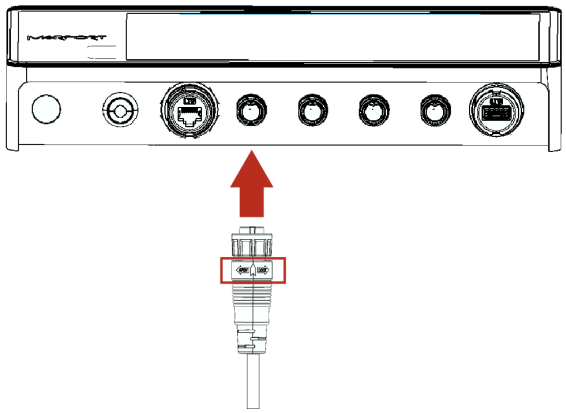
Note: Avoid full discharges and charge the battery whenever possible, at any battery level. Lithium-ion batteries do not have a charge memory, so they do not need full discharge cycles.

Procedure

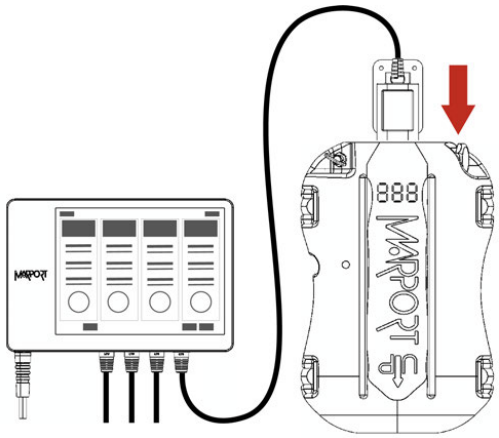
1. Before charging the sensor: wash with fresh water and dry the sensor. This prevents corrosion of the charging pins.

   Important: Check that the charging pins are not damaged. If they are, contact you local Marport dealer for replacement.

2. Connect the charger plug to one of the 4 charging ports.



3. Connect the 3-pin charging connector to the sensor charging pins.



Results

The Dock screen and Virtual Charger Room display the state of charge of the sensor.

Cleaning the Sensor

You need to regularly clean the sensor for proper performance.

Wash the sensor with fresh water and dry it before you charge or store it.

Regularly check that the sensor is clean. If not:

- Wash away mud or debris with warm water.
- Use Isopropyl alcohol to clean the end cap and transducer. Use a steel wool pencil to clean the shoulder bolts, and very fine sandpaper (180 grit) to clean between them.

⚠ **CAUTION:** Do not use highly abrasive materials or jet wash.

⚠ **CAUTION:** Special care should be taken with sensors and components sensitive to mechanical shock or contamination.

Regularly check the state of the shoulder bolts on the end cap and clean them using a swab or Q-tip with Isopropyl alcohol. Fully clean the surface from debris and inspect the surface for burrs or pitting.

Maintenance Checklist

We recommend you to follow this maintenance schedule for better performance and to avoid any trouble with the equipment.

Before use	• Check that all attachment equipment are not worn or torn. Replace when appropriate. • Check that the sensor is clean. See **Cleaning the Sensor (on page 48)** for cleaning procedures. • Check the battery level 24 hours before use and recharge if necessary.
After use	Wash the sensor with fresh water.
Between uses	When the sensor is not in use, store in a dry area, without humidity, at a temperature between -10° and 70 °C (14 to 158 °F).
Not used for more than 3 months	• Do not leave the batteries at full charge or discharged for a long period of time or they will wear out. • Every 6 months, put the sensor in charge for less than an hour.
Every 2 years	The sensor must be returned to an approved Marport dealer for inspection and maintenance.

If the sensor has not been not used for more than 3 months, we highly recommend to check the following points before using it:

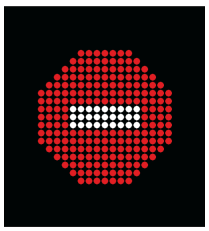
- Make sure the sensors on the end cap are in good condition and clean.
- Connect the sensor to a charger and check the charging status.
- Switch on the sensor by activating the water-switch, then listen for a ping noise and check if you see the LED switched on.
- Test the sensor measures with Mosa2: depth, temperature, pitch, roll, and if applicable: spread distance, echogram, catch status, speed measures.
- If you have a test hydrophone, check the reception in the wheelhouse with Scala2.

Troubleshooting

Learn how to solve common problems.

Warning icon on the Dock charger plug

The sensor is not detected by the Dock and there is a warning icon on the Dock charger plug.

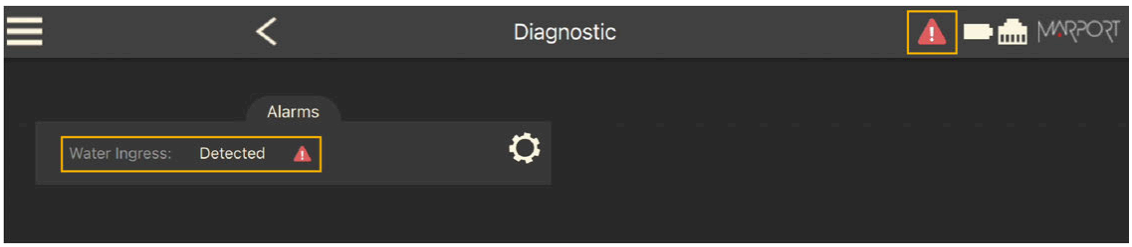


➜ The shoulder bolts are dirty or damaged.

- Clean them using a swab or Q-tip with Isopropyl alcohol.
- Fully clean the surface from debris and inspect the surface for burrs or pitting.
- If not taken care of, there is a risk of short circuit.

➜ If you have inspected the shoulder bolts and the problem persists, it means water may have leaked into the sensor.

- Connect the sensor to Mosa2 to check if there is a diagnostic alarm:
  1. Connect the sensor to a Dock charger plug or connect a Configuration Cable from the computer to the sensor, and open Mosa2.
  2. From Mosa2, go to the **Diagnostic** page and check the alarms.



- If there is an alarm or if the sensor is not detected by Mosa2, disconnect it from the Dock and do not charge it until it is inspected by a technician.
- Send the sensor back for servicing to a Marport office.

Important: Only Marport technicians can open the sensor to access the internal components.

WARNING: In case of water ingress into the sensor, battery may vent or rupture, causing product or physical damage.

Mosa2 does not open due to error message

Mosa2 displays an error message saying it cannot be opened.

➜ Your Mac security preferences do not allow you to open applications not downloaded from the App Store.

1. From the upper left corner of the screen, click **Apple menu > System Preferences > Security & Privacy**.
2. Click the lock icon and enter the password, if applicable.
3. At **Allow apps downloaded from**, select **Anywhere**, then close the dialog box.
4. **macOS Sierra or later: Anywhere** option is not displayed by default. To display **Anywhere**:
    a. Click the magnifying glass from the top right corner of your screen and type `Terminal`.
    b. Click **Terminal** from the results.
    c. Enter in the terminal: `sudo spctl --master-disable`.
    d. Press Enter.

    Anywhere option is now displayed in **Security & Privacy** preferences.

Sensor does not connect correctly with Mosa2 when using the Configuration Cable

Remember: If the sensor does not connect correctly with Mosa2, always:

- Disconnect both USB connector and three-pin plug.
- Connect again the Configuration Cable.
- Make sure the three pins are fully inserted inside the sensor.

➜ Mosa2 does not automatically open when connecting the Configuration Cable.

- Check that you see Marport Captain icon in the desktop taskbar. If you do not see it: close, then open Mosa2. The icon should appear in the taskbar.

    Note: Marport Captain is a program running in the background. It allows Mosa2 automatic opening and displays shortcuts to Mosa2 and Scala2 applications installed on the computer. It should not be closed.

- If the problem persists, install Mosa2 again.

➜ At the end of step 2 of the startup wizard, the sensor does not respond. Mosa2 displays a red cross and the Configuration Cable LED is red.

- Check that no other instance of Mosa2 application is already running on the computer. If this is the case, close both applications, then open only one.
- Or else, connect the sensor to a charger and wait until it is fully charged.

➜ The sensor has been disconnected from Mosa2.

- Check that the Configuration Cable is not connected to a USB hub. The Configuration Cable must be connected directly to the computer.
- If the computer goes to sleep mode, the sensor may be disconnected. Change the settings on your computer to increase the time before sleep mode.
- If the problem persists, connect the sensor to a charger and wait until it is fully charged. Then try again to connect.

➜ Mosa2 displays a critical error message.

- Disconnect both USB connector and three-pin plug. Then, connect again the Configuration Cable. If the message is still displayed, it means there is an issue with the sensor's components. Contact Marport support.

Height data is empty or labelled as "Lost"

You do not receive height data on Scala2, while still receiving other data from this sensor. The LED next to the data is green.



➜ Mosa2 has a blind zone setting, that sets a minimum distance below the sensor at which it does not detect the bottom. If the sensor does not show any height data while being close to the bottom, it means the blind zone is higher than this distance. You need to reduce the blind zone distance. See **Setting a Blind Zone Below the Sensor (on page 29)**.

The sensor is not running when testing out of water

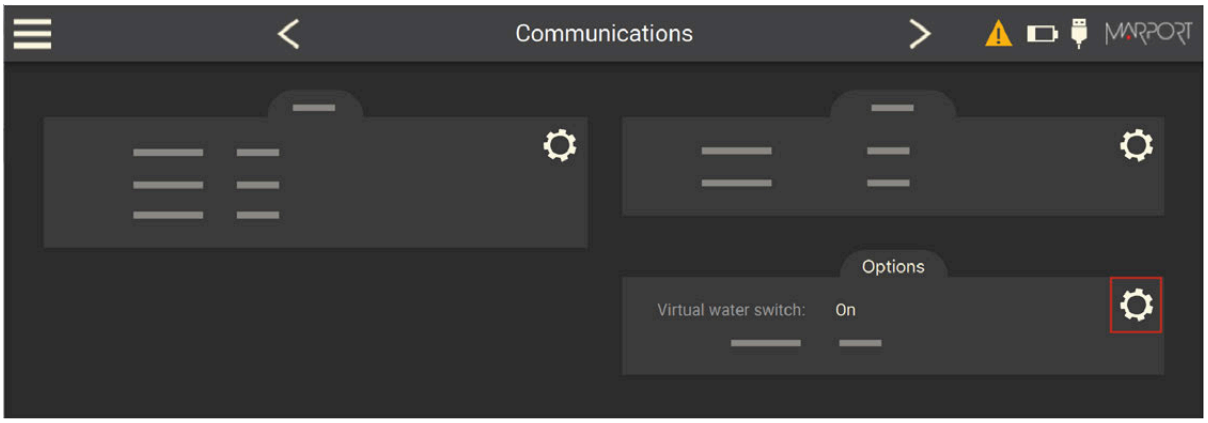
You activated the sensor water switch outside water or in a low level of water (for example for testing purpose) but it does not switch to running mode and does not emit any data.

➜ The virtual water switch option may be activated in Mosa2. When this option is activated, the sensor runs only at a depth more than 2 meters. For more details, read **About the Virtual Water Switch Option (on page 18)**.

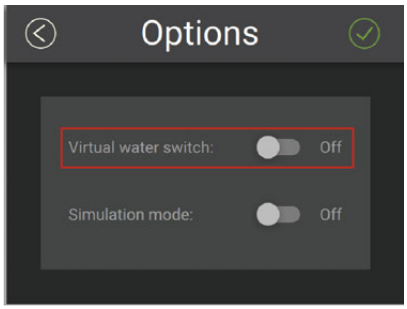
1. Connect the sensor to Mosa2 and check if there is an orange warning sign at the top of the window. If yes, it means the virtual water switch is on.



2. Go to **Communications** page, then in **Options**, click ⚙.



3. Deactivate the **Virtual water switch** option.



Sensor is not charging with the Medusa or Basic Marport legacy charger

You connected your Pro sensor to a Medusa or Basic Marport charger, but the sensor has not been charged.

Tip: When connecting the sensor to a Medusa or Basic Marport legacy charger, look at the sensor transducer LED to know if it is charging or not.

- LED is blinking red when compatible and charging.
- LED is blinking red for 10 sec. then stops, when incompatible.

→ By default, Pro sensors are not compatible with legacy Marport chargers.

- Compatibility with legacy Marport chargers is available as an optional feature.It must be activated by Marport sales offices.

Support Contact

You can contact your local dealer if you need maintenance on your Marport products. You can also ask us at the following contact details:

FRANCE

Marport France SAS

8, rue Maurice Le Léon

56100 Lorient, France

supportfrance@marport.com

NORWAY

Marport Norge A/S

Breivika Industrivei 69

6018 Ålesund, Norway

supportnorge@marport.com

SPAIN

Marport Spain SRL

Calle Jacinto Benavente 37 2º

(Acceso C/ La Paz n. 14)

36202 Vigo (Pontevedra), Spain

supportspain@marport.com

USA

Marport Americas Inc.

12123 Harbour Reach Drive, Suite 100

Mukilteo, WA 98275, USA

supportusa@marport.com

ICELAND

Marport EHF

Tónahvarf 7

203 Kopavogur, Iceland

supporticeland@marport.com

SOUTH AFRICA

Marport South Africa

28 Le Sage Close

Edgemead

7441 Cape Town, South Africa

jleroux@marport.com

UNITED KINGDOM

Marport UK Ltd

32 Wilson Street

Peterhead, AB42 1UD, United Kingdom

george@marport.com

Appendix

Frequency Plan

When the system is installed, you can add sensors to it. It is important to carefully plan the setup of your sensors before adding them to the system. You can create a table with a list of frequencies and complete it when you add sensors.

Boat & Channel Codes

This list shows the standard frequencies for PRP telegrams. When you configure boat codes, make sure to respect the correct interval between frequencies (see table above).

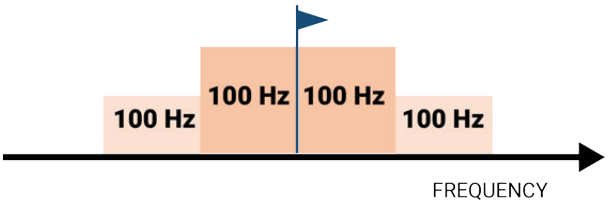
Codes		
BC/CH	Frequency	FID (Scanmar)
C-1/CH1	42833	45
C-1/CH2	41548	32
C-1/CH3	41852	35
C-1/CH4	40810	25
C-1/CH5	42500	42
C-1/CH6	43200	49
C-2/CH1	42631	43
C-2/CH2	41417	31
C-2/CH3	41690	33
C-2/CH4	40886	26
C-2/CH5	42300	40
C-2/CH6	43100	48
C-3/CH1	42429	41
C-3/CH2	41285	30
C-3/CH3	41548	32
C-3/CH4	40970	27
C-3/CH5	42100	38
C-3/CH6	43000	47

C-4/CH1	42226	39
C-4/CH2	41852	35
C-4/CH3	41417	31
C-4/CH4	41160	29
C-4/CH5	42700	44
C-4/CH6	43300	50
C-5/CH1	42024	37
C-5/CH2	41690	33
C-5/CH3	41285	30
C-5/CH4	41060	28
C-5/CH5	42900	46
C-5/CH6	43400	51
C-6/CH1	39062	3
C-6/CH2	39375	7
C-6/CH3	39688	11
C-6/CH4	40000	15
C-6/CH5	40312	19
C-6/CH6	40625	23
C-7/CH1	38906	1
C-7/CH2	39219	5
C-7/CH3	39531	9
C-7/CH4	39844	13
C-7/CH5	40156	17
C-7/CH6	40469	21

Frequencies and intervals

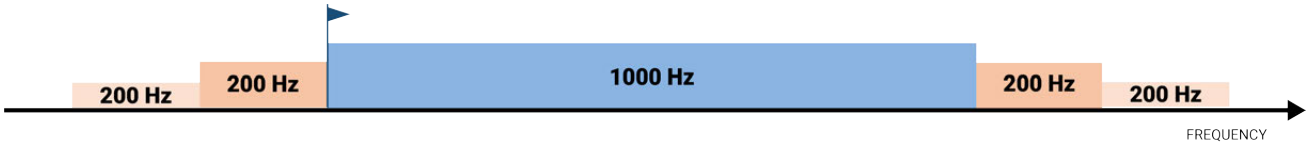
The diagrams below show the bandwidth of the different types of Marport sensors and intervals you must respect when adding other sensors.

Figure 1. PRP sensors (e.g. Catch sensor, Trawl Speed, Spread sensor...)



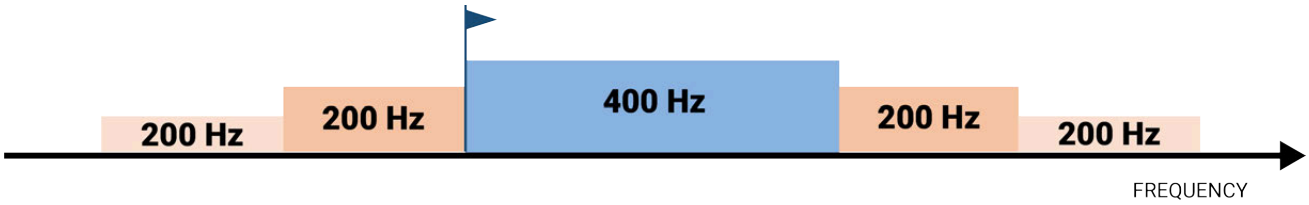
Example: If the frequency of the sensor is 40kHz, there should be no sensors between 39.9 and 40.1kHz.

Figure 2. Marport Pro sensors (e.g. Trident Pro, Door Explorer Pro, Door Sensor Pro, all Navigator range except Catch)



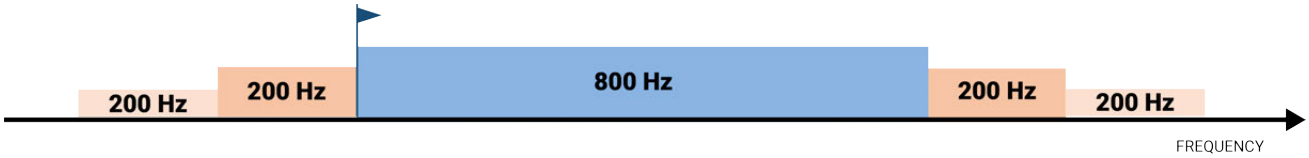
Example: If the frequency of the sensor is 40kHz, there should be no sensors between 39.8 and 41.2kHz.

Figure 3. NBTE sensors (e.g. Speed Explorer, Trawl Explorer, Catch Explorer, Catch Navigator Pro NX, Door Sounder)



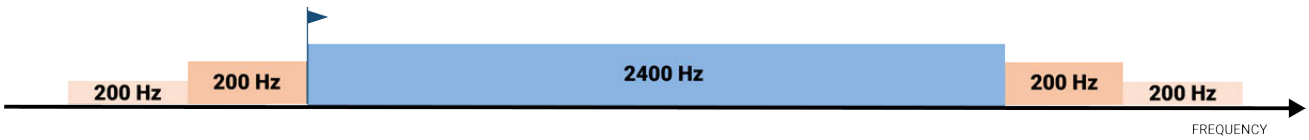
Example: If the frequency of the sensor is 40kHz, there should be no sensors between 39.8kHz and 40.6kHz.

Figure 4. HDTE narrow band mode

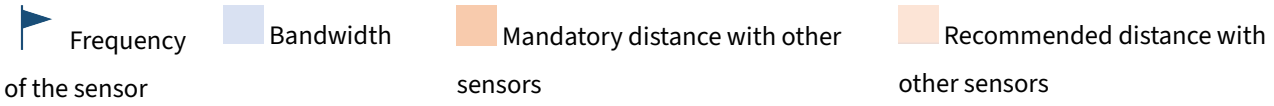


Example: If the frequency of the sensor is 40kHz, there should be no sensors between 39.8kHz and 41kHz.

Figure 5. HDTE wide band mode



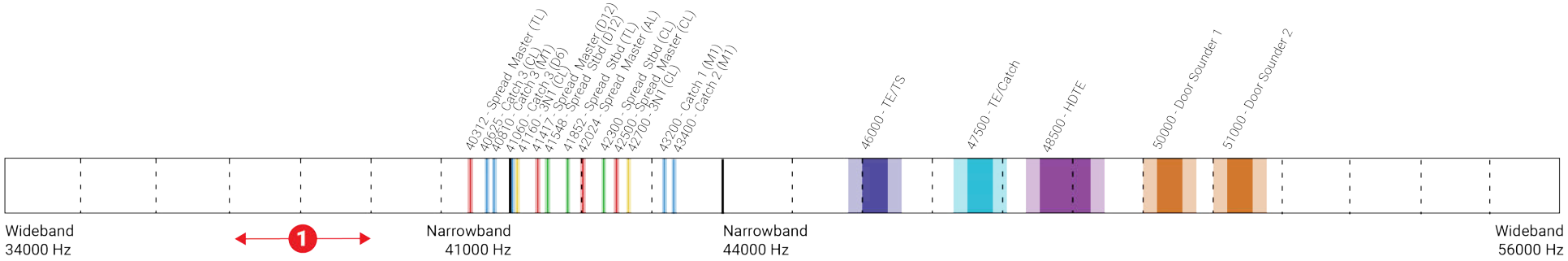
Example: If the frequency of the sensor is 40kHz, there should be no sensors between 39.8kHz and 42.6kHz.



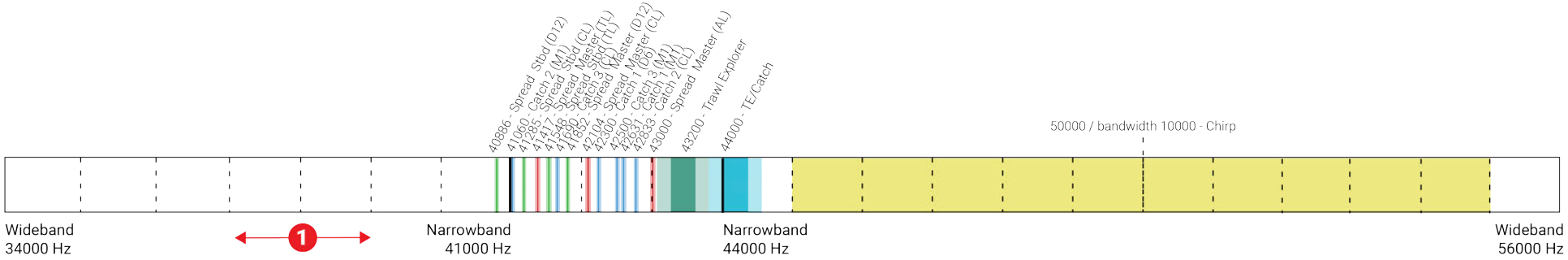
Examples of frequency allocations

- We recommend to allocate frequencies between 34 and 56 kHz for wideband hydrophones and between 41 kHz and 44 kHz for narrowband hydrophones.
- Echosounders are usually placed around 38 kHz, make sure to allow enough distance with them.

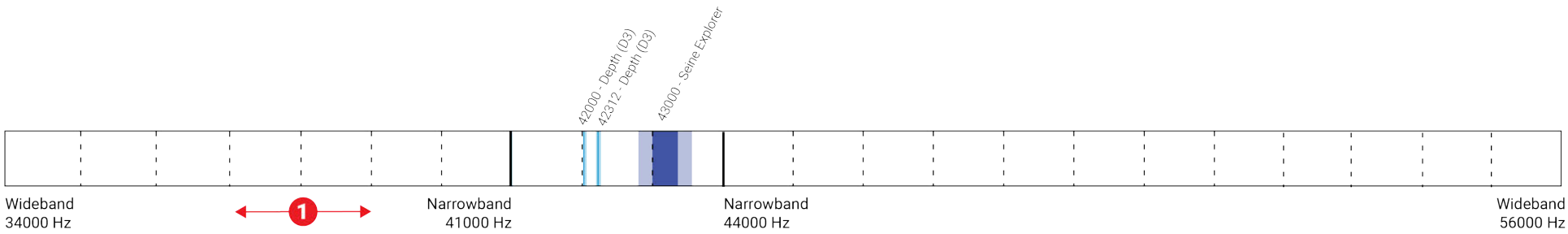
Example of a system with Spread, Catch, Trawl Speed sensors and Speed Explorer, Catch Explorer, HDTE and Door Sounder.



Example of a system with Spread sensors with positioning, Catch sensors, Trawl Explorer and Catch Explorer.



Example of a system for purse seining, with a Seine Explorer and depth Seine sensors.



Bandwidth

Mandatory distance with other sensors

1 Avoid allocating frequencies between 37 and 39 kHz because this range is generally used by echosounders.

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