

Step-by-step installation of

MLD Trawl Steering System

Achieve full control over your trawl position and improve fishing efficiency with our advanced system.

Dynamic adjustment of trawl doors in vertical and horizontal directions from the bridge while fishing.

Remote adjustments and automated functions ensure the MLD doors will be where you want them to be.

The MLD installation is designed to keep you prepared for future upgrades, the MLD Trawl Door Altimeter being one of them. By following the installation instructions, you can seamlessly integrate the altimeter along with any future MLD upgrades, ensuring you always stay ahead of the game.

Navigate toward optimized fishing and a stronger bottom line!

Installation of MLD TSS

The installation of Charger, Access Point, bridge PC, and Hydrophone installation should be carried out by your electrician. Let's review the process with them before they begin.

To ensure a correct and safe installation of the MLD TSS, we recommend that the work be carried out by a certified electrician. The electrician should handle cable routing, power supply, and network connections, while the housing for the hydrophones should be manufactured and installed by the shipyard.

The installation process requires care and precision, as incorrect placement or connections may affect system performance. We strongly recommend reviewing this manual, along with the provided drawings and component lists, before starting the installation.

Tasks to be completed:

(no. refer to block diagram MLD TSS)

1. Installation of the PC in the server room or in a cabinet on the Bridge. This includes the MLD Gateway and connection to the matrix system or dedicated monitor on the Bridge. WAN port of the Gateway or the PC secondary ethernet port must have internet connected.

2. Installation of 2 x Hydrophones 4201 at the bottom of the Ship. Placement of the Hydrophones from Midships and forward to Thrusters – where there are Riser Pipes available. The angle of the Hydrophone should be 15-20° outwards and downwards, if you require MLD to assist with the placement please submit Drawings of the Hull.

3. Installation of 2 x Hydrophone Cables C00009 for the Hydrophones. The Cables shall be pulled from the Hydrophone Box under the Hull through the Riser Pipe to the Interconnection Box. If needed MLD can supply longer Cables than the standard 25 meter.

4. Installation of the Inter Connection Box 4202 (Hydrophone Box) + installation of 230V power supply. The two Hydrophone Cables C00009 must be connected. The installation is typically close to the Riser Pipe.

5. Routing of CAT6 cable (or similar) from the MLD Gateway in the Server Room to the above-mentioned Hydrophone box.

6. Routing of CAT6 cable (or similar) from the server room to the aft of the ship, where a PoE switch will be installed preferably in the same area as the 2 Charging Boxes 4214 (stbd & port) (here it is also possible to connect the CAT6 cable from the Hydrophone box).

7. Installation of 2 x Access Points 4214 close to each of the Doors on the aft Deck (powered by PoE from the switch). The location of the Access Points shall have no or minimal obstruction between the Access Point and the Doors.

8. Installation of 2 x Charging Boxes 4211–stbd & 4211-port in a dry area with easy access for the crew. The Charging Plug of the Charging Cable C00043 shall be close to each of the Doors. It is recommended to install a Storage Device to hang or hide the loose end of the Charging Cable when it is not used for charging. The Charging Boxes require 230V / 800W power supply each. If needed MLD can supply longer Cables than the standard 25 meter.

9. Routing of CAT6 cable (or similar) from the above-mentioned PoE-switch 9888808 to the Access Points and Charging Boxes.

10. Once the Hydrophones are installed and connected to the Hydrophone Box, **MLD should be contacted to verify the connection BEFORE the ship leaves the Dock.**

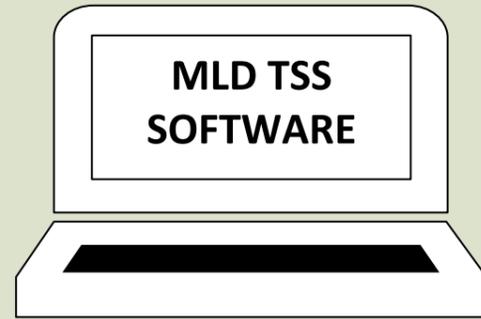
Typically, an electrician requires 2-3 days for the installation of hydrophones and network connections and an additional 2-3 days for cable routing for the charging stations and Wi-Fi installation. Depending on the vessel.

Parts list

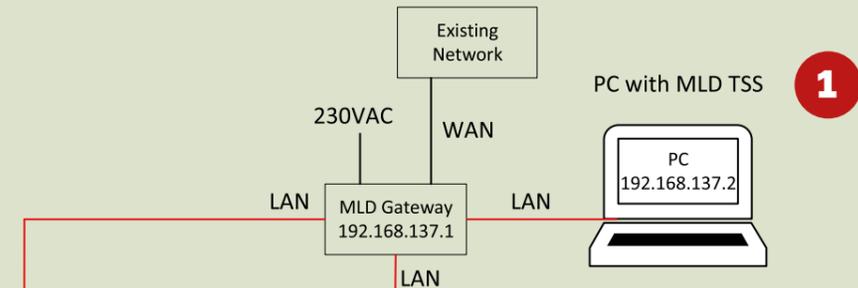
Top side installation

Part no.	Description	Picture	Number	Usage
4201	Topside Hydrophone Delrin		2 pcs.	To be mounted in holder
4207/000850	Topside Hydrophone holder AISI-S316		2 pcs.	To be installed in angle of 15-20°.
1000797	Topside Hydrophone Flange AISI-S316		2 pcs.	For mounting of topside Hydrophone holder
C00009	Hydrophone Cable Topside 25 meters		2 pcs.	Length can be modified.
4202	IC box		1 pc.	To be installed in sonar room and connected to ship network.
4214	Access Point		2 pcs.	To be installed inside within reach of the doors. 10 m max
4211	Charger Box		2 pc.	To be installed inside within a range of 25 m from the doors.
C00043	Charging Cable – Dummy plugs, 25 meters		2 pcs.	Length can be modified.
4212	Remote panel set		2 pcs.	Optional. For remote start/stop of charging.
4215	PC With MLD TSS		1 pc.	Installed in server room. Connects to bridge screen
4218	PC Keyboard & Mouse		1 pc.	Accessories
	MLD Gateway		1 pc.	PC access to network.
	PoE – Switch		1 pc.	Between Wifi and charger

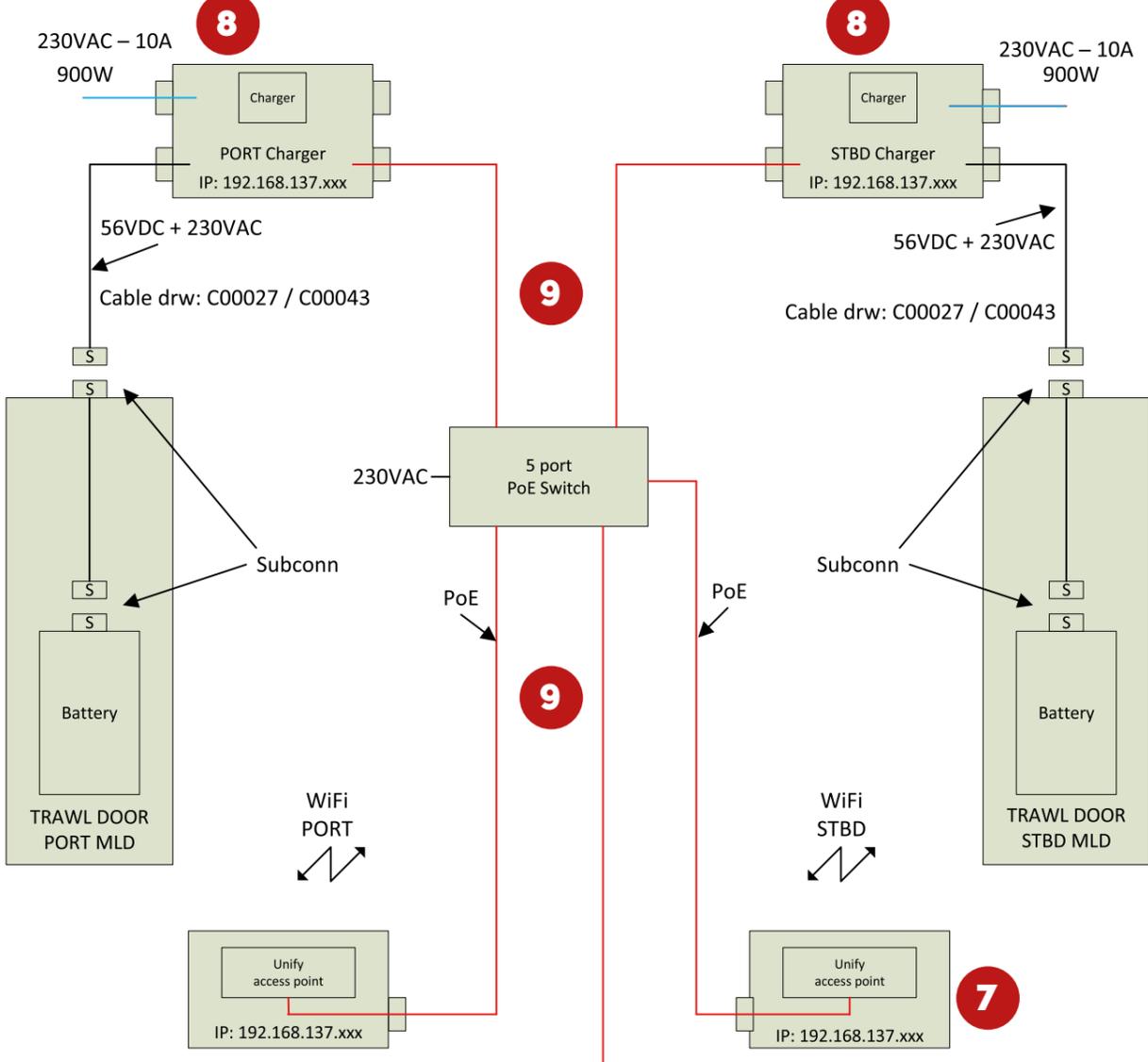
Bridge



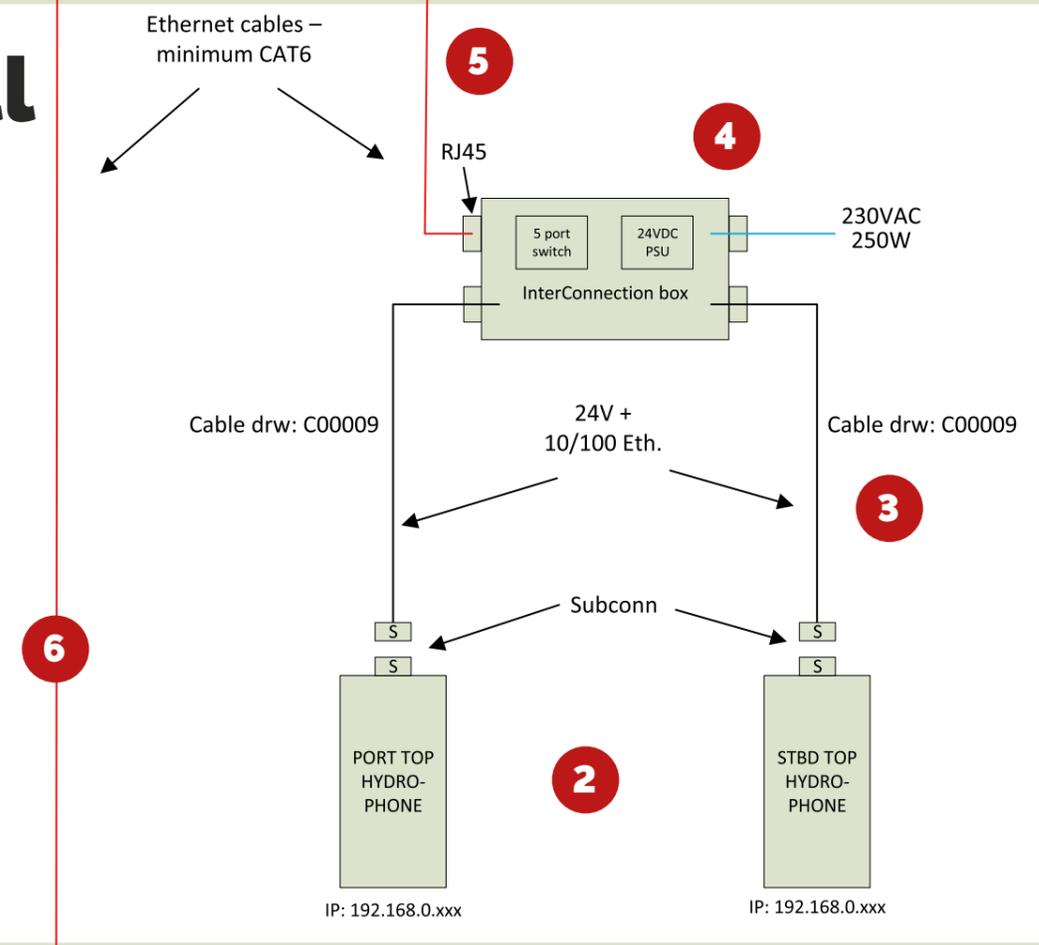
Server room



Aft



Hull



10 Contact MLD when hydrophone is installed and connected so an MLD technician can test the hydrophone installations before leaving dock.

Colored lines are NOT a part of MLD delivery:

RED = PDS cable

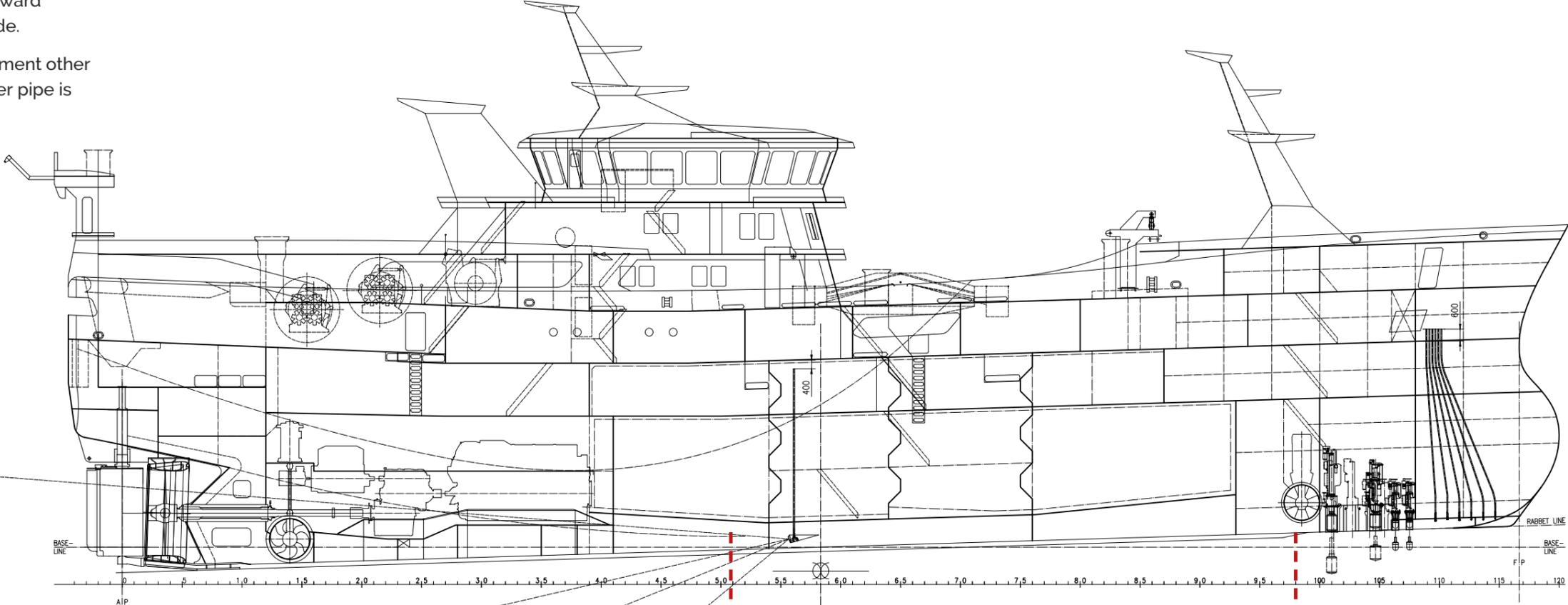
GREEN = 24V + signal cable (e.d CAT6)

Placement of Hydrophone

Preferred placement is midship and forward
app. 2 m away from the keel on each side.

Generally there is no limits to the placement other
than they should be placed where a riser pipe is
available.

See photos below with examples.



Preferred hydrophone section

Examples



Placement of charging box

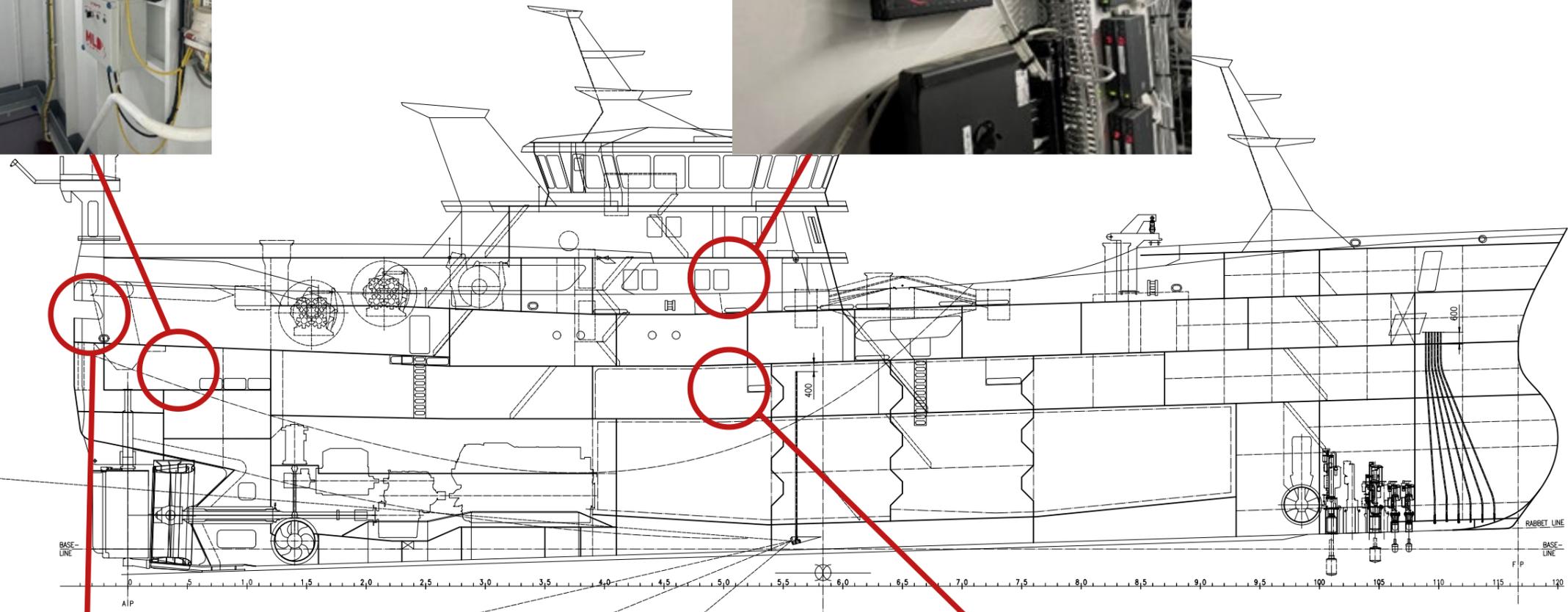


Charger box for the doors should be placed in a dry room below the galleys where the charging cable of 25 m length can reach the charging plug of the doors.

Placement of PC



The pc could be placed in the server room at or below the bridge.
The 5 port PoE switch could be placed here as well but could also be placed near the chargers.



Placement of access points



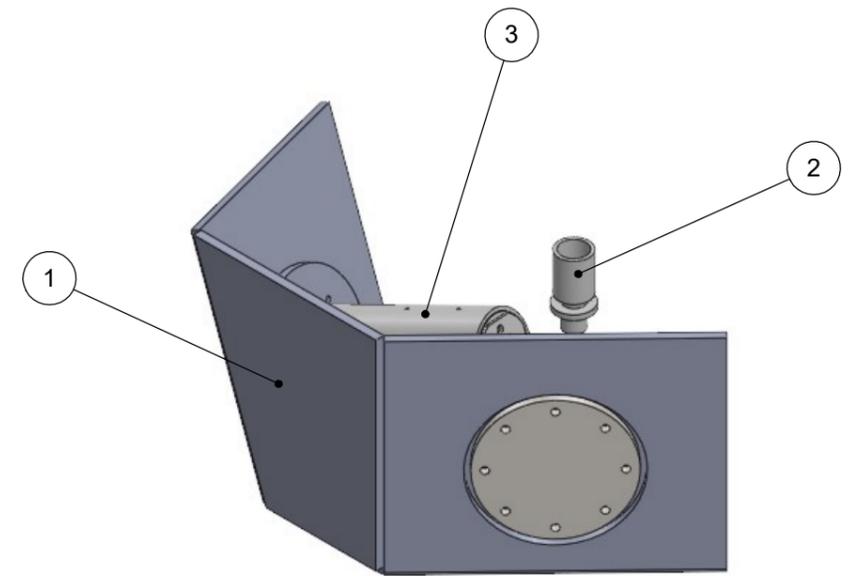
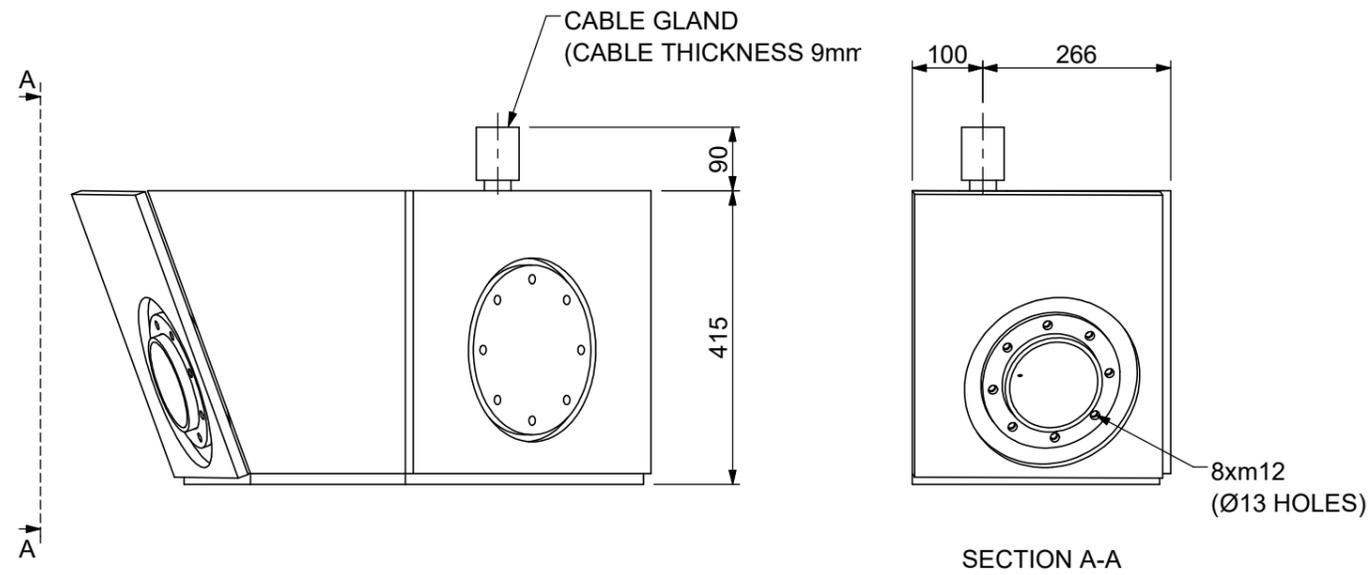
AP to be placed as close to the doors as possible with no or minimal obstructions between the AP and the doors.

Placement of IC box



The IC box where the hydrophone cables are connected could be placed in the Sonar room or similar just above the riser pipe.

Item No.	Description	Qty.	Drawing Number	Material	Weight
1	SUPPORT FOR BOTTOM EQUIPMENT - MLD TOP MODEM	1	2000112	-	14.13
2	Ø67,7x6,3 L=135	1	1000421	-	1.2
3	EVOLOGICS HOLDER	1	2000210	-	10.33



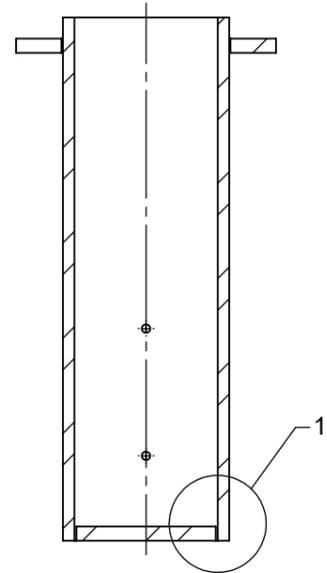
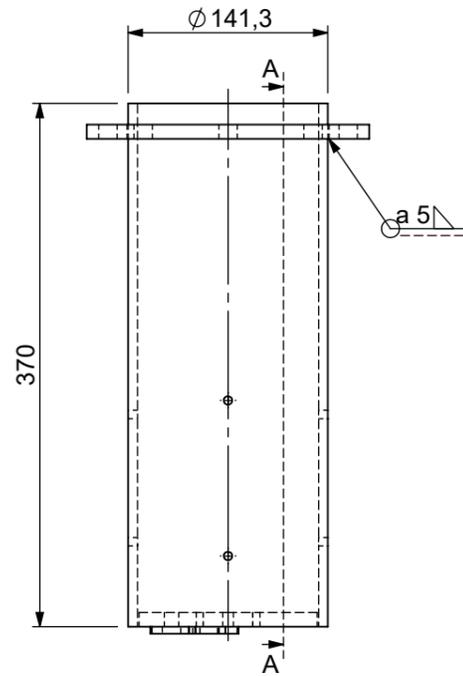
NOTE:
CABLE LENGTH IS 25m. CABLE DIAMETER IS 9mm.

MLD ApS
Trawl Steering System
Susåvænget 1A
6710 Esbjerg V
Denmark

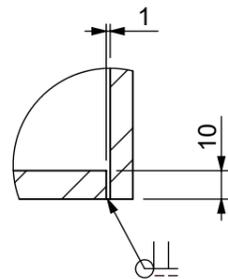
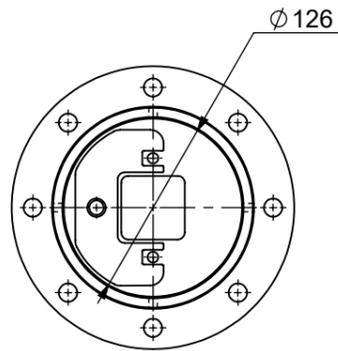
Description: PROPOSAL FOR BOTTOM EQUIPMENT					
Created 2. februar 2022 11:06:55			Updated 30. maj 2022 07:49:52		
Material	Constructor: Joan Rahbek		Weight	25.62 Kg	
Drawing Nr.: 2000211			Rev: -	Scale 1:10	A3 Sheet : 1 of 1

ALL SHARP EDGES DEBURRED.
TOLERANCES ACC. TO DS 2768-1M

2000210 Evologics holder

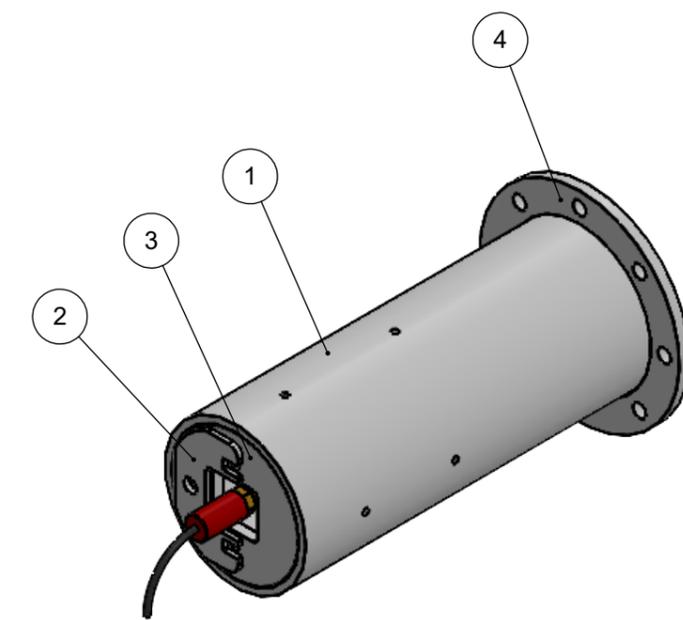
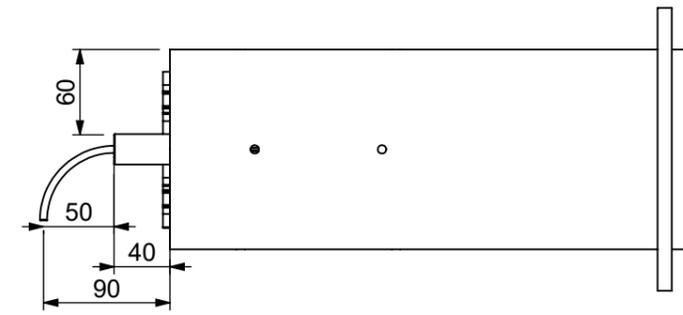


SECTION A-A



DETAIL 1
SCALE 2 : 5

Item No.	Description	Qty.	Drawing Number	Material	Weight
1	Ø141,3x6,6 L=370	1	1000794	AISI 316	8.20
2	PL. 5x63x110	1	1001265	AISI 316	0.16
3	PL. 10xØ126	1	1000795	AISI 316	0.82
4	PL. 10xØ200	1	1000796	AISI 316	1.14



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TOLERANCES ACC. TO DS 2768-1M



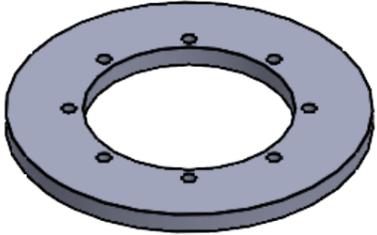
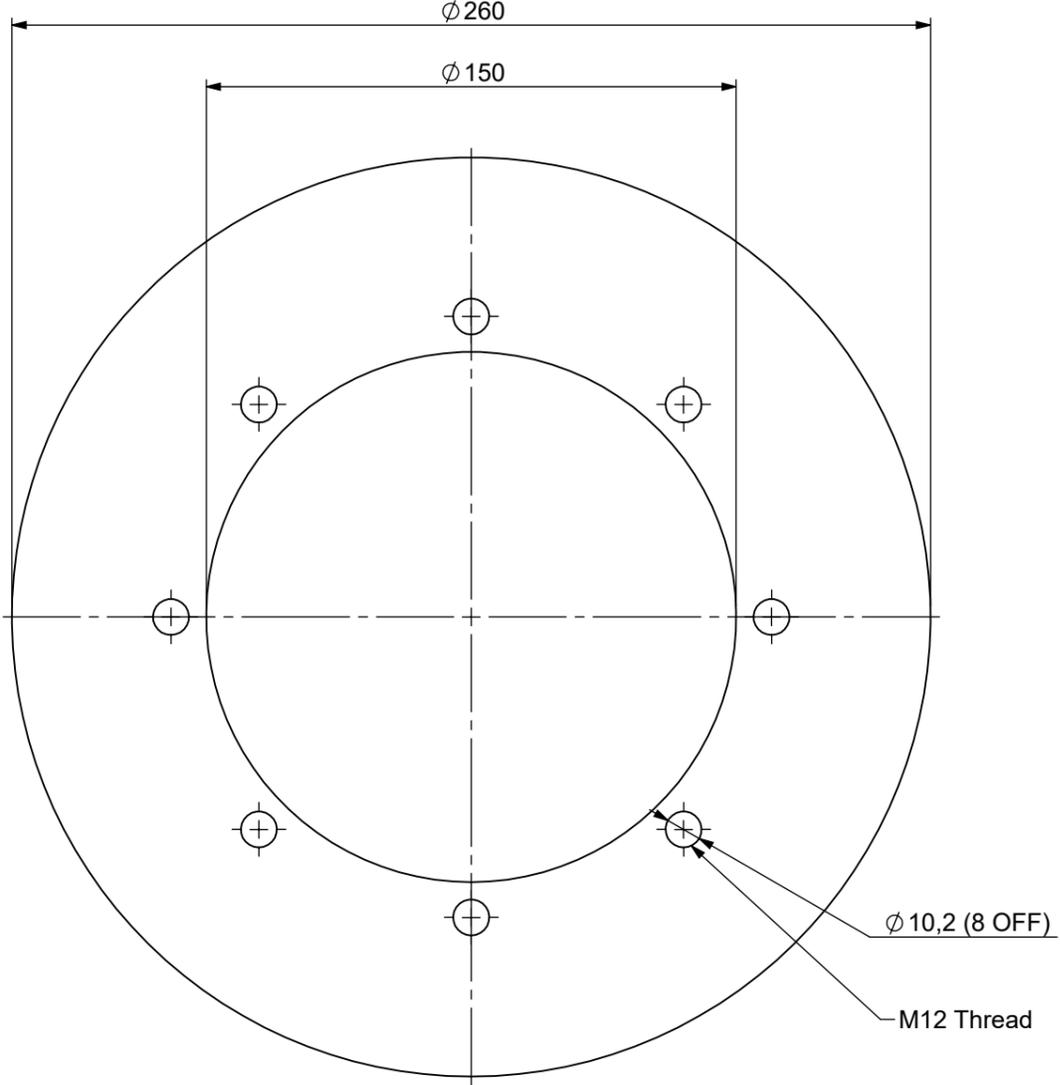
MLD ApS
Trawl Steering System
Susåvænget 1A
6710 Esbjerg V
Denmark

Description:

EVOLOGICS HOLDER

Created 2. februar 2022 12:08:55	Updated 31. maj 2022 13:24:23	
Material	Constructor: Tobias Knudsen	Weight 10.33 Kg
Drawing Nr.: 2000210	Rev: -	Scale 1:5 A3 Sheet : 1 of 1

1000797 Mounting plate topside modem



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TOLERANCES ACC. TO DS 2768-1M



MLD ApS
Trawl Steering System

Susåvænget 1A
6710 Esbjerg V
Denmark

Description:

PL. 15x \varnothing 260

Created 2. februar 2022 11:17:35	Updated 11. oktober 2022 16:04:18		
Material	Constructor: TB	Weight	0.52 Kg
Drawing Nr.: 1000797	Rev: A	Scale 1:5	A3 Sheet : 1 of 1

We're here to help!

Feel free to contact us if you encounter
any issues or questions along the way




Susåvænget 1A
6710 Esbjerg V


+45 60 86 67 36


sales@mld.one


/multileveldoor


www.mld.one