

# 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 Color Control GX 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.

### 1.3 System diagram



## 2. Wiring of communication cables

To use the BMZ ESS in Victron system, it is necessary to use a Color Control GX. The Color Control GX takes care of sending the necessary canbus keep-a-live message to the ESS battery. Without it, the battery will open its internal emergency relay after 10 minutes.

A special RJ-45 cable is necessary to connect the battery to the Color Control GX. Pinout:

Function	VE.Can RJ-45	BMZ ESS RJ-45
GND	Pin 3	Pin 2
CAN-L	Pin 8	Pin 5
CAN-H	Pin 7	Pin 4

Place a VE.Can terminator in the empty socket on the CCGX

## 3. VEConfigure settings

### 3.1 Charge tab

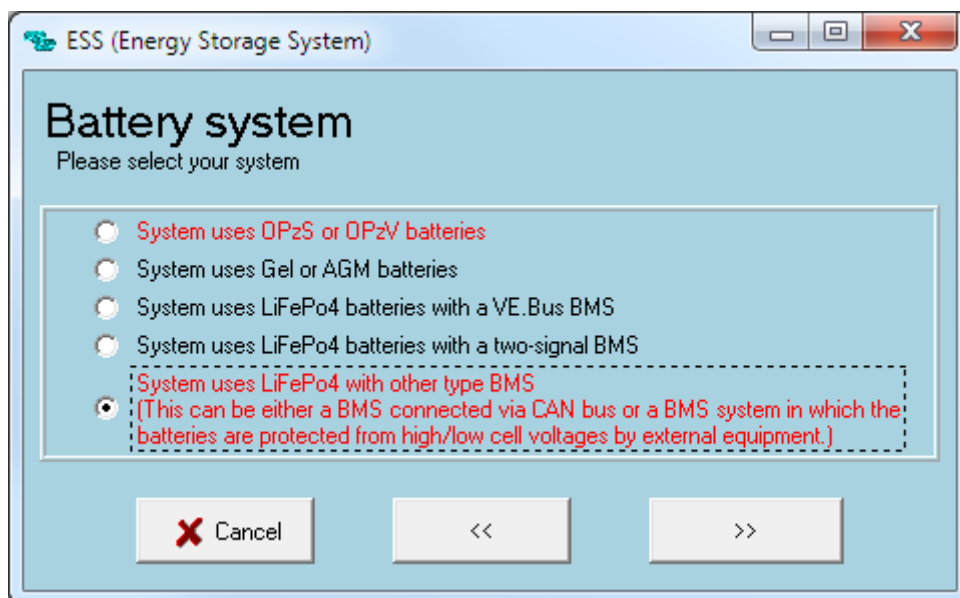
Parameter	Setting
Battery type	Lithium
Charge curve	Fixed
Absorption voltage	60.75 V
Float voltage	60.00 V
Absorption time	1 Hr

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

back to 60.00 V.

### 3.2 ESS Assistant

Select the fourth battery type:

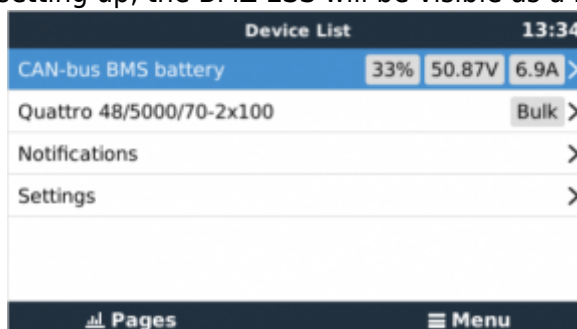


Then:

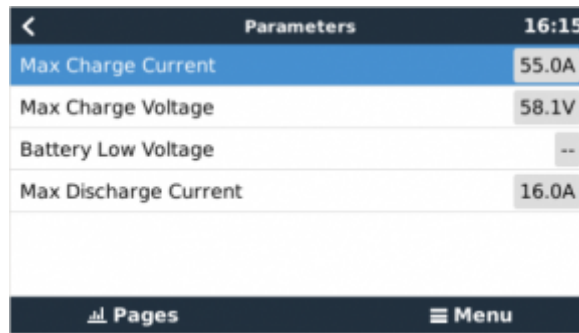
1. Enter the battery capacity:
  1. BMZ ESS 3.0 - 121.5 Ah
  2. BMZ ESS 7.0 - 121.5 Ah
2. Do not change the dynamic cut-off values, they have already been set correctly after selecting the lithium battery type.
3. Same for the restart offset: do not change that.

### 4. Color Control GX Configuration

- Enable the CAN-bus BMS Service in the CCGX. Menu path: *Settings* → *Services* → *CAN-bus BMS*. 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.
- After properly wiring and setting up, the BMZ ESS will be visible as a battery in the device list:



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



The screenshot shows a mobile application interface with a dark header. The header contains a back arrow, the word "Parameters", and the time "16:15". Below the header is a table with four rows. The first row is highlighted in blue and shows "Max Charge Current" with a value of "55.0A". The second row shows "Max Charge Voltage" with a value of "58.1V". The third row shows "Battery Low Voltage" with a value of "--". The fourth row shows "Max Discharge Current" with a value of "16.0A". At the bottom of the screen, there is a dark bar with "Pages" and "Menu" icons.

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

- Make sure to enable the *Synchronize VE.Bus SOC with battery* setting in the System Setup page in the CCGX: it will copy the State of Charge as reported by the BMZ ESS to the Multi or Quattro, making Hub-4 work with that SOC.

## DISQUS

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<https://www.victronenergy.com/live/> - **Victron Energy**

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