

Sailsense Analytics

INSTALLATION PROCEDURE

HUB with NMEA2000 interface
POD for Yanmar engine with ECU

Revision history

| Revision | Date | Description | Author | Checked by |
|----------|------------|--|------------|------------|
| A | 21/06/2018 | Initial release | Nicolas Z. | Jeremie S. |
| B | 01/05/2019 | Small corrections | Nicolas Z. | Yannick V. |
| C | 25/06/2019 | Minor changes | Yannick V. | Nicolas Z. |
| D | 11/06/2020 | 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 |  |
| 940-0014 | Sailsense POD cable | x1 |  |
| 940-0016 | Sailsense "Y" Engine cable | x1 |  |
| 840-0001 | Waterproof cap | x1 |  |
| 828-0004 | Mounting screws | x6 |  |

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
- Additional wire to connect the batteries or gauges
- Crimps and vamp clamps

INSTALLATION OF THE HUB

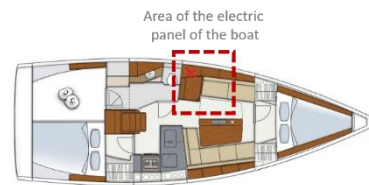
STEP 1: IDENTIFY THE BEST PLACE TO INSTALL THE HUB

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

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

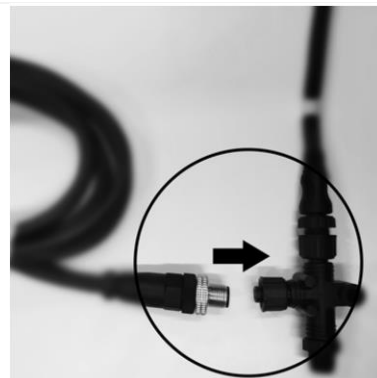
- a NMEA2000 T-connector
- a 12-24V DC power source (optional)
- the gauges you wish to monitor (optional)

Note: the ideal place for most monohulls / Catamaran and motorboats is behind the electrical panel.



STEP 2: CONNECT THE HUB CABLE TO THE NMEA2000 DATA SOURCE

Find a free entry on the NMEA2000 backbone of the boat and plug the NMEA2000 connector of the Sailsense HUB Cable.



For Raymarine or Simrad NMEA2000 backbones, you may need an adaptor cable (not provided by Sailsense).

STEP 3: CONNECT THE HUB 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 at the electrical panel.

For enhanced experience, we recommend to also connect the HUB to the 12V-24V power source of the boat. You can either connect the HUB before or after the main switch of the boat. In the first case, the HUB will always be ON. In the latter, it will be ON whenever the main switch is ON.

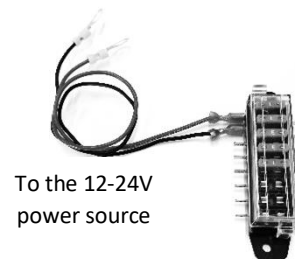
[!] Do not perform this step, if you do not have experience with installing electrical systems on boats. Make sure to take all the required security measures when working with electrical systems.

[!] 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 or of the electrical panel and plug it on the **left side** of the fuse holder.

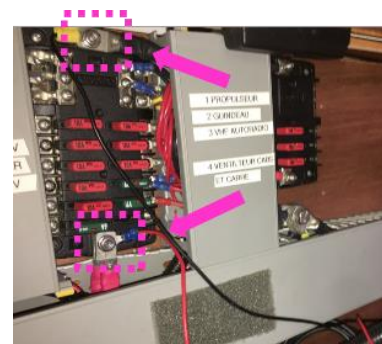
Drag a wire (not provided by Sailsense) between the (-) or ground of the boat batteries or of the electrical panel and plug it on the **left side** of the fuse holder.

Prepare the fuse holder



To the 12-24V power source

Connect to the 12-24V main switch



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

| BATTERY WIRE | SAILSENSE CABLE |
|--|--------------------|
| (+) of the batteries / DC power source | Red or Orange wire |
| (-) of the batteries / DC power source | Black or Grey wire |

Overall set-up

To the 12-24V power source



STEP 4: CONNECT THE CABLE TO GAUGES (OPTIONAL)

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

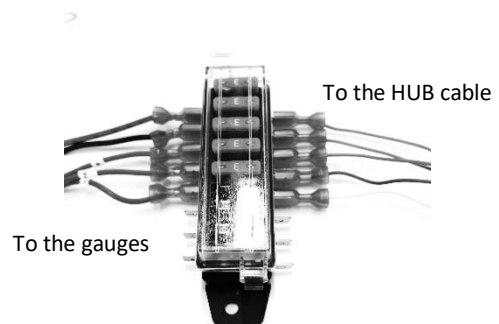
With a voltmeter, identify the wire at the back of your gauge that sends the tank level data.

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 |
|-----------|-----------------|
| Tank 1 | Green wire |
| Tank 2 | Blue wire |
| Tank 3 | White wire |


Overall set-up



STEP 7: 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 8: PLUG THE CABLE TO THE HUB

| | |
|---|--|
| <p>Plug the cable to the hub.</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> | |

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, close to the engine room.



STEP 2: CONNECT SAILSENSE "Y" ENGINE CABLE TO THE ENGINE

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

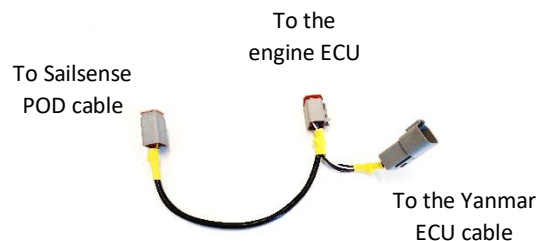
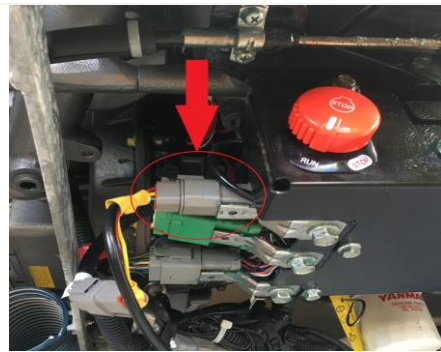
Locate the engine ECU on the side of the engine.

Unplug the 6 pin cable from the ECU. The cable is circle on the picture close by.

Plug the Sailsense Y Engine Cable to the ECU, where the cable was previously connected.

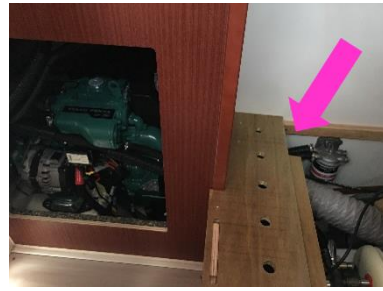
Plug the Yanmar cable to the other end of the Sailsense Y Engine Cable.

Plug the Sailsense POD Cable to the loose end of the Sailsense Y Engine Cable.



STEP 3: DRAG THE 'LOOSE END' OF THE POD CABLE TO THE COMPARTMENT UNDER THE BED

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



STEP 4: SCREW THE POD TO THE BOAT

Place the waterproof cap on the ethernet connector.



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 5: PLUG THE CABLE TO THE POD

Plug the cable to the POD.



Turn on the engine.

After about 15 seconds, the logo of the POD 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.

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 $\overline{\text{---}}$ - 40 °C - + 65 °C |

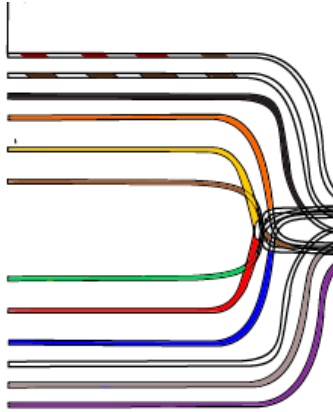
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ACCESSORIES ³

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

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Belgium.

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