ion energia

victron energy
BLUE POWER

Installation Manual
Victron Energy & Dyness

Safety Instructions

GENERAL

Please read the instructions in the documentation provided with this product carefully before using the equipment. This product has been designed and tested in accordance with international standards. The equipment must be used exclusively for the purpose for which it was designed.

WARNING: RISK OF ELECTRICAL SHOCK

This product is used in conjunction with a constant power source (battery). The input and / or output terminals can be dangerously energized, even when the equipment is switched off. Always disconnect the battery before servicing the product. Do not remove the faceplate or operate the product if any panels are removed. All maintenance must be carried out by qualified personnel. Never use the product in places where there is a risk of explosion by both gas and dust. Consult information from the battery manufacturer to ensure that the product is intended for use in conjunction with the inverter. Always follow the battery manufacturer's safety instructions.

WARNING: Do not carry or lift large weights without assistance.

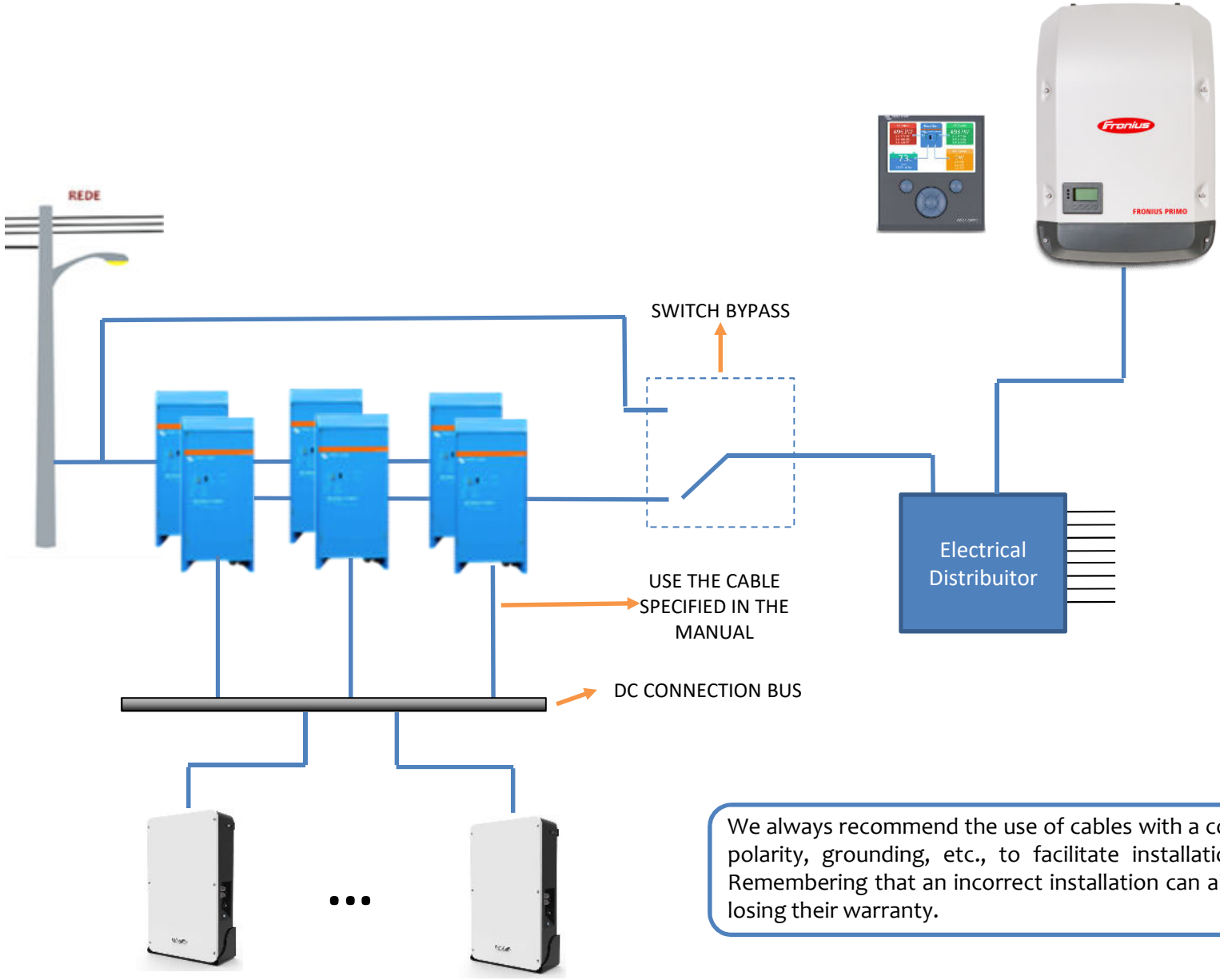
INSTALLATION

WARNING: CONNECTING THE PRODUCT WITH BATTERY POLARITY REVERSION WILL DAMAGE THE EQUIPMENT WITHOUT REPAIR CONDITIONS AND WILL BE CONSIDERED EXCLUSION OF WARRANTY.

Please read the installation instructions in the manual before installing the equipment. This product has a Class I protection factor (supplied with protective earth terminal). Uninterrupted protective ground must be installed at the AC input and / or output terminals. Alternatively, the earthing point located externally on the product can be used. If the earth connection is damaged, the product must be disconnected and protected against unintended operation. Contact a qualified service center. Make sure that the DC and AC input cables are protected with fuses and circuit breakers. Never replace a safety component with a different type. Consult the manual to determine the correct component. Before feeding the product, make sure that the available power source matches the power settings.

product configuration described in the manual. Make sure that the equipment will be used in the correct environmental conditions. Never use the product in a humid or dusty environment. Check that there is enough free space for ventilation around the product and check that the ventilation openings are not blocked. Make sure that the required system voltage does not exceed the capacity of the product.

Electrical Diagram – Simplified

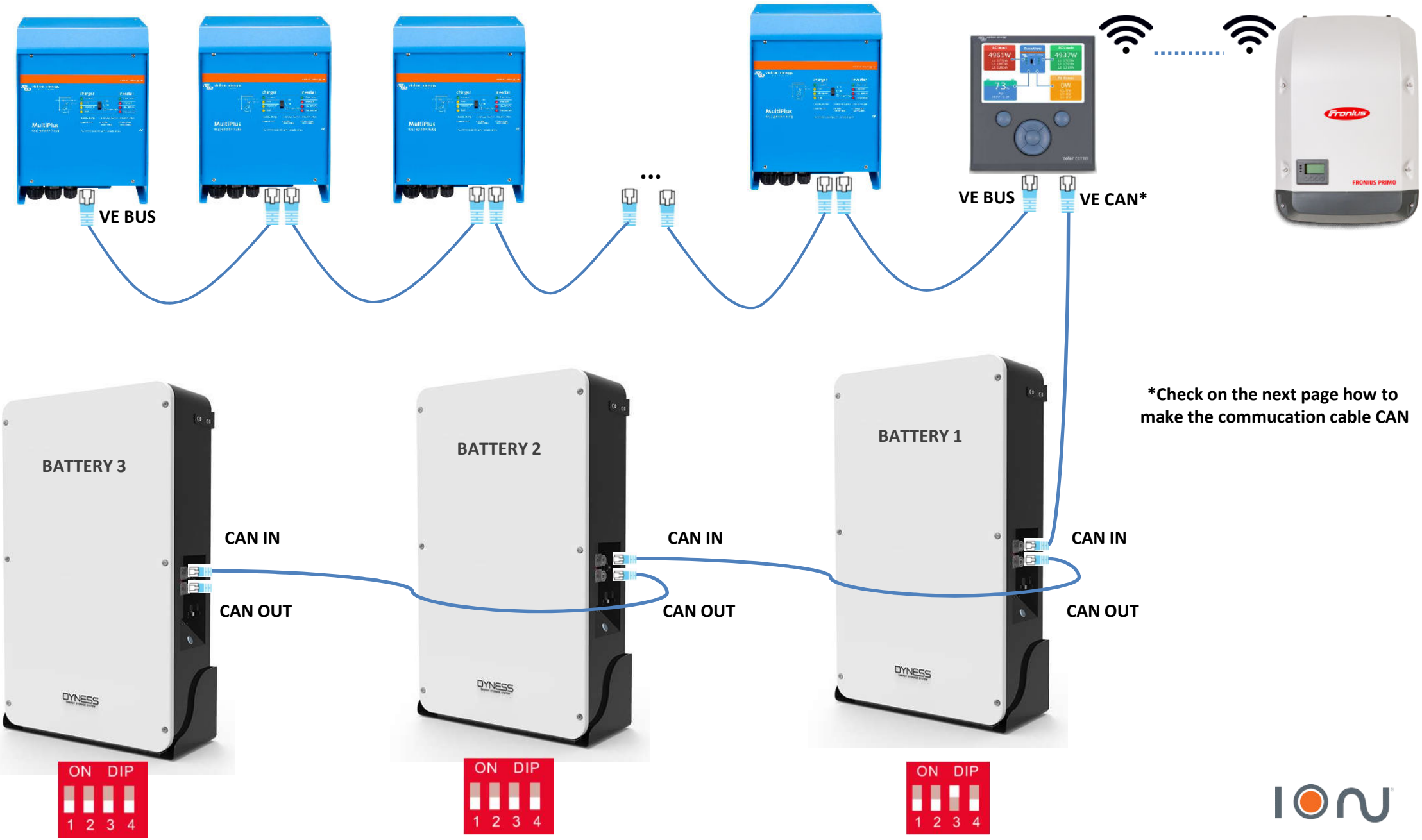


WARNING:
Is required the use of protective devices like:

- Breakers
- SPD
- Groundind
- Others

We always recommend the use of cables with a color pattern differentiating each phase, polarity, grounding, etc., to facilitate installation and possible future maintenance. Remembering that an incorrect installation can always bring damage to the equipment, losing their warranty.

Communication Between Equipments



*Check on the next page how to make the commucation cable CAN

Victron & Dyness – CAN Communication

BATTERY-Dyness

INVERTER-Victron

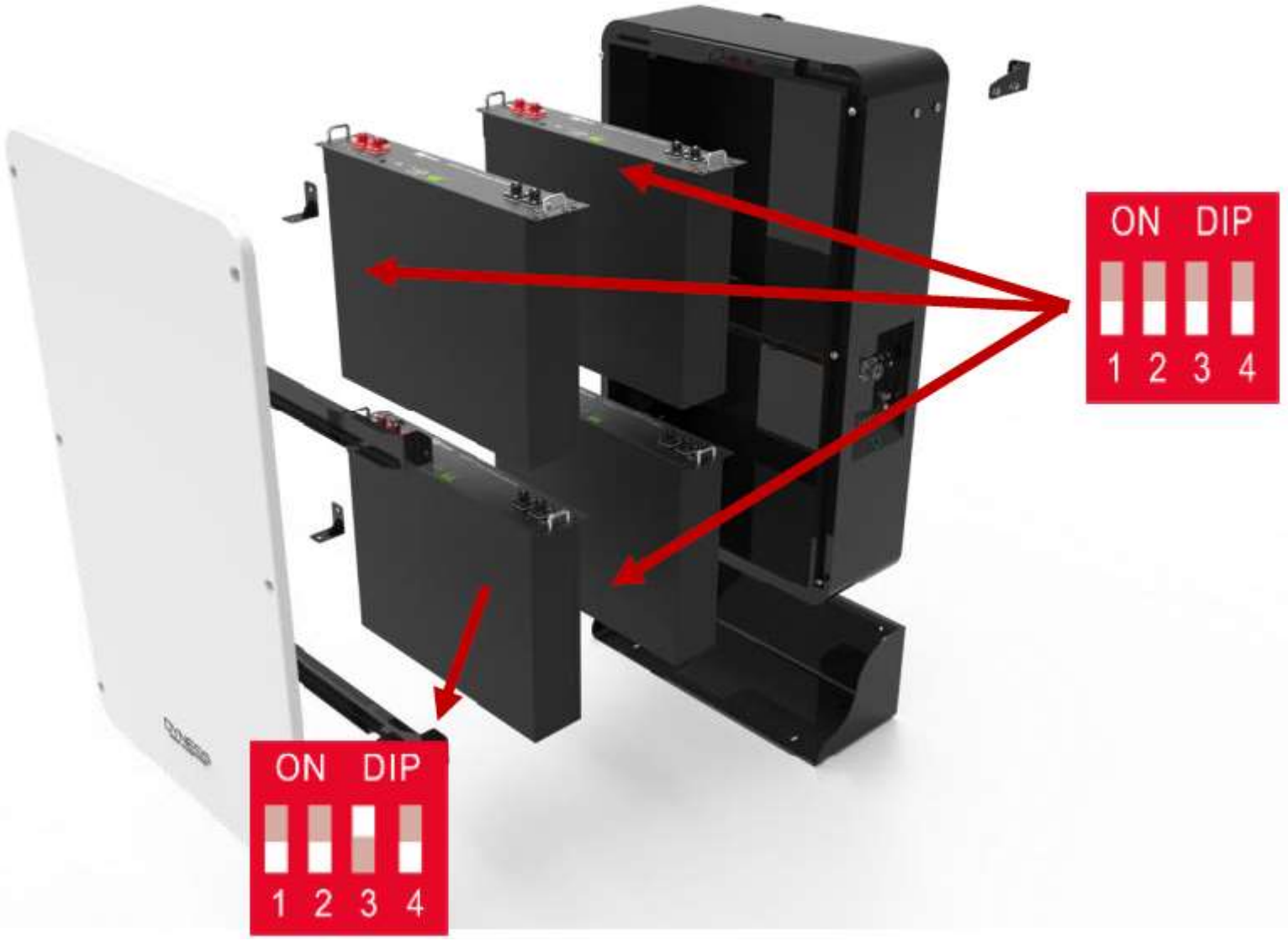
Battery (RJ45 IN)			
PIN	Color	Definition	
1	Orange/white	485_A	
2	Orange	XGND	
3	Green/white	485_B	
4	Blue	CANH	
5	Blue/white	CANL	
6	Green	X+5V	
7	Brown/white	XIN	
8	Brown	NC	

Inverter			
PIN	Color	Definition	
1	Orange/white	485_A	
2	Green/white	485_B	
3	Orange	GND	
4	Green	NC	
5	Brown/white	NC	
6	Brown	NC	
7	Blue	CANH	
8	Blue/white	CANL	

***One unity of this cable comes with the battery**

Dyness Battery Adress – Batery 1

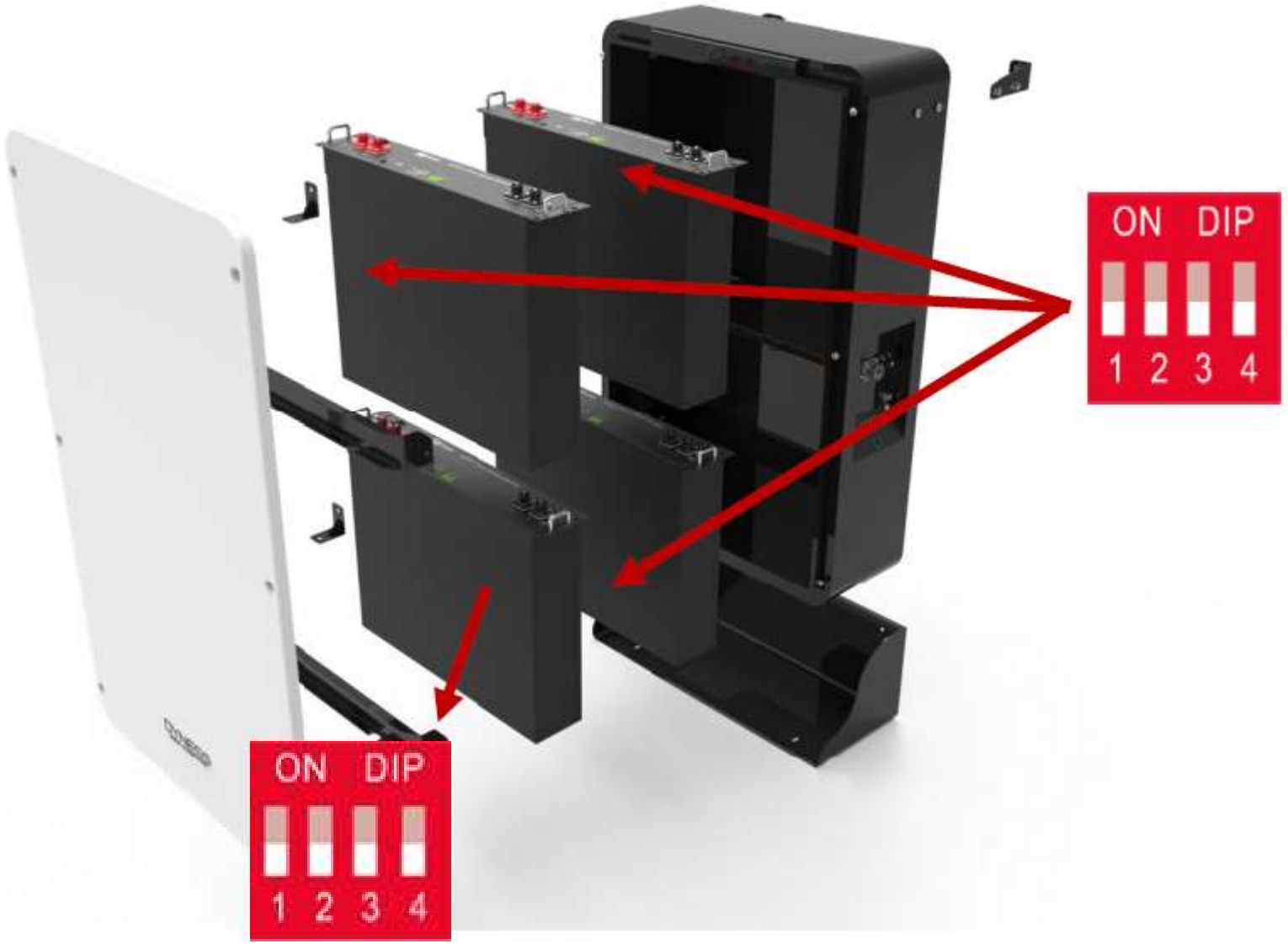
BATTERY 1



***Only the module #1 of the first battery must has ADDR "0010"**

Dyness Battery Address – Battery 2

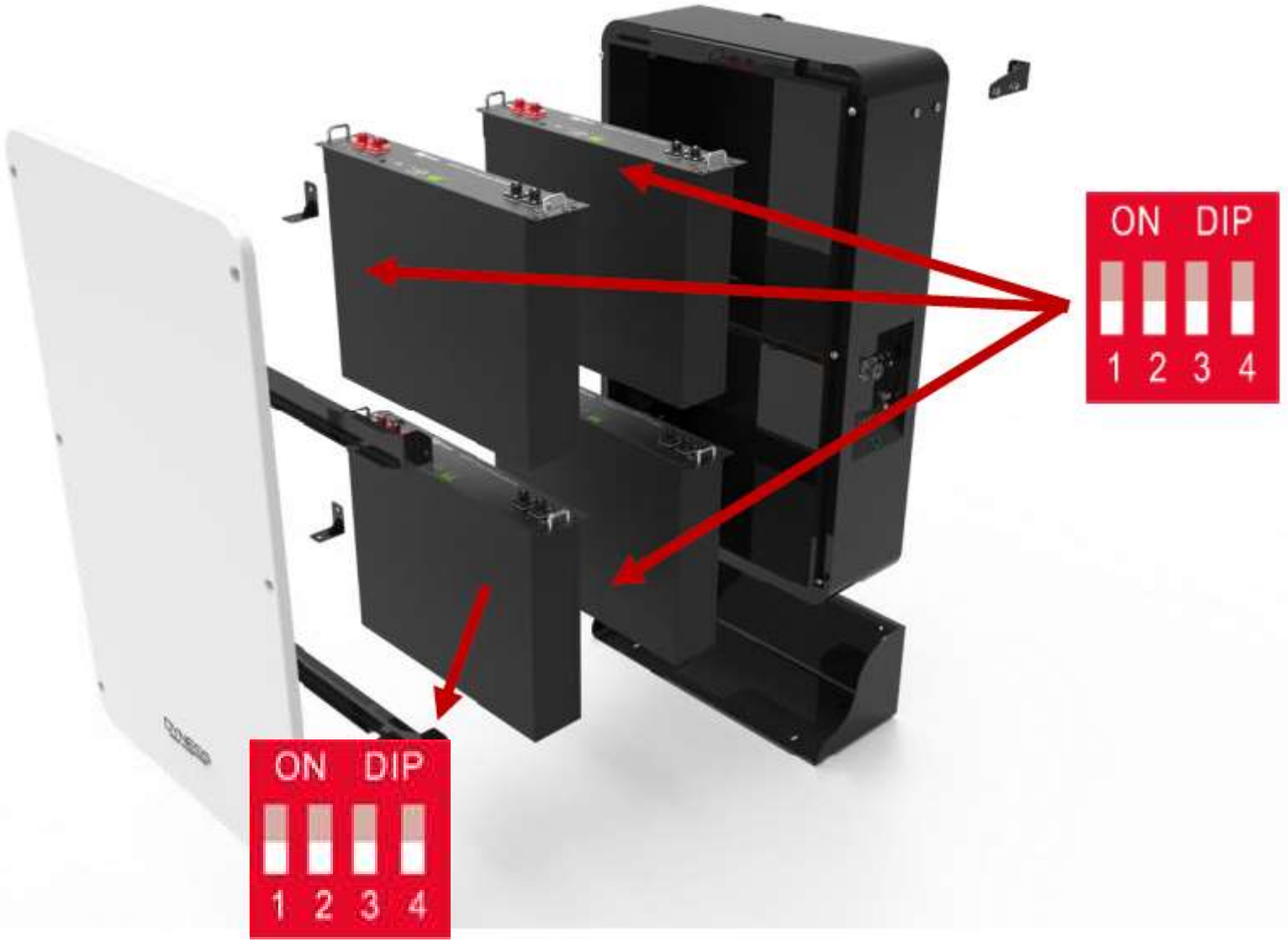
BATTERY 2



***Only the module #1 of the first battery must has ADDR "0010"**

Dyness Battery Address – Battery 3

BATTERY 3



***Only the module #1 of the first battery must has ADDR "0010"**

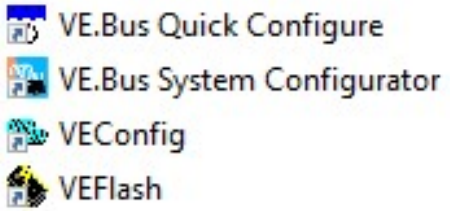
Softwares and cables

https://www.victronenergy.com/support-and-downloads/software

In the link above, download VE Configuration tools software:

On the same page, don't forget to download USB Drivers:

Software to be used:

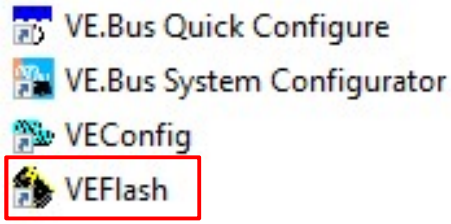


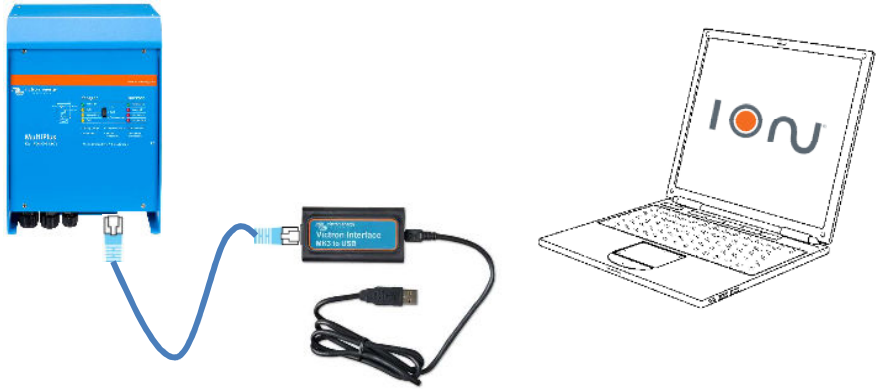
Cables:

- MK3 USB
- Ethernet Cable

Updating Inverter/Charger

- Firmware Update – VE Flash





→ To update the inverter, it is necessary to identify which model, through the label attached to the inverter plate. The latest version will be available at the link below:

To AC 230V→ https://www.dropbox.com/sh/s5t28y4cy4kq7s9/AADJ0yUHXHCwC8WqcJoLXlC-a?dl=0

To AC 120V → https://www.dropbox.com/sh/iwomro69epajcyh/AAAoen6cZKWcG2ZggEALhjjZa?dl=0

→ The inverter needs to be updated INDIVIDUALLY

→ It must be connected to the batteries only

→ Inverters with different versions will not operate together

2718 – Inverter/Charger Model

154 – Factory Version

Updating the Color Control GX

The Color Control GX firmware must be greater than V2.42

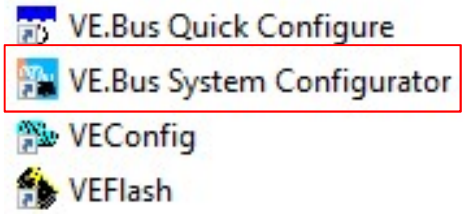
Please access the link below and follow the best procedure to your installation:

https://www.victronenergy.com/live/ccgx:firmware_updating

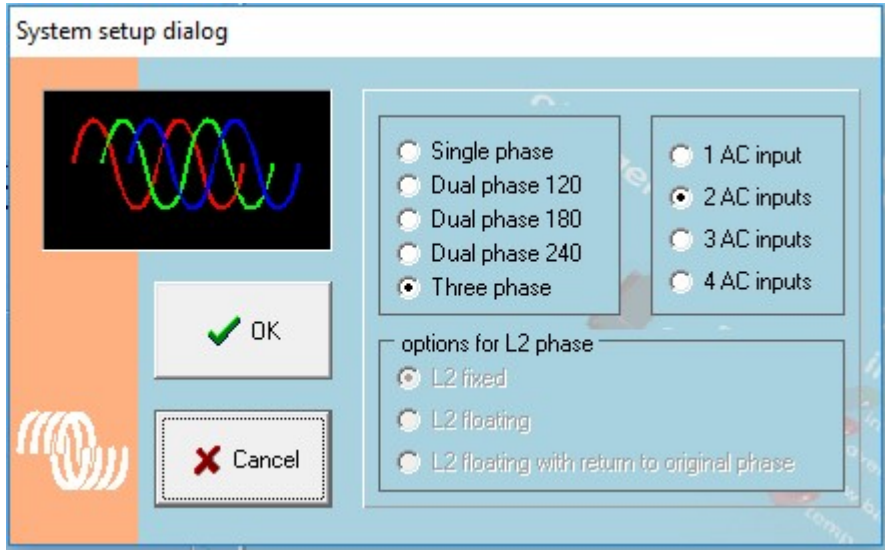
Inverter/Charger Programming

After all equipment are updated and properly installed, programming for three-phase operation is carried out.

→ The software used when you have more than 3 inverters Quattro or Multiplus is the VE BUS SYSTEM CONFIGURATOR



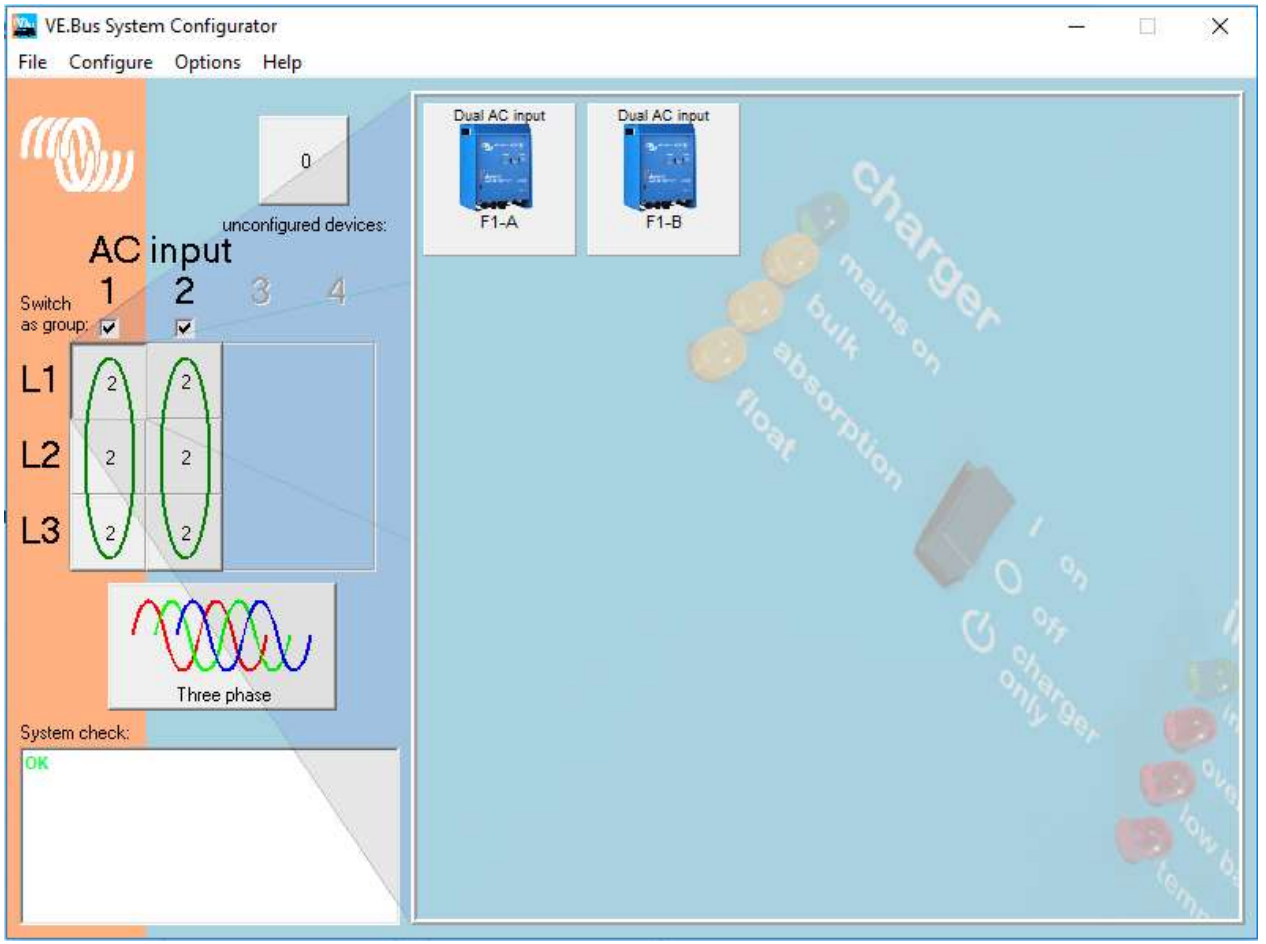
→ After establishing communication with the inverters, select the type of system operation:



Inverter/Charger Programming

→ When selecting the three-phase system, direct the inverters to their respective phases.

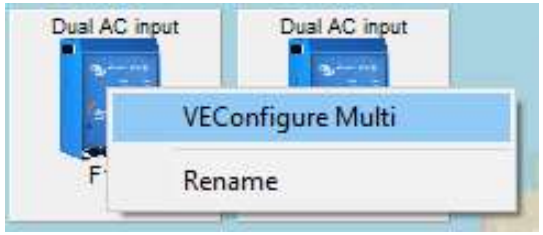
→ After selecting the phases, check if the inverters are in the correct phases, that is, identical programming and physical system.



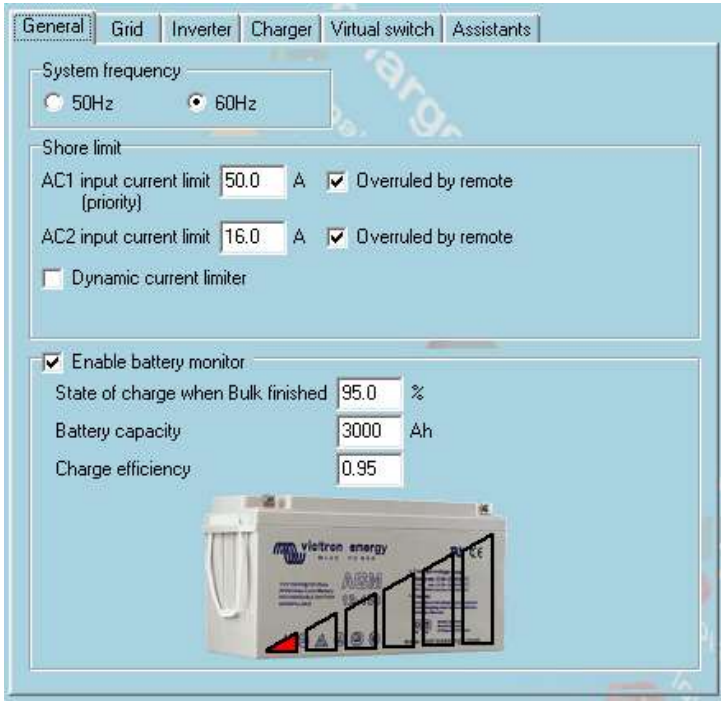
Inverter/Charger Programming

→ After establishing the operating phase of each inverter, perform individual programming of the inverters.

→ To access the inverter, click with the right mouse button and click on VEConfigure Multi.



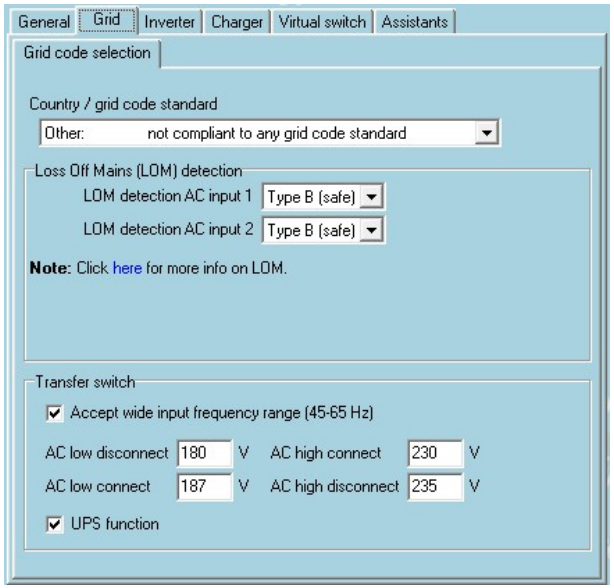
→ General: To Dyness batteries use the following parameters:



- State of charge when Bulk finished → 95%
- Battery capacity → According to the capacity of the installed battery bank (Verify on battery datasheet)
- Charge efficiency → 0.95

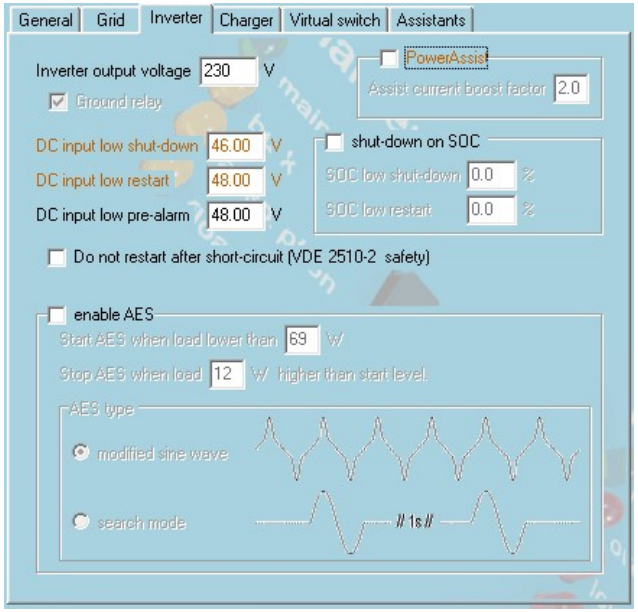
Inverter/Charger Programming

→ Grid:



- Country / grid code standard → Select 'Other'

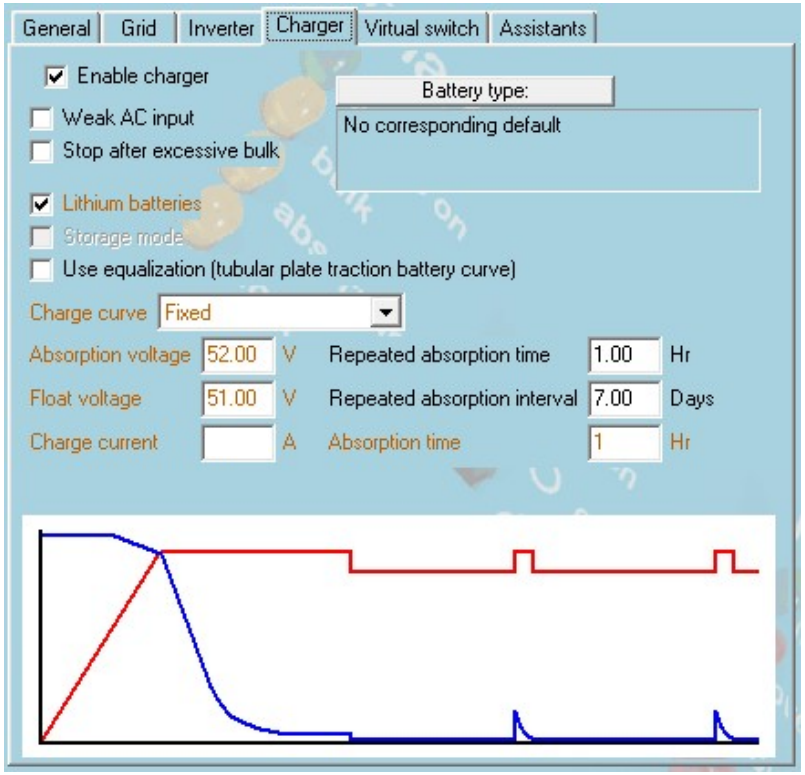
→ Inverter:



- DC input low shut-down → 46V
- DC input low restart → 48V
- DC input low pre-alarm → 48V

Inverter/Charger Programming

→ Charger:



- Lithium batteries
- Charge curve →Fixed
- Absorption voltage →53V
- Float voltage →52.5V
- Charge current →According to the installed current batteries*
- Repeated absorption time →1 Hr
- Repeated absorption interval →7 Days
- Absorption time →1 Hr

→ Virtual Switch:

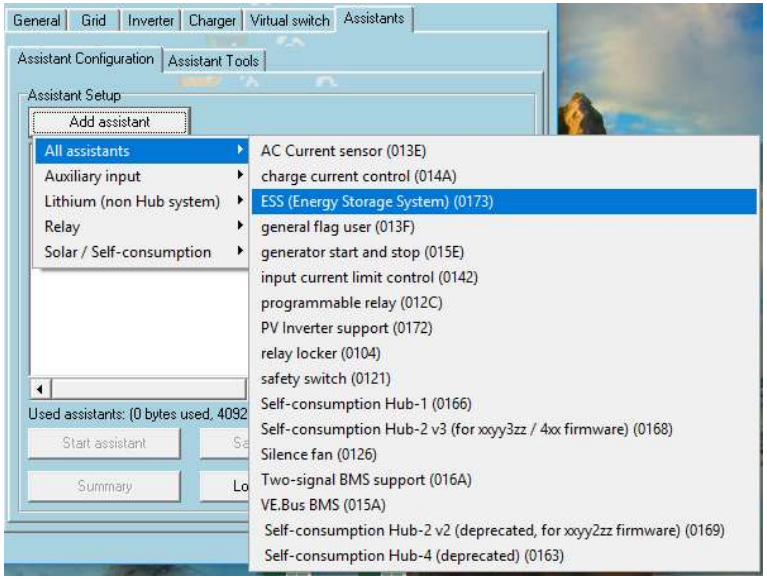
- Do not use

* Remember that every inverter is a charger, so a maximum current must be divided into the inverters that you charge as batteries.

Inverter/Charger Programming

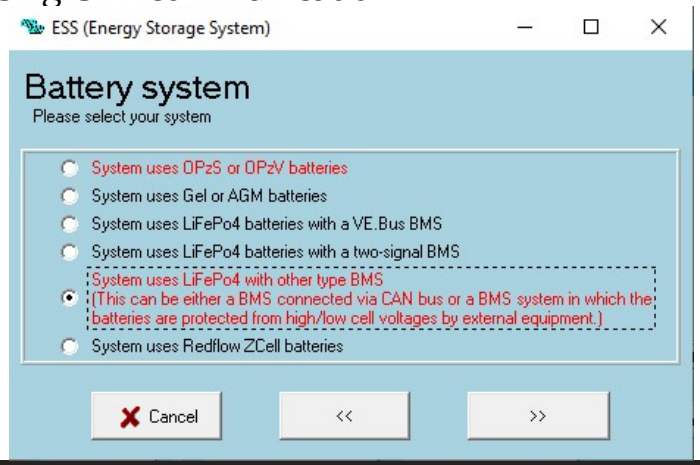
→ Assistants:

- Add assistant → All assistants → ESS (Energy Storage System)



→ Battery System:

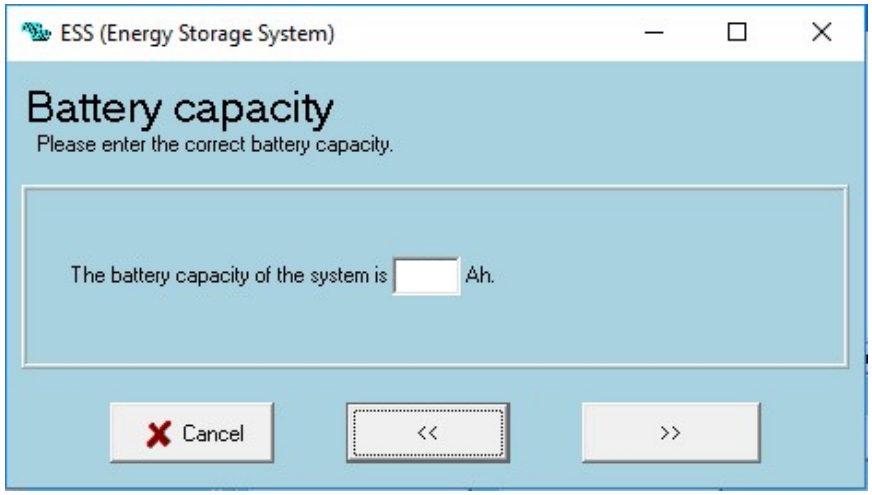
- Select LiFePo4 battery type with BMS using CAN communication



Inverter/Charger Programming

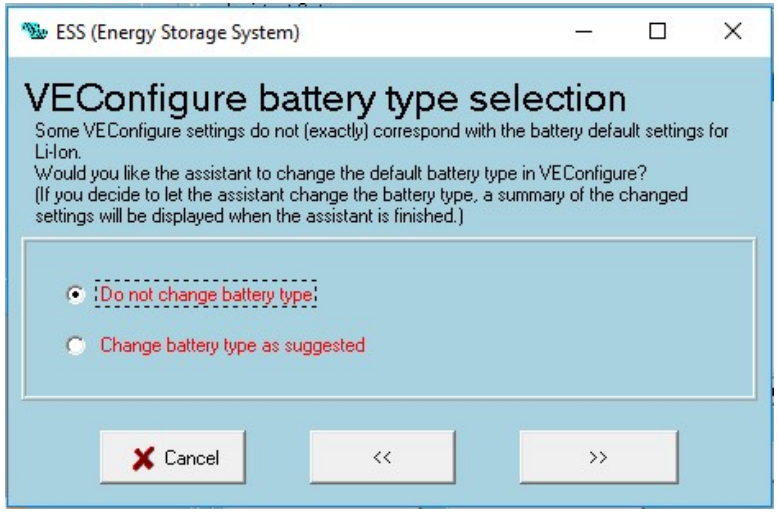
→ Battery capacity:

- Fill according to the seat capacity of your facility



→ VEConfigure battery type selection:

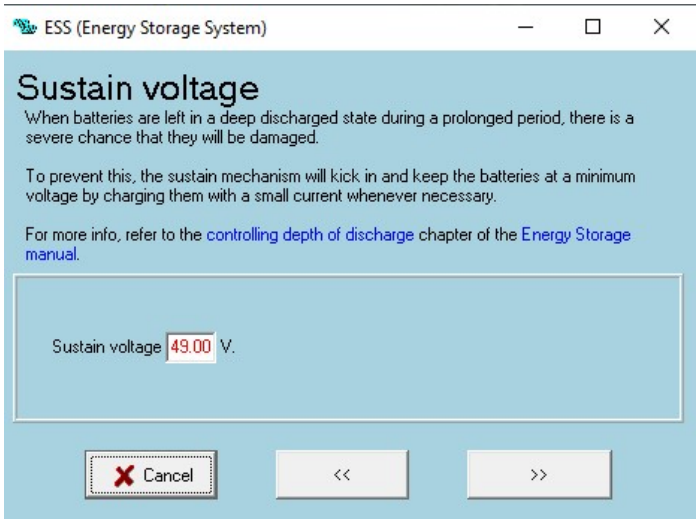
- Do not change battery type



Inverter/Charger Programming

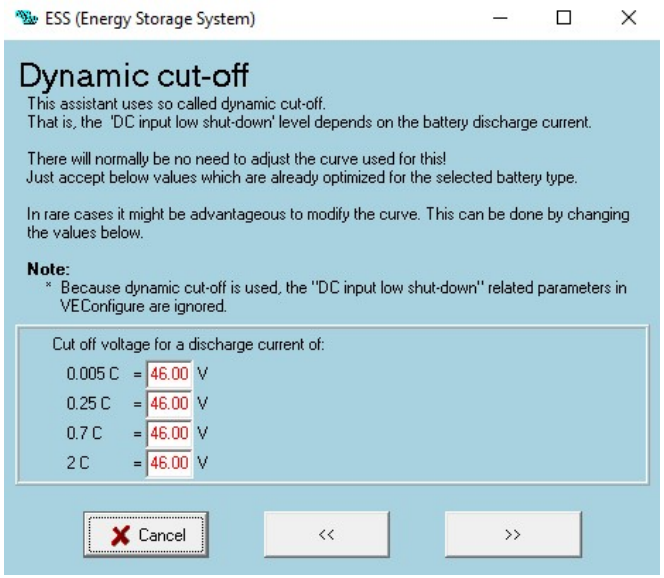
→ Sustain voltage:

- 49 V



→ Dynamic cut-off:

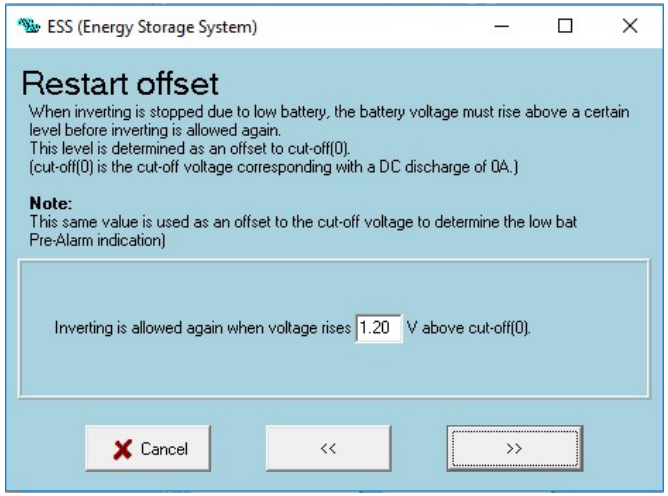
- Set all values to 46 V.



Inverter/Charger Programming

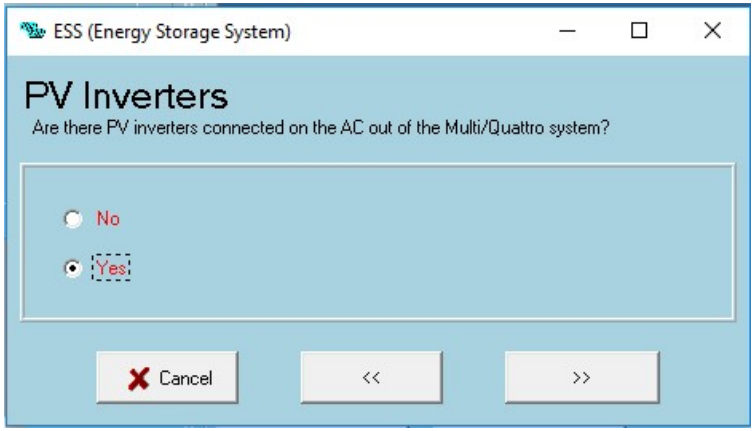
→ Restart offset:

- Inverting is allowed again when voltage rises **1,2 V** above cut-off.



→ PV Inverters:

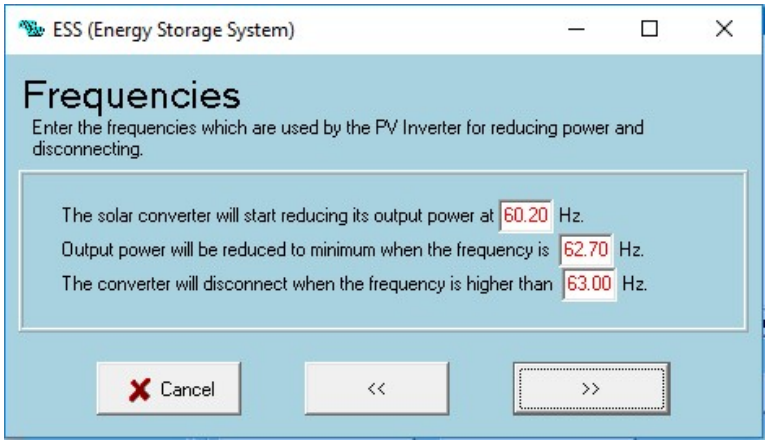
- Here you will select whether or not you have an on-grid inverter at the Victron Energy output.



Inverter/Charger Programming

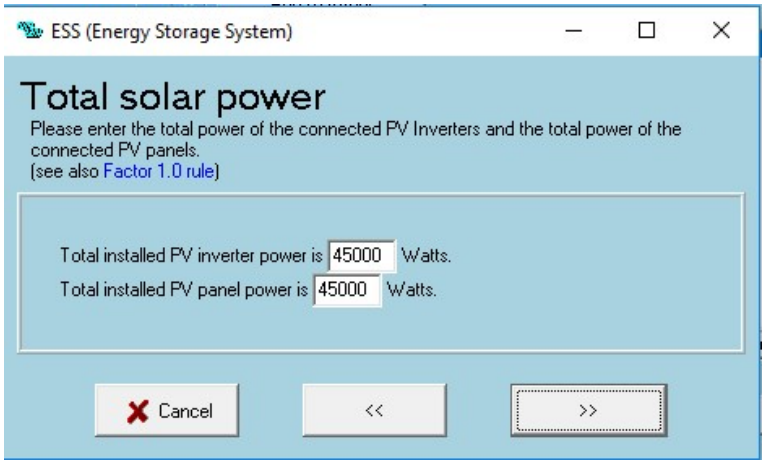
→ Frequencies:

1. 60,20 Hz
2. 62,70 Hz
3. 63,00 Hz



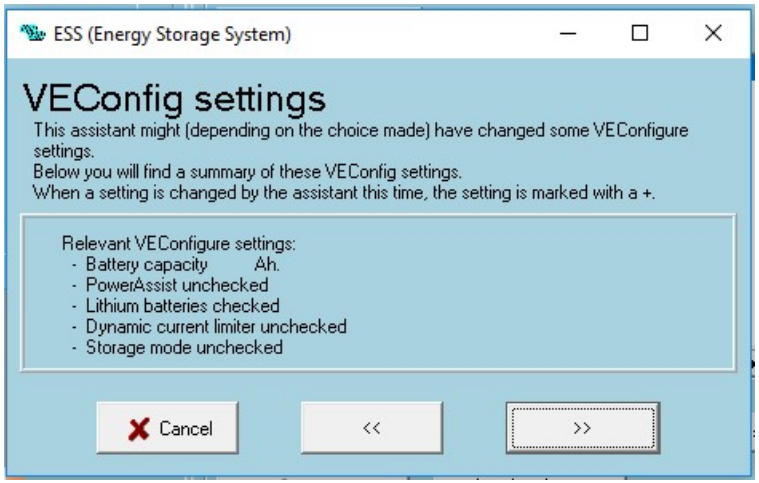
→ Total solar power:

- Configure total power of photovoltaic modules and on-grid inverter



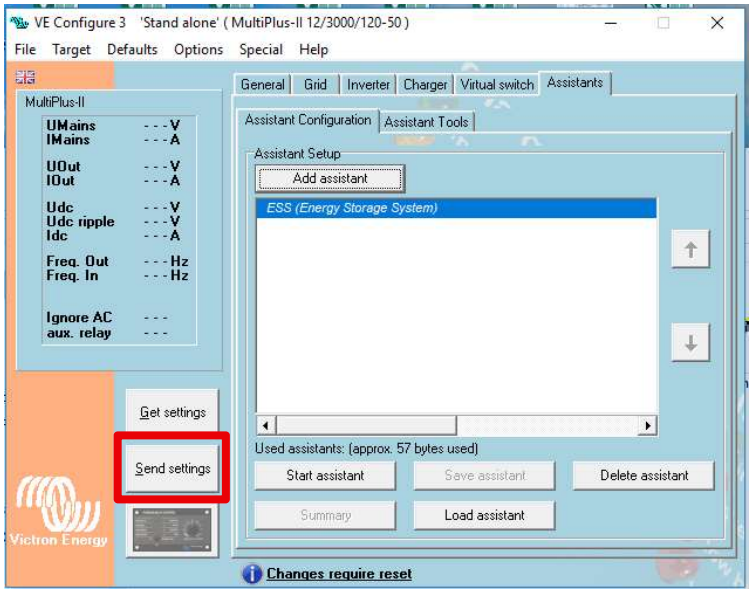
Inverter/Charger Programming

→ VEConfig settings:



→ Send settings:

- After checking all the configured parameters, send the configuration individually to each inverter



Programming Color Control GX

→ On Color Control GX:

- Settings → Services
- For Dyness battery communication with color control, use CAN-bus Profile → CAN-bus BMS (500kbit / s)

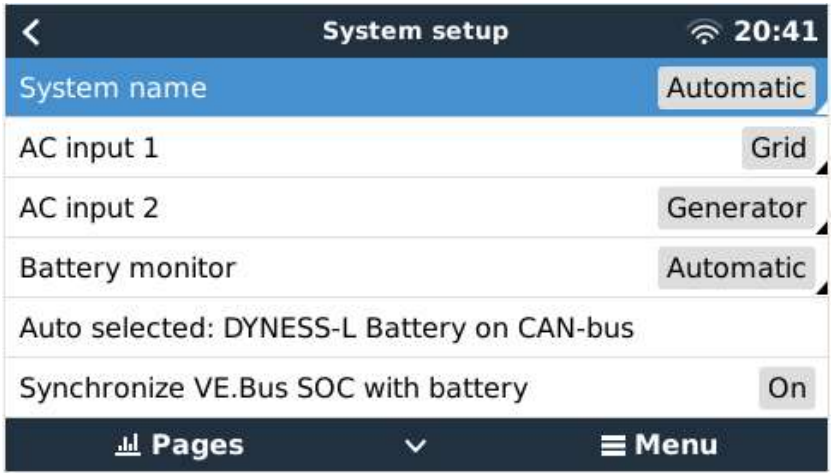
- Settings → ESS

1. Disable 'Grid meter installed'
2. To inject excess energy, enable 'Feed-in excess solarcharger power'
3. To use the charged battery mode as a backup, use 'Keep batteries charged' mode

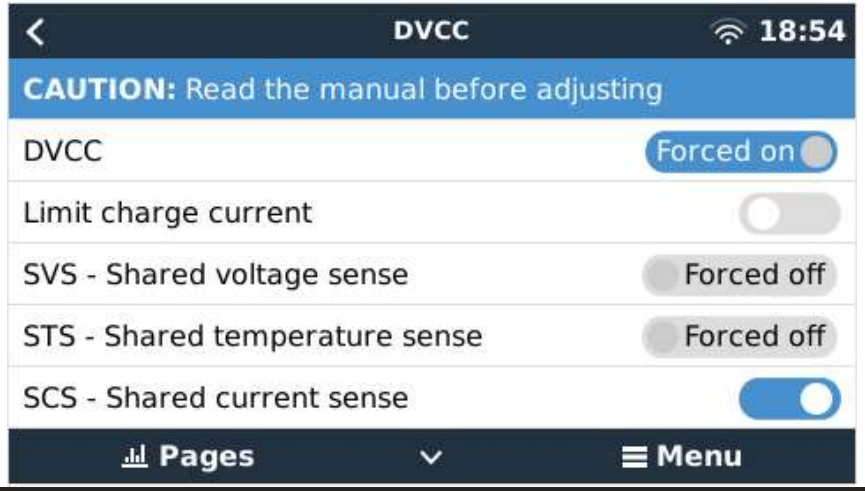
Programming Color Control GX

→ No Color Control GX:

- Settings → System Setup
- Set Dyness as 'Battery Monitor'.



- Settings →DVCC
  Activate:
  - DVCC
  - Limit charge current:
    25A×B4850 QTY or
    35A×B3 QTY
- Turn off:
  SVS
  STS
  SCS

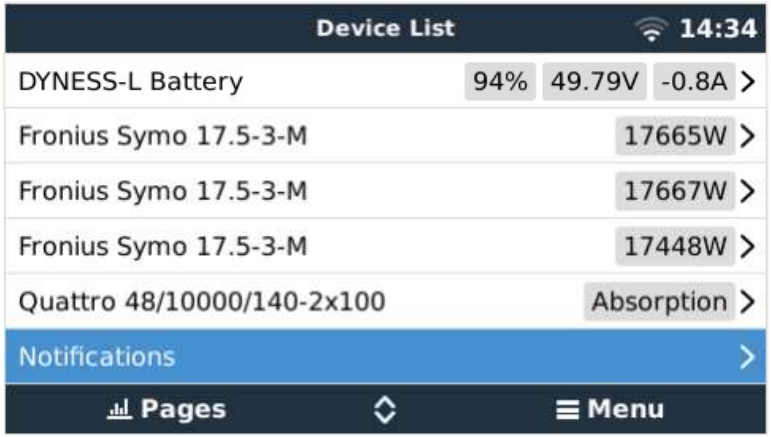


Programming Color Control GX

→ No Color Control GX:

- Settings → PV Inverters
- For communication with a Fronius inverter, just both be connected to the same ethernet network, and find in ‘Find PV inverters’

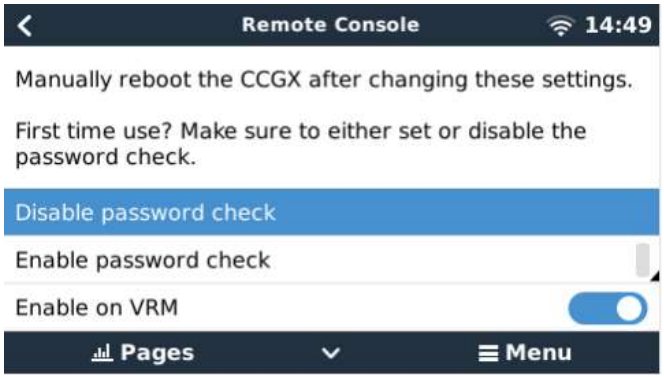
- Menu
- After establishing the communication with all equipment, all should appear in ‘Device List’.



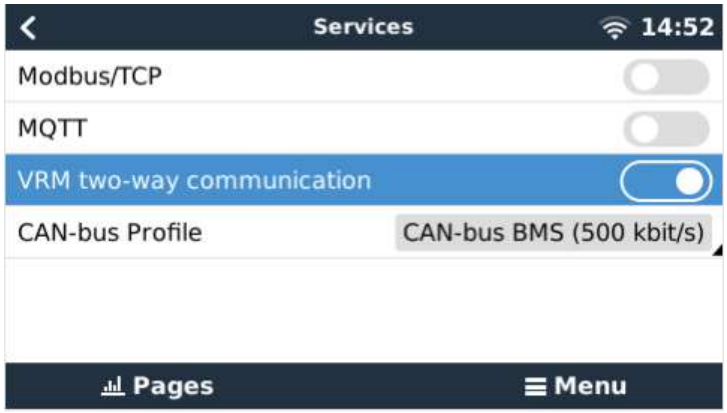
Remote Access – VRM

→ Color Control GX:

- Connect the color control on the internet, either via cable or wifi. If you want to use wifi, use the USB adapter model RALINK TECH RT5370.
- Settings → Remote console → Disable password check
- Then, enable the option 'Enable on VRM'



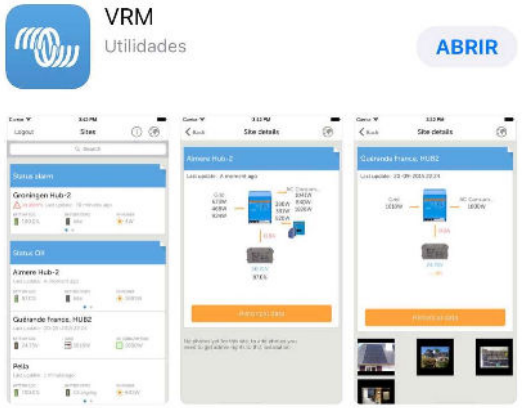
- Settings → Services → Enable VRM two-way communication



Remote Access – VRM

- To connect the system to remote access, create a free account at the link below. The same can be accessed later by the application available on Android and iOS.

https://vrm.victronenergy.com/landingpage



- To add the installation, select the type of device you are using

Remote Access – VRM

→ On Color Control GX:

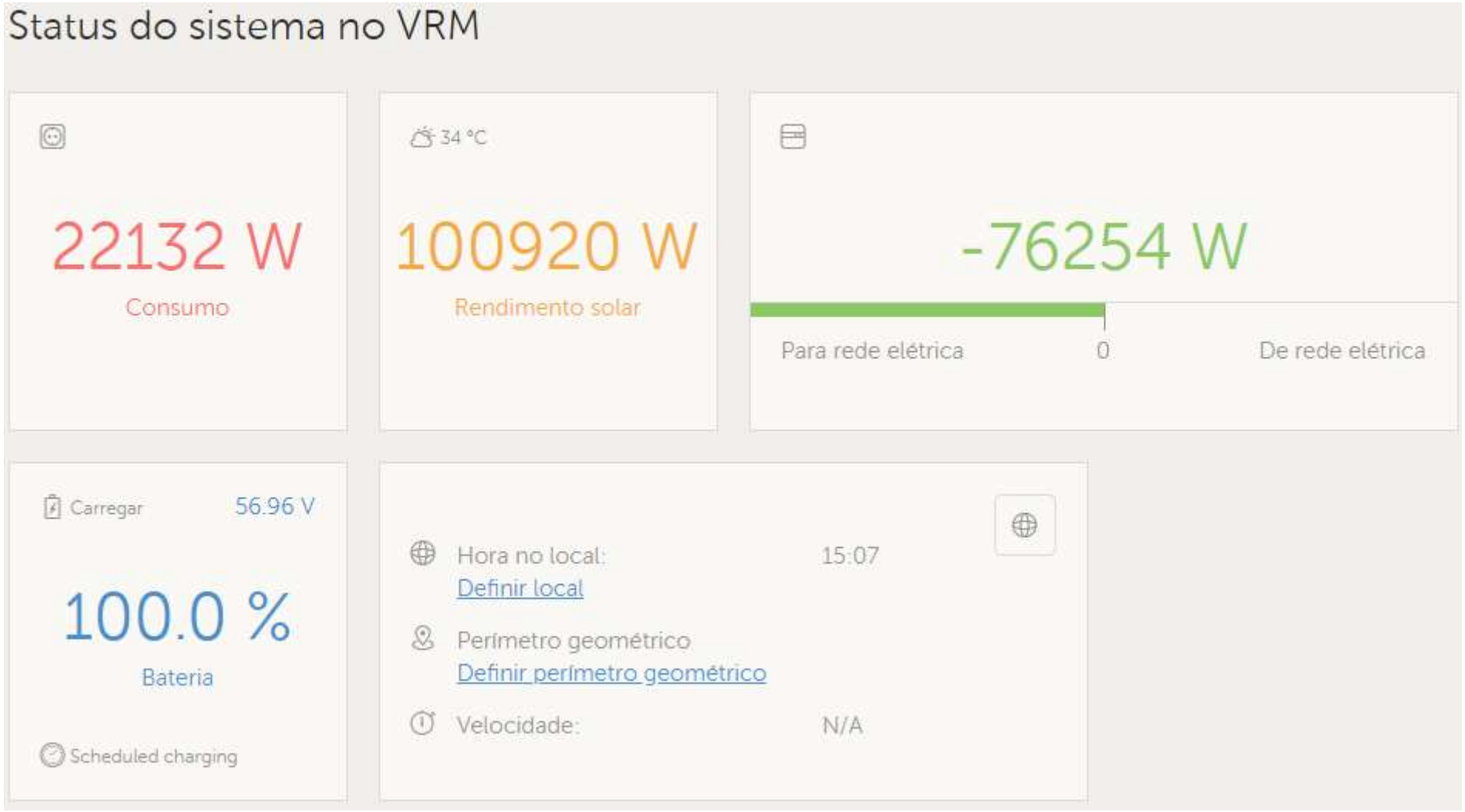
- You will be asked for the VRM Portal ID, which is found in Settings → VRM online portal

→ On Portal VRM:

- In case of other users have to access the VRM portal, just go to monitoring → settings → users
- Remembering that the email to be invited must also be registered on the VRM portal

Remote Access – VRM

→ Completed



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Energy. Anytime. Anywhere

THANK YOU!

victronenergy@ion-energia.com
15 3023 7799