SEA.AI

INSTALLATION MANUAL OFFSHORE 320 & 640

7.24.1 Eng version

SEA.AI Group				
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SUMMARY

The user must have previously registered online at the following address to obtain the serial password: https://sea.ai/user_registration/

1. PRECAUTION OF USE

> - The SEA.AI system must be installed by an experienced marine electronics technician, improper installation may void the warranty.

⚠️ **WARNING**

> • Turn off the power before beginning to install the unit, as this may result in fire, electric shock or serious injury.
>
> • Make sure that the power source is compatible with the voltage rating of the unit: connecting to an unsuitable power source may cause a fire or damage the unit.
>
> • Do not disassemble or modify the equipment: this can result in fire, electric shock or serious injury.

⚠️ **WARNING**

> • Do not rely exclusively on the SEA.AI system to steer the boat: for the safety of the boat and the people on board, the captain must monitor all available navigation aids. SEA.AI is not a substitute for a proper lookout.
>
> • Adjust the masthead vision unit correctly: the adjustment of the camera has a significant impact on the operation of the system.

⚠️ **WARNING**

> • Working at heights requires that safety instructions be followed.

2. GENERAL INFORMATIONS

- SEA.AI Offshore combines optical sensors and artificial intelligence to detect objects floating on your trajectory. SEA.AI automatically assesses the risk of collision in real time and warns of any possible danger.
- Having a SEA.AI system on board means improved safety for you and your crew.
- All SEA.AI systems can be controlled using the SEA.AI Oscar navigation app, which runs on smartphones and tablets (Android and iOS), on your chartplotter or on a computer.

Model	Offshore 320	Offshore 640
Thermal camera	2x FLIR BOSON™ 320 x 256 px, 50°	2x FLIR BOSON™ 640 x 512 px, 50°
RGB camera	5 Mpx low light vision 2592 x 1944 px, 110°	
Range détection -Large size (yacht, fishing vessel...)	1000m	1500m
-Middle size (boat, beacon...)	250m	375m
-Small size (MOB, buoy...)	100m	150m
Detection	Thermal	Thermal & RGB
Weight	990 g	990 g
Dimensions	190 x 143 x 106 mm	190 X 143 x 106 mm

3. SYSTEM COMPONENTS

Vision Unit (VU)

Processing Unit (PU)

Vision Unit Bracket

Wind sensor bracket

Cable "J1" PU Power supply

Cable "J2" VU Power supply

(Available in lengths from 25 à 70 m)

Cable "E1" Data RJ 45 connector

(Available lenghts 6 m / 20 m)

Cable "E2" Data

(Available in lengths from 25 à 70 m)

In option :

Alarm on NMEA network

Adapter STNG to NMEA

4. INSTALLATION

- **4.1 General view of the installation**

Vision Unit

User Interface

Processing Unit

- **4.2 Vision Unit installation (VU)**

The installation of the vision unit requires the following tools:

. 8mm wrench

. 8mm rachet wrench

. LAN tester

. RJ45 adapter cable

The installation of the vision unit must comply with the following points:

. The VU must be installed at the highest point of the boat

. The VU must be installed at a minimum height of 8 meters

. The field of vision of the VU must be completely clear.
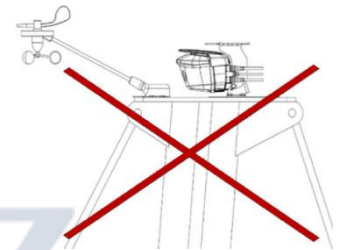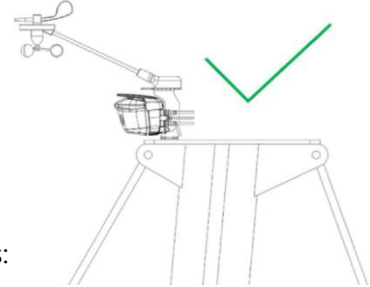
NOTE : Sufficient space at the rear of the VU must be provided for the proper handling of cables and electrical connectors.
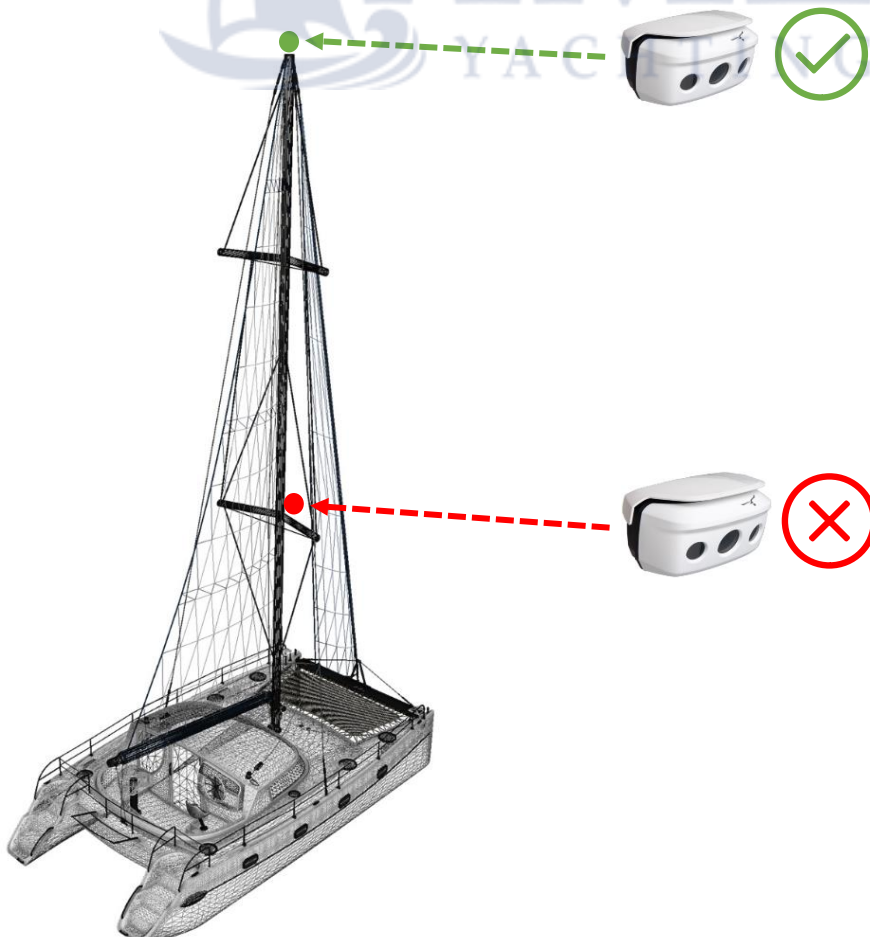
- **4.3 Attaching the vision unit (VU) bracket**

The following points must be observed when mounting the vision unit:

. The VU bracket must be fixed with four screws (not inclued)

adapted to the characteristics of the support on which it is mounted

(drawings of the bracket available on page 18).

. The fixing screws must be secured with threadlockers or locknuts.
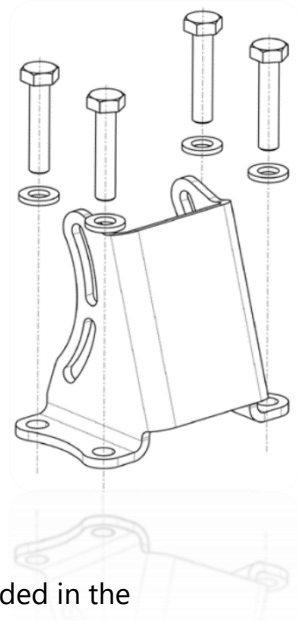
- **4.4 Mounting the vision unit (VU) on the bracket**

To attach the VU to the bracket, use the two screw/washer/nut sets provided in the installation kit.
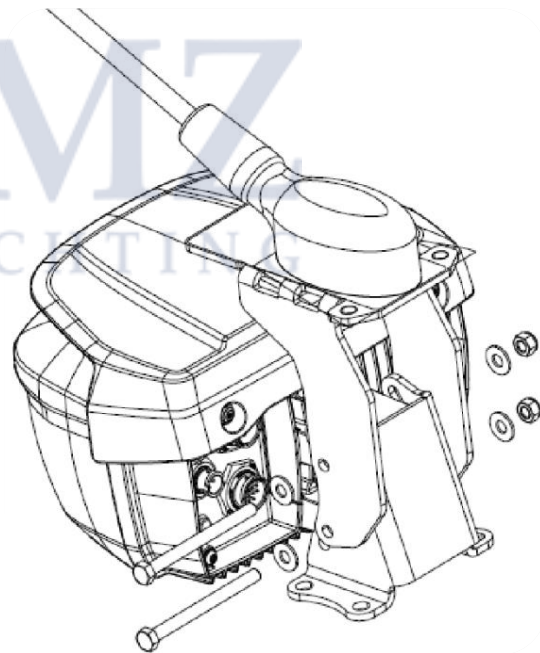
NOTE : If necessary, an windsensor bracket, included in the installation kit can be attached to the VU bracket.

NOTE : The inclination of the VU will have to be adjusted during the commissioning (+/- 15°)

⚠️ **WARNING :**

The VU must not be painted or covered!

- **4.5 Connecting the VU**

After routing the cables, connect the E2 data cable (label A) and the J2 power cable (label B) to the corresponding sockets on the VU.

(A)

(B)

⚠️

WARNING :

- Circular connectors must be properly locked.

- Cables must be properly secured so that their weight is not supported by the connectors.

- **4.6 Processing Unit installation (PU)**

The PU must be fixed by means of six screws (not supplied) on a suitable support. The installation of the PU must correspond to the following points:

- The PU must be installed in a clean, ventilated and dry place.
- The PU can be installed flat but not upside down.
- The PU can be tilted on a wall with the connectors downwards.

- **4.7 Connecting the processing unit (PU)**

Connect the J1 power cable to the PU and the boat's electrical system:

- Supply voltage 12 / 24 V.
- The power supply must be protected by a 3A FAST-BLOW type fuse.
- The power supply must be subject to an independent switch.

Connect the power cable from the J2 vision unit to the PU.

NOTE : The J1 and J2 connectors must be pushed in until they "click".

Connect the E1 data cable to the PU (marker E1) and to the user interface (MFD, PC).

Connect the E2 data cable from the vision unit to the PU (marked E2).

NOTE : The connectors for the E1 and E2 sockets (RJ45 type) must be held in place with their locking bayonet.

Name	Fonction	Destination	Comments
E1	Data cable	MFD, router, PC	Data 4TP
E2	Data cable	Vision Unit (VU)	Data 4TP
J1	Power supply cable	Power supply	12-24 V
J2	Power supply cable	Vision Unit (VU)	36 V
J3	NMEA 2000 Data	NMEA 2000 network	Not inclued

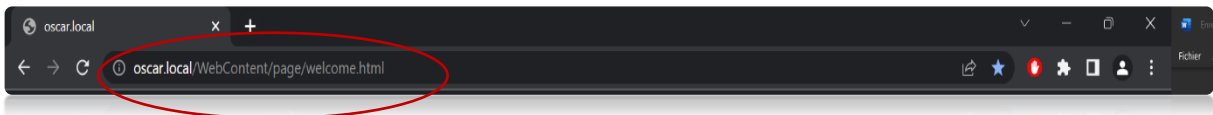## - 4.8 Installation example.
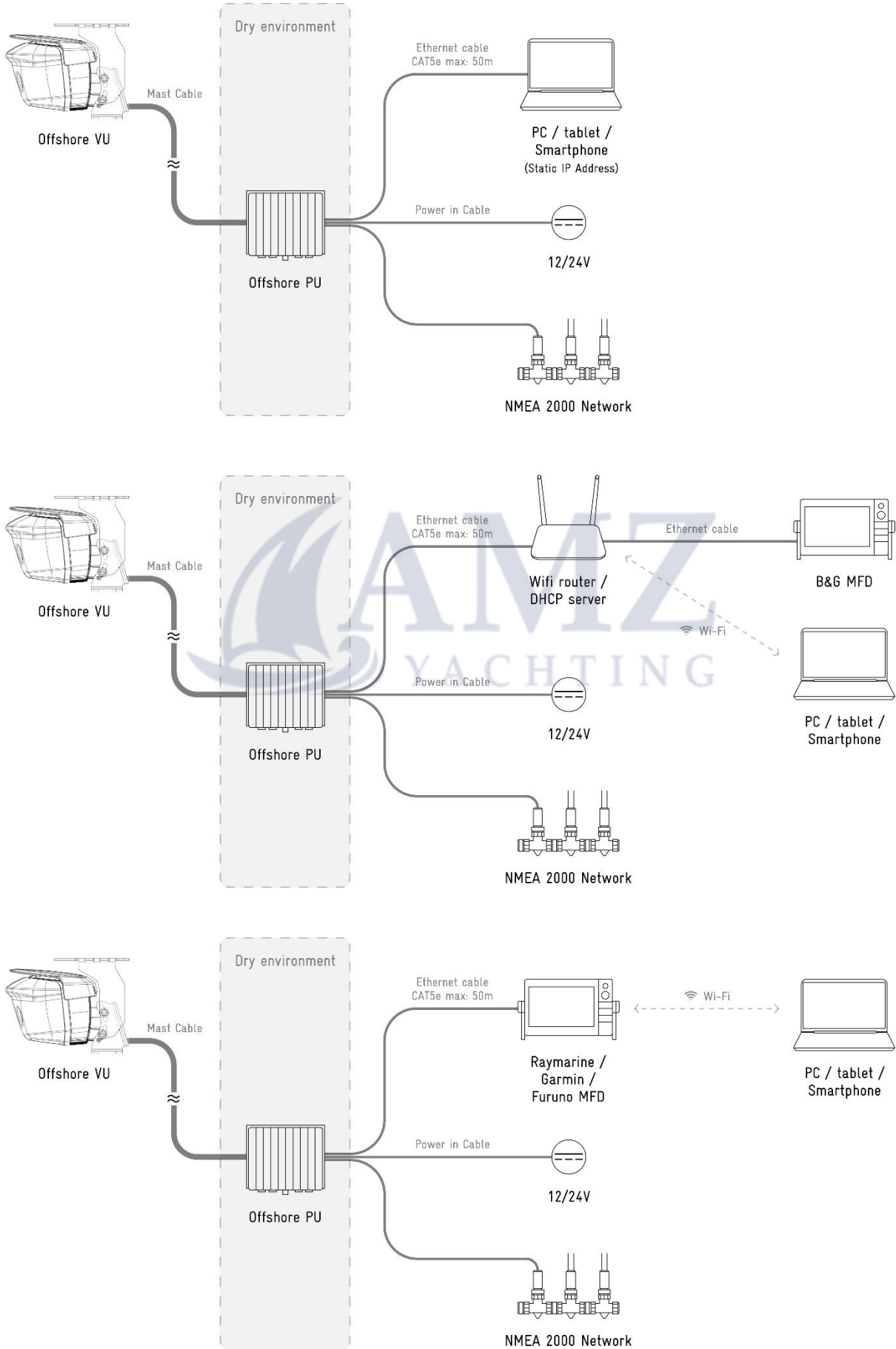
5.1 INSTALLER COMMISSIONING

- Turn on the SEA.AI system (start-up time is approximately two minutes).
- On MFD, the access to the application is done via the SEA.AI icon (appears automatically).
- From a computer, use the following links to access the SEA.AI home screen.

-System integrated in a network with DHCP server (router) :
http://oscar.local/WebContent/page/welcome.html

-System directly connected to a computer (static IP address) :
http://192.168.17.21/WebContent/page/welcome.html

An installer mode is available for settings and parameters of the SEA.AI system (pages 14 & 15) in the absence of a serial password.

This unique access is available via the Serial Password, Skip Once page.
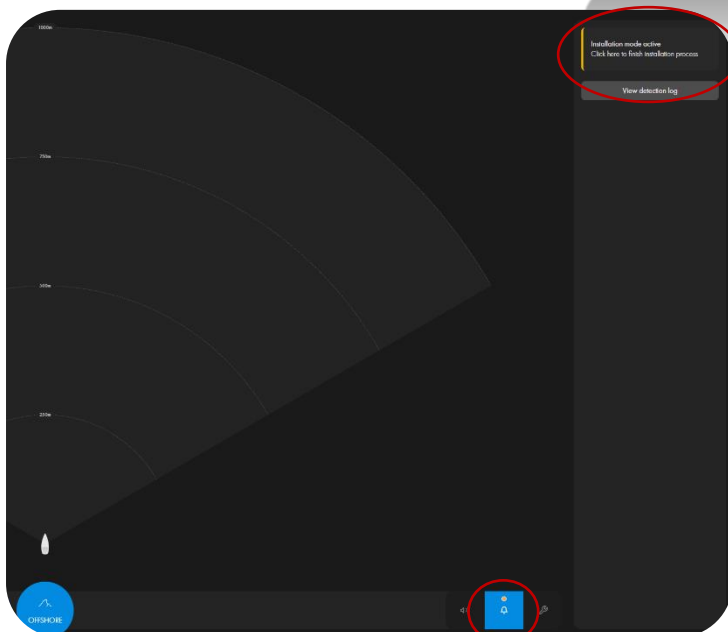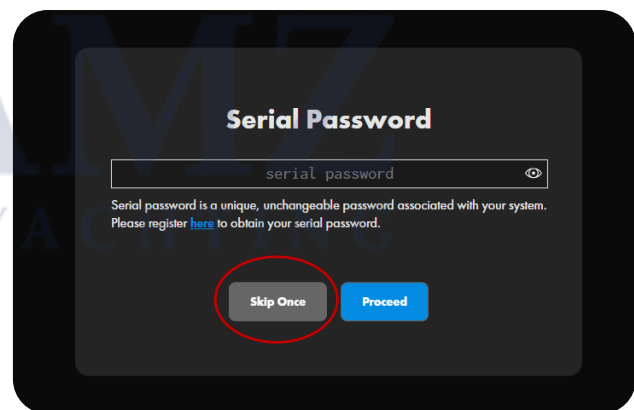
Once all settings and parameters have been completed, you can log out of installer mode by clicking on the "Click here to finish installation process" button on the notification page.

Following this action, the next connection to the SEA.AI system must be made using the Serial Password.

5.2 FINAL USER COMMISSIONING

The user must have previously registered online at the following address to obtain the serial password: https://sea.ai/user_registration/

- Turn on the SEA.AI system (start-up time is approximately two minutes).
- On MFD, the access to the application is done via the SEA.AI icon (appears automatically).
- From a computer, use the following links to access the SEA.AI home screen.

-System integrated in a network with DHCP server (router) :
http://oscar.local/WebContent/page/welcome.html

-System directly connected to a computer (static IP address) :
http://192.168.17.21/WebContent/page/welcome.html

- Select the language.
- Enter the serial password
- Fill in the position of the vision unit (VU) on the boat with the following information:
  . Mast rake
  . Height of the VU above sea level
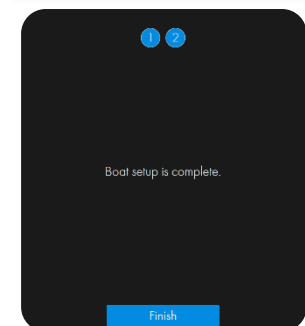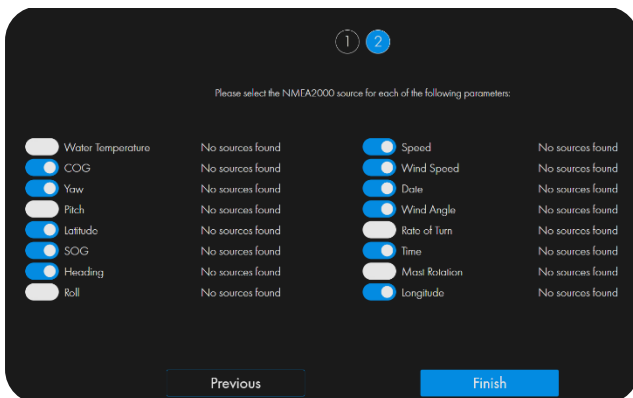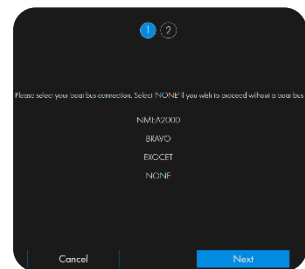 . Distance from mastbottom to bow
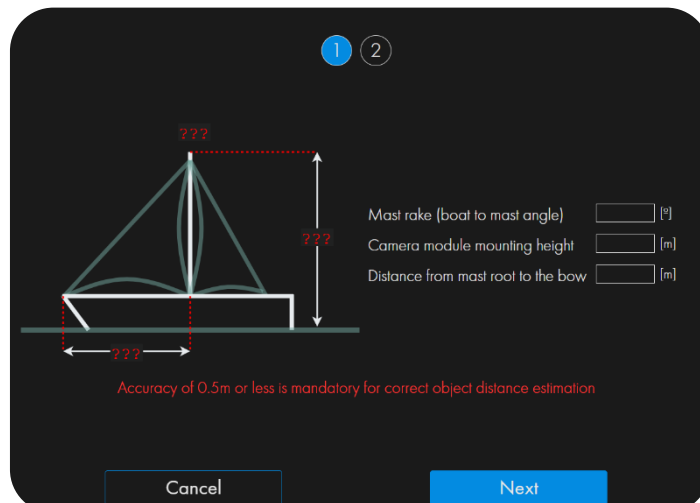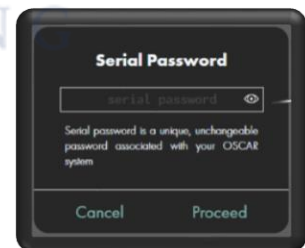
- Adjust the angle of the vision unit as indicated on the interface. (needs 2 technicians: one on top of the mast; one at the display).
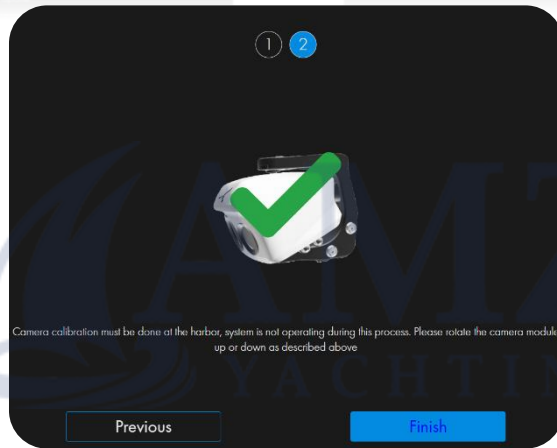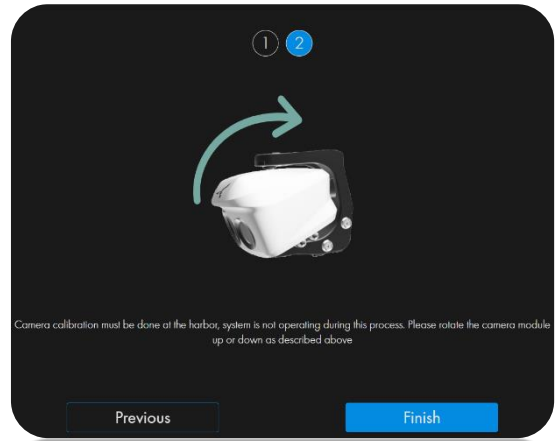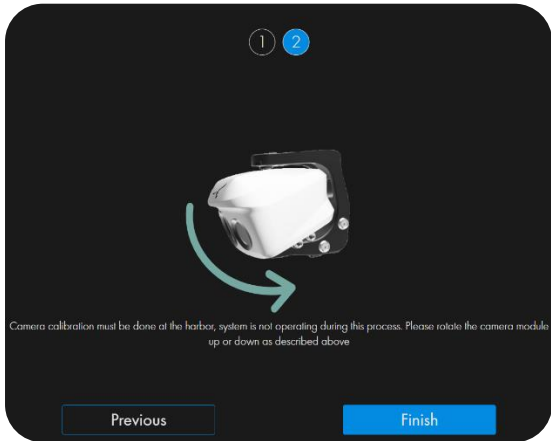
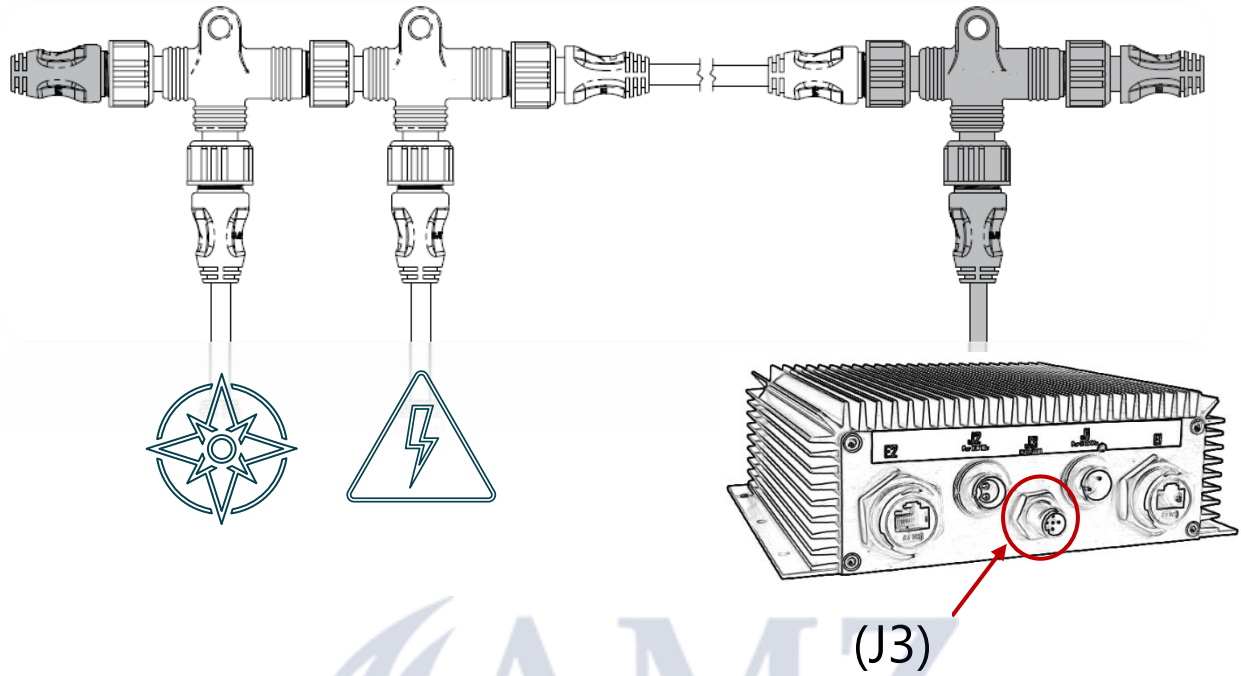

Configure SEA.AI with the onboard information network.

- Select the network type (NMEA 2000, BRAVO, EXOCET, NONE).
- Select the information to be displayed

NOTE : Uncheck "No sources found" data parameters.

6. Connecting to NMEA 2000 network

Connect a branch of the NMEA 2000 network to the J3 connector on the processing unit (PU)

(J3)

PGN	Description
Water Temperature	130311
Course over ground	129026
Yaw	127257
Pitch	127257
Latitude	129025
Speed over ground	129026
Heading	127250
Roll	127257
Speed over water	128259
Wind speed	130306
Date	126992
Wind angle	130306
Rate of turn	127251
Time	126992
Mast rotation	65330
Longitude	129025

7. MAINTENANCE

The system should always be updated to the latest available software version.

You should update your software frequently to benefit from all the improvements.

The software can be updated with the SEA.AI Oscar Navigation application.

The vision unit (VU) and camera lenses should be cleaned periodically, clean the lenses if you notice a decrease in image quality or dust accumulation.

⚠ WARNING :

- DO NOT SCRUB the lenses with a dry cloth or abrasive material such as paper or brushes as this may damage the protective coating.

- DO NOT use acid or ammonia based products.

- DO NOT EXERCISE EXCESSIVE PRESSURE when cleaning
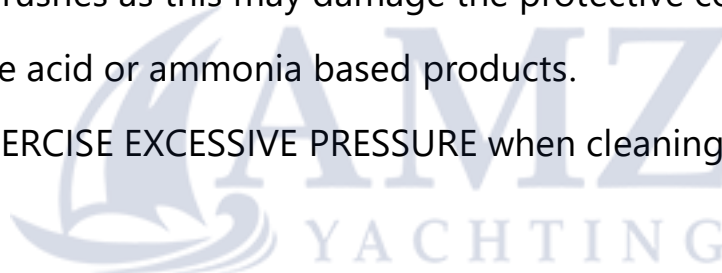
Be especially careful when cleaning the lenses. The anti-reflective coating could be damaged by improper cleaning..

Clean the vision unit housing with a soft, clean cotton cloth. You can dampen the cloth and use a mild detergent if necessary.

Rinse the camera lenses with clean water to remove dust particles and salt deposits. Allow to dry naturally.

If stains or streaks remain. Gently rub the lenses with a clean microfiber cloth or soft cotton cloth.
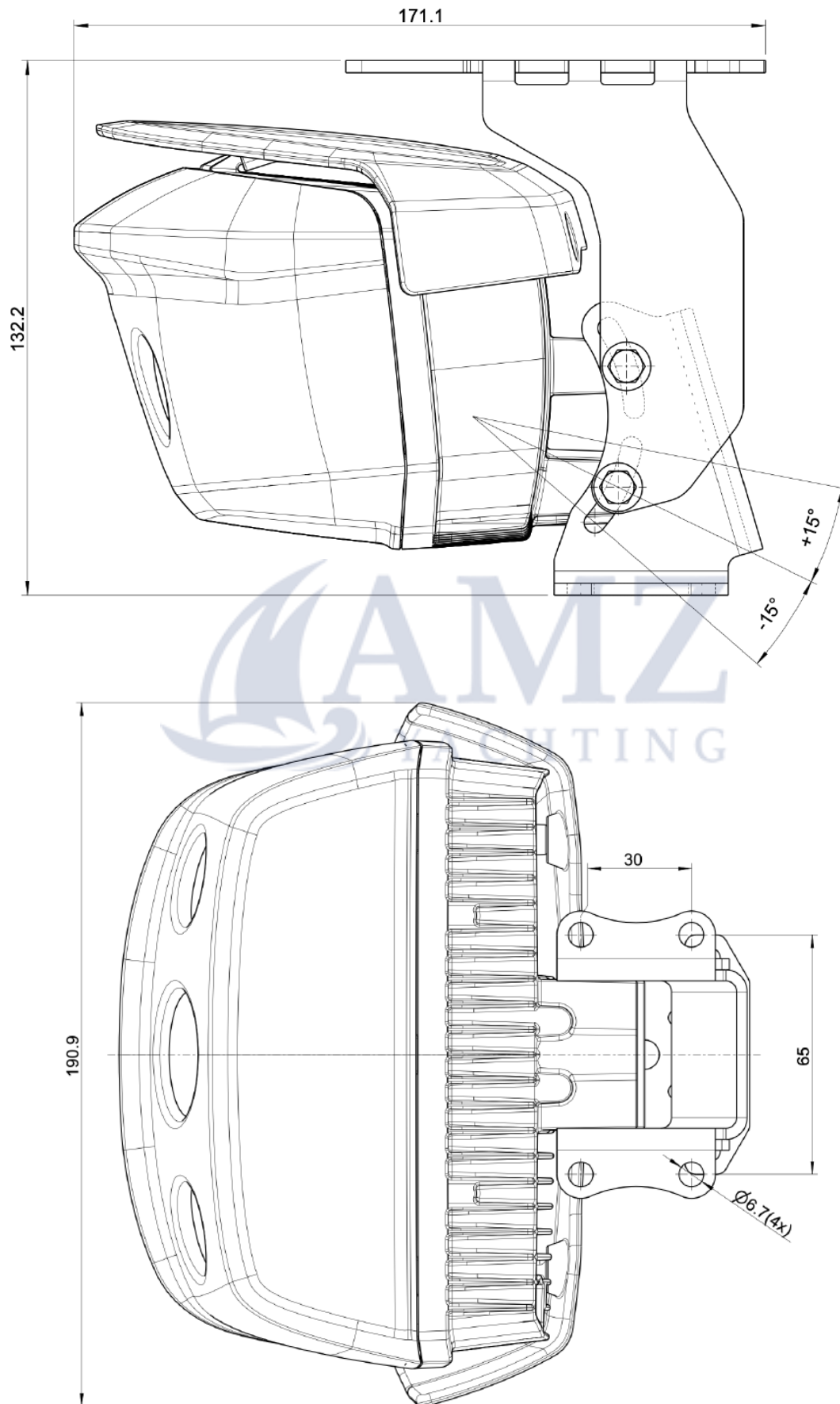
If necessary, use isopropyl alcohol or a mild detergent to clean up any remaining traces.
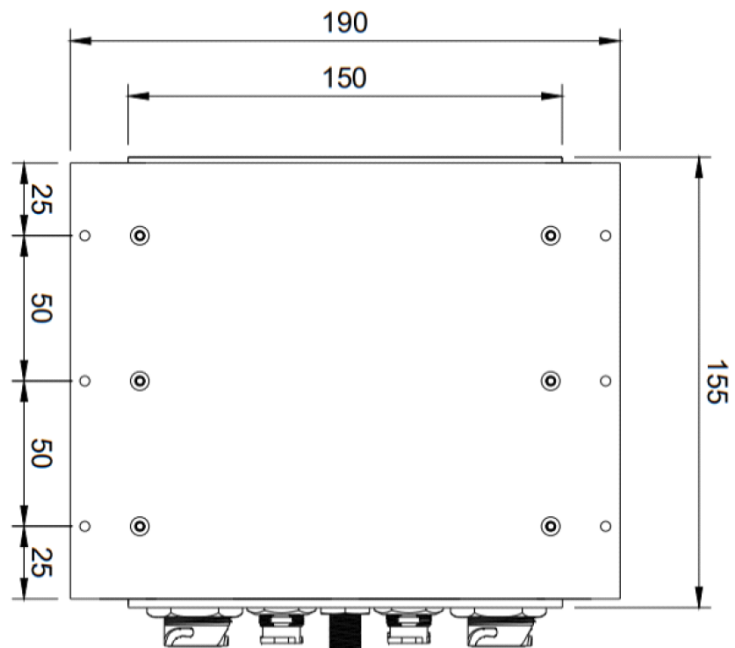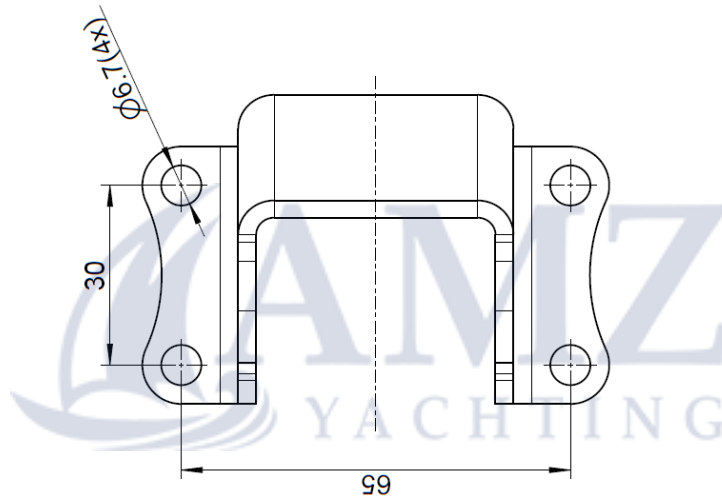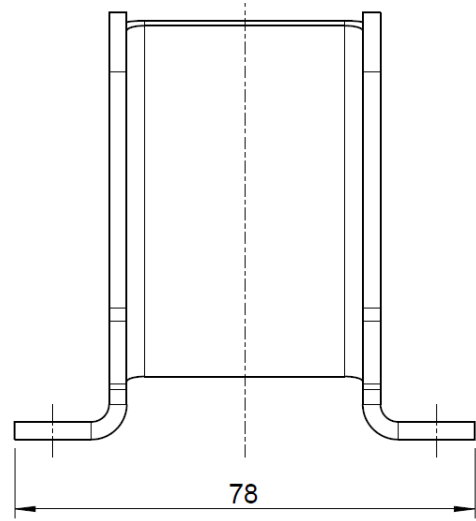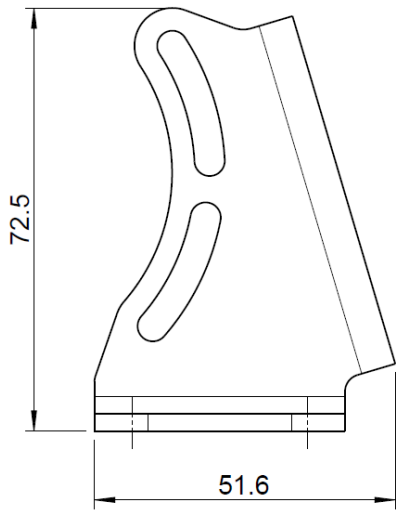
8. MFD COMPATIBILITY

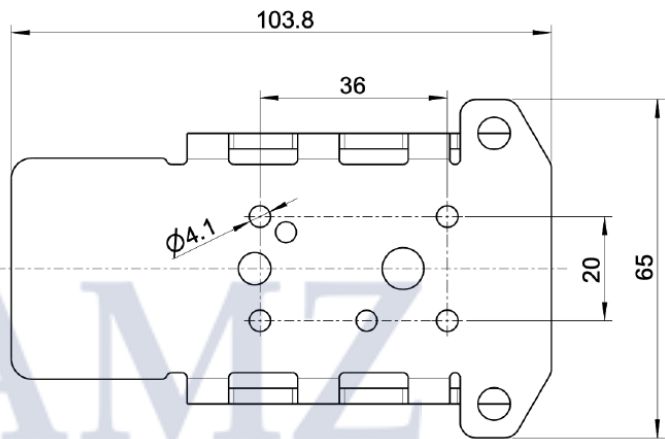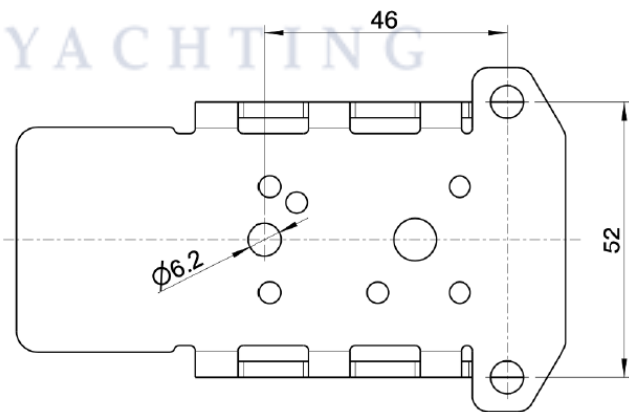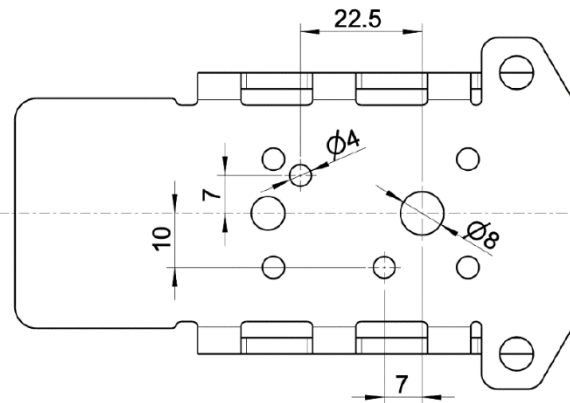| One, Offshore, Competition					
Brand	**Model**	**App Running**	**internal MFD Alarm**	**NMEA Buzzer**	**Comments**
B&G	Zeus3	☑	☑	reccomended	App is running but very slow performance due to slow MFD HW, wifi router necessary
	Zeus3S	☑	☑	reccomended	wifi router necessary
	Vulcan	☑	☐	reccomended	App is running but very slow performance due to slow MFD HW, wifi router necessary
	Nemesis	☐	☐	reccomended	
Simrad	evo3	☑	☑	reccomended	wifi router necessary
	evo3S	☑	☑	reccomended	wifi router necessary
Garmin	One Helm compatible MFDs	☑	☑	reccomended	
Furuno	TZtouch3 series: TZT9F/12F/16F/19F	☑	☐	required	
	TZtouch2 series: TZT2BB/TZTL12F/15F	☑	☐	required	
Raymarine	Axiom	☑	☐	required	LIGHTHOUSE 3 - Edgartown - v3.13 or higher Update
	Axiom Pro	☑	☐	required	LIGHTHOUSE 3 - Edgartown - v3.13 or higher Update
	Axiom XL	☑	☐	required	LIGHTHOUSE 3 - Edgartown - v3.13 or higher Update

9. TECHNICAL DATA

72.5

51.6

78

Ø6.7 (4x)

30

65

190

150

25

50

50

25

155

B & G

GARMIN

RAYMARINE

112

103.8

36

Ø4.1

20

65

46

Ø6.2

52

22.5

Ø4

7

10

Ø8

7

- ## NOTES :

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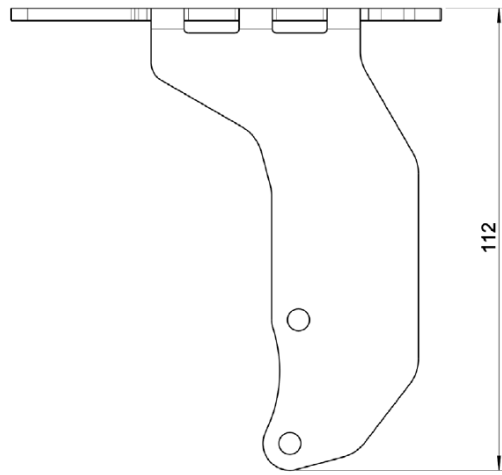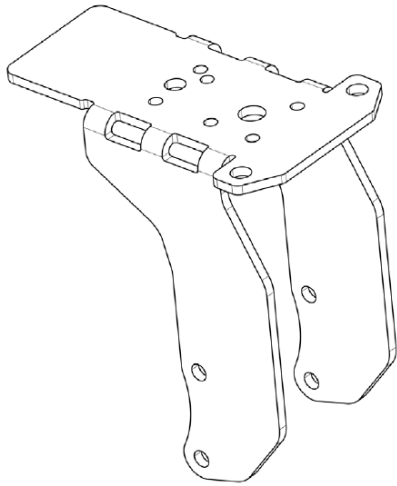
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