

ENGLISH



Solar & Wind Priority

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1. Introduction



The solar and wind priority function ensures that solar and wind energy are used to charge the battery. At the same time, shore power is only used to prevent the battery from becoming too deeply discharged.

When activated, the system remains in this mode, called Sustain, for seven days; if there is not enough sun or wind, a full charge cycle will take place, charging the batteries to 100%. This ensures they remain in optimal condition and are ready for later use.

After these seven days, the system will not return to sustain mode. Instead, it will keep the batteries fully charged and prioritise solar power over shore power wherever possible during the day to run DC loads such as pumps and alarm systems.



The intended applications for solar and wind priority are boats, campers and other systems connected to shore power.

For installations with a permanent utility connection, such as houses, farms and other stationary installations, we have another solution: ESS.

Watch the video below for a quick overview:





2. Details & Requirements

Requirements:

- · Victron inverter/charger such as Multi, MultiCompact, MultiPlus, MultiPlus-II or Quattro with new microprocessor (26/27).
- Solar, preferably a Victron solar charger, but not necessarily, or a wind generator with a designated charger. Note that Victron does not supply charge regulators for wind.
- To use the 'Charge the battery to 100%' feature, either a VE.Bus Smart Dongle + VictronConnect App, which is an effective and simple monitoring solution; easy to retrofit onto existing systems, is needed, or the more advanced option, a GX device like the Cerbo GX or Ekrano GX.

Further details and specifications:

- While in sustain mode, the inverter/charger uses shore power to ensure the battery voltage does not drop below the configured sustain voltage.
- For charging the battery, as well as powering DC loads, solar and wind are prioritised. For AC loads that is not the case; shore
 power will be used to power them, which in many systems is not really an issue since they are rather small. If you prefer to
 also power AC loads from the battery, solar and wind, look into our Ignore AC input options in VictronConnect, available as the
 'Conditional AC input connection' settings menu. Also described in detail in this blog post on Panbo.com.
- The feature works purely on voltage, making it simple, robust and effective. It does not require an integration with battery monitors, GX devices or central control mechanisms such as DVCC.
- The Solar and wind priority mode works for systems with a managed battery, where a BMS manages the charging process (DVCC) and more traditional systems where the inverter/charger runs its own charge process. Examples of managed battery systems are Lynx Smart BMS, MG Electronics batteries with MG Master LV, and similar. For such systems, during those first seven days, the inverter/charger will charge using the configured sustain voltage rather than the battery-commanded charge voltage (CVL).
- Generator support: The system will automatically detect that a generator is running and then charge at full power as usual. For Quattros, it requires the generator to be wired to the AC-in-1 input. In case of Multis with an external transfer switch wired in front of it, the GX device can be used to detect if the generator is active (with a digital input) and pass that information along to the Multi. When using a Digital Multi Control panel (DMC) and closing the generator select input terminals of the screw connector on the backside, the system will charge at full power also.



3. Configuration



WARNING: Updating the firmware of this product range and making configuration changes is strongly advised to be carried out by trained personnel only. Doing the update will cause all settings to be reset to their default. We therefore advise saving the settings before updating and after updating reinstalling the configuration.

1. Installation of software and firmware updates

- Download VictronConnect version 5.92 or later from the Google or Apple App Store
- Update the inverter/charger firmware to version 506 or later using VictronConnect (MK3 required, not supported for iOS devices), VE.Flash (MK3 required) or VRM: Remote VE.Bus Firmware Updates.

2. Configuration

Via VictronConnect (requires an MK3 to USB interface)

The setting is available in VictronConnect on the Advanced tab:

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÷	Advanced				
Prior More	itize other energy sources				
Sust	ain voltage	26.00V			

Use the slider to enable solar & wind priority

• Via VEConfigure (preferably via VRM: Remote VEConfigure or VEConfigure and MK3 to USB interface)

The setting is enabled in VEConfigure on the Advanced tab:

File Portselection Target Defaults Options Special Help CL3 General Gid Inveter Charger Vitual switch Assistants Advanced MuthPlus Free, Dut 49.9 Hz UDut 20 V Suitain voltace To prioritize other energy source Suitain voltace T3.00 V	When you check this option the charger switches to float and starts charging
General Grid Invester Charger Vitualswitch Assistants Advanced MultiPus Free, Out 49.9 Hz UDut 230 V Tout 0.0 A Suitain votage 13.00 V	When you check this option the charger switches to float and starts charging
Freq. In Hz UMains 0.V IMains 0.1X Udc 13.1 V Udc 0.1 V Idc 0.1 V	with the dedicated voltage which can be specified below this checbox. This option is designed for mobile systems, such as boats and motorhomes that, besides an inverter/charger, also have solar installed. When enabled, the inverter/charger will charge the battery only up to the specified voltage; to leave the rest of the charging for the installed solar, or other installed renewable energy sources such as a wind generator. This will last until the repeated absorption interval is elapsed. From then on the charger will behave normally.
Get setting: Send setting: Viction Energy	ie VictionConnect, GX, device, VRM Portal, there is an option to override this behavior, for moments where a full charge from shore power is needed. Warning: This option is not to be used for ESS and/or Off-grid systems! For further details, see https://ve3.nl/vebus-pr

· Adjust the sustain voltage according to the table below. Note that these are recommended voltages:

For lithium batteries, setting Sustain to 13.0V, which equals 3.25V per cell, makes the system maintain a minimum state of charge of approximately 30%.

For Lead batteries (AGM, Gel), setting Sustain to Float minus 0.2V, makes the system maintain a minimum state of charge of approximately 95% (using 13.8V float voltage as an example).

System voltage	LiFePO4	Lead (AGM, Gel)			
12V	13.0V	Float* minus 0.2V			
24V	26.0V	Float* minus 0.3V			
48V	52.0V Float* minus 0.4V				
* See the battery manufacturer's recommendations for float voltage					



3. Check other settings

- If the storage setting is enabled, after 12 hours of float the system will go into storage mode as usual.
- Repeated absorption interval: With solar and wind priority enabled, this setting controls both the duration of the initial Sustain mode and the repeated absorption interval. Increase this setting in case it is preferred to keep the system in Sustain for longer allowing more days for solar and wind to charge the battery before falling back to shore.



4. Operation

Once solar and wind priority is activated, it can be overridden at any time via a virtual switch in VictronConnect, the VRM portal or the GX device to force charging with shore power to charge the battery to 100%. Once charging is complete, the system will return to sustain mode and prioritise solar and wind power.

This is especially useful when you go on a trip with a fully charged battery or to balance the lithium batteries. The forced charging via shore power can be cancelled anytime using the same switch.

Via VictronConnect:

To force a charge from shore power or stop a forced charge with VictronConnect:

- 1. Open VictronConnect and tap on the VE.Bus inverter/charger overview (connected either via VE.Bus Smart Dongle or MK3 to USB interface)
- 2. Tap the Solar & Wind icon next to the battery icon.
- 3. Tap 'OK' in the pop-up window.





Via GX device menu:

To force a charge from shore power or stop a forced charge via the Remote Console:

- 1. Open the Remote Console.
- 2. Go to Device List → [your_MultiPlus_or Quattro].
- 3. Click on 'Charge the battery to 100%'.
- 4. In the menu that opens, click 'Yes'.
- 5. Click 'Charging the battery to 100%' to stop the forced charge.
- 6. In the menu that opens, click 'Yes'.

<	MultiPlus 12/1600/70-16	ຈີ 16:10	<	Charge the battery to 100%	奈 16:10	<	ļ	MultiF
Switch		On	Shore po	wer will be used to complete a full I	oattery	Switch		
State		AES mode	After the	charging process is complete, the	system will	State		
Input current lim	it	12.0	Do you w	normal operation, prioritizing rene ant to continue?	wable energy.	Input curre	nt lin	nit
Charge the batt	ery to 100%	Press to start	Yes		۲	Charging th		
DC Voltage		13.25V	No		0	DC Voltage	0	
DC Current		0.0A				DC Current		
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Via VRM Portal: TBD when available

Watch the video below to learn how to use the solar and wind priority feature:





