YACHT ⚓ SENTINEL

YS PRO
Installation Manual

ENGLISH

Welcome
to the YS PRO installation manual

This manual will provide everything you need to install and configure your YS PRO. The YS PRO installation must be completed by a certified electrician or a person with advanced knowledge in boat electronic installation. For more detailed information please visit our help center or reach out to our support team via email or Whatsapp.

Website: www.yacht-sentinel.com

Email: support@yacht-sentinel.com

Whatsapp: +33 7 82 64 64 57

CONTENTS

IMPORTANT INFORMATION

SAFETY WARNINGS

This product must be installed and operated according to the provided instructions. Failure to follow these instructions could lead to personal injury, damage to your vessel, and/or suboptimal product performance.

Warning: High voltage

This product operates with high voltage. Any adjustments require specialized service procedures and tools that are available only to qualified service technicians. There are no user-serviceable parts or adjustments. The operator should never remove the cover or attempt to service the product.

Warning: input and output channels

The YS PRO's input and output channels facilitate the creation of a straightforward digital monitoring/control system. Since device connections are beyond Yacht Sentinel's control, the company will not be liable for any damage or injury caused by incorrect connections. Input and output device connections should only be performed by someone knowledgeable about vessel digital data sources and digital switching systems. If you have any doubts or need further advice, please contact Yacht Sentinel technical support.

Warning: potential ignition source

This product is NOT approved for use in hazardous or flammable atmospheres. Do NOT install it in such environments (e.g., engine rooms or near fuel tanks).

Warning: Positive ground systems

Do not connect this product to a system with a positive grounding.

Warning: Product grounding

Before applying power, ensure the product is correctly grounded according to the provided instructions.

Warning: Power supply voltage

Connecting this product to a power supply that exceeds the specified maximum voltage may cause permanent damage.

Warning: Multiple battery connection

The YS PRO can monitor multiple battery voltages. All monitored batteries MUST share the same negative (-) terminal as the main battery at all times.

Caution: Power supply protection

Ensure that the power source is adequately protected by a suitably-rated fuse or thermal circuit breaker during installation.

Caution: Service and maintenance

This product contains no user-serviceable components. Please refer all maintenance and repair needs to Yacht Sentinel customer support. Unauthorized repairs may affect your warranty.

DISCLAIMER

Keep away from children.

If a technical issue persists, please contact us:

Email: **support@yacht-sentinel.com**

Whatsapp: **+33 7 82 64 64 57**

The use of YS PRO is at the user's own risk. Please visit our website : www.yacht-sentinel.com to review our Terms and Conditions.

Yacht Sentinel does not warrant that this product is error-free or that it is compatible with products manufactured by any person or entity other than Yacht Sentinel.

Yacht Sentinel is not liable for damages or injuries resulting from your use or inability to use the product, interactions with products

manufactured by others, or errors in third-party information used by the product.

Yacht Sentinel YS PRO and its accessories do not guarantee or insure against property damage, theft, injury, or similar incidents. Yacht Sentinel cannot be held responsible if any such events occur.

WARRANTY

All new goods supplied by Yacht Sentinel Limited, Yacht Sentinel France and its licensed dealers have a 12 month warranty from the date the goods were delivered (unless otherwise stated). This warranty does not affect your statutory rights as a consumer. If your unit develops a defect within the 12 month warranty period, please contact us for warranty service.

Please be aware that the warranty does not cover defects in the goods resulting from abnormal wear and tear, intentional damage, accidents, negligence by you or any third party, or use outside of its intended purpose. Additionally, failure to follow the manufacturer's or supplier's instructions, or any modifications or repairs performed without prior written approval from Yacht Sentinel Limited or Yacht Sentinel France, will void the warranty.

TECHNICAL ACCURACY

To the best of our knowledge, the information in this document was accurate at the time of publication. However, Yacht Sentinel cannot be held liable for any inaccuracies or omissions. Furthermore, our policy of continuous product improvement may lead to changes in specifications without notice. Consequently, Yacht Sentinel cannot accept responsibility for any discrepancies between the product and this document. Please visit the Yacht Sentinel website: www.yacht-sentinel.com to ensure you have the most current version of the documentation for your product.

PUBLICATION COPYRIGHT

DOCUMENT INFORMATION

DOCUMENT INFORMATION

This document contains essential information for installing your YS PRO.

Inside, you will find guidance to help you:

- Plan your installation and ensure you have all the necessary equipment
- Install and connect your product within a broader system of marine electronics
- Troubleshoot issues and access technical support if needed

You can download this document in PDF format from:
www.yacht-sentinel.com/user-manual/ys-pro-installation

COMPLEMENTARY DOCUMENTATION

You may need complementary documentation containing important information about the YS PRO accessories and Sentinel Cam 2.

For the installation and pairing of Yacht Sentinel Zigbee sensors with your YS PRO, please refer to the accessories manual. The accessories manual can be downloaded in PDF format from:
www.yacht-sentinel.com/user-manual/accessories

For the installation and pairing of the Sentinel Cam 2, please refer to the Sentinel Cam 2 manual. The Sentinel Cam 2 manual can be downloaded in PDF format from:
www.yacht-sentinel.com/user-manual/cam-2

DOCUMENT ILLUSTRATIONS

Your product and its user interface may vary slightly from the illustrations in this document, depending on the product variant and date of manufacture. All images are for illustrative purposes only.

YACHT SENTINEL ECOSYSTEM

YS PRO ACCESSORIES

A large range of wireless accessories can be added to YS PRO.

All accessories are wireless. Range is 7 to 15 meters for zigbee accessories. Range can be affected by the bulkheads and specific materials.

Sensors are monitored 24/7. Battery level and signal strength of each sensor can be monitored via the YS PRO touchscreen. Alerts from any sensors will automatically turn on the 85db built-in siren included in the bilge sensor, the smoke sensor and/or the heat sensors.

For YS PRO accessories installation, please refer to the Accessories Manual.

You can purchase our sensors from our distributors or directly from our website: www.yacht-sentinel.com/ys-pro-accessories/.

SENTINEL CAM 2

The Sentinel Cam 2 requires a stable WI-FI connection to work. Make sure that your WI-FI network is always working when you need your camera to be active. If you wish to use YS PRO as a WI-FI network, you will need to insert a SIM card in the YS PRO (not provided).

The Sentinel Cam 2 is fullty integrated within the YS PRO app. For easy app integration, we recommend installing the YS PRO first.

For installation, please refer to the Sentinel Cam 2 manual. You can purchase the Sentinel Cam 2 from our distributors or directly from our website: www.yacht-sentinel.com/products/sentinel-cam

PRODUCT AND SYSTEM OVERVIEW

IMPORTANT TO KNOW

YS PRO collects real-time data from your boat and relays it via 3G/4G. YS PRO contains an embedded SIM card, during app activation you will be asked to choose a 3G/4G subscription depending on your geographic location.

It is possible to connect YS PRO to another internet source by inserting a SIM card or connecting the YS PRO via ethernet or WI-FI. YS PRO can also be used as a WI-FI hotspot/range extender if a SIM card is inserted or if connected to WI-FI.

YS PRO can be connected to a large number of wireless accessories. These accessories can be added during installation or later. YS PRO only accepts Yacht Sentinel© accessories.

Some sensors have a built-in siren. If an intrusion is detected, YS PRO will trigger all sirens, even those of sensors not causing the alarm.

YS PRO can be powered by 12V, 24V or 48V. In case YS Pro is disconnected from the main battery, its internal battery lasts 12 to 24h.

When the boat is not in use (NMEA 2000 is off), YS PRO has a low power consumption while monitoring 24/7:

- Up to 3 battery banks
- Integrated alarms
- Up to 3 voltage detectors
- All the wireless accessories

YS PRO has an internal relay to remotely update NMEA 2000 data on request from the app. This relay will power the NMEA 2000 network of your boat and automatically turn it off after 5 minutes.

PARTS SUPPLIED

YS PRO Central Unit

4G/GPS Antenna

Alternative Antenna

Power cable

x2 Zigbee/WI-FI Antennas

Voltage detector

Ethernet Waterproof mounting

x4 Stainless Screws

YS PRO Mounting Template
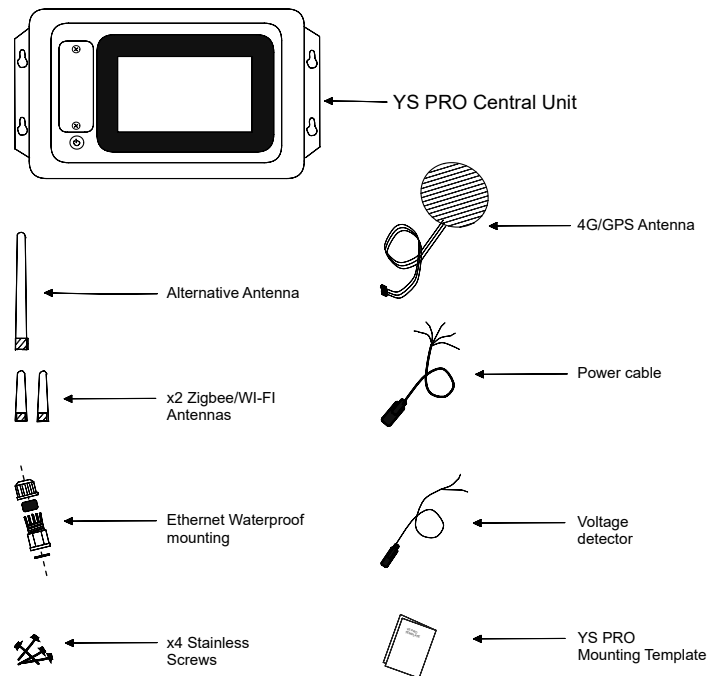
PRODUCT OVERVIEW INTERFACE

4G/GPS Antenna

Alternative

WI-FI

Zigbee

optional SIM card

Power button

Ethernet

Power

4x CAN

Modbus

PRODUCT DIMENSIONS

30 cm

4 cm

25,5 cm

14,5 cm

6,8 cm

24,5 cm
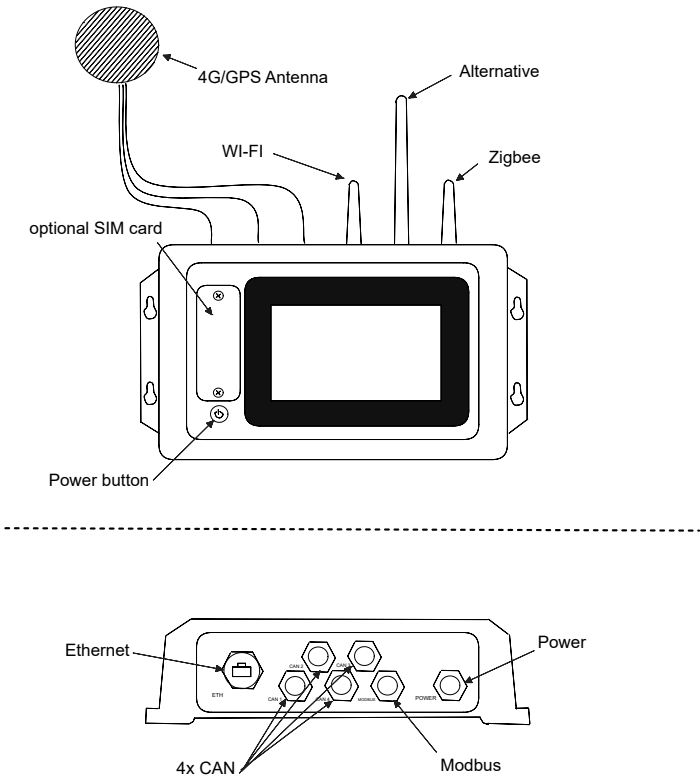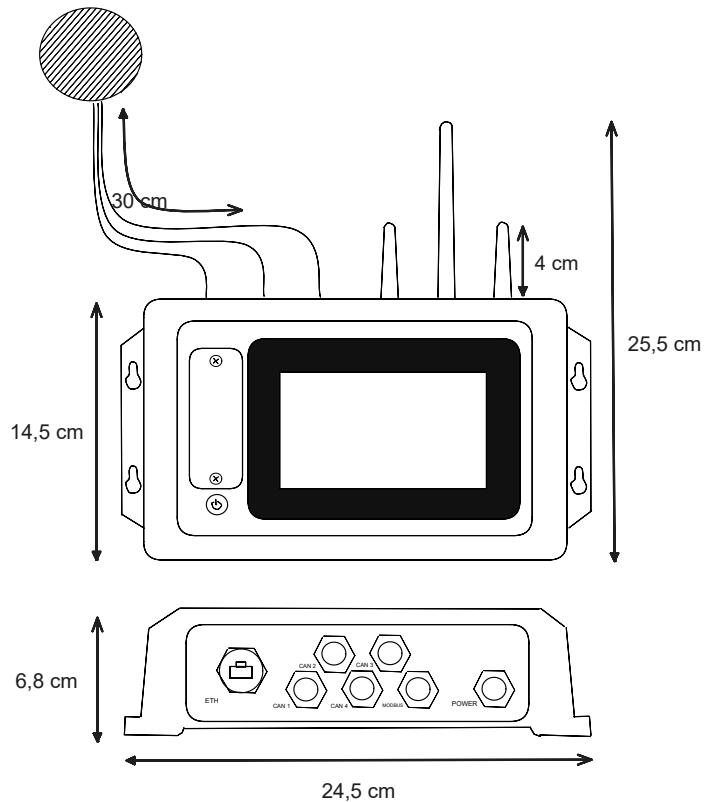
LOCATION REQUIREMENTS

WARNINGS AND CAUTIONS

Before proceeding, please ensure that you have read and understood the warnings and cautions outlined in the Important Information section of this document.

Warning: Potential ignition source
This product is NOT approved for use in hazardous or flammable atmospheres. Do NOT install it in such environments (e.g., engine rooms or near fuel tanks).

YS PRO LOCATION REQUIREMENTS

This product is not suitable for installation in above-deck locations unless placed in a suitable protective enclosure. In this case, it is crucial to avoid using enclosure materials that can significantly impact wireless signals, such as conductive materials like steel or carbon fiber.

WIRELESS LOCATION REQUIREMENTS FOR OPTIMUM PERFORMANCE

Ensure that all wireless devices in your system are positioned to reliably receive and transmit wireless signals. Various factors can affect wireless performance, including physical obstacles and certain vessel structures and materials. Before drilling into any mounting holes, it's essential to assess a product's wireless performance at the intended installation location.

Vessel construction and materials

Whenever feasible, mount products on surfaces made of GRP (fiberglass resin or foam) or dry wooden bulkheads. Avoid mounting wireless products directly on conductive materials, as they can significantly affect wireless signal performance. These materials include carbon fiber, kevlar, aramid (including sails made from these materials), aluminum, and steel.

In installations involving conductive materials, if possible, use an accessory pole mount or deck mounting kit to mount the wireless product. Maintain a clearance of at least 10 cm (3.9 in) to minimize the ground effect from conductive materials. This applies to both transmitters and displays. If relocating the product resolves the issue, consider creating an antenna clearance hole behind the unit after finalizing its position and mounting.

Wireless signal path considerations

Wireless performance may degrade when the signal passes through a bulkhead containing power cables. Additionally, crew members (especially when wet) can obstruct wireless signals if their bodies intersect the signal area between wireless sensors and associated displays.

Signal strength optimization
Experiment with the placement of wireless products to achieve optimal performance and a clear signal path. Keep the distance between wireless products to a minimum, ensuring it does not exceed the maximum stated range of each device. Note that wireless performance diminishes over distance, potentially leading to slow connection speeds, signal dropouts, or failed connections.

For optimal results, ensure a clear, direct line-of-sight between wireless products. Any physical obstructions can degrade or block wireless signals.

Interference and equipment placement

Interference from other wireless devices can affect your products. Use a third-party wireless analyzer tool or smartphone app to determine the best wireless channel to avoid interference. Install wireless products at least 1 m (3 ft) away from other wireless-enabled devices, transmitting products in the same frequency range, and any other electrical, electronic, or electromagnetic equipment that may cause interference.

MOUNTING SURFACES REQUIREMENTS

When choosing a mounting surface, consider the following:

- Ensure the product will be securely supported on a flat surface
- Avoid mounting units or cutting holes in areas that may compromise the vessel's structure
- Allow ample space around the product for proper ventilation and access
- Check that there are no obstructions behind the mounting surface that could be damaged during drilling

CABLE ROUTING REQUIREMENTS

Ensure you have planned the cable routing and confirmed that there is enough space for connecting all required cables:

- Unless specified otherwise, maintain a minimum cable bend radius of 100 mm (3.94 in)
- Use cable supports as needed to prevent strain on connectors

ELECTRICAL INTERFERENCE

Choose a location sufficiently distant from potential sources of interference, including motors, generators, and radio transmitters/receivers.

POWER SUPPLY AN EQUIPMENT CONNECTIONS

Opt for a location adjacent to the vessel's DC power supply and near your other equipment source, typically the NMEA 2000 backbone or distribution board for voltage detection. This minimizes cable runs.

RF INTERFERENCE

To mitigate Radio Frequency (RF) interference from certain third-party external electrical equipment with GNSS (GPS), AIS, or VHF devices, ensure that the external equipment is adequately insulated and does not emit excessive electromagnetic interference (EMI).

To minimize interference:

- Keep the external equipment as far away from GNSS (GPS), AIS, or VHF products and their antennas as possible
- Ensure that power cables for external equipment are separate from power or data cables for these devices

COMPASS SAFE DISTANCE

When choosing a suitable location for your product you should aim to maintain the maximum possible distance between the product and any installed compass. This distance should be at least 1 m (3 ft) in all directions.

For smaller vessels it may not be possible to achieve this distance. In this situation ensure that the compass is not affected by the product when it is powered on.

ANTENNAS AND CONNECTORS SPACE

Make sure that your location will allow enough space for the antennas on the top and the cables on the bottom of the YS PRO (minimum space is given by the mounting template):
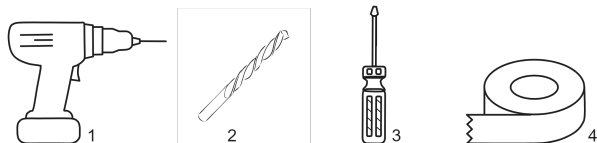
- 12 cm / 5 inch on top of the YS PRO
- 10 cm / 4 inch on the bottom of the YS PRO

For optimum performance, the GPS antenna shall be installed flat, on a horizontal surface.

MOUNTING

TOOLS REQUIRED

The following tools are required for installation.

1. Power drill
2. Drill bit (suitable for pilot holes)
3. Pozidriv screwdriver
4. Masking / adhesive tape

MOUNTING THE YS PRO

Follow the instructions below to mount the YS PRO.

Before proceeding with mounting, ensure you have:

- Chosen an appropriate location, taking into account the location specifications detailed in this manual
- Recognized the pertinent cable connections and planned out the path for the cables
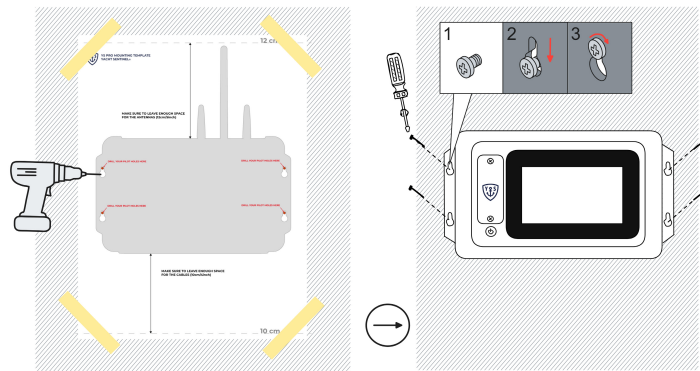
1. Fix the supplied mounting template to the chosen location using masking or self adhesive tape
2. Drill 4 holes as indicated on the template to accept the fixings. Make sure to use a suitable pilot holes size
3. Remove the mounting template
4. Screw the screws approximately halfway into the holes
5. Place the unit over the screws and push down to engage the keyhole slots
6. Fully tighten the screws using the pozidriv screwdriver

ATTACH THE ANTENNAS TO YS PRO

Alternative

WI-FI / Zigbee

WI-FI / Zigbee

4G 4G GPS
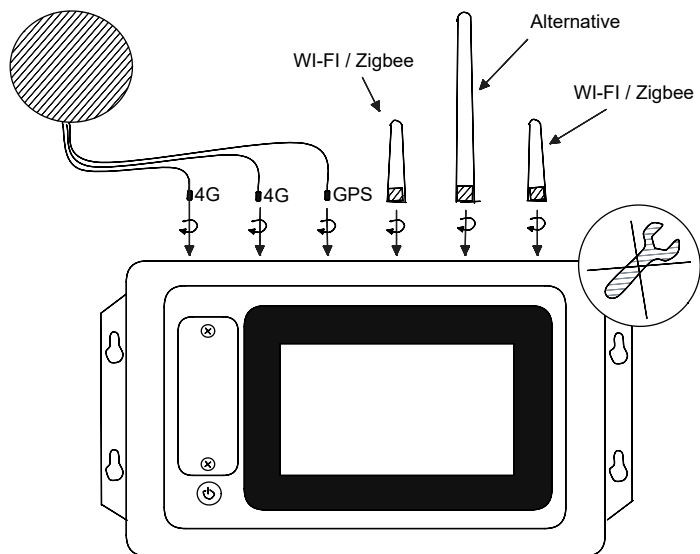
ATTACH THE 4G/GPS ANTENNA TO YOUR BOAT

Remove the sticker below the 4G/GPS antenna and place it on the desired location. **Install the antenna flat, on a horizontal surface.**

CABLES AND CONNECTION - GENERAL INFORMATION

CABLE TYPE AND LENGTHS

It's crucial to employ cables of the suitable type and length. Verify that they meet the necessary standards in terms of quality and gauge for their designated use. For instance, longer power cable stretches might necessitate larger wire gauges to mitigate voltage drop over the distance.

STRAIN RELIEF

Use adequate strain relief for cabling to ensure that connectors are protected from strain and will not pull out under extreme sea conditions.

CABLE SHIELDING

Ensure that cable shielding is not damaged during installation and that all cables are properly shielded.

CONNECTING CABLES

Follow these steps when connecting cable(s) to your product:

1. Make sure the power supply of the vessel is turned off
2. Confirm that the device you're connecting has been installed following the provided installation instructions
3. With the correct orientation, firmly push cable connectors onto the corresponding connectors
4. Activate any locking mechanisms to ensure a secure connection
5. Ensure that any exposed wire connections are adequately insulated to prevent short circuits and corrosion caused by water infiltration

POWER CABLE OVERVIEW

POWER CABLE OVERVIEW

The YS PRO power cable is composed of 5 smaller wires. Each wire can be identified by its color and the label.

- BLACK: Main battery (-)
- RED: Main Battery (+)
- WHITE: Second Battery (+)
- GREEN: NMEA 2000 (Relay IN) + Third Battery (+)
- YELLOW: NMEA 2000 (Relay OUT)

YS PRO is able to monitor and use any electrical source with a voltage of 12V, 24V or 48V.

Main Battery Connection

The black and red wires are used to power the YS PRO. From this power source, the YS PRO is also able to monitor the main battery voltage. Main battery monitoring is available 24/7.
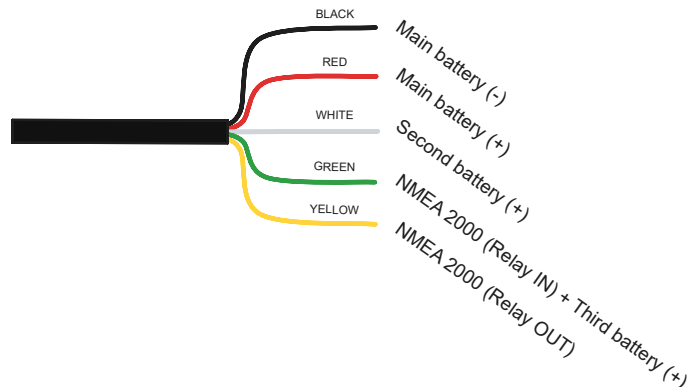
Secondary Battery Monitoring

The white wire can monitor the voltage of a second battery on your boat. No additional power consumption will be drawn. Second battery monitoring is available 24/7.

NMEA 2000 Relay + Third Battery Monitoring

The NMEA 2000 instruments are sometimes powered down while the boat is not in navigation. To allow YS PRO to collect data when away from your boat, the integrated relay has the ability to power the NMEA 2000 network from the user app. After 5 minutes of operation, the YS PRO will turn off the relay.

The YS PRO also monitors the voltage of the NMEA 2000 relay power source 24/7 via the green wire.

BLACK — Main battery (-)
RED — Main battery (+)
WHITE — Second battery (+)
GREEN — NMEA 2000 (Relay IN) + Third battery (+)
YELLOW — NMEA 2000 (Relay OUT)

POWER SOURCE CONNECTION

BATTERY CONSUMPTION

YS PRO is composed of two processors to ensure low power consumption.

Normal state

In normal state, at least one of the CAN bus is active which automatically keeps the main processor awake. In this state, YS PRO will keep all features running and will send data via 3G/4G at high frequency. In this state, YS PRO power consumption remains under 3W.

Power saving state

If all the CAN buses are inactive, YS PRO will automatically turn off the main processor and enter a power saving state. YS PRO will keep a power consumption under 0.3W. All the security alarms will still be active (geofencing, battery, tilt, G-shock, wireless accessories, etc.). If something wrong is detected, YS PRO will awaken the main processor in order to trigger the alarm and send an alert.

Exception: WI-FI hotspot

If the YS PRO is used as a WI-FI hotspot, it will stay in normal state. To turn the YS PRO in power saving state, the WI WI-FI hotspot needs to be turned off via the YS PRO touch-screen.

POWER SOURCE REQUIREMENTS

YS PRO can be powered by a battery with a voltage of 12V, 24V or 48V. This can be achieved by connecting directly to a battery or via the distribution panel.

POWER SOURCE IN-LINE FUSE

The YS PRO device includes an internal fuse for safety, however we recommend using an additional fuse on the cable connected to the main battery.
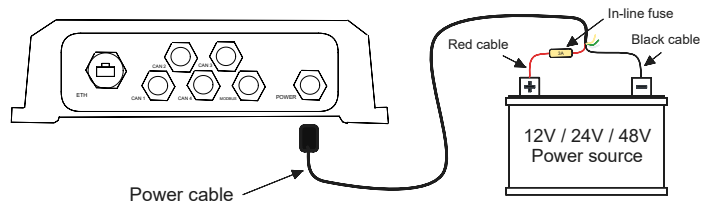
In-line fuse rating: 3A

POWER CONNECTION OVERVIEW

Only use the power cable supplied with the product. Do NOT use a power cable designed for, or supplied with, a different product.

IMPORTANT: When planning and wiring, take into consideration other products in your system, some of which (e.g. sonar modules) may place large power demand peaks on the vessel's electrical system, which may impact the voltage available to other products during the peaks.

The information provided below is for guidance only, to help protect your product. It covers common vessel power arrangements, but does NOT cover every scenario. If you are unsure how to provide the correct level of protection, please consult an authorized dealer or a suitably qualified professional marine electrician.


In-line fuse
Red cable
Black cable
ETH   CAN   CAN   WIRELESS   POWER   CAN 1   CAN 0
12V / 24V / 48V Power source
Power cable

POWER DISTRIBUTION

YS PRO can be connected to the distribution panel or directly to the battery, depending on your boat configuration.

Connection to the distribution panel

Connect the YS PRO directly to the positive (+) and negative (-) bar of the distribution panel, upstream circuit breakers or switches.

3A In-line fuse

3A

Red Cable   Black Cable
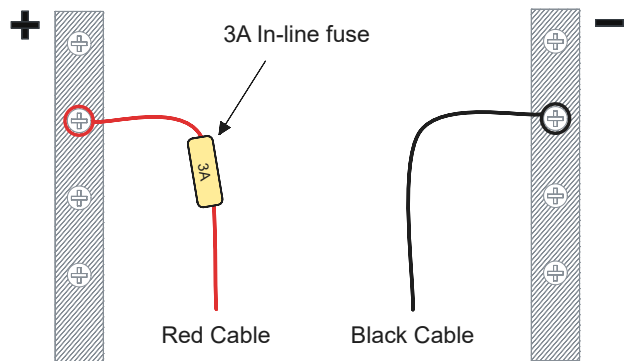
Direct connection to the battery

Connect YS PRO directly to the battery, upstream circuit breakers or switches.

3A In-line fuse

3A

Red Cable
Black Cable

12V / 24V / 48V
Power source
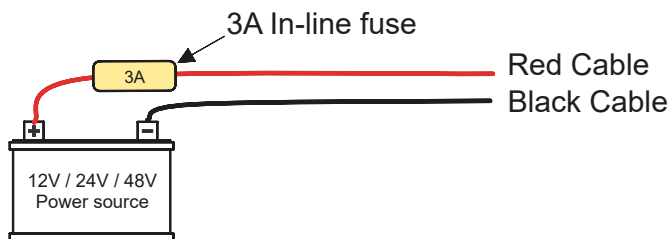
POWER CABLE EXTENSION

If you need to extend the length of the power cable supplied with your product, ensure you observe the following advice:

- The main battery cable (black and red) should be run as a separate, single length of 2-wire cable from the unit to the vessel's battery or distribution panel.
- Ensure that the extension cable is at least as the same gauge as the YS PRO power cable. Min gauge: 16 AWG. Max cable length: 20m.

MORE INFORMATION

It is recommended that best practice is observed in all vessel electrical installations, as detailed in the following standards:

- BMEA Code of Practice for Electrical and Electronic Installations in Boats
- NMEA 0400 Installation Standard
- ABYC E-11 AC & DC Electrical Systems on Boats
- ABYC A-31 Battery chargers and Inverters
- ABYC TE-4 Lightning Protection

NMEA 2000 RELAY CONNECTION

YS PRO NMEA 2000 RELAY CHARACTERISTICS

The NMEA 2000 instruments are usually powered down while the boat is not in navigation. To allow YS PRO to collect data when away from your boat, the integrated relay has the ability to power the NMEA 2000 network from the user app. After 5 minutes of operation, the YS PRO will automatically turn off the relay.

- Relay type: NO (Normally Open)
- DC load voltage: 12V - 24V
- DC Load type: resistive
- DC load max amperage : 7 Amperes
- Mechanical performance: 450 cycles
- Default power cable : 1m 16 AWG wires.

The NMEA 2000 relay will also measure the voltage available on the green cable (NMEA 2000 (Relay IN) + Third Battery (+)). This option will allow you to monitor a third battery/power source voltage.

NMEA 2000 RELAY CONNECTION

If the NMEA 2000 network is equipped with a relay, we recommend connecting the YS PRO relay directly to the coil of the relay.

If the NMEA 2000 network is not equipped with a relay but a manual switch, we recommend installing the NMEA 2000 relay in parallel to the switch. Therefore your NMEA 2000 backbone will keep the same power entry point. If the load might exceed the relay's characteristics, an external 12V Monostable Modular Relay NO shall be installed, driven by the internal relay.
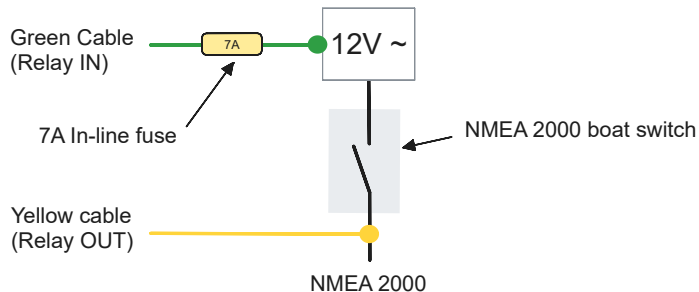
Connect to the boat NMEA 2000 relay

This configuration is only possible if the NMEA network is already equipped with a relay.
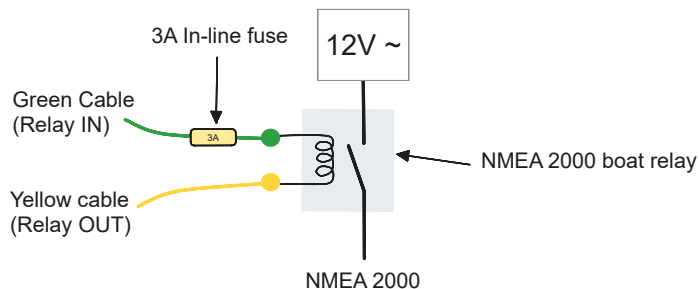

Installation in parallel to the boat NMEA 2000 switch

In this configuration, make sure that the YS PRO relay is able to support the load required by the NMEA 2000 network.

Installation in parallel to the boat NMEA 2000 switch, driving an external relay

If the characteristics of the YS PRO relay are not sufficient to support your NMEA 2000 network power load, an external relay is required. Install it in accordance with the following schema.
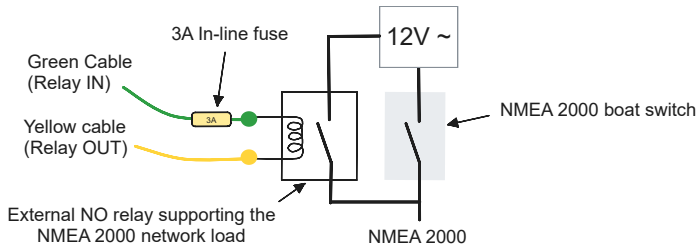
- Case 1 & 3: Ensure that the extension cable is of a sufficient gauge for the supply voltage, the load required by the NMEA 2000 boat relay or external relay and the length of the cable run.
- Case 2: Ensure that the extension cable is of a sufficient gauge for the supply voltage, the total load of the NMEA 2000 network and the length of the cable run. Refer to the following table for typical maximum extension cable length:

Extension cable gauge (AWG)	Max extension wire length (m)
16 AWG	6
14 AWG	10
12 AWG	16

This table is calculated for an NMEA network requiring up to 7A with a voltage loss of maximum 10%.

NMEA 2000 RELAY IN-LINE FUSE

A fuse must be installed to protect the YS PRO relay.

If the YS PRO relay is used in a "relay driving position" (Configuration 1 & 3): **Max in-line fuse rating: 3 A**

If the YS PRO relay is installed in parallel to the NMEA switch (Configuration 2): **Max in-line fuse rating: 7 A**

INTERNAL RELAY CABLE EXTENSION

If you need to extend the length of the relay cable supplied with your product, ensure you observe the following advice:

- The relay cable should be run as a separate, single length of 2-wire cable from the unit to the NMEA 2000 relay/switch or external relay.
- The length of the cable extension should be the **ADDITION** of the extension cable of the Relay IN **AND** the Relay OUT.

SECONDARY AND THIRD BATTERY MONITORING

SECONDARY AND THIRD BATTERY MONITORING INTRODUCTION

**IMPORTANT: The monitored batteries MUST have the same (-) than the main battery at all times.**

The power cable allows you to connect to a secondary and a third battery to monitor their voltage. YS PRO can monitor a battery of 12V, 24V or 48V.

The YS PRO won't use these batteries as power sources, only to monitor their voltage.

The third battery monitoring cable (Green) is also the Relay IN. If you wish to use the YS PRO NMEA 2000 relay, please refer to its specific section for connection.

SECONDARY BATTERY CONNECTION

Connect the white cable directly to the (+) of the second battery you wish to monitor.

1A — White Cable

12V / 24V / 48V Power source

up to 1A In-line fuse
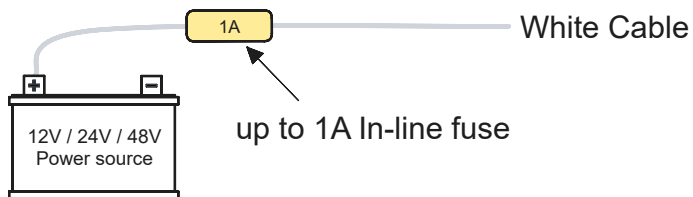
THIRD BATTERY CONNECTION

IMPORTANT: This section is to consider only if you DON'T wish to use the YS PRO NMEA 2000 relay. If you wish to use the YS PRO NMEA 2000 relay, please refer to its section for connection.

IMPORTANT: In this case, the yellow cable (Relay OUT) won't be used. Cut the wire short and cover it with electrical tape.

Connect the green cable directly to the (+) of the third battery you wish to monitor.

1A — Green Cable

12V / 24V / 48V Power source
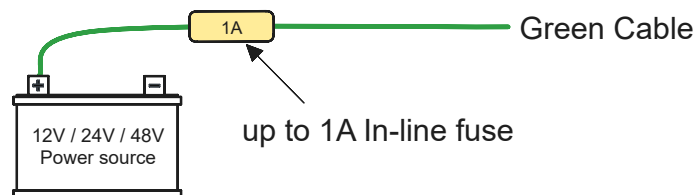
up to 1A In-line fuse

SECONDARY AND THIRD BATTERY IN LINE FUSE

A fuse must be added to the connection.

In-line fuse rating: up to 1A

SECONDARY AND THIRD BATTERY CABLE EXTENSION

Secondary and third battery voltage monitoring will only measure the voltage without current in the cables. Therefore there is no specific limit of a cable extension, however a longer cable run might impact the precision of the voltage measurement.

ETHERNET CONNECTION

ETHERNET CONNECTION OVERVIEW

The YS PRO Ethernet connector will allow you to bring an external Internet connection to the YS PRO. This could be a good option for example if your boat is equipped with a satellite connection.

Note: An external Internet connection can also be brought directly via WI-FI.

ETHERNET CONNECTION SETUP

A water resistant Ethernet mounting is provided to protect it from harsh environments. ALWAYS use this mounting when connecting Ethernet to the YS PRO.

Front mounting

Back mounting

Ethernet cable

Joint 1

Joint 2
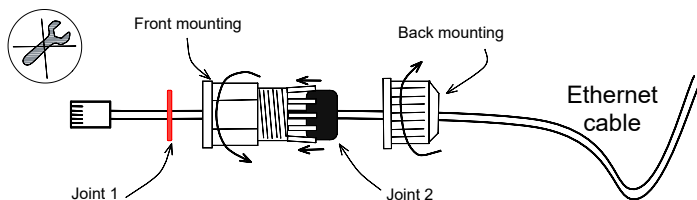
CAN PORTS CONNECTION

CAN CONNECTORS OVERVIEW

YS PRO is equipped with 4x CAN connectors. Each connector is independent and can support the following protocols:

- NMEA 2000
- CAN OPEN
- J1939
- Voltage detector

There is no specific order for the connection of each protocol, the configuration is done on the YS PRO screen.

It is possible to connect the same protocol from different networks on different CAN connectors.

For NMEA 2000, there is no additional configuration needed to classify the data, YS PRO is able to detect automatically and classify the data available on the network.

NMEA 2000 OVERVIEW

YS PRO can monitor all the standard PGNs that are available on the NMEA 2000 network of the boat. This includes batteries, power equipment, engines, navigation, fluid levels, temperatures, etc.

VOLTAGE DETECTOR OVERVIEW

The voltage detector is used to monitor the usage of electrical equipment.

- Send an alert if an equipment is turned on/off
- Indicate the used time in the last 24h

- Indicate the total used time
- Create automatic maintenance based on total used time

A voltage detector is included with the YS PRO, it is possible to install up to 4x voltage detectors connected to YS PRO. Only use a voltage detector distributed by Yacht Sentinel or an official distributor.

The voltage detector is composed of two smaller cables. Each cable can be identified by its color and the label:

- BLACK: Main Battery (-)
- RED: Voltage detection

CONNECTOR CONNECTION

Connect your cables to the 4x CAN connectors available on YS PRO. **Tighten the connectors by hand** to avoid damaging the cables or the YS PRO.


NMEA 2000
CAN OPEN
J1939
Voltage detector
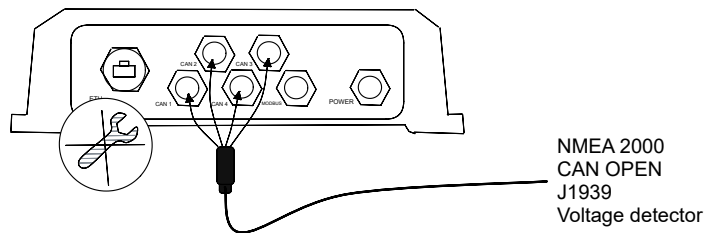
VOLTAGE DETECTOR CONNECTION

IMPORTANT: The voltage detector MUST have the same (-) than the main battery at all times.

Equipment to monitor

Equipment switch

1A In-line fuse

Red Cable
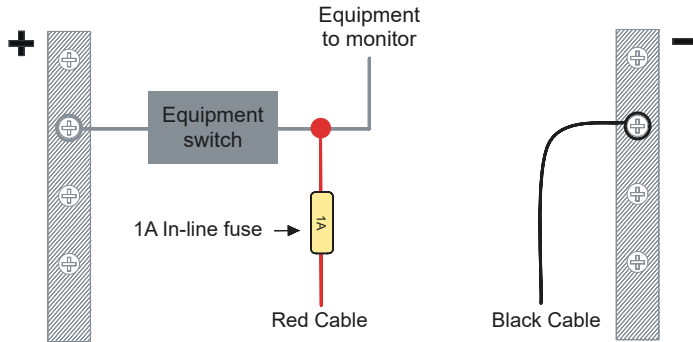
Black Cable

Connect the red cable to the (+) power source of the equipment you wish to monitor. Connect the black cable to the battery (-).

Exception: Bilge Pump

Bilge pumps are usually powered via a 3 outputs switch. It is important to connect the red cable of the voltage detector to the "Manual" output:

Manual

Off

Auto

Bilge Switch

Float Switch

Bilge Pump

1A In-line fuse

Red Cable

Black Cable
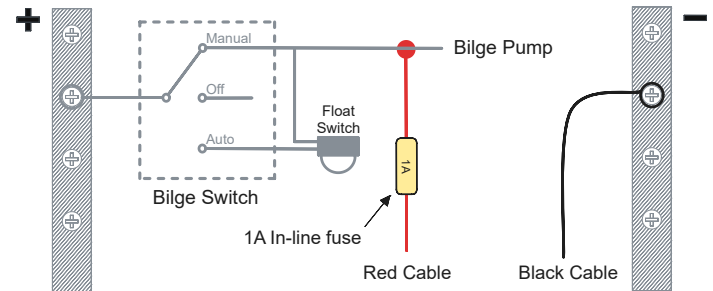
SIM CARD

SIM CARD OVERVIEW

YS PRO is already equipped with an embedded SIM card. This Embedded SIM card can be used worldwide. A subscription is necessary when adding the YS PRO to an app account. This embedded SIM card is used to send data to the app however it can't be used for YS PRO to work as a WI-FI hotspot.

Inserting a SIM card will allow you to:

- Use YS PRO as a WI-FI hotspot
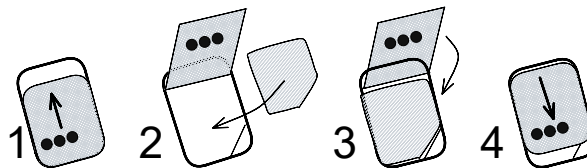- Have a connection if you are in a zone where the YS PRO embedded SIM card doesn't have a 4G connection

IMPORTANT TO KNOW: A subscription in the YS PRO is required even if using a SIM card to cover the costs of Yacht Sentinel cloud servers.

INSERTING A SIM CARD

1.   Unscrew the SIM card spot
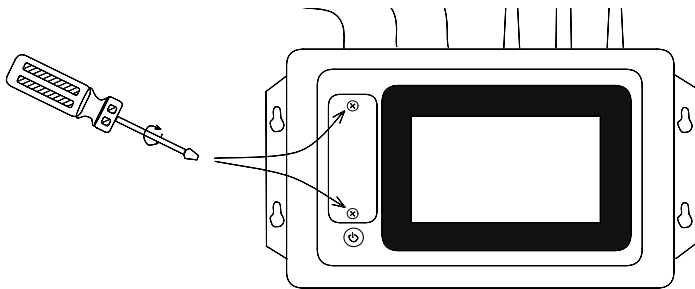
2.   Insert your SIM card

3.   Close and screw back the SIM card spot

Note: The SIM card format must be Micro SIM.

INITIALIZATION

PROFESSIONAL INSTALLER MODE

When YS PRO is powered, it will automatically turn on. At this point two modes are available: the professional installer mode and the user mode.

The professional installer mode allows the installer to access the settings and configure the YS PRO without having to enter a password.

When the user mode is selected, YS PRO will guide the user in setting up a password and connecting the YS PRO to the user app account. Once a password is entered, the professional installer mode won't be accessible anymore.

We recommend finalizing all the installation and configuration in the professional installer mode, the user mode should be configured by the final user of the system.

YS PRO MENU OVERVIEW
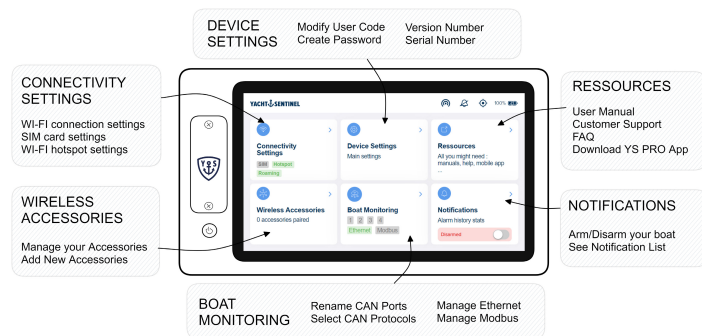
SLEEP MODE

After 30 minutes of inactivity, YS PRO enters into sleep mode: all the functionalities are running normally but the screen is turned off to save power.

To "wake up" the unit, touch the power button.

Power button
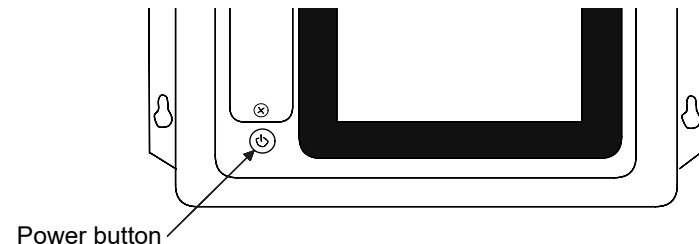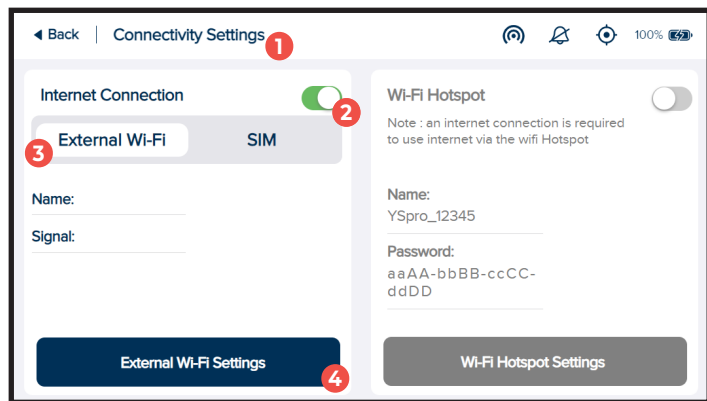
WI-FI CONNECTION

WI-FI CONNECTION OVERVIEW

The YS PRO has the ability to connect to a WI-FI network in order to use its Internet connection.

When connected to a WI-FI network, YS PRO will prioritize sending data via this channel. If no Internet connection is detected from the WIFI, YS PRO will send the data via its own 4G network.

WI-FI CONNECTION SETUP

To connect the YS PRO to an external WI-FI, follow the steps below:

1. Open the **Connectivity Settings** menu
2. Turn on **Internet Connection**
3. Select **External WI-FI**
4. Click on **External WI-FI Settings**

YS PRO starts scanning the WI-FI networks available. Please wait until the scan is complete.

5. Select your WI-FI network

*Once selected you will be redirected to the **WI-FI connection Assistant**.*

6. Enter the WI-FI password
7. Click Connect to WI-FI
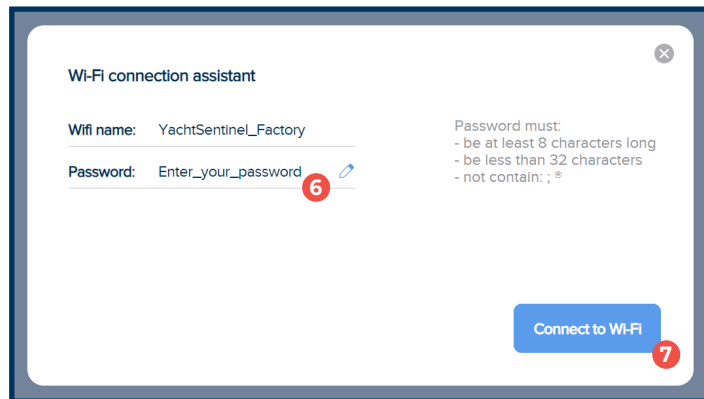
SIM CARD CONFIGURATION

SIM CARD SETUP

IMPORTANT: This step is only required if a SIM card has been inserted in the YS PRO. A SIM card is not mandatory for YS PRO to run, check the "SIM CARD" chapter for more information.

Before proceeding, make sure that a SIM card is properly inserted in the system as explained. YS PRO will need to delete the SIM password. If you wish to reactivate the SIM password for an other purpose, insert the SIM card in a smartphone.

1. Open the **Connectivity Settings** menu
2. Turn on **Internet Connection**
3. Select **SIM**
4. Click on **SIM Settings**
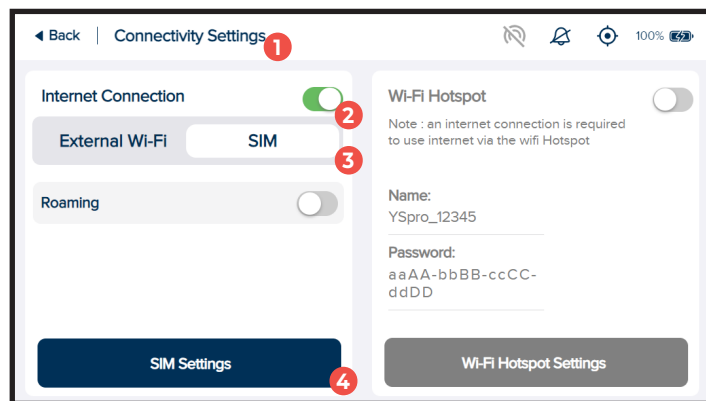
Once selected, you will be redirected to the **Mobile network settings** page. To activate the SIM card, follow the next steps:

5. Make sure Automatic APN selection is ON
6. If the SIM card has a password, click on **Remove pin code**. *(If the SIM card doesn't have a pin code, you can skip this step)*
7. Click on **Reload SIM** to activate the SIM and wait for the process
8. Click **Save**
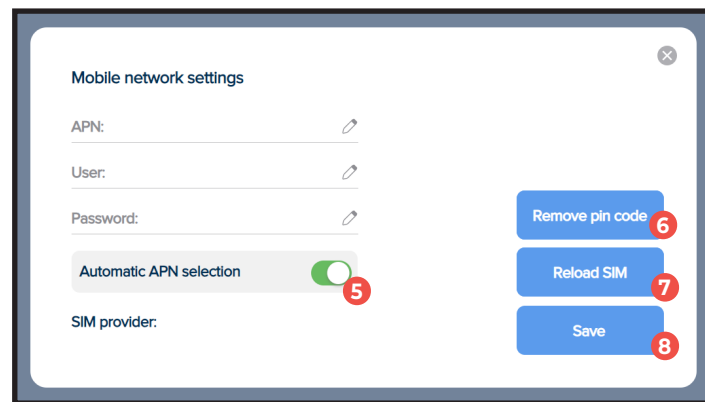
ROAMING

Allowing roaming allows your SIM card to use data outside the range of its native network and connect to another available cell network. This is for example the case if your YS PRO is connected to a 4G network in another country than your SIM provider.

IMPORTANT: Make sure that you are aware of the roaming cost of your SIM card before proceeding. Yacht Sentinel Limited can't be held responsible for excessive data cost.

CAN CONFIGURATION

CAN SOURCE CONFIGURATION

Once all your CAN ports are connected to the YS PRO, follow the steps below to configure them:

Before proceeding, make sure that your connectors have been properly connected as explained.

1. Open the **Boat Monitoring** menu

Once opened 4 windows corresponding to each CAN connector will appear.

2. Click on the CAN connector you wish to configure (CAN 1 in the example)

*Once a CAN selected, you will be redirected to the **Wired Hub Modification** page*

3. Rename you CAN (optional)
4. Choose a **Function** (protocol)

Note: If you are configuring a voltage detector, you will need to select a type.

5. Click **Save**

CAN SOURCE TESTING

A CAN source can be tested directly via the YS PRO interface.

1. Open the **Boat Monitoring** menu
2. Power the network connected to the CAN

NOTE: For an NMEA 2000 configuration, simply power the NMEA 2000 network.

For a voltage detector configuration, power the equipment connected to the voltage detector.

3. Observe the ON/OFF indication on the YS PRO screen. When the CAN is powered, the indicator should show ON in green.

Example:

- *CAN 1 (NMEA 2000) POWERED*
- *CAN 2 (WATERMAKER) POWERED*
- *CAN 3 (BILGE PUMP) NOT POWERED*
- *CAN 4 NOT CONNECTED*
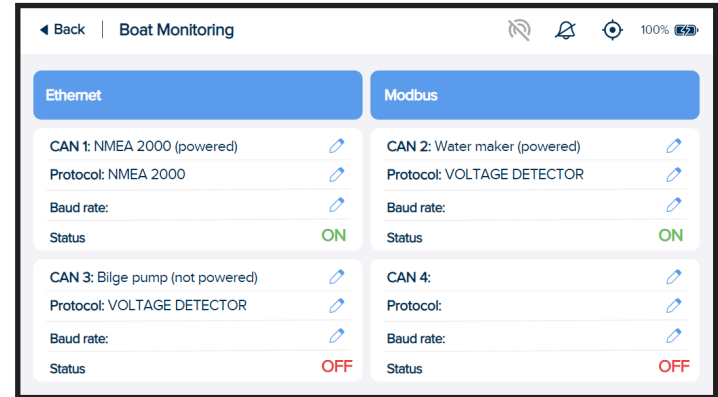
WIRELESS ACCESSORIES CONFIGURATION

GENERAL INFORMATION

YS PRO only accepts Yacht Sentinel Accessories, purchased via our distributors or directly from our website.

The pairing of each device must be executed following the instructions provided in the Accessories Manual.

COMMUNICATION FREQUENCY

YS PRO accessories are smart sensors with extended battery life. Sensors only send a message if an event is recorded. Such as:

- Intrusion
- Fire (smoke or heat)
- Water leak
- Shore power break
- Temperature change (+/- 1°C)
- Humidity/air quality change

Outside of these events, sensors will remain active but won't send data to the YS PRO.

PAIRING ACCESSORIES

1. Open the **Wireless Accessories** menu

*Once opened, The **Wireless Accessories** menu will display the list of all the connected accessories with their name, type, zone, enable/disable state, signal strength, battery percentage.*

2. Click on the "**+**" button on the top right corner of the screen
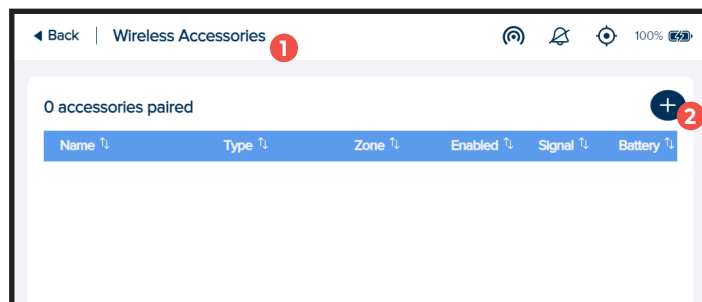
Make sure that your sensor is powered and available for connection as described in the Accessories Manual.

A pairing mode page will appear with a countdown of 120s. During this time YS PRO is scanning the Zigbee network to find available sensors.

Once a sensor is found, the countdown will stop and a waiting page will appear. Wait for the end of the pairing.

*Once the pairing is done, you will be redirected to the **Wireless Accessories** menu, your sensor(s) will then appear in the list.*

CONFIGURE A SENSOR

Once a sensor is paired, you can rename or disable it.

If a sensor is renamed, the new name will be displayed on the Wireless Accessories menu and in the YS PRO user app.

Disabling a sensor will disable all the alerts and data related to this sensor. The sensor will remain connected to the YS PRO.

1. Open the **Wireless Accessories** menu
2. Select the 3 dots on the right side of the sensor you wish to configure
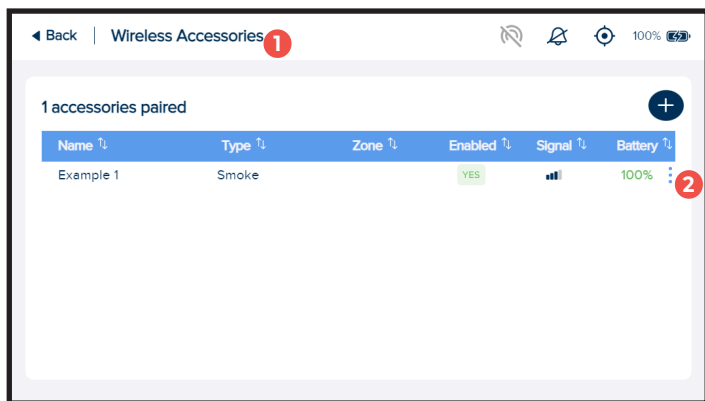
Once selected you will be redirected to the Edit Accessory page.

3. Change the name of the accessory
4. Enable or disable the accessory
5. Click **Save**
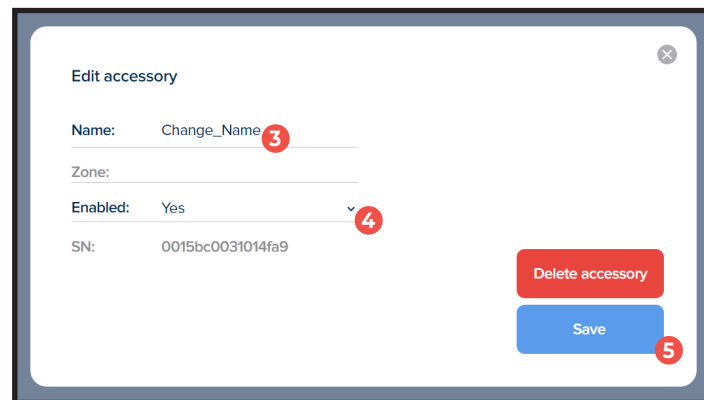
WI-FI HOTSPOT CONFIGURATION

WI-FI HOTSPOT GENERAL INFORMATION

YS PRO can be used as a WI-FI hotspot. This hotspot is accessible via any connected device to access a fast Internet connection.

Note: an external Internet connection is required to use the Internet via the WI-FI hotspot.

An external Internet connection is possible using:

- **An external SIM card**: in this case YS PRO will share the 3G/4G connection via its WI-FI network.
- **An external WI-FI**: In this case YS PRO will act as a range extender to extend the WI-FI network.

WI-FI HOTSPOT ACTIVATION

Make sure that your YS PRO is connected to an external Internet connection if you wish to use YS PRO as an Internet connection provider.

1. Open the **Connectivity Settings** menu
2. Activate the **WI-FI Hot-spot**
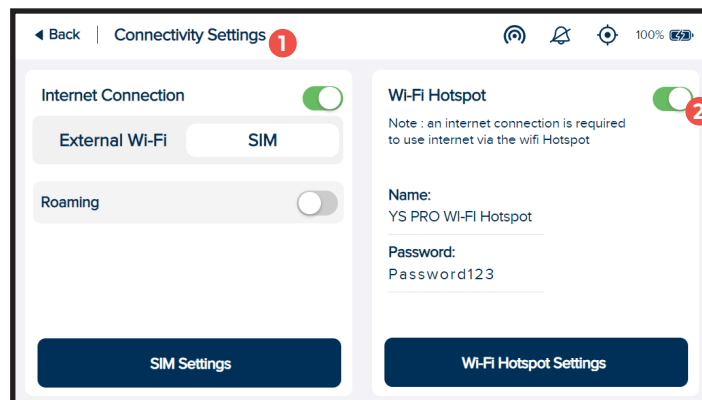
WI-FI HOTSPOT CONFIGURATION

To rename or change your WI-FI password:

1. Open the **Connectivity Settings** menu
2. Select **WI-FI Hotspot Settings**

Once selected, you will be redirected to the WI-FI Hotspot Settings page.

3. Change the WI-FI name
4. Change the WI-FI password
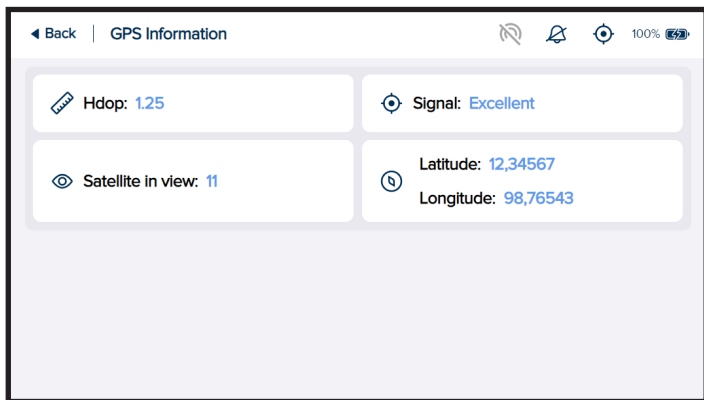5. Click **Save**

GPS SIGNAL STRENGTH

GPS SIGNAL TESTING

YS PRO offers the possibility to test the GPS signal strength in real time.

To access the GPS signal strength info, select the logo ⊙ on the YS PRO top bar.

YS PRO will provide you with:

- The GPS Hdop (Horizontal dilution of precision)
- The Number of satellites in sight
- A GPS signal quality indicator: Ideal, Excellent, Good, Moderate, Fair, Poor
- The calculated position

For precise GPS tracking, geofencing and trip replay, we recommend having a GPS signal quality indicator of good or higher.

If your GPS signal strength is low:

- Make sure that the YS PRO installation follows the location requirements provided in this document
- Make sure that the GPS antenna is well connected to the YS PRO
- Make sure that the GPS antenna is mounted on a horizontal surface

YS PRO COLLECTED DATA

COLLECTED DATA OVERVIEW

YS PRO collects data from different sources, the data is then sent via an Internet connection, from 3G/4G, WI-FI or Ethernet.

If YS PRO is out of range from an Internet connection, data can be recorded for months and sent later.

All data is saved without a time limit and can be viewed from the user app.

INTERNAL YS PRO DATA

YS PRO collects data from the main unit:

- GPS position & signal strength
- Internal battery voltage and state of charge
- Tilt and G-shock
- WI-FI statistics and settings

POWER CABLE AND VOLTAGE DETECTOR DATA

The power cable and voltage detectors allow users to monitor 24/7 their electric equipment on board.

- Voltage monitoring on up to 3 batteries
- Equipment usage: the last 24h and since the installation

DATA FROM ADDITIONAL WIRELESS ACCESSORIES

Each additional wireless sensor can send data to the YS PRO.

Sentinel Cam 2
Intrusion notification
Live view
Siren

Entry Sensor
Intrusion notification
Temperature

Motion Sensor
Intrusion notification
Temperature

Bilge Sensor with Probe
Water detection notification
Temperature

Smoke Sensor
Smoke detection notification
Temperature

Heat Sensor
Overheat detection notification
Temperature

Air Quality Sensor
VOC level
Humidity
Temperature

Humidity Sensor
Humidity level
Temperature

Shore Power Sensor
Shore power notification

DATA FROM NMEA 2000

Manufacturer's Alarms

Check Engine
Over Temperature (Engine)
Low Oil Pressure (Engine)
Low Oil Level (Engine)
Low Fuel Pressure
Low System Voltage
Low Coolant Level
Water Flow
Water in Fuel
Charge Indicator
Preheat Indicator
High Boost Pressure
Rev Limit Exceeded
EGR System
Engine Emergency Stop Mode
Power Reduction
Engine Comm Error
Sub or Secondary Throttle
Neutral Start Protect
Engine Shutting Down
Check Transmission
Over Temperature (Transmission)
Low Oil Pressure (Transmission)
Low Oil Level (Transmission)
Sail Drive

Engine Parameters

RPM
Fuel Consumption
Boost Pressure
Tilt/Trim
Oil Pressure
Oil Temperature
Engine Temperature

Alternator Potential
Fuel Rate
Engine Hours
Engine Coolant Pressure
Fuel Pressure
Engine Load
Engine Torque

Power Parameters

State of Charge
Time Remaining
Current
Battery Case Temperature
State of Health
Voltage
Amp Hours
Combi DC Out
Solar Panels Power
Solar Panels Voltage

Temperature and Humidity

Sea Temperature
Inside Temperature
Outside Temperature
Engine Room Temperature
Main Cabin Temperature
Refrigeration Temperature
Wind Chill Temperature
Freezer Temperature
Exhaust Gas Temperature

Fluid Levels Alarms

Fuel Tank Capacity

Oil Tank Capacity
Fresh Water Capacity
Black Water Capacity
Waste Water Capacity
Live Well Water Capacity

Navigation

GPS Coordinates
COG (Course Over Ground)
SOG (Speed Over Ground)
SOW (Speed Over Water)
AWS (Apparent Wind Speed)
AWA (Apparent Wind Angle)
TWS (True Wind Speed)
TWA (True Wind Angle)
TWD (True Wind Direction)
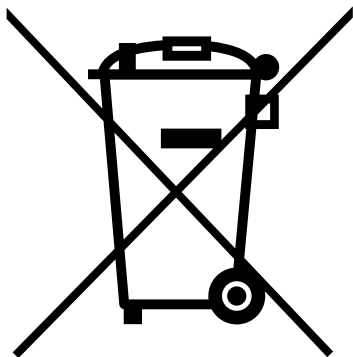Water depth
Cumulative Distance

DISPOSAL

Dispose of this product in accordance with the WEEE Directive.

The Waste Electrical and Electronic Equipment (WEEE) Directive requires the recycling of waste electrical and electronic equipment which contains materials, components and substances that may be hazardous and present a risk to human health and the environment when WEEE is not handled correctly.

Equipment marked with the crossed-out wheeled bin symbol indicates that the equipment should not be disposed of in unsorted household waste.

Local authorities in many regions have established collection schemes under which residents can dispose of waste electrical and electronic equipment at a recycling center or other collection point.