Sailsense Analytics

INSTALLATION PROCEDURE

HUB with NMEA2000 interface

Revision history

Revision	Date	Description	Author	Checked by
1.0	21/06/2018	Initial release	Nicolas Z.	Jeremie S.
1.1	01/04/2019	Small corrections	Nicolas Z.	Yannick V.
1.2	21/09/2019	Improvement and additional information for certification	Nicolas Z.	Yannick V.
1.3	26/09/2019	Add Model info.	Nicolas Z.	-
1.4	11/06/2020	Add user manual and safety information	Nicolas Z.	Yannick V.
1.5	01/06/2022	Update schematics with new cabling kit	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	
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 tools (screwdrivers, voltmeters, crimping tools…)

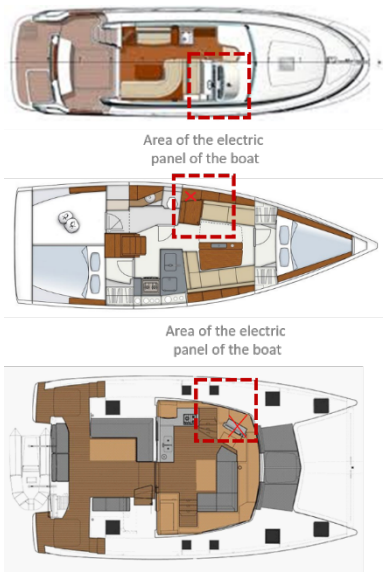
INSTALLATION OF THE HUB

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)



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 bellow access to the device connectors afterwards.**

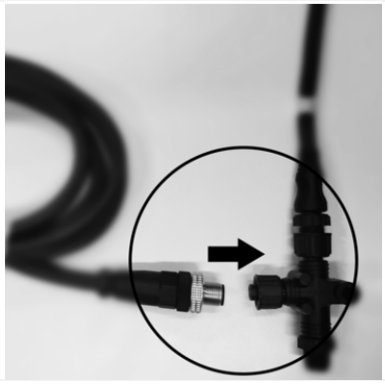
We recommend installing the HUB

- 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

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.

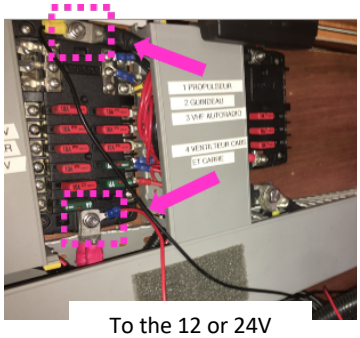
For example, you can connect the HUB to the boat batteries before or after the main switch. In the first case, the HUB will always be on. In the latter, it will be ON whenever someone uses the boat.

To add a secondary power source, connect the (+) and (-) of the batteries as follows.

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

Note: if you need additional wire length to connect to the batteries, always use at least 0.5mmsq wires (not provided by Sailsense)

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



To the 12 or 24V Battery power source

STEP 6: CONNECT THE CABLE TO ANALOG SOURCES (OPTIONAL)

You can skip this step if you do not want to monitor analog data such as bilge pump status or gauges or engine battery.

With a voltmeter, identify the wire of your analog data source that sends the data you would like to monitor.

Write down the value measured with your voltmeter. You will need to send it to Sailsense support team to calibrate your analog data source.

Warning: The voltage on the analog data source wire should never exceed 32V. Voltages above 32V will irreversibly damage the HUB.

Connect the data source wire to one of the available wires of the Sailsense cables, for example with a vamp clamp (not provided by Sailsense).

Analog input	SAILSENSE CABLE
Analog input 1	Green wire
Analog input 2	Blue wire
Analog input 3	White wire

STEP 7: 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.	

STEP 8: SEND YOUR CONFIGURATION TO SAILSENSE

After installation, send the following information **via whatsapp to +32 460 22 00 00** or **via email to** support@sailsense.io. This is mandatory for Sailsense to calibrate your devices.

Boat Owner Name	
Boat Name	
Device ID	
Red Wire	
Black Wire	
Orange Wire	
Grey Wire	
Green Wire (analog 1)	
Blue Wire (analog 2)	
White Wire (analog 3)	
NMEA 2000 connected ?	
ID of other Sailsense devices installed on board (e.g. POD)	

MISCALLENEOUS

LED behavior	
Color	**Description**
Blinking white	Device is booting
White steady (or with green blinks every 5 seconds)	Device is starting to operate
Blue steady (or with green blinks every 5 seconds)	Device is connected on the network
Blinking red	Error mode. Unplug the cable. After 2 minutes, plug it back. The device should boot normally. If the problem persists, contact Sailsense Support.
No light	The device is powered off. ***Check that the device is properly powered.*** *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, …).*

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 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, …

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 ⎓ (DC) 2,1 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

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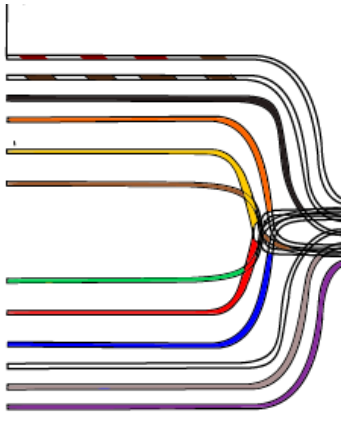
ACCESSORIES [3]

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



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

Cantersteen 47

1000 Brussels

Belgium.

Email : support@sailsense.io