NAVIFLOW

Econometro per imbarcazioni

Installation Manual

IMPORTANT

NaviFlow reserves the right to make changes to the following manual at any time and without any notice. For further assistance you can write to info@naviflow.it

Our device provides an estimate of the consumption for boats with one or two engines. Such consumption may not exactly reflect reality for several reasons. NaviFlow assumes no responsibility for damage of any kind to people or things and for the unlawful use of its products.

The language of reference of this manual is Italian. In case of differences between the original and any translation of the documentation, the Italian language version will be considered the official version.

NaviFlow products are designed for use in international waters and in coastal maritime areas administered by EU countries. NaviFlow declares that this product complies with the following standards, normative documents, and CE directives:

- **EC low voltage directive (2006/95 / EC)**
- **Electromagnetic Compatibility (2004/108 / EC)**
- **RoHs directive (2011/65 / EU)**
- **Contains FCC ID: 2AC7Z-ESP32**

It is assumed that the entire appliance has been installed and configured as indicated in this manual and that the system is ready for use. **Furthermore, it is presumable that the user has basic knowledge of terminology, nautical practice, basic mechanical electricity and IOS or Android phone devices**. Important parts of text to which the reader must pay attention are highlighted in this way:

The above warning sign is used to draw the reader's attention to a comment or important information. Warning: It is used when it's necessary to warn the user to proceed with caution to prevent the risk of injury and / or damage to the appliance or people.

NaviFlow is suitable for engines with a displacement greater than 60 HP.In case of installations on engines with a displacement of less than 60 HP, the consumption in liters may not reflect reality due to the reduced flow and so not detectable by our flow meters.On some types of Diesel systems, idle consumption may be higher than those declared by the manufacturers. This anomaly is caused by backpressures inside the fuel circuit due to:

• Excessive length of the fuel line

• Clogged filters

• Position of the tank which increases the difficulty of fuel aspiration

The reading range of our flow meters is from 3 l / h to 160 L / h

All firmware and software updates are free.

Manual Version 3.0 - 20/05/2023

Summary

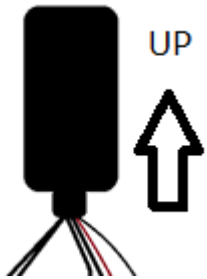
Symbols

SIMBOLO	DEFINIZIONE
	CE marking of European conformity
	Warning for correct disposal of the product in accordance with European Directive 2012/19/EU
RoHS	RoHS marking
	Indication of obligation to consult the manual
	Federal Communications Commission certification mark

Installation

Positioning

Control unit: The control unit must be placed in a compartment away from the tank, in a dry place, away from sunlight, regardless of the low voltages and waterproofing of the control unit. The cables must be positioned downwards, so as not to allow water and humidity to enter.



Position the control unit with the cables downwards, to prevent any water from entering the fairlead, as close as possible to the control console at a maximum distance of 4 meters.

Circuit corrosion is not covered under warranty.

Flow meter: It must be **positioned horizontally** with respect to the sea level, in a dry place, away from sunlight. If necessary, apply anti-corrosion products to the flow meter contacts. **Contact corrosion is not covered by warranty.** For a correct positioning, the sensor must be fixed to prevent it from crashing or taking blows due to the wave motion.

Diesel version: the "outward" flow meter must be positioned to the side of the pump and must be placed after the decanter with 2 meters of Petrol pipe from the latter. The flow meter on the "inward" line must be at least 2 meters away from the engine.

On some installations, the consumption measured at idle speed or without gear engaged, may be higher than the one declared by the manufacturer.

This anomaly is given by the presence of air or too much pressure in the forward circle, due to multiple reasons.
If this happens, move the flow meter to the side of the pump above the tank level or as high as possible. The tube that connects the decanter to the flow meter (pump side) must be at least two meters long as high as possible compared to the maximum tank level.

This reduces pressure exerted by the volume of liquid inside the pipes, reducing consumption to a minimum.

NaviFlow provides limited assistance for this type of anomaly.

In the Diesel version, the flow meter on the return line is gray color.

Power Supply

The connection must be made in such a way that, when the boat is at rest, the device is not turned on. "Rest" means when you are not physically on board of the boat.

The device has a consumption of around 1A, according to which version you are using.

We recommend connecting it in one of the following ways:

- To the power switch (so that when the unit is turned off the control unit will lose power)
- To the service battery, to avoid draining of the battery.
- With separate power supply (12-24V)

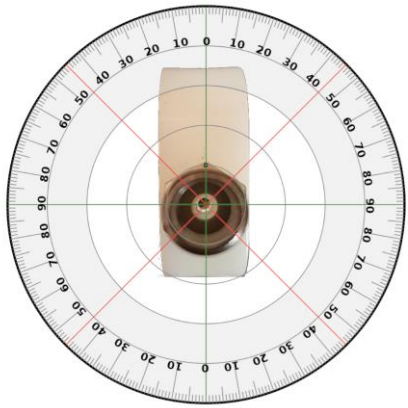
The system need a 2A fuse.

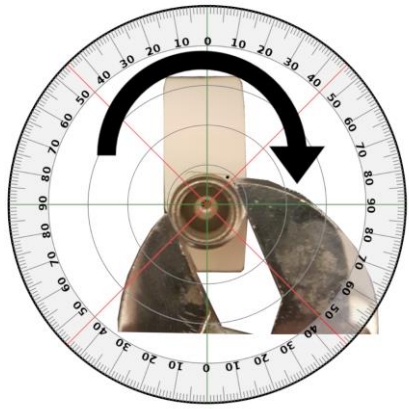
Do not install under the ignition key.
http://www.naviflow.it/funzionamento.html

NaviFlow assumes no responsibility for discharged batteries and related problems caused by this.

Hose Fitting Assembly

Apply the thread locker, soft type. Tighten the hose holder with your fingers to the end using only strength of your hands. At this point use a wrench to further tighten by an additional 40 °.





Do not tighten beyond 40 degrees as the thread could break.

The warranty does not cover replacement for flow meters with a broken thread.

Flow Meter installation

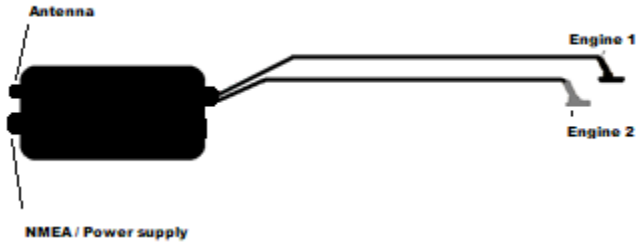
Follow the arrow indicated on the side of the flow meter to understand the direction of the flow.

In this case the tube that goes to the engine is on the right-hand side.
On the left-hand side there will be the tank.

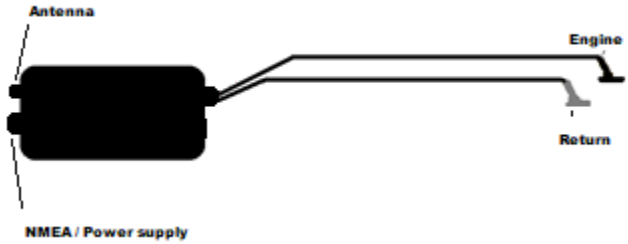
To secure the plastic connector to the flowmeter, replace the Screws currently present with longer length ones supplied in endowment.

Single petrol engine installation

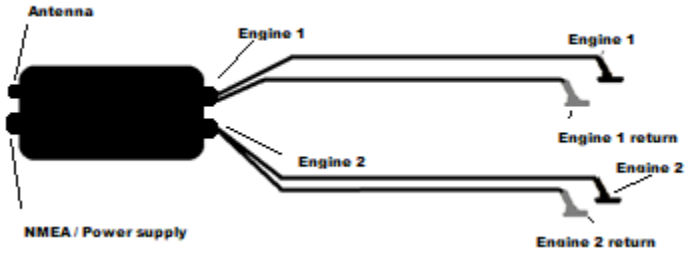
Dual petrol engine installation



Single diesel engine installation



Double diesel engine installation



Engine 1: Left engine looking at the bow
Engine 2: Right engine looking at the bow

Important!

In 550 L/h Diesel version the return line, has a white signal before the connector.

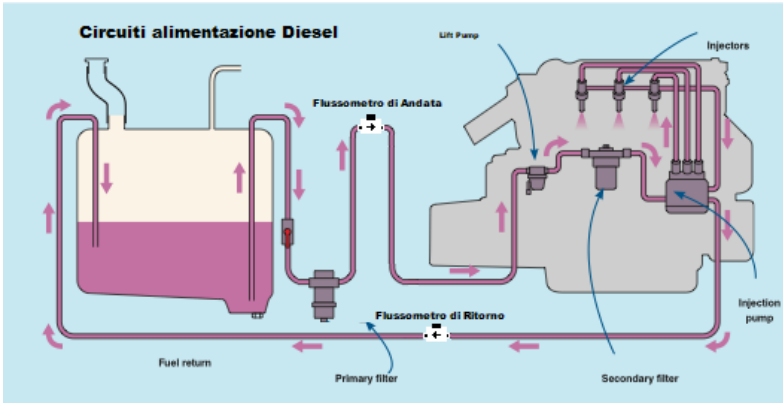
Use steel clamps to tighten the fuel pipe on the flow meter tube holder.For models with removable flow meters, remove the adhesive film from the connector cover rubber.

Connect the JST plug and cover it with the cap. Position the flowmeter **HORIZONTALLY with respect to the sea level**.

Diesel Engine

In Diesel engines, the flow meter (return line) must be positioned as far as possible from the engine outlet.

In case of non-linear readings, it is recommended to install a filter before the flow meter, to remove the turbulence created after nebulization of the fuel.



This reduces the pressure exerted by the volume of liquid inside the pipes, reducing consumption to a minimum.

In case of double motorization, the **installations on the two motors must be symmetrical** to the flow meters, positioned in the same way and at the same distances.

The flow meters MUST be positioned HORIZONTALLY with respect to the sea level.

Petrol Engines

The flow meter must be **positioned horizontally** after the decanter filter.

NaviFlow provides an estimate of the consumption of one or two engines. The consumption may not exactly reflect reality for several reasons.

NaviFlow assumes no responsibility for damage of any kind to people or things.

The flow meter has a reliable reading above 3 L / h. The fuel consumed with the engine at idle speed may not be fully calculated, especially on small displacement engines.

NaviFlow APP

The app it's free and can be downloaded from Apple Store and Google Play.

The NaviFlow App works via Bluetooth 4.1, at a maximum distance of 3 meters and can be activated on your device (WITHOUT THE NEED TO PAIR THE DEVICE !!!).

We recommend keeping the Wi-Fi off while using the APP. Start NaviFlow and name your device on the first screen. Once a name has been assigned (usually the name of your boat), restart the APP.

As you start browsing, on the first use, the app will required the password that corresponds to the last 4 digits of the serial number found on the box or on the control unit box.

NMEA 2000

The NaviFlow X version provides the NMEA 2000 option. This purchase option requires the presence of a NMEA 2000 connector which allows connection to your own network. Once connected, the tool sends the readings of liters per hour consumed and the engine hours of each individual engine. In the dual engine version, consumption, and engine hours of the two

engines are sent separately. The control unit does not require any setting.

Connection cables are not included in the kit and must be purchased separately.

The nmae network also provides the power.

In some configurations it is necessary to start the control unit a few seconds (30-40) after starting the reading tool (Chart plotter or Sounder) to make the latter detect the NaviFlow control unit.

Control Unit Monitoring

The NaviFlow X version is supplied with a Wi-Fi interface, by connecting to the Hotspot (NF_XXXXXXXXXXX). **Disable data line before use it.**

It is preferable to restart the control unit after using the interface

The Hotspot password is: navi + "last 4 digits of the serial"
Example: navi1234

This interface is used to monitor flow meters, to perform updates, read adjustments and reset the engine hours.

On the browser, connect to the following URL:

http://192.168.4.1

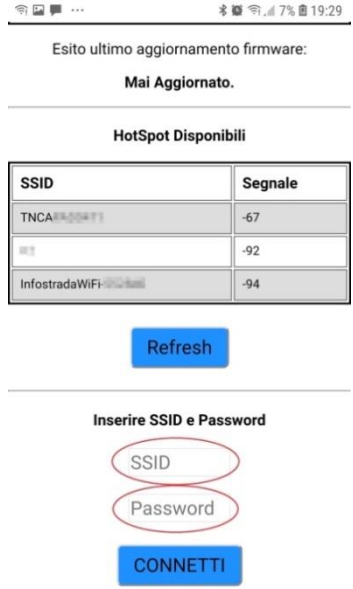
Reading Configuration (Home):
In this section, it is possible to automatically calibrate the readings based on the feedback of the fuel refilled, or to manually set the correction factor.

Sistema:
In this section you can monitor the flow meters separately and get information about the processor temperature, CPU number and speed.

Update:
In the Update section, connect to an available Hotspot by entering the **SSID** and **Password**. The Hotspot to which you connect **MUST NOT HAVE SPACES IN THE NAME (SSID).**

Control Unit Updates

Go to the "Update" page



Click on your Hotspot and enter the password

(optional) - Once connected, add an email address to receive the update's outcome.

Click on the Update button and wait for the LED positioned on the control unit to come on again, reconnect and check the outcome of the update.

Troubleshooting:

The APP does not connect to the control unit

Possible causes:

The control unit is not powered (Blue LED off)
Check the power connections.

If that does not work:
The control unit might be faulty. Please contact us for support.

The APP connects but the data is not provided.

Possible solutions:

If the LED light does not FLASHING every second:

Check the connection of the flow meter to the control unit and if necessary, try using WD-40 on the pin.

If the LED light FLASHES every second:

The control unit are reading data, the problem may be with the smartphone, reinstall the app or try another phone device.

If that does not work, the control unit might be faulty. Please contact us for support:

http://www.naviflow.it/contatti.html

LED Communications

LED on: The control unit has booted and is ready to send data.

Led 3 Fast blinks: The control unit has booted and connected to a device.

Led 4 Fast blinks: The control unit has disconnected from the device.

Led off 1 Fast blink every second: The control unit reads the fuel passing through the sensor.

Warnings

NaviFlow assumes no responsibility for damage caused by misuse of its products.

This equipment is not suitable for use in places where it is children are likely to be present.

The control unit must be positioned in a dry place and should not be exposed to sunlight.

The control unit must be stored in a separate compartment away from the tank.

The control unit must be positioned at a safe distance (approximately 10 meters) from people wearing pacemakers or any other device capable of safeguarding human lives, which may be influenced in some way by radio waves.

Wait at least 20 seconds between switching off the engine and switching off the control unit to ensure data is saved correctly.

Disposal

 **The packaging is made with environmentally friendly materials, which can be disposed of through the appropriate collection and recycling centers.**

 **Do not dispose of the control unit together with normal domestic waste.**

According to the European directive 2012/19 / EU, used electronic devices must be collected separately and sent to a center for ecological recycling.

For the disposal of used appliances, contact the local municipal waste collection agency or the department of public works.

Support

Raise a support ticket by emailing: info@naviflow.it, and accurately describe the issue.

Send to:
NaviFlow di Emiliano Mazziotta
Viale Luigi Moretti, 16 int. 6
00163 - Rome
Italy

Free Toll Number 800 13 17 87

Email: info@naviflow.it
Contact: https://www.naviflow.it/contattaci