

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 [GX 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. GX 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. [GX 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 [GX device](#).

Then, plug a [VE.Can terminator](#) in the other VE.Can socket on the [GX 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 [GX 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.

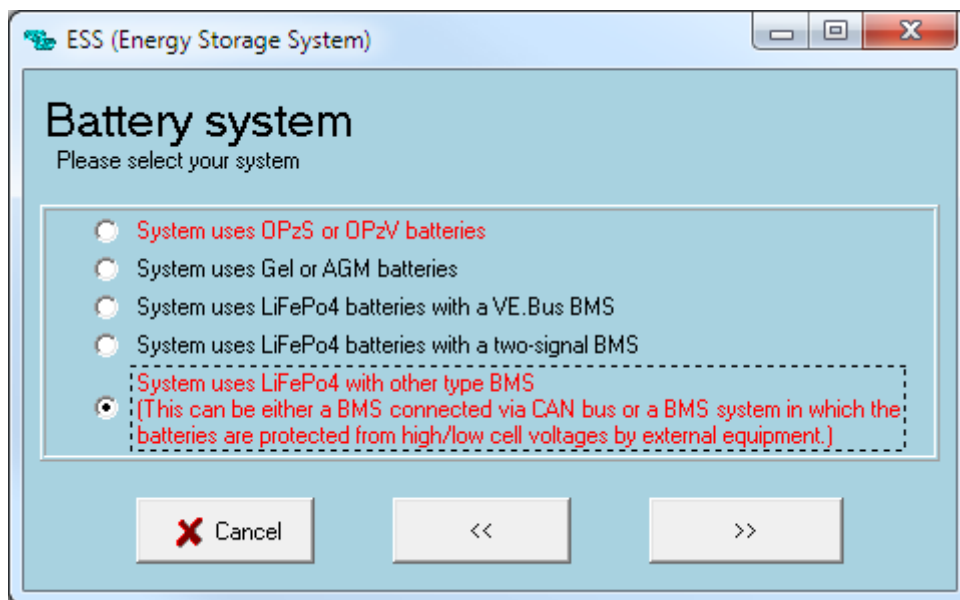
4.2 Charger tab

| 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.

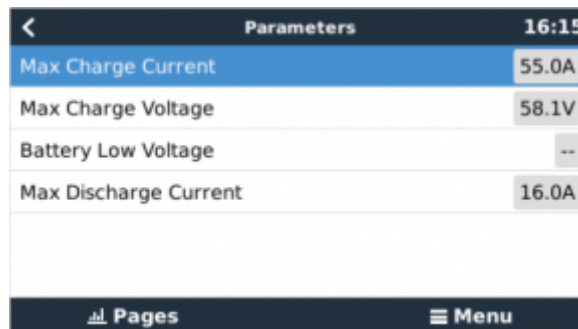
5. GX device Configuration

- Select the *CAN-bus BMS (500 kbits/s)* CAN-profile in the **GX 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 | | > |

- 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 |

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

Permanent link:
https://www.victronenergy.com/live/battery_compatibility:bmz_ess?rev=1565864011

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