



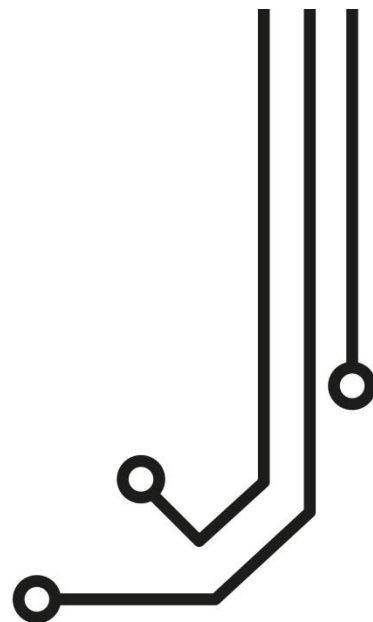
SAIL BOAT



SPORT FISHING



MOTOR BOAT



veLink

Bluetooth

GATEWAY

Installation and instruction Manual

This manual applies to Velink version 1.30 and later. Please refer to Section 6.3 to check your firmware version.



IMPORTANT NOTE

Your veLink creates a WiFi network named "**veLink-XXXX**", where **XXXX** is the unique four-digit code assigned to your device. The default Password = "**PASS-xxxx**", where **xxxx** is the same unique four-digit code at the end of the WiFi network name. For example, if your veLink WiFi network name is "veLink-D4F5", the default WiFi password is "PASS-D4F5"

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

1. Introduction	3
2. Before you start	3
3. Installation	4
3.1 Connecting to NMEA2000 Network	4
3.2 Mounting	4
3.3 Wireless Communication	4
4. Pairing a new Victron device	5
4.1 Entering the encryption key:	6
4.2 Choosing a custom NMEA name	7
4.3 Choosing NMEA Device Instance	7
4.4 Selecting output PGN	7
4.5 Verify good connection	8
5. Normal operation	9
5.1 LED Behaviour	9
6. Settings page	9
6.1 Network settings	9
6.2 NMEA 2000 Diagnostic Tools	10
6.3 Firmware updates	10
7 List of compatible products:	11
8. Further Information	12



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 in normal or DC Energy meter configuration.
- All **SmartSolar/BlueSolar** MPPT chargers
- All **BlueSmart** AC chargers and **Phoenix IP43** chargers
- All **Orion-Tr** Smart DC/DC converters and **Orion XS** converters

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

If you are unsure about compatibility, please see section 7 : Product code compatibilities or contact 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

Before installing and configuring your veLink gateway, ensure you have the following:

- 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 capable of displaying the PGNs transmitted by veLink.
- A device with the Victron connect app (only for the configuration process)
- A smartphone, tablet, or computer with a web browser. We recommend using the same device that has the **VictronConnect** app installed to simplify the setup process.

* 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 beginning the installation, choose a suitable location for the veLink gateway. 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 is supplied with an integrated NMEA 2000 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)

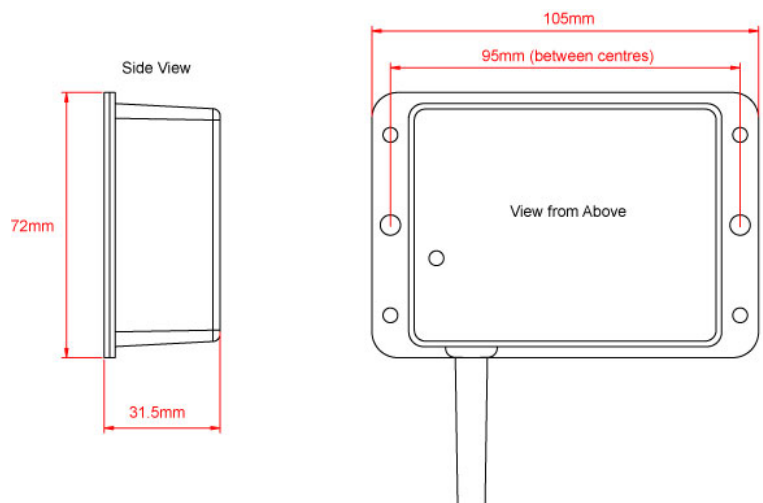
3.2 Mounting

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. For example, if your veLink WiFi network name is "veLink-D4F5", your default WiFi password will be "PASS-D4F5".

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 systems; Windows, iOS, Android, etc. may display "No Internet", which is normal and not a cause for concern.

Figure 1 veLink Home page

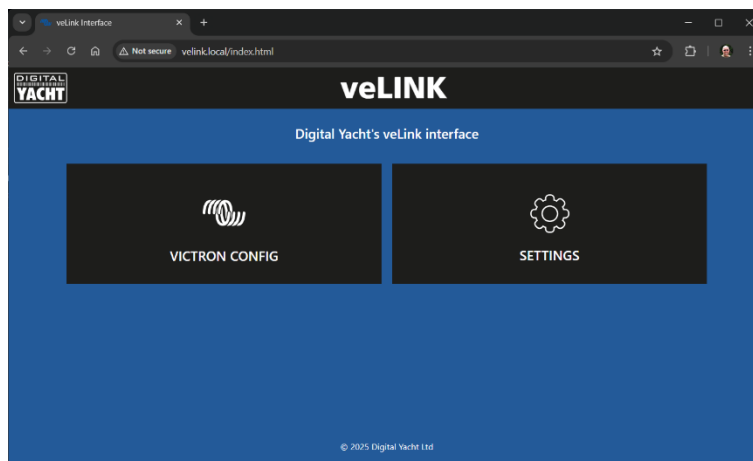
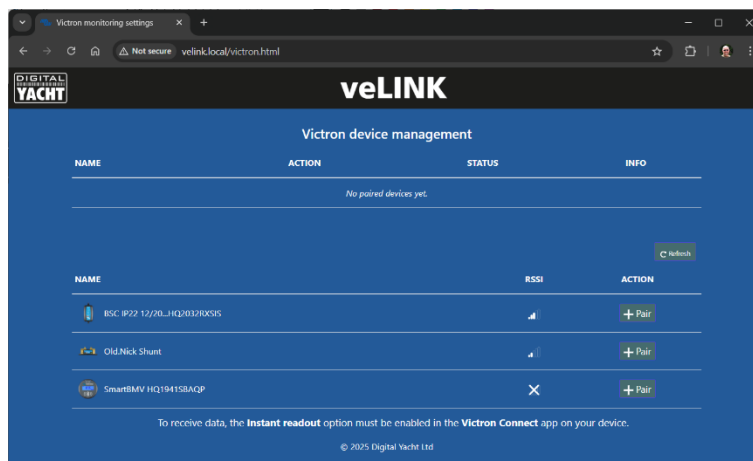


Figure 2 veLink Configuration page





i 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. When veLink is powered on for the first time, 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](#):

×

Pair Victron Device

Device Name:

SmartBMV HQ22444G3VT

MAC Address:

F7:F6:97:2B:2B:C4

Encryption Key (hex):

Enter encryption key

NMEA Device Name:

SmartBMV HQ22444G3VT

Device Instance: ⓘ

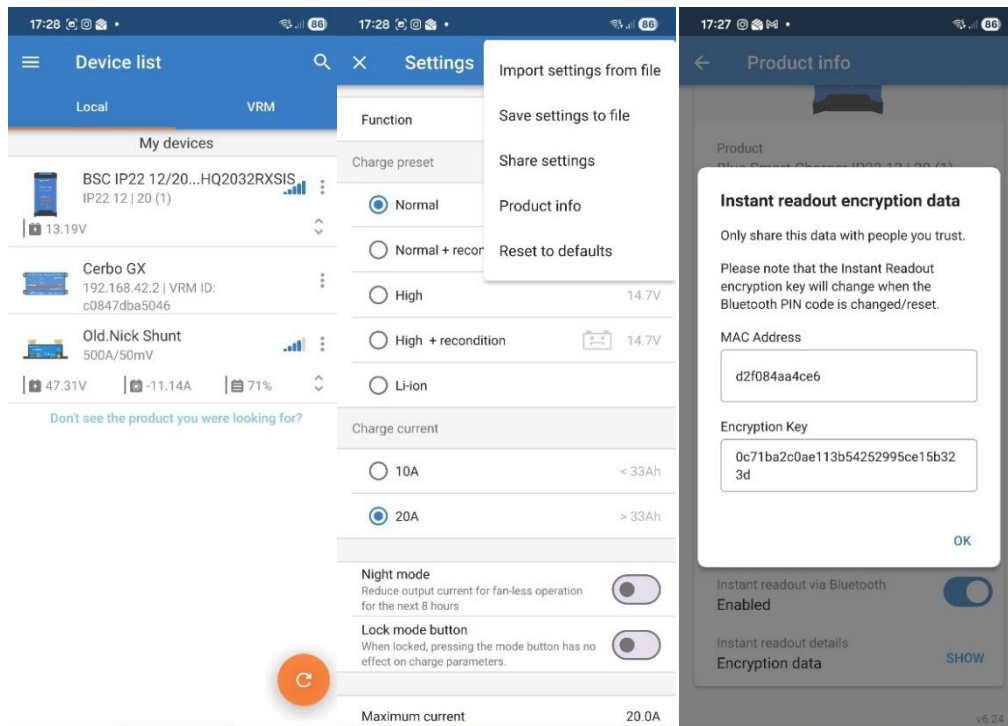
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PGN selection

☒ 127508 - Battery Status
 ☒ 127506 - DC Detailed Status
 ☒ 127507 - Charger Status
 ☒ 127751 - DC Voltage/Current
 ☐ NMEA2000 Alerts for Victron devices
 ☐ NMEA 2000 Alerts for offline devices

✓ Pair Device

Cancel





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 Device 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. veLink automatically assigns an instance number that avoids conflicts with other devices on the network. You may assign a custom instance number if required.

If the AUX function of a Victron SmartShunt or BMV is used to measure a second starter battery or the midpoint voltage of a battery bank, additional Battery Status, DC Detailed Status, and DC Voltage/Current messages will be transmitted if activated.

The same applies to devices that provide both input and output voltage measurements.

By default, Battery Instance/Connection number/DC Instance "0" is used for the main input, and Battery Instance/Connection number/DC Instance "1" is used for the second input or output. Advanced users can change these battery instance values by selecting the **EDIT** button after the device has been paired.

4.4 Selecting output PGN

You can choose which type of PGN your device will transmit on the network according to your MFDs, **by default, all supported PGNs are enabled, which is suitable for most installations.**

PGN 127506 DC Detailed Status	(DC Type, SOC, Time remaining and Ah consumed)
PGN 127508 Battery Status	(Output Voltage, Current and battery case temperature)
PGN 127507 Charger Status	(Charger operating state)
PGN 127751 DC Voltage/Current	(DC Voltage /DC Current)

If the AUX wire of a Victron SmartShunt or BMV is used to measure a second starter battery or the midpoint voltage of a battery bank, or if a device provides both input and output voltage measurements, additional Battery Status, DC Detailed Status, and DC Voltage/Current PGN messages will be transmitted. These additional messages will contain the voltage measured at the AUX connection or the device's secondary voltage connection.

If the AUX wire is used with a Victron temperature sensor, the measured temperature will be included in the Battery Case Temperature field of the Battery Status PGN.



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.
- 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 the connection

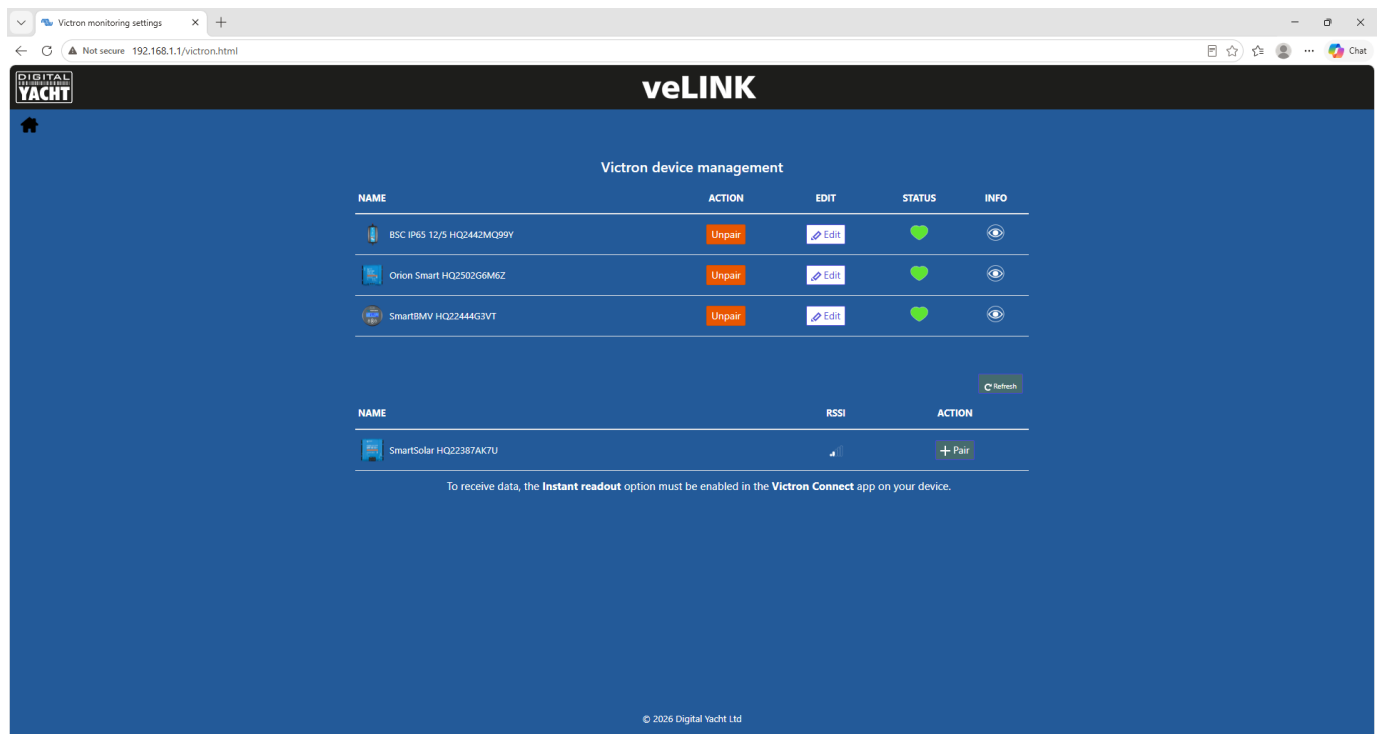
Once the devices are paired, you can verify the connection status using the heart icon. If the device is not detected, the heart icon will remain empty. If the device is detected and communicating correctly, the heart icon will turn green.

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 they 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 List of compatible products:

This table shows the list of compatible product codes.

#	Status	VELink family	Product code window(s)	Compatible products	Decoded data
1	Supported	VIC_REC_BATTERY_MONITOR	0x0203, 0x0204, 0xA192, 0xA196, 0xA198, 0xA19C, 0xA19D, 0xA380, 0xA381, 0xA383, 0xA389-0xA38E, 0xC030-0xC032, 0xC033, 0xC035-0xC03B	SmartShunt, SmartShunt IP65, BMV-712 Smart, compatible BMV-700/702 via VE.Direct Bluetooth Smart Dongle	Battery voltage, current, SoC, time-to-go, consumed Ah, auxiliary starter/temperature input, alarms
2	Supported / expected	VIC_REC_SOLAR_CHARGER	0x0300, 0xA040-0xA04F, 0xA050-0xA081, 0xA101-0xA119, 0xA170-0xA171	BlueSolar / SmartSolar MPPT, including VE.Direct and selected VE.Can SmartSolar models that use the Instant Readout solar format	Battery voltage, charge current, PV power, yield today, load current, charger state, error
3	Supported	VIC_REC_AC_CHARGER	0xA300-0xA33E	Blue Smart IP65, IP22, IP67 and related Blue Smart AC chargers	Battery voltage, charge current, charger temperature, charge state, error
4	Supported / expected	VIC_REC_AC_CHARGER	0xA340-0xA35F	Phoenix Smart IP43 chargers	Same AC charger data as Blue Smart chargers
5	Supported	VIC_REC_DCDC	0xA3C0-0xA3D4	Orion-Tr Smart DC/DC chargers, isolated and non-isolated	Input voltage, output voltage, state, error, off reason
6	Supported	VIC_REC_ORION_XS	0xA3F0-0xA3FF	Orion XS DC/DC battery chargers	Input voltage/current, output voltage/current, state, error
7	Supported when advertised as family 0x0D	VIC_REC_DC_ENERGY_METER	Same physical product IDs as compatible shunts, but only when the BLE family byte reports DC Energy Meter mode	SmartShunt configured as Smart DC Energy Meter	Voltage, current, meter type, alarm
8	Decoder present, not enabled in routing	VIC_REC_SMART_BMS	0xA3E8-0xA3E9 inside the wider 0xA3E8-0xA3EB Smart BMS window	Smart BMS CL 12/200	Battery voltage, system voltage, BMS I/O flags, error, alarm
9	Decoder present, not enabled in routing	VIC_REC_LYNX_SMART_BMS	0xA3E4-0xA3E7, 0xA3EC, 0xA3ED inside the wider 0xA3E4-0xA3EF BMS window	Lynx Smart BMS, smallBMS NG, VE.Bus BMS NG	BMS voltage/current/status data, depending on the advertised record

If your device does not appear in veLink, first make sure that the Instant Readout feature is enabled. You can then verify device compatibility by opening the **Product Info** page in the VictronConnect app. This is the same page on which the BLE data encryption key is displayed.



A four-digit hexadecimal product code is shown below the product name, as illustrated in the image.

The compatibility table above may specify either a single product code, such as **0xA383**, or a product code range, such as **0xA3E4–0xA3EF**. Your device is compatible if its product code matches the specified code or falls within the specified range.

Victron may release new product codes that are not yet included in the compatibility table. In this case, please contact support at the email address below and include a screenshot of the Product Info page.

8. Further Information

For veLink technical support please email support@digityacht.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.