Victron & MG Energy Systems battery solutions

Introduction

MG Energy Systems (MG) develops and produces advanced battery systems for Marine, Solar/off-grid, industrial and mobile applications. The roots of the cooperation with Victron Energy goes back to 2011 when we developed the first Lithium-Ion battery systems and was added to Victron's product range. A development cooperation were setup to achieve maximum compatibility, performance, functionality and safety between our battery systems and Victron's inverter/chargers. This close development is still an ongoing process. From Master BMS firmware development with new functions to GX products scripts and GUI to extend functionality and compatibility.

Products

MG has developed a complete range of products with all the same philosophy to provide modular and scalable solutions from 12 VDC to 800 VDC. Each battery system consists out of the following:

- One or multiple Master BMS's (MG Master LV (Lynx Ion BMS) or MG Master HV).
- One or multiple battery modules (HE Series, HP Series, LFP Series, UHE Series, RS Series, E-Rack Series).

Different setups can be created at different voltages and capacities. The most common to connect to Victron equipment is a Master LV in combination with one of the battery module series from 12 VDC to 48 VDC. For support information you can contact support@mgenergysystems.eu.

Product compatibility

MG is the only battery system provider that has VE.CAN implemented in the Master BMS. This has the advantage to directly control VE.CAN equipment on this communication bus like VE.CAN MPPT's and skylla-I's. Another advantage is that the VE.CAN bus can be connected to the existing NMEA2000 CAN-Bus networks. The default selected mode for the VE.CAN on the GX products (CCGX, Octo GX, Venus GX and CANvu GX) is used.

GX products requirement

One of the GX products needs to be connected in between the Master BMS and inverter/chargers with VE.Bus or VE.Direct to provide charge and discharge control by DVCC. The GX products work like an advanced gateway.

Compatible Victron Energy products

Device Control type Connection MultiPlus 500VA - 1200VA DVCC VE.BUS to GX product MultiPlus 800VA - 5kVA DVCC VE.BUS to GX product MultiPlus-II 3 kVA and 5 kVA DVCC VE.BUS to GX product MultiGrid 3kVA DVCC VE.BUS to GX product Quattro – complete range DVCC VE.BUS to GX product EasySolar – complete range DVCC VE.BUS to GX product Phoenix inverter – all with VE.Bus DVCC VE.BUS to GX product Skylla-I and Skylla-IP44[1] Current control VE.CAN directly Skylla-TG Allow-to-charge contact Remote on/off (inverted) Phoenix Smart IP43 Charger Allow-to-charge contact Remote on/off (inverted)

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DVCC    VE.Direct to GX product
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SmartSolar MPPT 75/10, 75/15, 100/15 & 100/20 DVCC VE.Direct to GX product SmartSolar MPPT 100/30 & 100/50 Allow-to-charge contact Remote on/off VE.Direct [2]

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DVCC    VE.Direct to GX product
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SmartSolar MPPT 150/35 Allow-to-charge contact Remote on/off

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DVCC    VE.Direct to GX product
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SmartSolar MPPT 150/45 to 150/100 Allow-to-charge contact Remote on/off input

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DVCC    VE.Direct to GX product
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SmartSolar MPPT 250/60 to 250/100 Allow-to-charge contact Remote on/off input

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DVCC    VE.Direct to GX product
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BlueSolar MPPT 75/10, 75/15 & 100/15 Allow-to-charge contact Remote on/off VE.Direct [2]

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DVCC    VE.Direct to GX product
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BlueSolar MPPT 100/30 & 100/50 Allow-to-charge contact Remote on/off VE.Direct [2]

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DVCC    VE.Direct to GX product
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BlueSolar MPPT 150/35 to 150/100 Allow-to-charge contact Remote on/off VE.Direct [2]

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DVCC    VE.Direct to GX product
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BlueSolar MPPT 150/70 & 150/85 Current control VE.CAN directly

[1] Current control requires to set the correct voltage in the charger before use. [2] Requires VE.Direct remote on-off cable non-inverting

Firmware

To have the best functionality it is recommended to update all firmware of the devices used in a system to the latest release version. The firmware of the MG Master LV (Lynx BMS) can be update by CAN-Bus locally with the “Diagnostic Tool” (Lynx BMS Tool) or by a GX product remotely on the VRM portal. Updating the Master LV (Lynx BMS) will also update the battery module connected to it automatically if necessary. This will have the advantage that the battery modules are always compatible with the connected Master LV.

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