

# Victron & BMZ ESS 3.0 / ESS 7.0

The combination of Victron products with the BMZ ESS 7.0 battery has been tested and certified by the R&D departments. The combination is actively supported by both companies.

## 1. Introduction

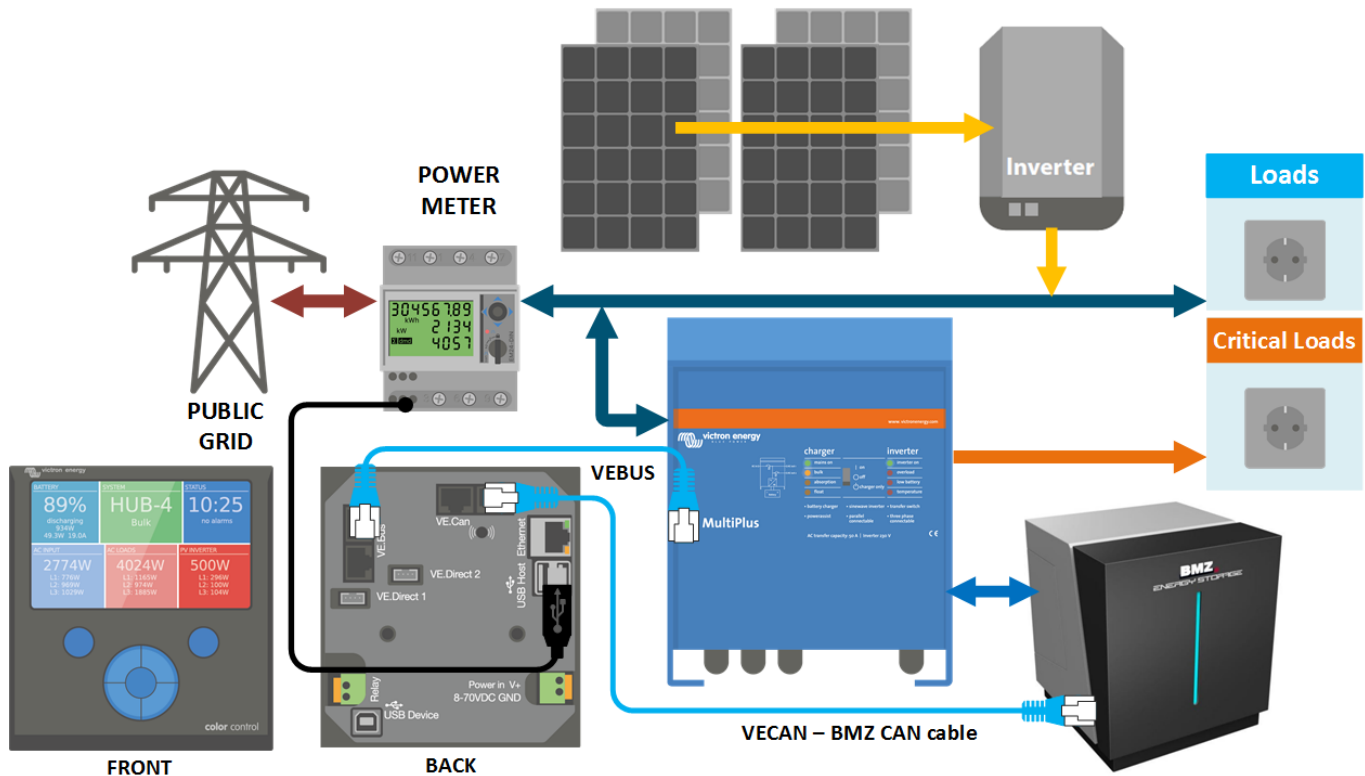
### 1.1 Compatible Victron products

All 48V Multis and Quattros. And always a [Venus-device](#) is necessary in the system, since that has the canbus port which is used for the (required!) communication between the ESS battery and the Victron system.

### 1.2 Notes

- BMZ batteries can only be used in a [Victron ESS installation](#) installation that uses the ESS Assistant.
- Paralleling multiple BMZ ESS batteries to expand capacity is possible. Contact BMZ for more information.
- Derating, based on the dynamic BMZ ESS charge- and discharge limits:
  - Minimum CCGX version is v1.72
  - The derating mechanism is not very precise yet. In other words, do not expect a discharge limit of 30A to result in a precise discharge of 30A.
  - Actual charge- and discharge limits are visible in the Parameters page. See screenshot below in Chapter 4.
- BMZ batteries and MPPT Solar Chargers with a VE.Can communication port cannot be both connected to the CCGX, because of different canbus speeds. Use Solar Chargers with a VE.Direct comm. port instead.

### 1.3 System diagram



## 2. Venus-device needed

To use the BMZ ESS in Victron system, it is necessary to use a Color Control GX or Venus GX. On first commissioning an external power supply (Not the 48V from the BMZ-Battery) is needed. The CCGX/VGX sends a keep alive signal to the BMZ ESS via canbus. This will only be send once the canbus baud rate is changed (see 5. [Venus-device](#) Configuration). Without it, the battery will have a communication fault and shut down after 10sec.

## 3. Wiring of communication cables

Use the *VE.Can to CAN-bus BMS type B Cable*, part number ASS030720018. Plug the side which is labeled Battery BMS into the BMZ BMS. Plug the side labeled Victron VE.Can into the [Venus-device](#).

Then, plug a [VE.Can terminator](#) in the other VE.Can socket on the [Venus-device](#). Two VE.Can terminators are included with the package of the CCGX as an accessory, only one is used. Keep the other one as a spare.

More information about the cable can be found in [its manual](#).

Without properly connecting this cable, the battery will stop charging/discharging after several minutes. Also, the battery will not show up on the display of the [Venus-device](#).

## 4. VEConfigure settings

### 4.1 General tab

1. Check "Enable battery monitor"
2. Enter the battery capacity:
  1. BMZ ESS 3.0 - 121.5 Ah
  2. BMZ ESS 7.0 - 156.6 Ah
  3. BMZ ESS X - 186.3 Ah
3. The other parameters ("State of charge when bulk finished" and "Charge efficiency") can be left to their default setting. They are not used in this setup.

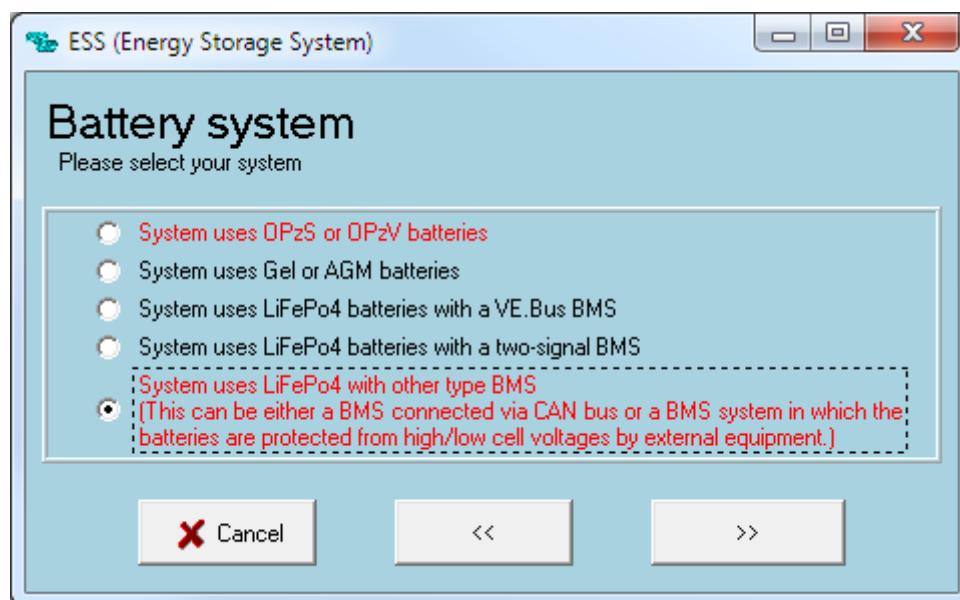
## 4.2 Charger tab

Parameter	Setting
Battery type	Lithium
Charge curve	Fixed
Absorption voltage	60.75 V
Float voltage	60.00 V
Absorption time	1 Hr

Note: make sure to double check the float voltage after completing Assistants, and if necessary set it back to 60.00 V.

## 4.3 ESS Assistant

Select the fourth battery type:



Then:

1. Do not change the dynamic cut-off values, they have already been set correctly after selecting the lithium battery type.
2. Sustain voltage: 50V
3. Same for the restart offset: do not change that.

## 5. Venus-device Configuration

- Select the *CAN-bus BMS (500 kbits/s)* CAN-profile in the [Venus-device](#). Menu path: *Settings* → *Services* → *CAN-profile*. Note that this changes the function of a VE.Can port: it is not possible to connect both VE.Can products and a BMZ battery together on a Color Control GX. Is is possible on the Venus GX
- After properly wiring and setting up, the BMZ ESS will be visible as a battery in the device list:

Device List		13:34
CAN-bus BMS battery	33% 50.87V 6.9A >	
Quattro 48/5000/70-2x100	Bulk >	
Notifications	>	
Settings	>	
Pages		Menu

- The parameters option within the battery page shows the actual battery charge and discharge limits:

Parameters		16:15
Max Charge Current	55.0A	
Max Charge Voltage	58.1V	
Battery Low Voltage	--	
Max Discharge Current	16.0A	
Pages		Menu

## DISQUS

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