

Sailsense Analytics

INSTALLATION PROCEDURE

HUB with NMEA2000 interface
POD for engine without ECU

Revision history

Revision	Date	Description	Author	Checked by
A	21/06/2018	Initial release	Nicolas Z.	Jeremie S.
B	01/04/2019	Small corrections	Nicolas Z.	Yannick V.
C	18/06/2020	Add user manual and safety information	Nicolas Z.	Yannick V.

BEFORE YOUR START

First of all, we would like to thank you for purchasing this product and we hope that it will bring you entire satisfaction. Before you proceed with the installation, please check for the latest version of the Installation Procedure at www.sailsense.io/first-use.

In case of question during or after installation, please reach out to our **Support teams**:

 support@sailsense.io

 +32 460 22 00 00

 Sailsense Analytics



IMPORTANT SAFETY AND WARRANTY NOTICE:



- **READ ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR OPERATING THE PRODUCT. FAILURE TO DO SO MAY CAUSE PERSONAL INJURY OR DAMAGE TO PRODUCT AND/OR PROPERTY.**
- DO NOT ATTEMPT TO INSTALL THE PRODUCT IF YOU DO NOT HAVE SUFFICIENT KNOWLEDGE OR EXPERIENCE RELATED TO INSTALLING ELECTRICAL SYSTEMS ON BOATS. MAKE SURE TO TAKE ALL THE REQUIRED SECURITY PRECAUTIONS. SWITCH-OFF THE POWER SUPPLY OF THE BOAT TO SAFELY OPERATE THE CONNECTION OR PLACEMENT OF THE DEVICE.
- Review the product package and contents prior to beginning the installation. Take care when opening the packaging and removing items. Do not operate the product if the packaging or its content are damaged or if one or more parts are missing. In case of doubt, contact Sailsense support team immediately for further assistance.
- Sailsense products can only be serviced by Sailsense or their official trained representatives. Do not attempt to open or repair the product by yourself. Failure to do so will immediately void the warranty.
- Please leave no part of the package within reach of children or irresponsible adults.
- The manufacturer and distributors of this product cannot be held liable and declines responsibility for damage or personal injury resulting from improper use or failure to observe the instructions of the Installation Procedure.

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REQUIRED MATERIAL

Supplied by Sailsense

FOR THE HUB

Part number	Description	Quantity	Picture
101-0001	Sailsense HUB	x1	
102-0001	Sailsense HUB Cable	x1	
704-0003	GPS Antenna	x1	
708-0001	Fuse holder	x1	
707-0001	Fuses	x5	
840-0001	Waterproof cap	x1	
828-0004	Mounting screws	x6	

FOR THE POD

Part number	Description	Quantity	Picture
101-0002	Sailsense POD	x1	
102-9999	Sailsense POD cable	x1	
	No ECU Engine interface	x1	
840-0001	Waterproof cap	x1	
828-0004	Mounting screws	x6	
	Crimp contacts	x5	
	Crimp faston Female	x8	
	Crimp faston Male	8x	

Not supplied by Sailsense

- Silicone to glue the antenna
- Cleaning tissues
- Cable ties & cable ties mounts
- NMEA2000 cable adapter for Raymarine or Simrad NMEA backbones
- Wire
- Crimps and vamp clamps

INSTALLATION OF THE HUB

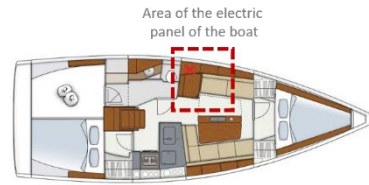
STEP 1: IDENTIFY THE BEST PLACE TO INSTALL THE HUB

The HUB should be installed **inside** the boat.

In order to minimize the installation time and to limit the need for dragging additional cables, the HUB should be located as close as possible from:

- a NMEA2000 T-connector
- a 12-24V DC power source (optional)
- the gauges you wish to monitor (optional)

Note: the ideal place for a Jeanneau Sun Odyssey 349 is behind the electrical panel.



STEP 2: SCREW THE HUB TO THE BOAT

Place the waterproof cap on the ethernet connector.



Screw the hub to the boat, with its **connectors facing down**.



We recommend installing the HUB

- at least 1m above the water level
- at least 0.5m away from other metallic objects or from the water or fuel tanks

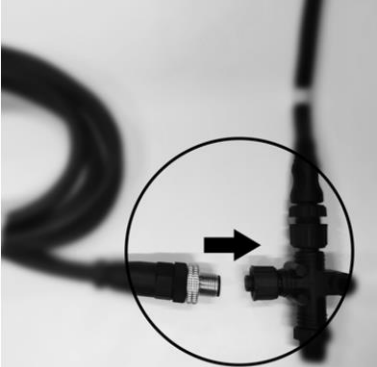
Note: make sure that you screw the hubs close enough from an NMEA2000 T-connector.



STEP 3: CONNECT THE GPS ANTENNA

<p>Glue the GPS antenna horizontally on a flat and clean surface (with silicon).</p> <p>The antenna should be placed inside the boat, as close as possible to the deck with its largest black surface pointing to the sky.</p>	
<p>Screw the antenna to the HUB</p>	

STEP 4: CONNECT THE CABLE TO THE NMEA2000 DATA SOURCE

<p>Find a free entry on the NMEA2000 backbone of the boat and plug the NMEA2000 connector of the Sailsense HUB Cable.</p>	
<p>For Raymarine or Simrad NMEA2000 backbones, you may need an adaptor cable.</p>	

STEP 5: CONNECT THE CABLE TO A SECONDARY POWER SOURCE (OPTIONAL)

By default, the HUB is powered through the NMEA2000 cable. It is ON when the navigation instruments are switched-on.

Optional: we recommend to also connect the HUB to a secondary power source to extend the periods during which it will be ON.

For example, you can connect the HUB to the boat batteries before or after the main switch. In the first case, the HUB will always be on. In the latter, it will be ON whenever someone uses the boat.

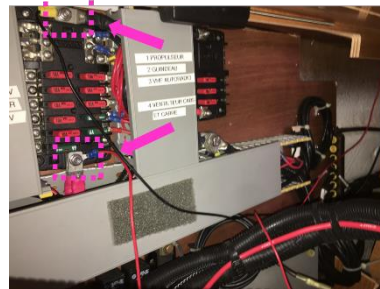
[!] Do not perform this step, if you do not have experience with installing electrical systems on boats. Make sure to take all the required security measures when working with electrical systems.

[!] Sailsense HUB works with 12-30 V DC power inputs.

To add a secondary power source, drag a wire (not provided by Sailsense) between the (+) of the boat batteries and plug it on the **left side** of the fuse holder.

Drag a wire (not provided by Sailsense) between the (-) or ground of the boat batteries and plug it on the **left side** of the fuse holder.

Connexion to the 12V main switch



Connect the Sailsense HUB Cable to the **right side** of the fuse holder with the following color coding.

BATTERY WIRE	SAILSSENSE CABLE
(+) of the batteries / DC power source	Red or orange wire
(-) of the batteries / DC power source	Black or grey wire



STEP 6: CONNECT THE CABLE TO GAUGES (OPTIONAL)

You can skip this step if you do not want to monitor gauges data with the HUB.

For Jeanneau boats:

At the back of the electrical panel, locate the white rectangular connector of the gauges. It is usually located behind the LCD gauge screen.

Unplug the white rectangular connector and connect the Sailsense Gauge Connector between the panel and the original white rectangular connector.

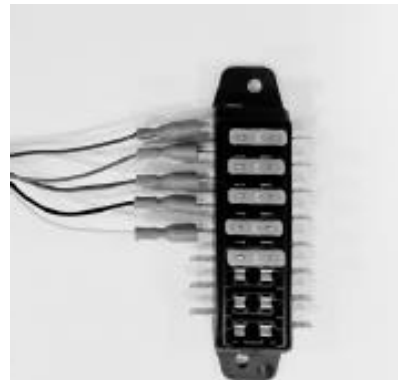
At the back of Sailsense Gauge Connector, you will see loose wires with numbers. Drag a wire between the wires marked as (1), (3) and (4) to any available plug on the **left side** of the fuse holder provided by Sailsense.



For other boats:

With a voltmeter, identify the wire at the back of your gauge that sends the tank level data.

Crimp a vamp clamp to that wire. Drag a wire (not provided by Sailsense) between the vamp clamp and any available plug on the **left side** of the fuse holder provided by Sailsense.



Connect the Sailsense HUB Cable to the **right side** of the fuse holder with the following color coding:

TANK WIRE	SAILSENSE CABLE
Fuel tank 1 - wire marked as (1)	Green wire
Water tank 1 - wire marked as (3)	Blue wire
Water tank 2 - wire marked as (4)	White wire

STEP 7: SCREW THE FUSE HOLDER

You can ignore this step if you have not performed step 5 or 6.

If you have used the fuse holder as required in steps 5 or 6, screw the fuse holder to the boat.

Make sure that Sailsense cable is long enough to be able to be plugged in the Hub.

STEP 8: PLUG THE CABLE TO THE HUB

Plug the cable to the hub.



After about 15 seconds, the logo will become white.

After about 2 minutes, the logo will become blue.

Your device should be visible in the Sailsense Fleet Management Platform within 5 minutes.

INSTALLATION OF THE POD

STEP 1: IDENTIFY THE BEST PLACE TO INSTALL THE POD

The POD should be installed **inside** the boat.

The best place to install the POD is under the bed of the aft cabin on starboard side, close to the engine room.



STEP 2a: CONNECT SAILSENSE ENGINE CABLE TO THE YANMAR ENGINE WITHOUT ECU

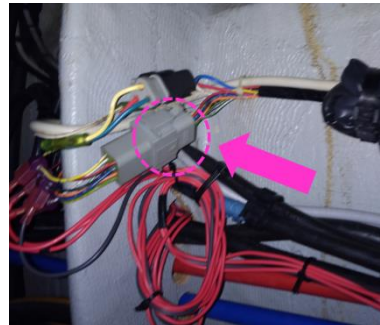
From the aft cabin, open the engine compartment panel to access the starboard side of the engine.

For a Yanmar engine like a 3YM or 2YM series without an ECU

Locate the engine cable harness that connects the engine to the engine instruments panels. This harness is composed of 2 connectors: a triangular connector and a rectangular connector.

Unplug the two ends of the rectangular connector and plug them back into the two ends of Sailsense Y Engine Cable.

You should have a "Y" with a loose end.



STEP 2b: CONNECT SAILSSENSE ENGINE CABLE TO THE ENGINE WITHOUT ECU

From the aft cabin, open the engine compartment panel to access the starboard side of the engine.

Locate the engine cable harness that connects the engine to the engine instruments panels. From there find the wire that feeds the tachometer (tachometer sensor) and split the connexion here with two fastons and connect it to the Yellow wire of the cabling without ECU.

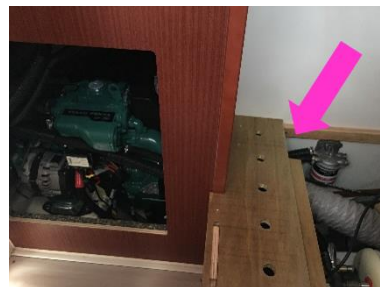
Note: you can also place the POD at the back of the instruments and split the wire from the tachometer there.

If available, you can also connect the alarm bulb of both coolant temperature and high engine temperature. Please specify if you use it and with information you've placed on the green and brown wire.



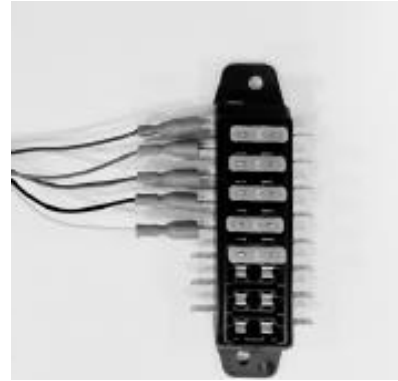
STEP 3: DRAG THE 'LOOSE END' OF SAILSSENSE "Y" ENGINE CABLE TO THE COMPARTMENT UNDER THE BED

Drag the loose end of Sailsense "Y" Engine Cable (see previous step) to any compartment under the bed where you have enough room to install the POD.



STEP 4: CONNECT THE SAILSENSE “Y” ENGINE CABLE TO THE FUSE HOLDER

Plug the loose wires of Sailsense “Y” Engine Cable to any available plug on the **left side** of the fuse holder.



Connect Sailsense POD Cable to the **right side** of the fuse holder with the following color coding.

<i>(LEFT)</i> SAILSENSE “Y” ENGINE CABLE	<i>(RIGHT)</i> SAILSENSE POD CABLE
RED wire	RED wire
BLACK wire	BLACK wire
ORANGE wire	GREEN wire
GREEN wire	BLUE wire
BROWN wire	WHITE wire

STEP 5: SCREW THE POD TO THE BOAT

Place the waterproof cap on the ethernet connector.

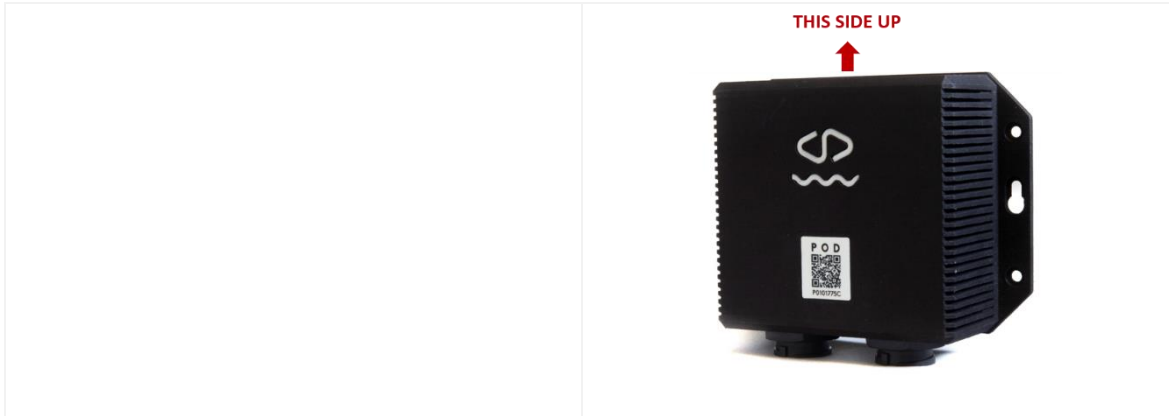


Screw the fuse holder where there is space.


Screw the POD to the boat, with its **connectors facing down**.

We recommend installing the POD

- at least 0.5m away from other metallic objects or from the water or fuel tanks



STEP 6: PLUG THE CABLE TO THE POD

<p>Plug the cable to the POD.</p>	
<p>After about 15 seconds, the logo will become white.</p> <p>After about 2 minutes, the logo will become blue.</p> <p>Your device should be visible in the Sailsense Fleet Management Platform within 5 minutes.</p>	
<p>In order to calibrate the engine, please call the support team and wait until the engine is properly configured.</p>	

NEED ANY HELP?

For any assistance, please contact support@sailsense.io

INSTALLATION NOTES

Date		Boat Name		
Client		Type of boat		
Installed by		Engine(s) type		
Engine1 hours		Engine2 hours		
	SERIAL	Location	Interface type	Led Color
HUB				
POD 1 (if applies)				
POD 2 (if applies)				
POD 3 (if applies)				
POD 4 (if applies)				

INTENDED USE OF THE PRODUCT (USER MANUAL)

HUB

The HUB is used to monitor and gather data from the main electrical systems aboard of leisure crafts. It can be interfaced with any NMEA2000® equipment, NMEA0183® equipment, J1939® engines, as well as analog systems such as batteries, gauges, switches, ... It can also record the GPS position of the boat.

The HUB serves as gateway between the boat systems and Sailsense' servers hosted in the cloud (through GSM network) as well as between Sailsense PODs (optional) and Sailsense' servers.

Technical specifications ¹

Model	HUB01
Use	Inside leisure boat
Altitude	up to 2000 m
Temperature range & Humidity	+5 °C to +40 °C 5-80 %RH related to voltage range with no condensation.
Storage temperature & storage relative humidity	-40 °C to +70 °C 5 to 80 % (no condensation)
Dimensions	149 / 129 / 44 mm
Input voltage & consumption	12V – 28V $\overline{\text{---}}$ (DC) 4,6 Wmax
Number of Analog inputs	3
Analog inputs measures	0-30V $\overline{\text{---}}$ (DC)
Number of CAN inputs	1
Box material	PC ABS V0
PCB material	FR4 UL94
Inner fuse protection	32V $\overline{\text{---}}$ (DC) 3A Fast blow
SuperCap	5VDC $\overline{\text{---}}$ - 40 °C - + 65 °C

¹ Sailsense Analytics SA/NV reserves the right to alter the characteristics of the products anytime.

POD

The POD is used to monitor and gather data from the main electrical systems aboard of leisure crafts. It can be interfaced with any NMEA2000® equipment, NMEA0183® equipment, J1939® engines, as well as analog systems such as batteries, gauges, switches, ...

The POD connects to Sailsense' servers hosted in the cloud (through WIFI network) through a Sailsense HUB.

Technical specifications ²

Model	POD01
Use	Inside leisure boat
Altitude	up to 2000 m
Temperature range & Humidity	+5 °C to +40 °C 5-80 %RH related to voltage range with no condensation.
Storage temperature & storage relative humidity	-40 °C to +70 °C 5 to 80 % (no condensation)
Dimensions	130 / 100 / 44 mm
Input voltage & consumption	12V – 28V $\overline{\text{DC}}$ 2,1 Wmax
Number of Analog inputs	3
Analog inputs measures	0-30V $\overline{\text{DC}}$
Number of CAN inputs	1
Box material	PC ABS V0
PCB material	FR4 UL94
Inner fuse protection	32V $\overline{\text{DC}}$ 3A Fast blow
SuperCap	5VDC $\overline{\text{DC}}$ - 40 °C - + 65 °C

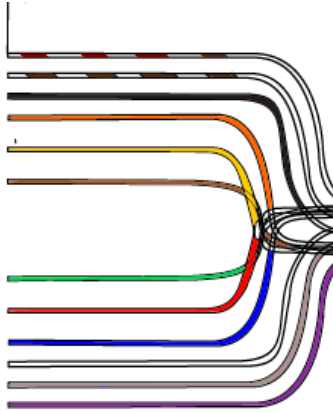
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ACCESSORIES ³

Cable

Specifications: UL 2904 with colors and tinned wires. Cable sheath resistant to oil and chemicals. Reference of the main circular connector: DD-18BFFA-LL7001

Color and pinout table:

Connector	PIN	
DD-18BFFA-LL7001	2	
DD-18BFFA-LL7001	4	
DD-18BFFA-LL7001	3	
DD-18BFFA-LL7001	5	
DD-18BFFA-LL7001	10	
DD-18BFFA-LL7001	12	
DD-18BFFA-LL7001	9	
DD-18BFFA-LL7001	1	
DD-18BFFA-LL7001	11	
DD-18BFFA-LL7001	13	
DD-18BFFA-LL7001	7	
DD-18BFFA-LL7001	N/A	

Fuse box

Specifications: fuse holder characteristics with automotive 3A fuses (ref:0287003.PXCN).

Any additional documents / instructions / manuals can be printed and/or sent on request.

³ Sailsense Analytics SA/NV reserves the right to alter the characteristics of the products anytime.

NAME AND ADDRESS OF MANUFACTURER

Sailsense Analytics SA

Place Sainte Gudule 5

1000 Brussels

Belgium.

Email : support@sailsense.io