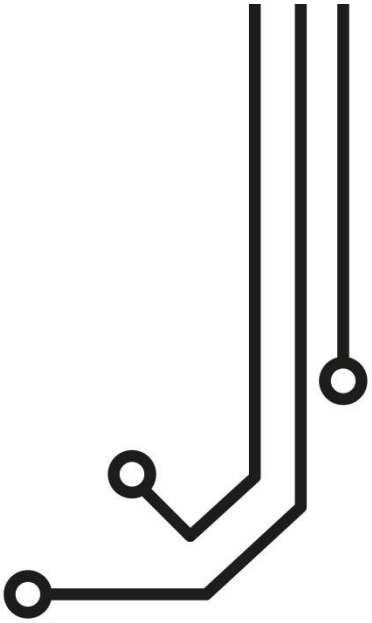
DIGITAL YACHT



veLink Bluetooth GATEWAY

Installation and instruction Manual

PRODUCT HANDBOOK

IMPORTANT NOTE

Your veLink has a WiFi network name "**veLink-xxxx**" where **xxxx** is your unique 4 digit code.

The default Password = "**PASS-xxxx**", where **xxxx** is the same unique 4 digit code at the end of the WiFi network name.

To access the web interface, http://192.168.1.1 or http://velink.local

Table of Contents

1. Introduction

Congratulations on the purchase of your veLink gateway. This product is designed to allow Victron devices with wireless capabilities to send data to an NMEA 2000 network. Many Victron devices include a Bluetooth interface that allows data to be accessed via the VictronConnect app using the Instant Readout feature. veLink can discover and pair with up to 8 Victron devices and then communicate their data on to the NMEA 2000 network.

veLink is designed to connect only to Victron data “Producers” and is compatible with the following Victron products:

• All **SmartShunt** devices and **BMV-712** Smart battery monitor

• All **SmartSolar** MPPT chargers

• All **BlueSmart** AC chargers

• All **Orion-Tr** Smart DC/DC converters

Some Victron devices equipped with Victron BLE adapters may also be compatible.

If you are unsure about compatibility, please contact technical support.

Before operating this unit you should familiarise yourself again with the user manual of the Victron equipment that you will be using veLink with.

2. Before you start

To install and test your veLink gateway you will need:

- M3 or M4 screws or other fixings appropriate to the mounting location
- A spare NMEA 2000 network connection (T-Piece) to allow the veLink to connect to the NMEA 2000 network*
- An NMEA 2000 compatible MFD that will display the NMEA 2000 that veLink will transmit
- A device with the Victron connect app (only for the configuration process)
- A device with a web browser to access the configuration web page, we recommend to use the device with the Victron Connect app to make it easier.

* NOTE – if you require any additional NMEA 2000 networking components or cables please click on the link below..

https://digitalyacht.co.uk/product-category/nmea-2000/nmea-2000-cables/

3. Installation

Before starting installation select a suitable location for the veLink. The unit is water resistant; however it should be installed below deck in a dry location. When locating the unit you should consider:

- Routing of the NMEA 2000 and cable to the NMEA 2000 network
- WiFi and Bluetooth range
- Provision of sufficient space around the unit for comfortable cable routing
- Maintaining the compass safe distance of 0.5m

3.1 Connecting to NMEA2000 Network

- The veLink, has an integral NMEA2000 cable terminated with a male connector that is designed to connect straight into a standard NMEA2000 network via a spare “T-Piece”. If you are creating a new NMEA2000 network, then you may wish to consider Digital Yacht’s NMEA2000 Starter Kit, that provides all of the cables, connectors and terminators required for a basic NMEA2000 network.

- veLink takes its power and data from the NMEA2000 network.

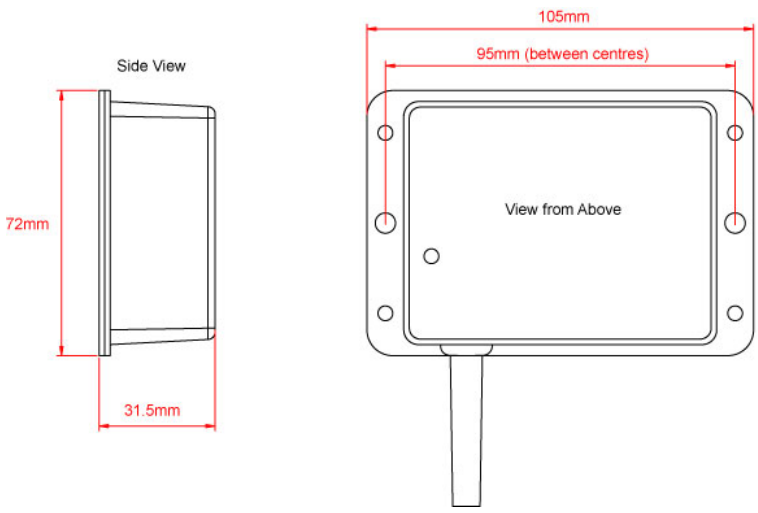
- If you are connecting veLink to a non-standard NMEA2000 network, then a suitable adaptor cable will need to be sourced from the relevant manufacturer;

    - SeaTalkNG (Raymarine P/No A06045)

    - Simnet (Simrad P/No 24006199)

3.2 Mounting

The veLink gateway has two fixing holes. Use suitable fixings (not supplied) to fix the converter to a flat surface – using the dimensions and details shown in the drawing to the right. Note that the unit may be installed in any orientation.



3.3 Wireless Communication

veLink should be mounted away from other RF equipment and sited in a location where wireless communication is not negatively affected i.e. inside a metal box, away from electrical power lines, etc.

Think about the location of the Victron Bluetooth devices you wish to connect to and mount the veLink as close to them as possible. The WiFi connection is only used for initial configuration and diagnostics, so the mobile wireless device can be taken to the veLink.

4. Pairing a new Victron device

Before pairing a Victron device, ensure that both the Victron device and the veLink gateway are powered on. Connect your mobile device or computer to the veLink WiFi network. By default, veLink will create a wireless network (Access point) with name and SSID veLink-XXXX, where XXXX is the unique four-digit code of your device. The default WiFi password is PASS-XXXX, using the same four-digit code. Once connected to the veLink WiFi network, open a web browser and access the configuration interface by entering either:

- http://192.168.1.1
- http://velink.local

The veLink configuration webpage will then be displayed.

veLink is not a router/gateway, so when connected to it, you will not have an internet connection. Some operating system; Windows, iOS, Android, etc. may display "No Internet", which is normal and not a cause for concern.

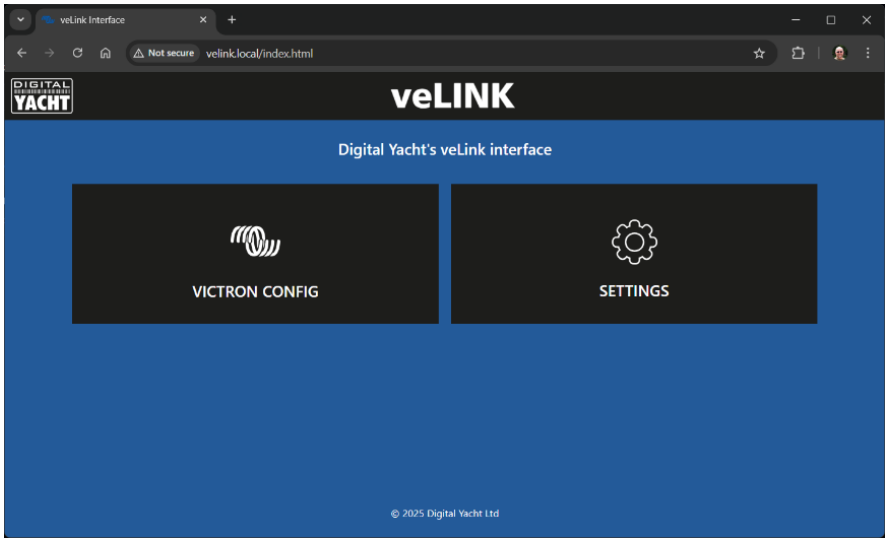


Figure 1 veLink Home page

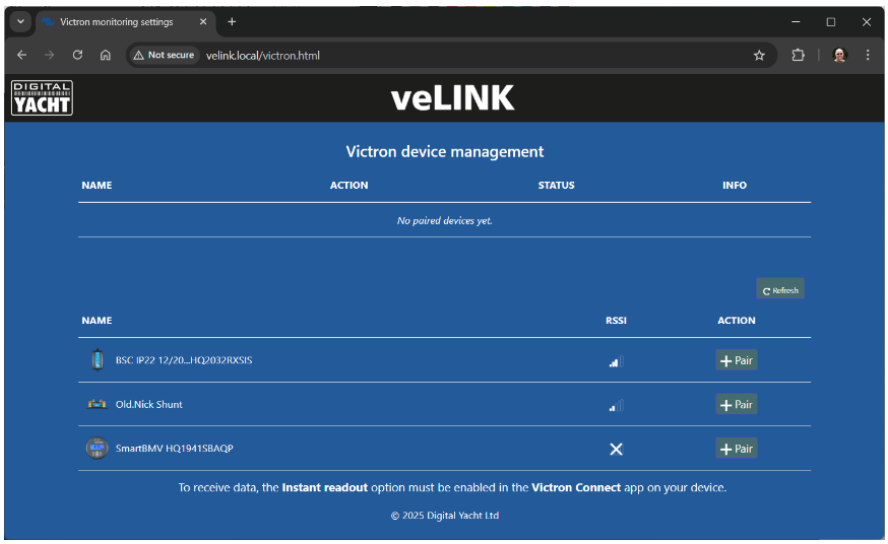
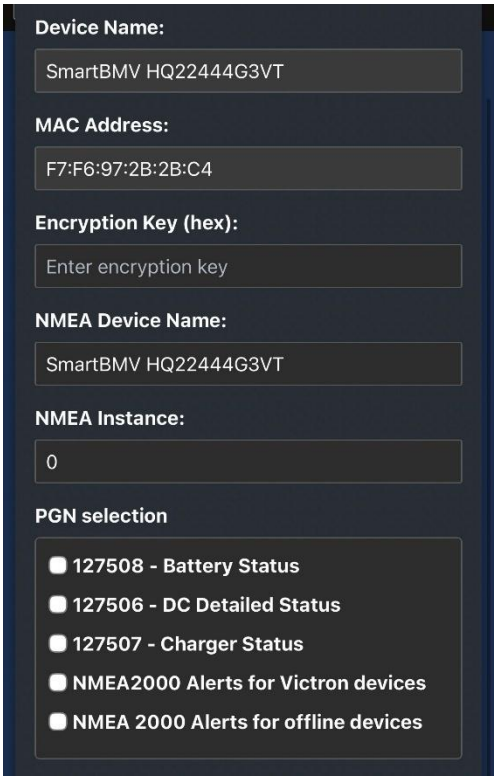


Figure 2 veLink Configuration page

INSTANT READOUT feature must be enabled on the Victron Connect

App. See : [Instant readout page]

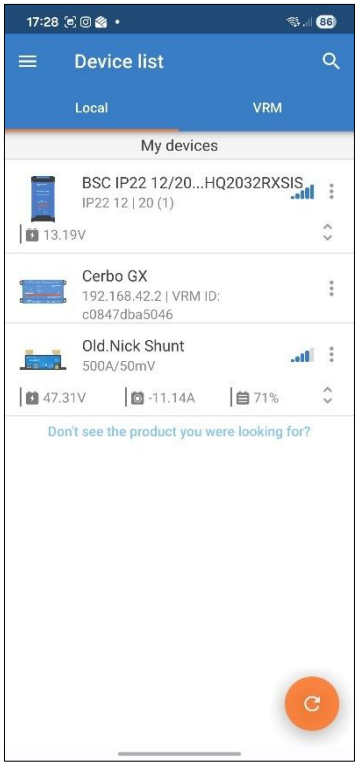


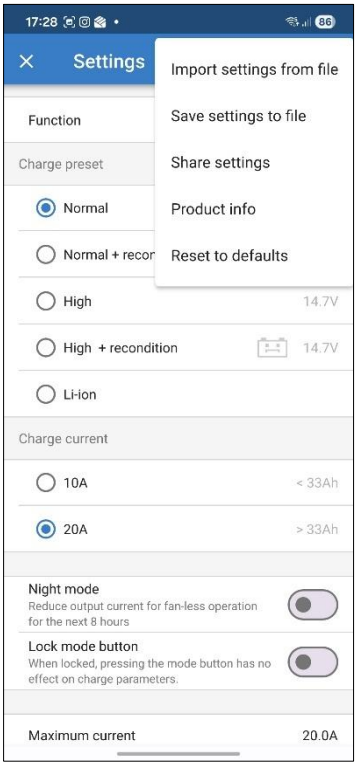
4.1 Entering the encryption key:

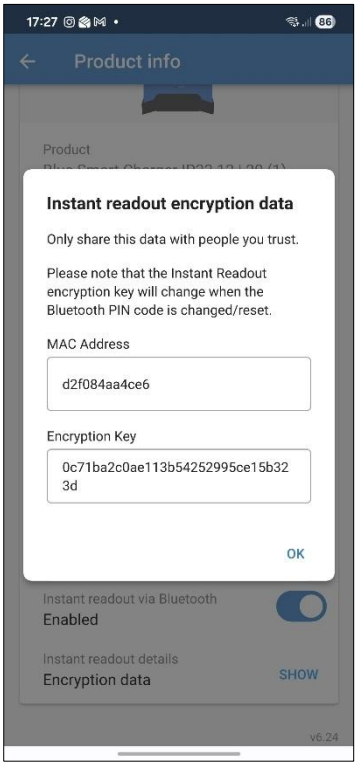
Open the Victron configuration page to pair a new Victron device or to unpair a previously paired device. At first startup, the paired device list will be empty.

To pair a device, select one of the discovered Victron devices and click the "**Pair**" button. A configuration form will appear, asking you to enter the encryption key.

Victron devices encrypt their data using a 32-character encryption key. This key can be found in the VictronConnect app under settings/product info/encryption data (refer to the images below to locate the key). The encryption key can be entered manually or copied and pasted from your smartphone, as shown in the following video:







4.2 Choosing a custom NMEA name

You may assign a custom NMEA device name to help identify the device on the NMEA 2000 network. To do this, modify the default name in the "NMEA Device Name" field.

If no change is required, the default name may be kept.

4.3 Choosing NMEA Instance

In most installations, the default NMEA 2000 settings can be left unchanged. The options below are intended for advanced users or multi-device installations.

On the NMEA 2000 network, the veLink gateway creates one virtual NMEA 2000 device for each connected Victron product. If two or more veLink gateways are installed on the same NMEA 2000 network, you can modify the device instance numbers to clearly differentiate each virtual device.

If the AUX function of a Victron SmartShunt or BMV is used to measure a second starter battery or the mid-voltage of a battery bank, an additional PGN 127508 (Battery Status) will be transmitted. This additional PGN will use a Battery Instance value equal to the main device instance plus one.

4.4 Selecting output PGN

You can choose which type of PGN your device will output on the network according to your MFDs, note that you can choose to output all of them with no issue :

PGN 127506 DC Detailed Status	(DC Type, SOC, Time remaining and A/h consumed)
PGN 127508 Battery Status	(Output Voltage,Current and battery case temperature)
PGN 127507 Charger Status	(Charger operating state)

If you are using the AUX wire of the Victron SmartShunt or BMV to measure a second Starter Battery or the Mid-Voltage of a battery bank, then an additional 127508 Battery Status PGN will be transmitted that just includes the voltage measured on the AUX connection.

If you are using the AUX wire with a Victron temperature sensor, then the Battery Case Temperature field of the Battery Status PGN will be populated with the measured temperature.

You must also choose whether Alert PGNs are enabled :

To display alerts, an NMEA 2000 device compatible with Alert PGNs is required. Two types of alerts are available:

NMEA 2000 Victron Alerts

- These alerts relay the alarm conditions configured in the VictronConnect app.
- They are available only for BMV and SmartShunt devices.
- This allows system malfunctions to be monitored directly on the NMEA 2000 network without using the VictronConnect app.

NMEA 2000 Offline Alerts

- An alert is generated if a paired Victron device is not detected for more than 30 seconds during scanning.

Note that a short press on the reset button of the veLink device will clear all the ongoing alarm.

4.5 Verify good connection.

Once the devices are paired, you can verify the connection status using the heart icon. If the device is not detected, the heart icon will remain empty. If the device is detected and communicating correctly, the heart icon will turn green.

Click the "Eye" icon to view all data transmitted by the Victron device.

The displayed values must exactly match the Instant Readout data fields shown in the VictronConnect app. If the displayed values or alarm fields appear incorrect or inconsistent, the encryption key has been entered incorrectly and must be checked. Please unpair the device, then refresh the discovered list and retry with a new key.

At this point, the device is correctly paired and operational.

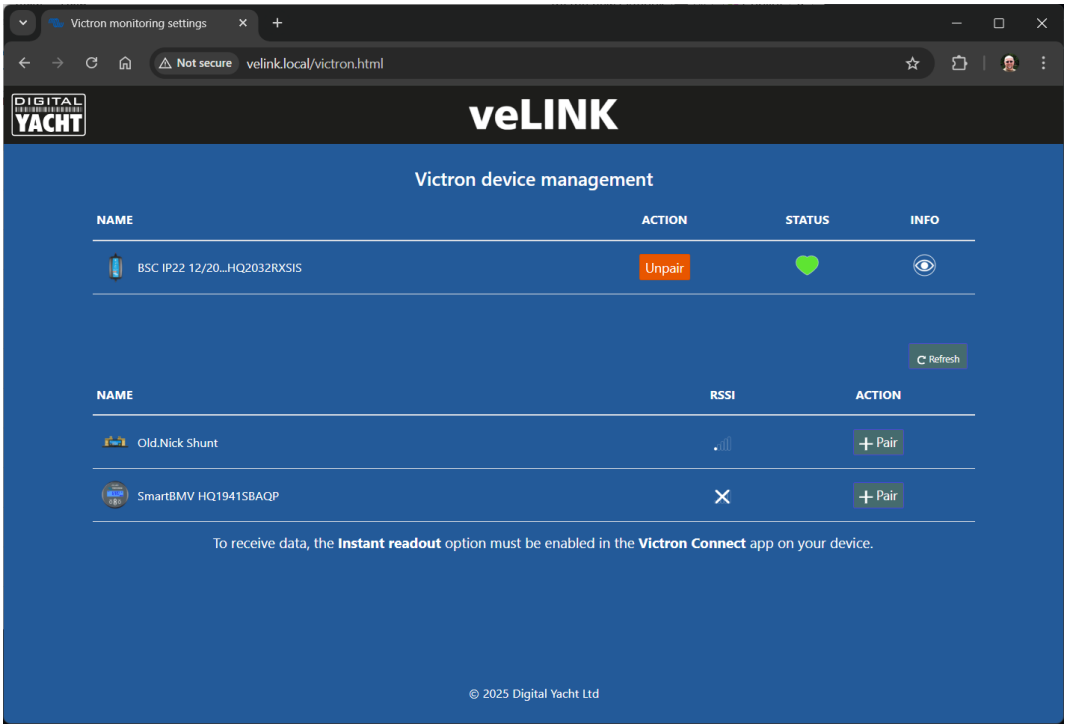


Figure 3 Config page with paired devices

5. Normal operation

Once the veLink has been configured and installed, it will automatically run with no additional interaction. At power up, all the LEDs will flash briefly and then once the veLink has initialised and claimed an NMEA 2000 address, it will start converting the Victron data into NMEA 2000 PGNs.

5.1 LED Behaviour

- Apply power to the NMEA 2000 network, the veLink LEDs will illuminate in sequence, from left to right, and then they should behave, as per Table 1

Condition	STATUS LED (Green)	DATA IN LED (Yellow)	ERROR LED (Red)	DATA OUT LED (Yellow)	LINK LED (Green)
ON (Solid)	WiFi STA Mode Connected		N2K Network Down		Web Connection
Flashing	WiFi AP-Mode Active	Data Received		Data sent	New victron product scanned
OFF	WiFi STA Mode Disconnected*	No Data from N2K	All OK	No data sent to N2K	No Web Connection

6. Settings page

6.1 Network settings

By default, veLink creates a wireless network (Access Point), with Name (SSID) = "**veLink-xxxx**" and Password = "**PASS-xxxx**", where **xxxx** is a four digit code, unique to your device.

We strongly recommend that you change the default wireless Password and/or the SSID (network name). Even though these are unique to you, anyone can read the online copy of this manual and work out what your password is once then can scan and see your wireless network.

The veLink can also join the vessel's main wireless network or any network. To do this, from the Home page, click on the **Settings** icon/button and in the Network Settings section at the top of the page change WiFi Mode to **STA**. Click the **Scan** button to scan for available wireless networks, select the network you want to join from the drop-down list, enter the wireless password and click the **Update Settings** button.

veLink will now display a window saying that the WiFi settings have been changed and the unit will now reboot. On rebooting it will try to join the selected wireless network and if successful the Status LED will stop flashing a few seconds after booting up and stay permanently ON.

If the Status LED is OFF with a short flash every two seconds, then veLink has failed to connect to the selected network. Wait 30-45secs for the device to revert to AP mode or press and hold the reset button for >10secs for a factory reset.

If the connection is successful, you can find your device on http://velink.local like before.

6.2 NMEA 2000 Diagnostic Tools

The Settings page provides three distinct diagnostic pages that allow you to monitor and troubleshoot the NMEA 2000 network. These tools are optional and are not required for normal operation of the device.

• The "**Devices**" page displays a list of all devices detected on the NMEA 2000 network. To view additional product and configuration information for a specific device, click the "Eye" icon at the end of the corresponding row. A green heart icon indicates that a device is active and currently transmitting PGNs on the network. Click the green heart icon to view the PGNs transmitted by that device.

• The "**PGNs**" page displays a list of all PGNs currently being received on the network. To view detailed information for a specific PGN, click the "Info" icon on the corresponding PGN row.

• The "**Data Monitor**" page displays the raw NMEA 2000 data being received. This page also allows the raw NMEA 2000 data to be logged for diagnostic purposes.

6.3 Firmware updates

The Settings page can be used to perform software updates by uploading the appropriate firmware file. Important firmware updates will be announced on the Digital Yacht website and via email notifications.

Firmware files can be downloaded from the following page:

https://digitalyacht.support/downloads/product-firmware/

7. Further Information

For veLink technical support please email support@digitalyacht.co.uk

Due to the large number of Victron products available, it has not been possible to test compatibility with every model. If you encounter any compatibility issues or have doubts about a specific product, please contact technical support.