

Sailsense Analytics

INSTALLATION PROCEDURE

HUB01 with NMEA2000 interface

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 | 21/09/2019 | Improvement and additional information for certification | Nicolas Z. | Yannick V. |
| D | 26/09/2019 | Add Model info. | Nicolas Z. | - |
| E | 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

| Part number | Description | Quantity | Picture |
|-------------|------------------------------------|----------|---|
| 101-0001 | Sailsense HUB | x1 |  |
| 102-0001 | Sailsense cable NMEA2000 & 7 wires | x1 |  |
| 704-0003 | GPS Antenna | x1 |  |
| 708-0001 | Fuse holder | x1 |  |
| 707-0001 | Fuses | 5x |  |
| 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
- Wire
- Crimps and vamp clamps

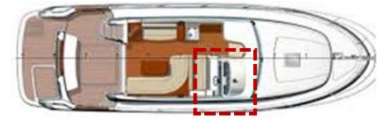
INSTALLATION OF THE HUB

STEP 1: IDENTIFY THE BEST PLACE TO INSTALL THE HUB

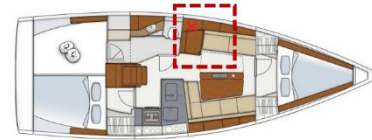
The HUB should be installed **inside** the boat.

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:

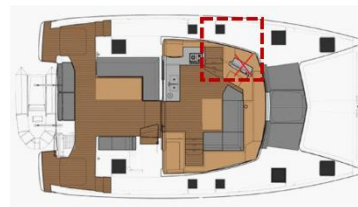
- a NMEA2000 T-connector
- a 12V  (12V Battery) or 24V  (24V Battery) DC power source (optional)
- the gauges you wish to monitor (optional)



Area of the electric panel of the boat



Area of the electric panel of the boat



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 with still enough room below access to the device connectors afterwards.**

We recommend installing the HUB

- As close a possible to the main circuit breaker.
- at least 1m above the water level
- at least 0.5m away from other metallic objects or from the water or fuel tanks

THIS SIDE UP



STEP 3: CONNECT THE GPS ANTENNA

Glue the GPS antenna **horizontally** on a flat and clean surface (with silicon).

The antenna should be placed inside the boat, as close as possible to the deck with its largest black surface pointing to the sky.

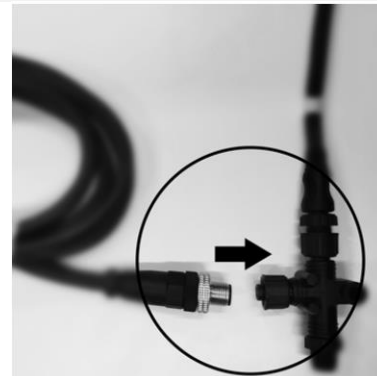


Screw the antenna to the HUB



STEP 4: CONNECT THE 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 cable.



And any adaptor for Raymarine or Simrad NMEA2000 backbones, you may need an adaptor cable.

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.

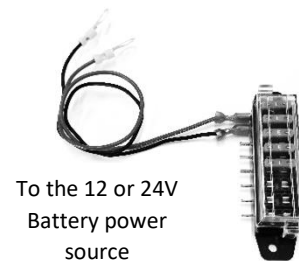
Optional: You can also connect the HUB to a secondary power source to extend the periods during which it will be ON.

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.

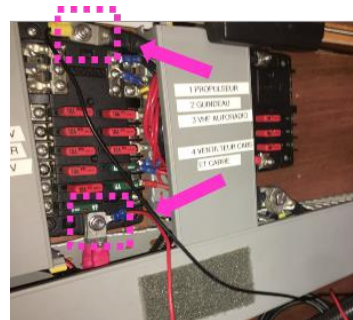
To add a secondary power source, drag a wire (not provided by Sailsense) between the (+) of the boat batteries and plug it on the **left side** of the fuse holder.

Drag a wire with a min of 0.5mmsq (not provided by Sailsense) between the (-) or ground of the boat batteries and plug it on the **left side** of the fuse holder.

Prepare the fuse holder



Connct to a 12-24V battery or to the electrical pannel

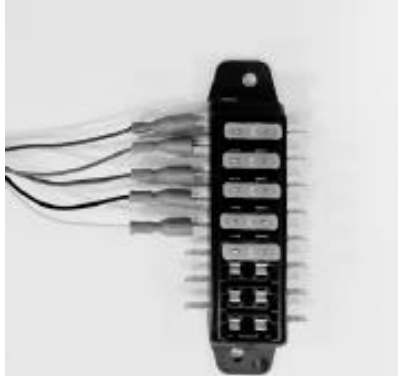


Connect the Sailsense cable to the **right side** of the fuse holder with the following color coding.

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

STEP 6: CONNECT THE CABLE TO GAUGES (OPTIONAL)


You can skip this step if you do not want to

| <p>monitor gauges data with the HUB.</p> | | | | | | | | | |
|--|--|-----------|-----------------|-------------|------------|----------------------------------|-----------|-----------------------------------|------------|
| <p>With a voltmeter, identify the wire at the back of your gauge that sends the tank level data.</p> <p>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.</p> |  | | | | | | | | |
| <p>Connect the Sailsense cable to the right side of the fuse holder with the following color coding:</p> | <table border="1"> <thead> <tr> <th>TANK WIRE</th> <th>SAILSENSE CABLE</th> </tr> </thead> <tbody> <tr> <td>Fuel tank 1</td> <td>Green wire</td> </tr> <tr> <td>Fuel tank 2 (or Water tank 1)</td> <td>Blue wire</td> </tr> <tr> <td>Water tank 1 (or Water tank 2)</td> <td>White wire</td> </tr> </tbody> </table> | TANK WIRE | SAILSENSE CABLE | Fuel tank 1 | Green wire | Fuel tank 2 (or Water tank 1) | Blue wire | Water tank 1 (or Water tank 2) | White wire |
| TANK WIRE | SAILSENSE CABLE | | | | | | | | |
| Fuel tank 1 | Green wire | | | | | | | | |
| Fuel tank 2 (or Water tank 1) | Blue wire | | | | | | | | |
| Water tank 1 (or Water tank 2) | White wire | | | | | | | | |

STEP 7: SCREW THE FUSE HOLDER

| | |
|--|--|
| <p>You can ignore this step if you have not performed step 5 or 6.</p> <p>If you have used the fuse holder as required in steps 5 or 6, screw the fuse holder to the boat.</p> <p>Make sure that Sailsense cable is long enough to be able to be plugged in 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> | |

MISCALLENEOUS

| LED behavior | |
|---------------------|---|
| Color | Description |
| Blinking white | Device is booting |
| White steady | Device is starting to operate |
| Blue steady | Device is connected on the network |
| Blinking red | <p>Error mode.</p> <p>Unplug the cable. After 2 minutes, plug it back. The device should boot normally. If the problem persists, contact Sailsense Support.</p> |
| No light | <p>The device is powered off or in sleep mode.</p> <p><i>Note: the device automatically enters sleep mode after 1 hour of inactivity. It will automatically wake-up at least every hour or in case of noticeable event (boat moving, voltage change, NMEA2000 signal, ...).</i></p> |

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 electronical 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 ⁻⁻⁻ (DC) 4,6 Wmax |
| Number of Analog inputs | 3 |
| Analog inputs measures | 0-30V ⁻⁻⁻ (DC) |
| Number of CAN inputs | 1 |
| Box material | PC ABS V0 |
| PCB material | FR4 UL94 |
| Inner fuse protection | 32V ⁻⁻⁻ (DC) 3A Fast blow |
| SuperCap | 5VDC ⁻⁻⁻ - 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 |

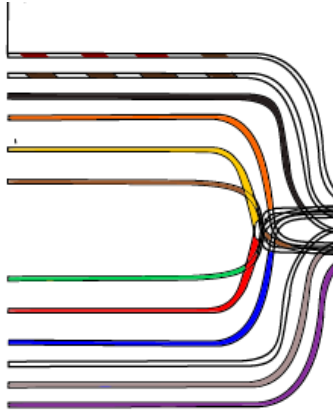
² Sailsense Analytics SA/NV reserves the right to alter the characteristics of the products anytime.

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

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