

# veKonvert GATEWAY

Installation and instruction Manual



## 1. Introduction

Congratulations on the purchase of your veKonvert Gateway. This product is designed to allow Victron devices to send data to an NMEA2000 network. Many Victron devices have a VE.Direct interface that allows them to communicate with other Victron devices. VE.Direct is a serial protocol where data “Producers” like SmartShunts, Battery Monitors (BMV) and Solar Controllers (MPPT) send data to data “Consumers” like Multiplus, Quattro and Cerbo GX devices.

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

- BMV -700, BMV -702, BMV -700H, BMV-712 Smart, BMV-710H Smart, BMV-712 Smart Rev2
- SmartShunt 500A/50mV, SmartShunt 1000A/50mV, SmartShunt 2000A/50mV
- All MPPT Charge Controllers

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

## 2. Before you start

To install and test your veKonvert 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 veKonvert to connect to the NMEA 2000 network\*
- Installation manual for the Victron equipment you will be using with veKonvert
- An NMEA 2000 compatible MFD that will display the NMEA 2000 that veKonvert will transmit

\* 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 veKonvert. 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 NMEA2000 and VE.Direct cables to the NMEA 2000 network and Victron equipment
- Provision of sufficient space around the unit for comfortable cable routing.
- Maintaining the compass safe distance of 0.5m

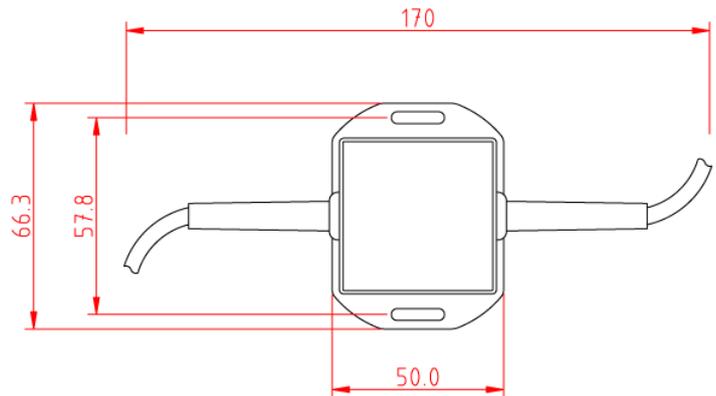
### 3.1 Connecting to NMEA2000 Network

- The veKonvert, has an integral NMEA2000 cable terminated with a male connector that is designed to connect straight in to 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.
- veKonvert takes its power and data from the NMEA2000 network.
- If you are connecting veKonvert 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

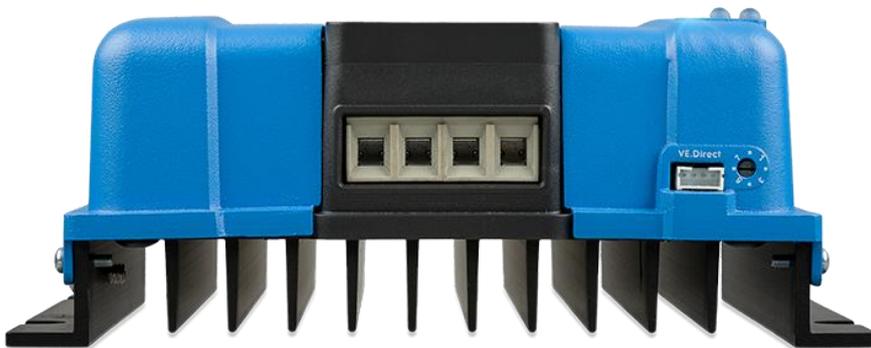
The veKonvert Gateway has two slotted 4mm Diameter fixing holes. Use suitable fixings (not supplied) to fix the converter to a flat surface – using the dimensions and details shown in the drawing below. Note that the unit may be installed in any orientation.



### 3.3 VE.Direct Connection

The veKonvert Gateway has an integral VE.Direct cable that can be plugged directly in to the VE.Direct connector on any compatible Victron device. The 4 way connector is a small, usually white plastic socket those location varies from device to device, so please consult the unit's manual if you are unsure where to plug in.

The images show the VE.Direct connector on a typical MPPT, Smart Shunt and BMV device.



The veKonvert will automatically detect what Victron device it is connected to and adjust the NMEA 2000 data that it outputs accordingly. Below is a list of the PGNs that the veKonvert outputs for the different Victron Devices and different modes that they can operate in.

#### All MPPTs

PGN 127506 DC Detailed Status  
 PGN 127508 Battery Status  
 PGN 130900 Proprietary Solar Controller

(DC Type set to MPPT)  
 (MPPT Output Voltage and Current)  
 (All solar panel data)

#### All SmartShunts and BMVs

PGN 127506 DC Detailed Status  
 PGN 127508 Battery Status

(DC Type set to Battery, SOC and A/h consumed)  
 (Output Voltage and Current)

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.



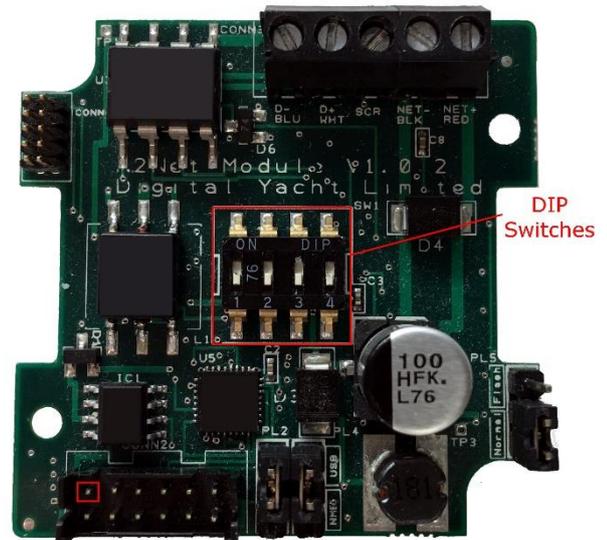
### 3.4 Setting veKonvert Device Instance

By default, veKonvert will have a Device Instance of 0, which is fine when just one veKonvert for a SmartShunt/Battery Monitor and one veKonvert for an MPPT controller are on the NMEA 2000 network.

If you wish to use multiple veKonverts, with multiple MPPTs or with Multiple SmartShunts/Battery Monitors, then each veKonvert will need to have a different Device Instance

To change the DIP switches, open the veKonvert Gateway by unscrewing the two cross head screws in the base of the unit. Then set the DIP switches to create a four bit binary number as follows...

0 = 0000	4 = 0100	8 = 1000	12 = 1100
1 = 0001	5 = 0101	9 = 1001	13 = 1101
2 = 0010	6 = 0110	10 = 1010	14 = 1110
3 = 0011	7 = 0111	11 = 1011	15 = 1111



Once you have set the DIP switches, power cycle the veKonvert unit for the new Device Instance to be applied.

If you are using the AUX function of the Victron SmartShunt or BMV to measure a second Starter Battery or the Mid-Voltage of a battery bank, then the additional 127508 Battery Status PGN will be transmitted with a Battery Instance equal to the Device Instance (set by DIP switches) + 1.

## 4.0 Operation

Once the veKonvert has been configured and installed, it will automatically operate with no additional interaction. At power up, all of the LEDs will flash briefly and then once the veKonvert has initialised and claimed an NMEA 2000 address, it will start converting the VE.Direct data in to NMEA 2000 PGNs. The VE.Dir LED will flash every 1.5 seconds and the N2K LED will continuously flash/flicker depending on the amount of data being received.

### 4.1 LED Behaviour

veKonvert has four LEDs, which behave as follows;

LED	State	Meaning
Power	ON	veKonvert is powered up
N2K	FLASH	NMEA 2000 data being received
VE.Dir	FLASH	VE.Direct data being received
Error	ON	Serious Error condition contact Digital Yacht



### 4.2 Further Information

For veKonvert technical support please email [support@digitalyacht.co.uk](mailto:support@digitalyacht.co.uk)