

SEA.AI

INSTALLATION MANUAL COMPETITION 320 & 640

7.24.1 ENG version



SEA.AI Group

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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.

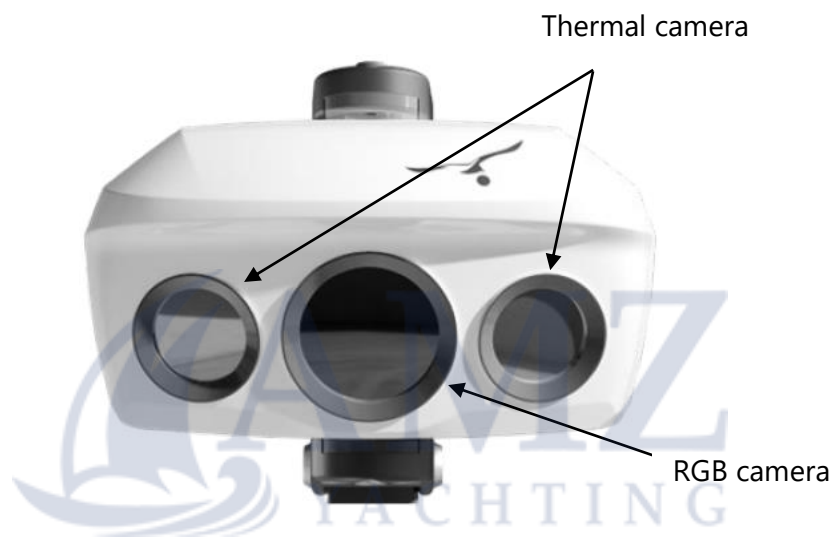


WARNING

- Working at heights requires that safety instructions be followed.

2. GENERAL INFORMATIONS

- SEA.AI Competition 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	Competition 320	Competition 640
Thermal camera	2x FLIR BOSON™ 320 x 256 px, 50°	2x FLIR BOSON™ 640 x 512 px, 50°
RGB camera	2 Mpx 1920 x 1080 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
Horizontal rotation	+- 50°	
Weight	750 g	750 g
Dimensions	144 x 114 x 96 mm	144 x 114 x 96 mm

3. SYSTEM COMPONENTS



Vision Unit (VU)



Processing Unit (PU)



Vision Unit Bracket



Cable "E2" Data
(Available in lengths from 25 à 70 m)



Cable "J1" PU Power supply



Cable "J2" VU Power supply
(Available in lengths from 25 à 70 m)



Cable "E1" Data RJ45 connector
(Available in lengths 6 m / 20 m)



In option :



Alarm on NMEA network



Imoca mast Bracket



Adapter STNG to NMEA



Wind sensor bracket

4. INSTALLATION

- 4.1 General view of the installation



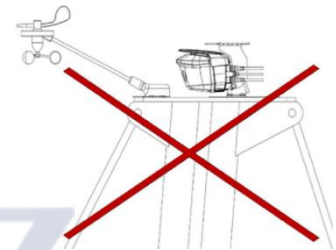
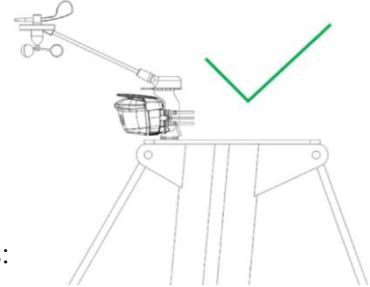
- 4.2 Vision Unit installation (VU)

The installation of the vision unit requires the following tools:

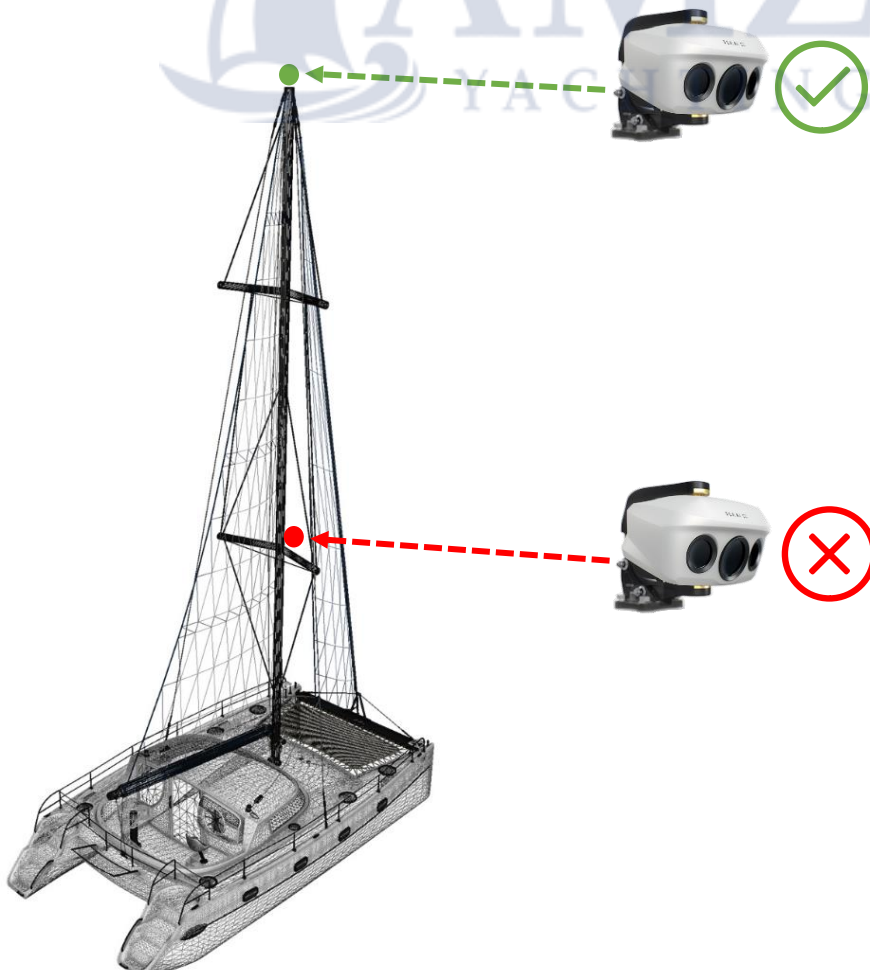
- . 8mm wrench
- . 8mm ratchet wrench
- . LAN tester
- . RJ45 adapter cable

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.



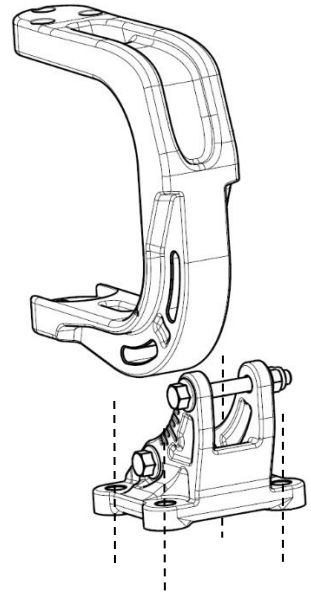
NOTE : Sufficient space at the rear of the VU must be provided for the proper handling of cables and electrical connectors.



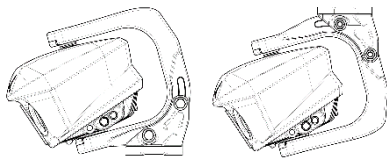
- 4.3 Attaching the vision unit (VU) bracket

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

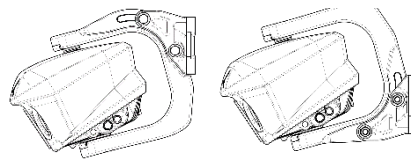
- . The VU bracket must be fixed with four screws (not included) adapted to the characteristics of the support on which it is mounted (drawings of the bracket available on page 18).
- . The fixing screws must be secured with threadlockers or locknuts.



Horizontal mounting

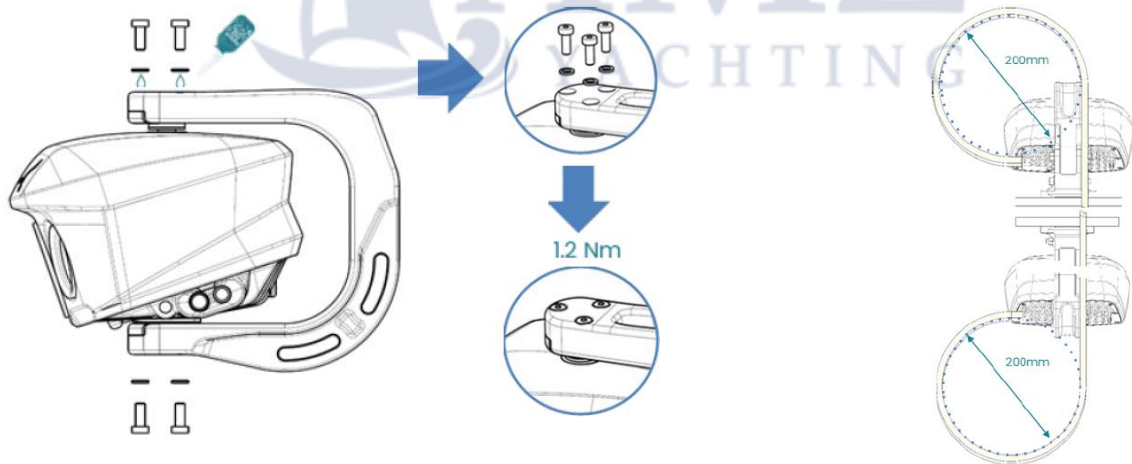


Vertical mounting



- 4.4 Mounting the vision unit (VU) on the bracket

To attach the VU to the bracket, use the six 4mm screw/washer sets provided in the installation kit, put medium screw adhesive (e.g. Loctite 243) on each screw and tighten with 1.2Nm.



Secure the cables properly with a cable tie. The Vision Unit needs to rotate freely without harming the

cables nor interfere with the view of the cameras.

o Do not bend the cables excessively

o Leave enough cable for the Vision Unit to be able to horizontally rotate in a range of +/- 50° without stretching the cables

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°)

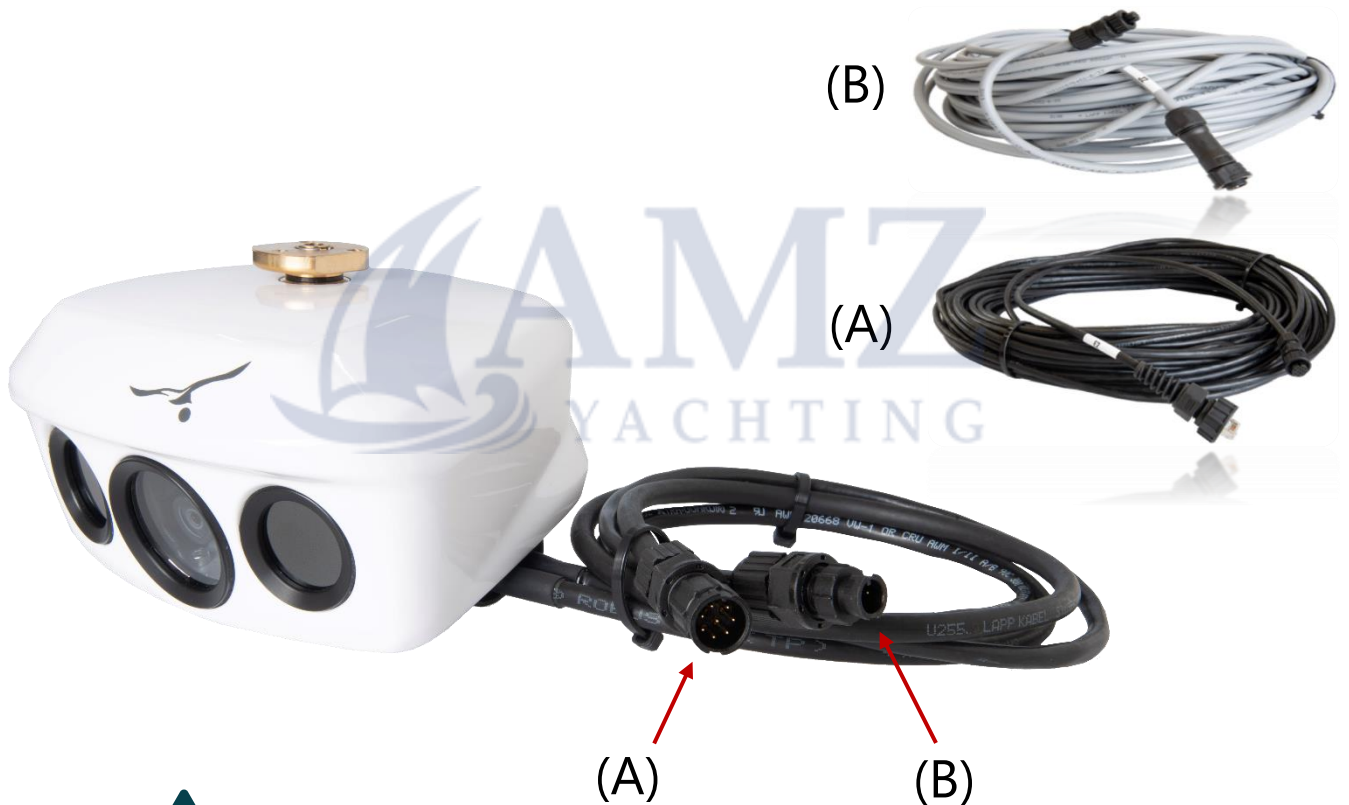


WARNING :

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 VU connectors.



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).

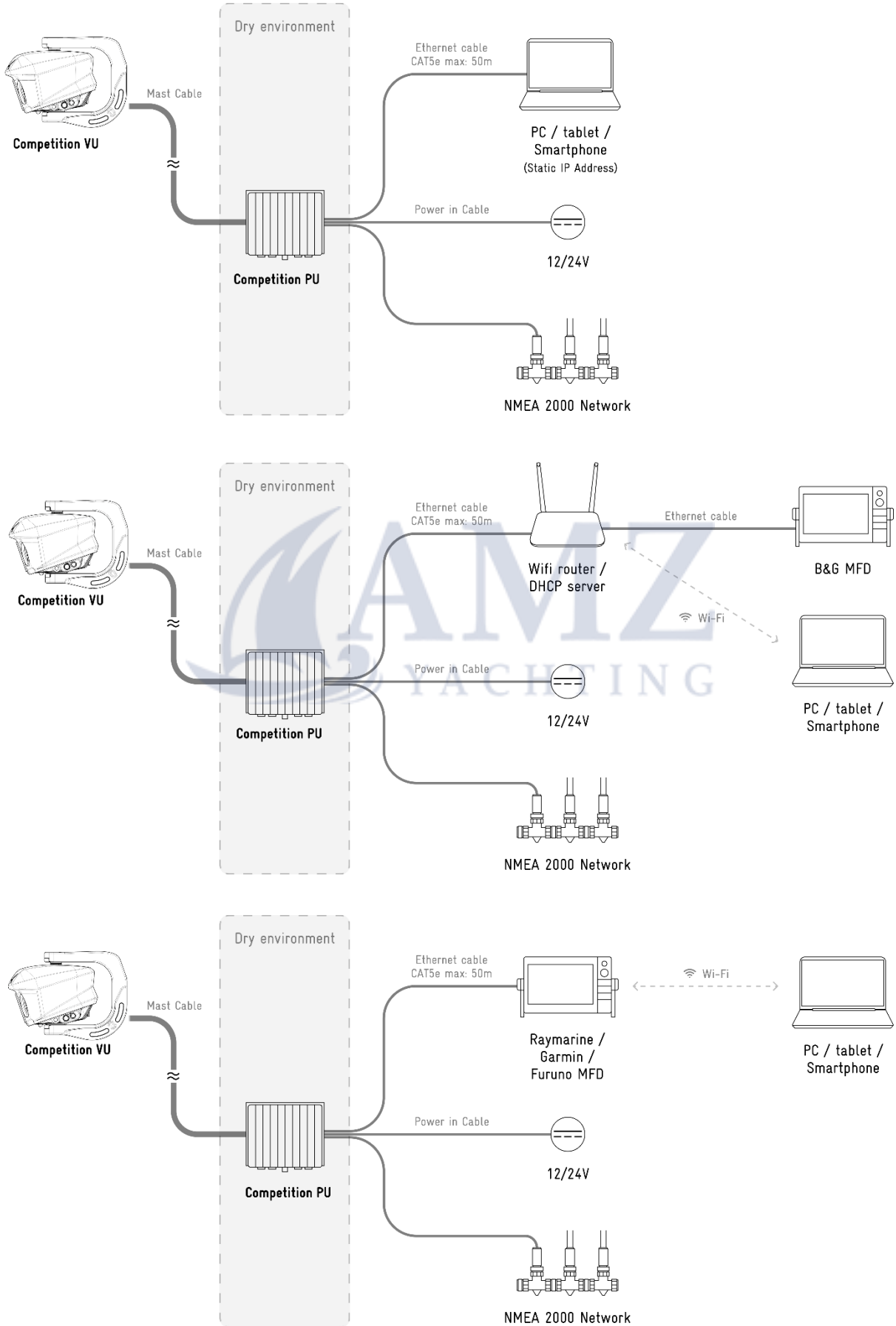
Connect the E2 data cable from the vision unit to the PU (marked E2).



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 included

- 4.8 Installation example.



5.1 INSTALLER COMMISSIONING

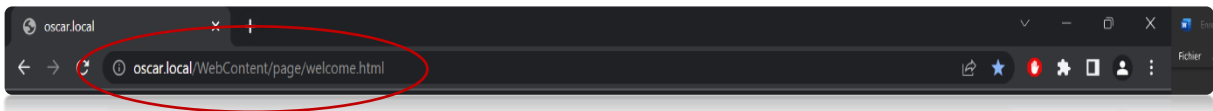
- Turn on the SEA.AI system (start-up time is approximately two minutes).
- On MFD, the access to the application is done via the SEA.AI icon (appears automatically).
- From a computer, use the following links to access the SEA.AI home screen.

-System integrated in a network with DHCP server (router) :

<http://oscar.local/WebContent/page/welcome.html>

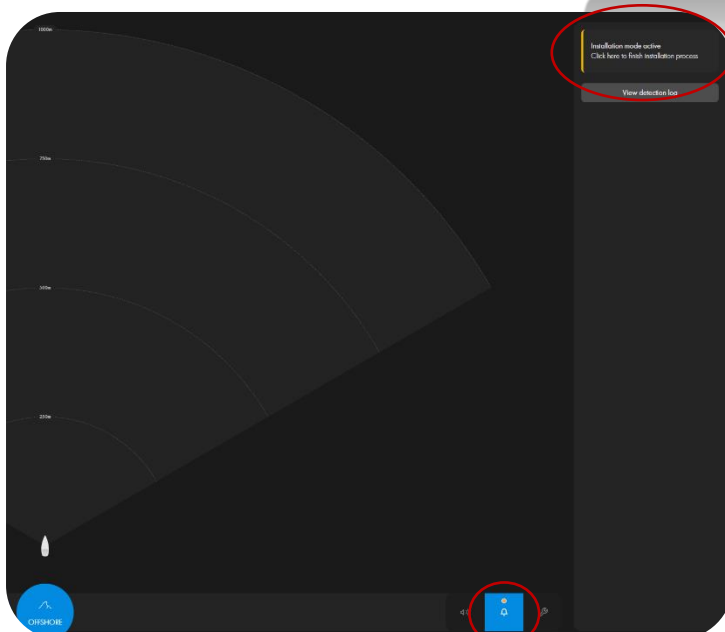
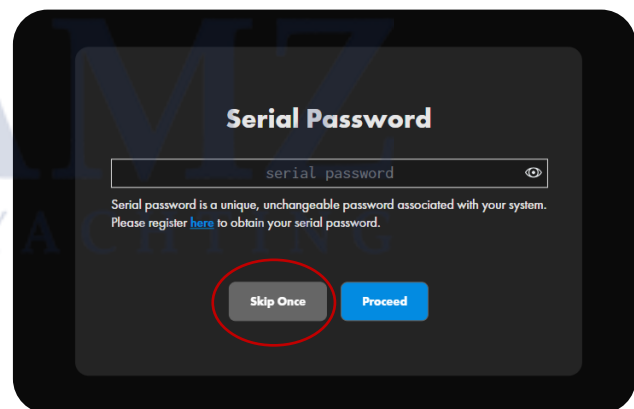
-System directly connected to a computer (static IP address) :

<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) :

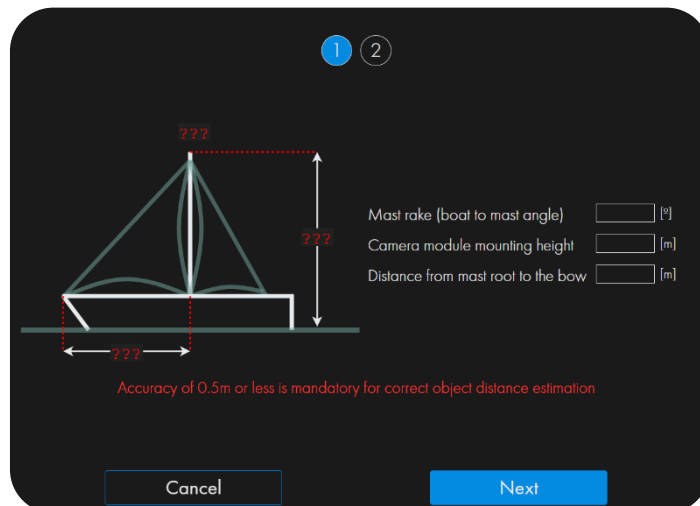
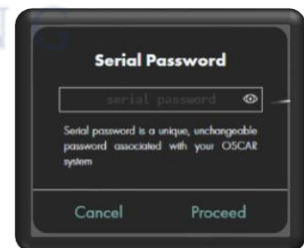
<http://oscar.local/WebContent/page/welcome.html>

-System directly connected to a computer (static IP address) :

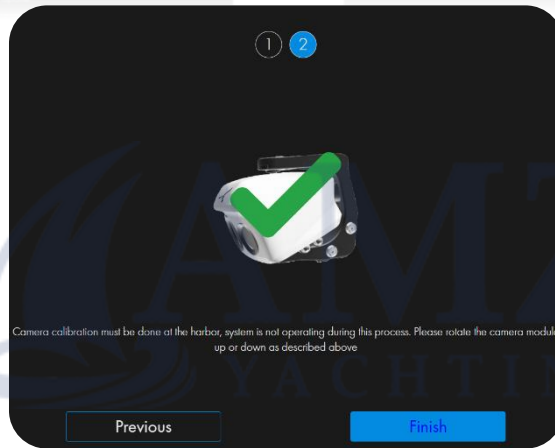
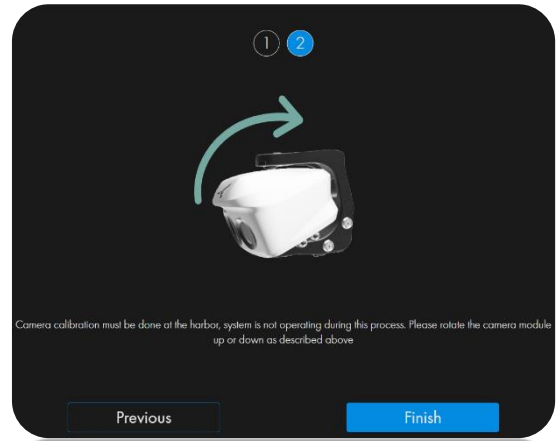
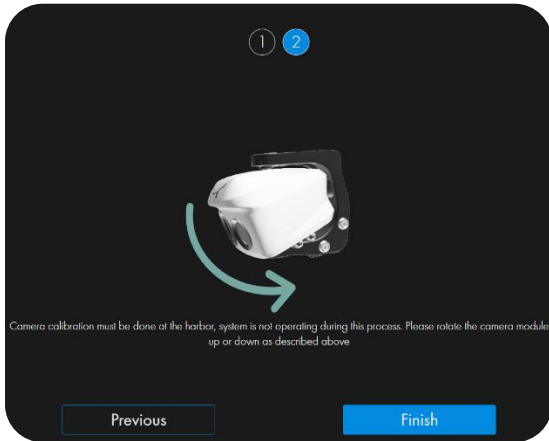
<http://192.168.17.21/WebContent/page/welcome.html>



- 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



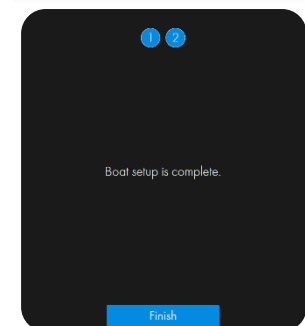
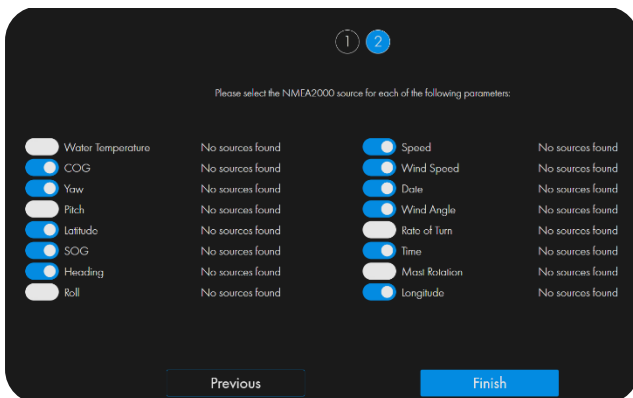
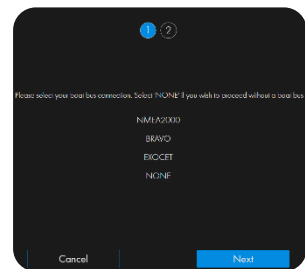
- Adjust the angle of the vision unit as indicated on the interface. (needs 2 technicians: one on top of the mast; one at the display).



Configure SEA.AI with the onboard information network.

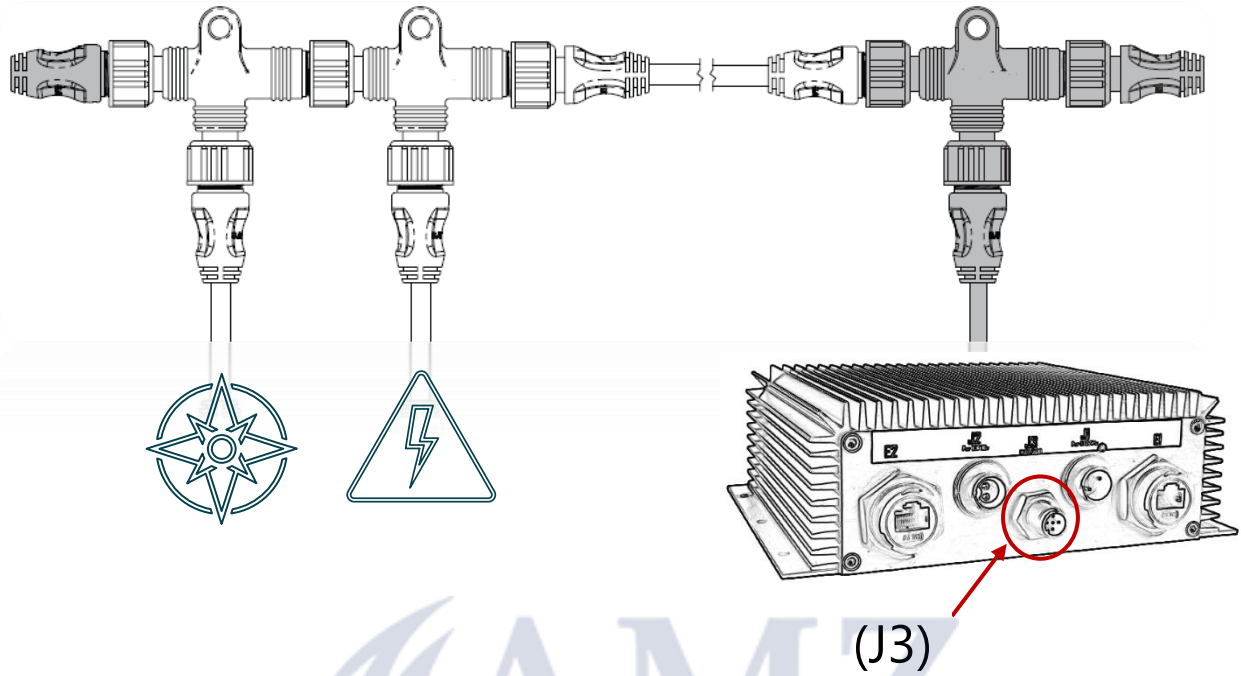
- Select the network type (NMEA 2000, BRAVO, EXOCET, NONE).
- Select the information to be displayed

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)



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.

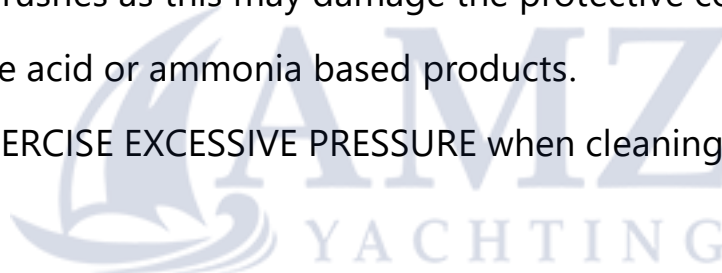
The software can be updated with the SEA.AI Oscar Navigation application.

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.

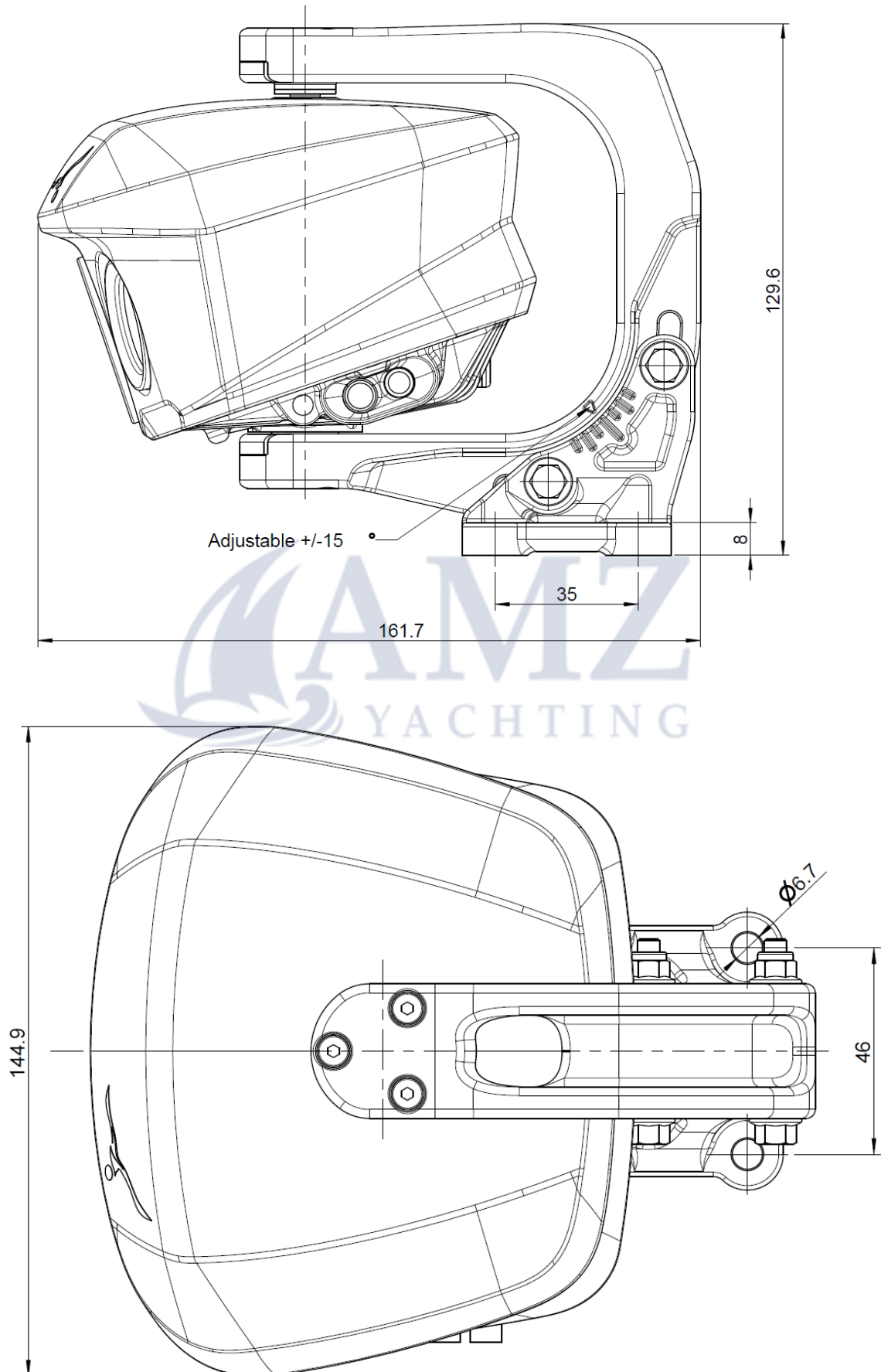
If necessary, use isopropyl alcohol or a mild detergent to clean up any remaining traces.

8. MFD COMPATIBILITY

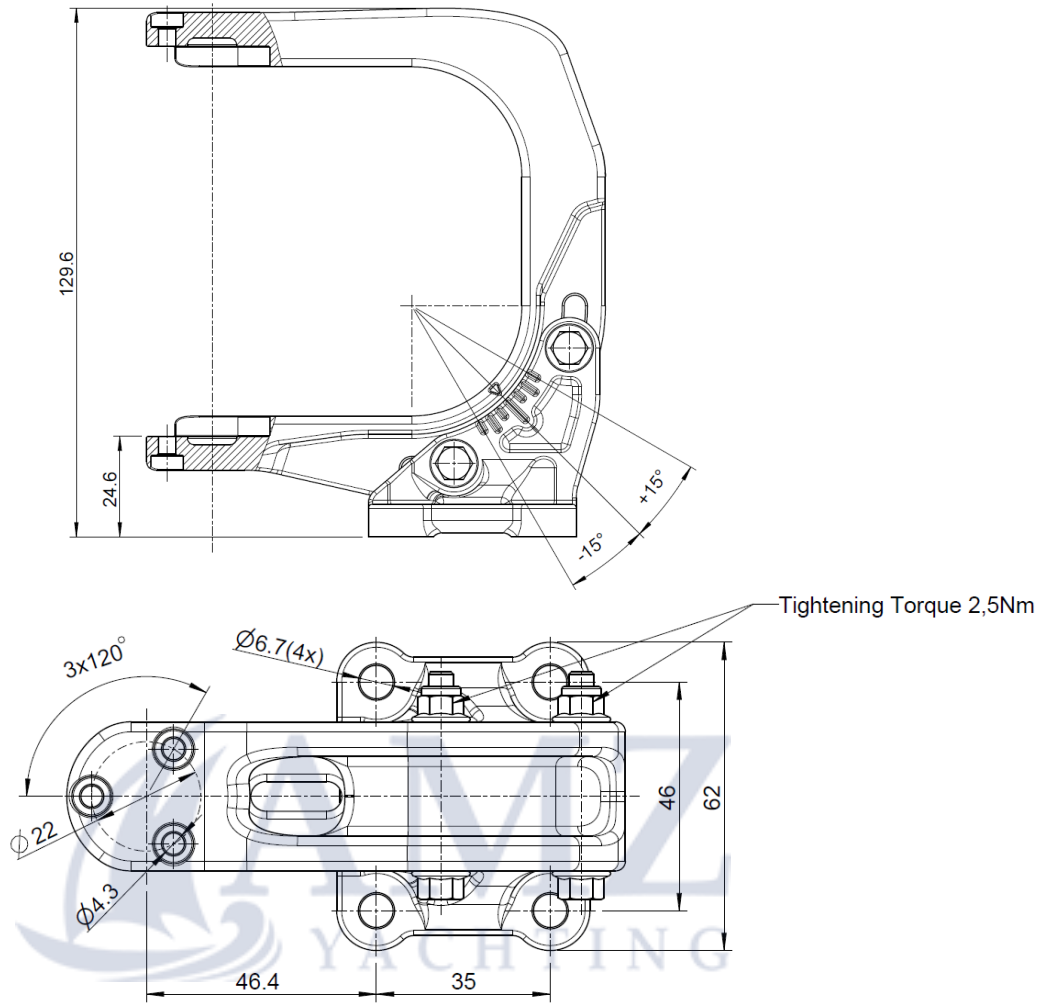
One, Offshore, Competition					
Brand	Model	App Running	Internal MFD Alarm	NMEA Buzzer	Comments
B&G	Zeus3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	reccomended	App is running but very slow performance due to slow MFD HW , wifi router necessary
	Zeus3S	<input checked="" type="checkbox"/>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



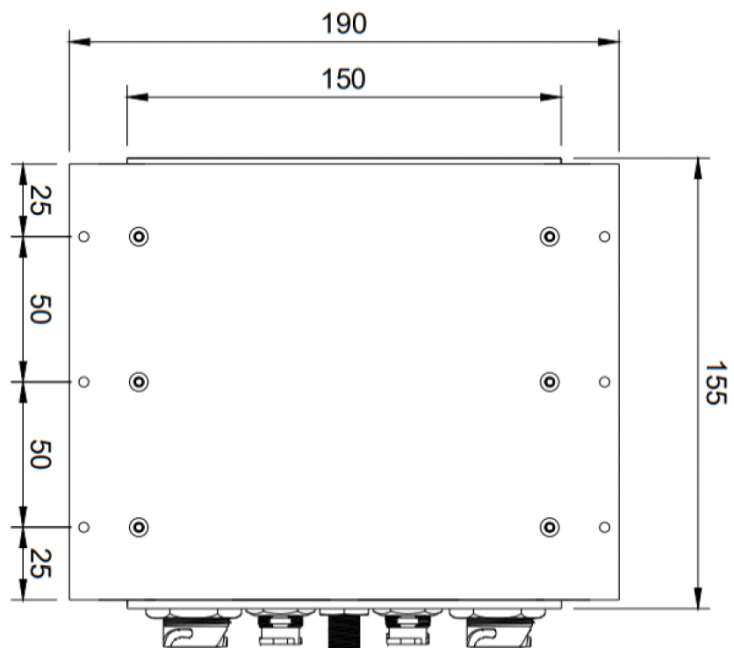
9. TECHNICAL DATA



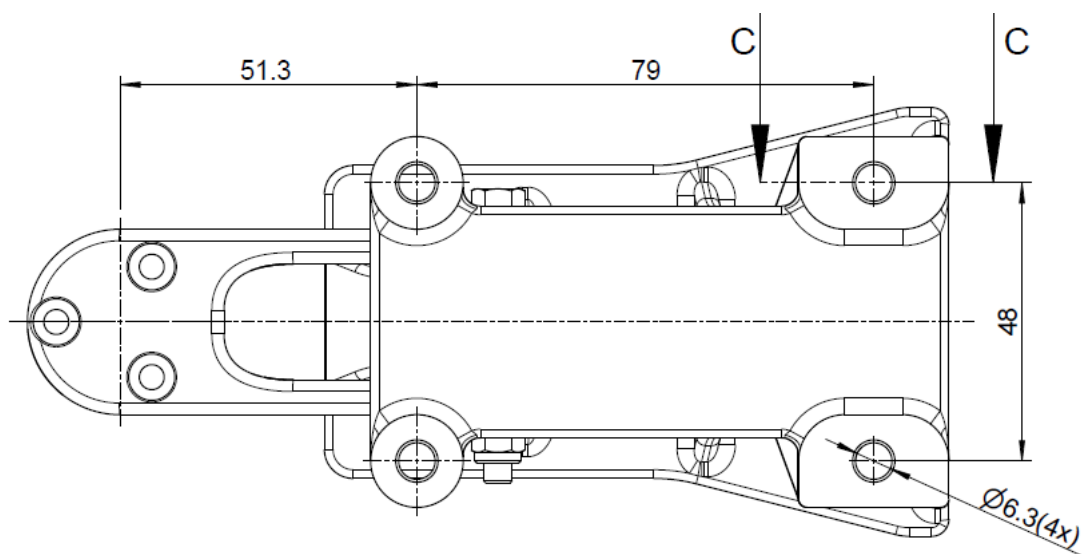
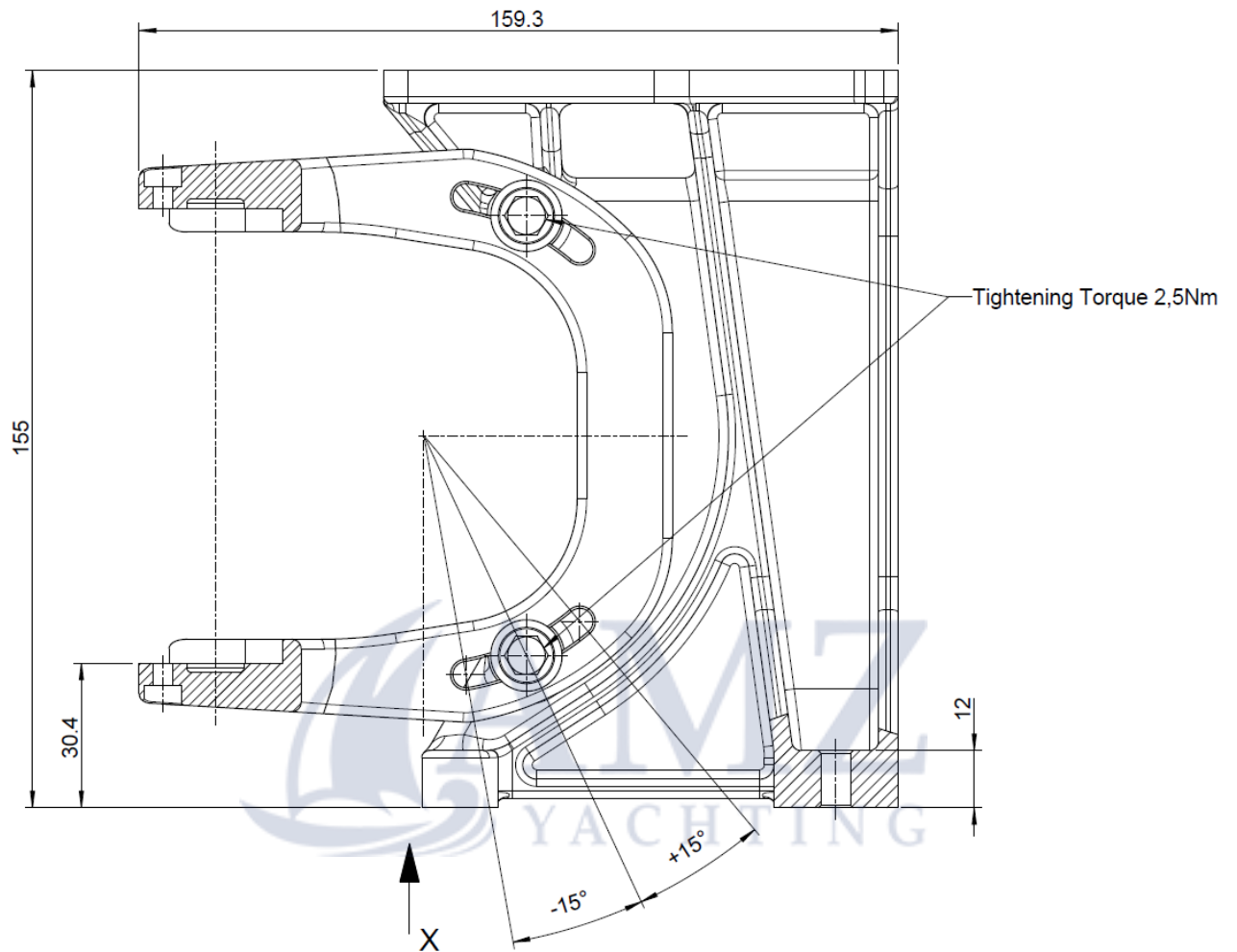
Vision Unit Bracket



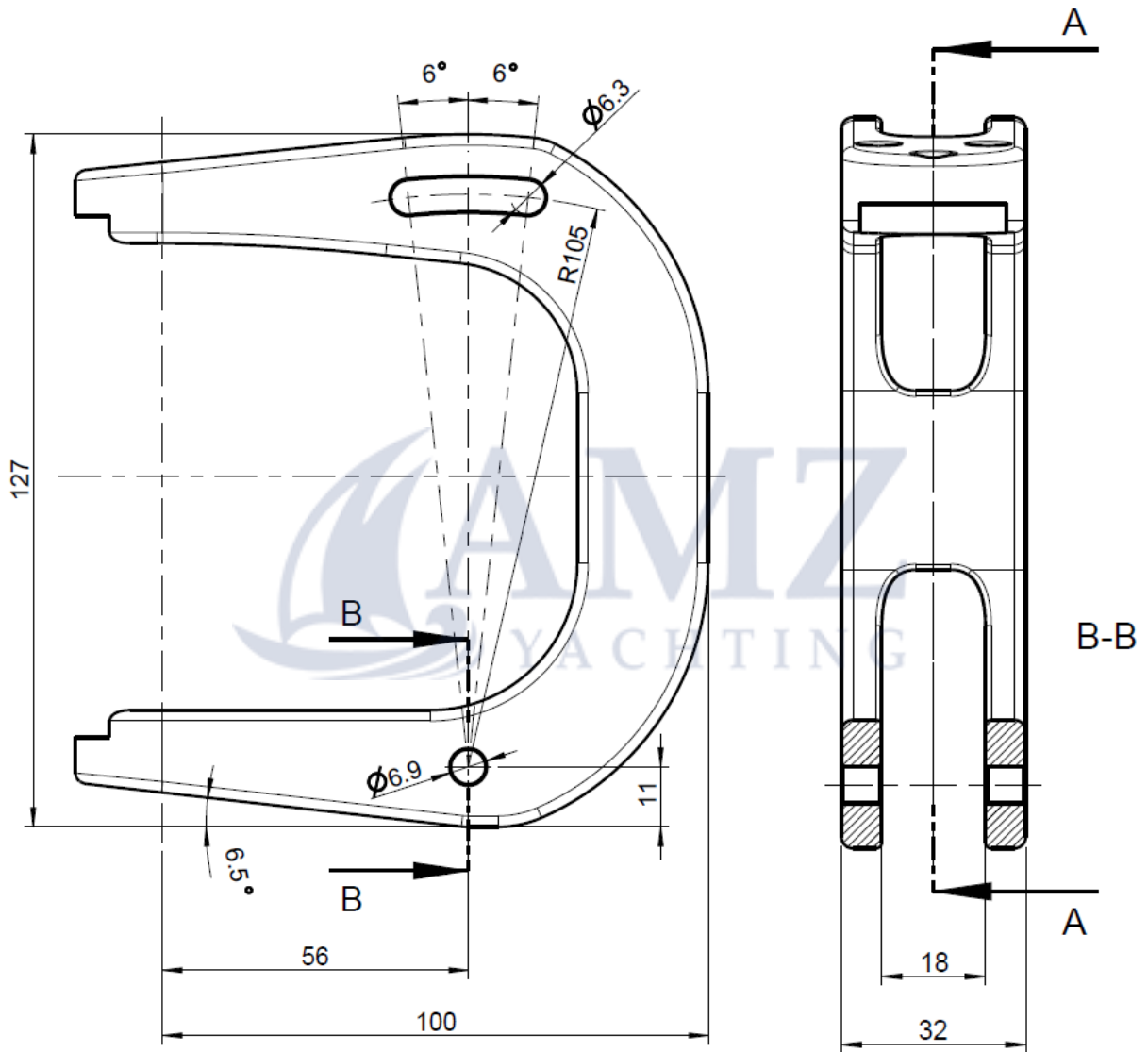
Processing Unit



Wind Sensor Bracket

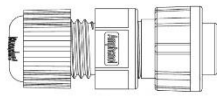


Imoca Mast Bracket

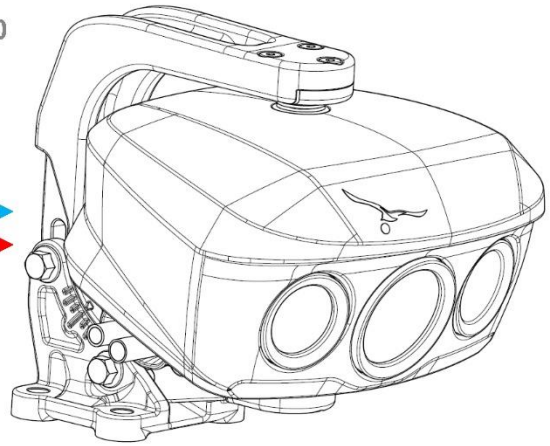


SEA.AI

COMPETITION 320 & 640

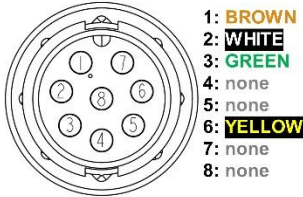


Amphenol AD & BD CONNECTORS VERSION

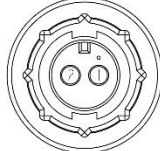


PING VU: 192.168.1.201
PING PU: 192.168.17.21

BD-08BMMA-LL7001



AD-02BMMA-LL7001



PIN 1: NEG - / CABLE N°1
PIN 2: POS + / CABLE N°2

AD-02BFFA-LL7001

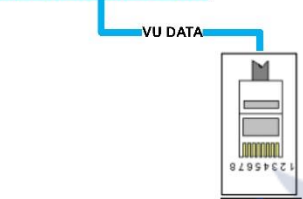
POWER OUT +36V

PIN 1: CABLE N°1 / NEG -
PIN 2: CABLE N°2 / POS +

BB-02BFMA-QL8MPP



BD-08BFFA-LL7001

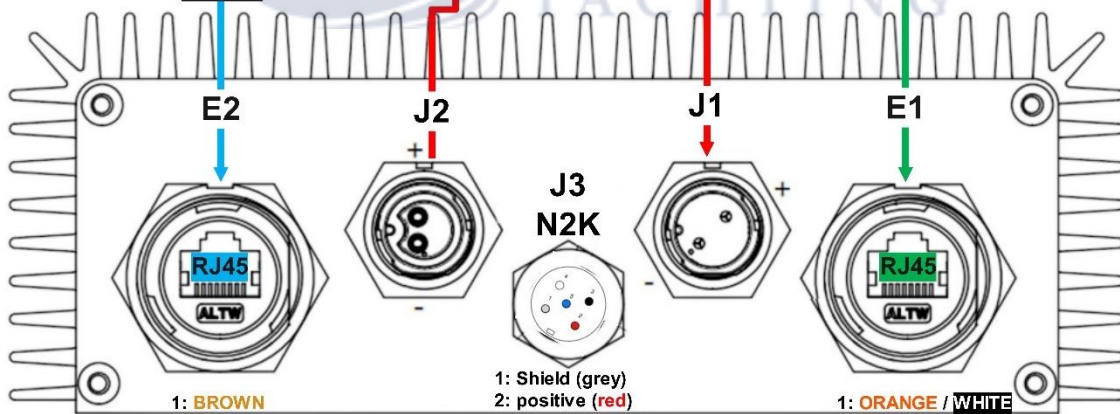


PIN 1: BLACK CABLE / NEG -
PIN 2: WHITE CABLE / POS +

POWER IN +12/24V

From 3A fast blow fuse

DISPLAY



1: BROWN
2: WHITE
3: GREEN
4: none
5: none
6: YELLOW
7: none
8: none

1: Shield (grey)
2: positive (red)
3: negative (black)
4: CAN_H (white)
5: CAN_L (blue)

1: ORANGE / WHITE
2: ORANGE
3: GREEN / WHITE
4: BLUE
5: BLUE / WHITE
6: GREEN
7: BROWN / WHITE
8: BROWN

Static IP adress: <http://192.168.17.21/WebContent/page/welcome.html>

DHCP server : <http://oscar.local/WebContent/page/welcome.html>

WWW.SEA.AI

NOTES :



SERVICE CONTACT

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WhatsApp SEA.AI Service

