Victron Energy & Dyness Batteries

This page tells you how to set up a Victron Energy system with Dyness low-voltage (48 V class) lithium iron phosphate (LiFePO4) batteries.

Dyness batteries communicate with the Victron GX device over BMS-Can.

1. Supported battery models

These Dyness models are for use with the 48 V range of Victron systems.

The settings in sections 8 and 12 are different for the two voltage classes. Make sure that you know the nominal voltage of your model.

Model	Energy capacity (kWh)	Nominal voltage	Nominal capacity (Ah)
DL5.0C	5.12	51.2 V	100
DL5.0C Pro	5.12	51.2 V	100
DL5.0F	5.12	51.2 V	100
PowerDepot G2	5.12	51.2 V	100
Powerbox G2	10.24	51.2 V	200
Powerbox G3	10.24	51.2 V	200
PowerBrick	14.336	51.2 V	280
PowerBrick Pro	14.336	51.2 V	280
PowerBrick Plus	16.07	51.2 V	314
PowerBrick SC	16.07	51.2 V	314
PowerBrick MAX	16.07	51.2 V	314
PowerBrick Max20	20.07	51.2 V	392
STACK LV			

Other models. These models are not on the 2026 Dyness compatibility list. Dyness states that they use the same BMS-Can protocol:

- 48 V models: B4850, VB4850, B3, A48100, B48100, BX48100, Powerbox F, PowerDepot.
- 51.2 V models: BX51100, B51100, Powerbox Pro, PowerDepot H5B.

The BMS sends the charge and discharge current limits to the GX device over BMS-Can. Refer to the Dyness datasheet for the maximum currents of each model.

2. Victron device compatibility

Dyness batteries are compatible with these Victron products when you connect the battery through BMS-Can to a GX device:

- **GX devices:** a GX device is necessary, for example the Cerbo GX or the Ekrano GX.

- **Inverter/chargers:** all 48 V models of the VE.Bus MultiPlus, MultiPlus-II, Quattro and Quattro-II, and the RS range. Connect the VE.Bus models to the VE.Bus port of the GX device. For minimum firmware, refer to section 3.
    - The EasySolar-II GX and the MultiPlus-II GX have an integrated GX device. They do not need a separate GX device.
- **Solar chargers:** all 48 V SmartSolar and BlueSolar MPPT. Connect each solar charger to the GX device through VE.Direct or VE.Can. This connection is mandatory. The GX device uses it to control the charge voltage and current.
- **Remote monitoring:** VRM Portal (SOC, voltage, current, temperature, alarms).

The battery BMS sends these values to the GX device:

- State of Charge (SOC)
- Charge Voltage Limit (CVL)
- Charge Current Limit (CCL)
- Discharge Current Limit (DCL)
- Temperature

The GX device sends these limits to all connected Victron inverter/chargers and solar chargers through DVCC.

Important: Only **48 V** Victron inverter/charger models are compatible with Dyness low-voltage batteries. 12 V and 24 V models are not supported.

3. Minimum firmware

Always install the latest firmware on all devices during commissioning and when you troubleshoot a problem.

Device	Minimum firmware version	Notes
Victron GX device (Venus OS)	**v3.31**	
VE.Bus inverter/chargers	**469**	MultiPlus, MultiPlus-II, Quattro, Quattro-II
RS inverter/chargers	**1.16**	

4. Hardware requirements

To connect Dyness batteries to a Victron system, you need:

1. A Victron GX device. Refer to section 2.
2. A **VE.Can to CAN-bus BMS cable Type A** (Victron part number ASS030710018). Connect the side with the label “CAN-bus BMS” to the **CAN IN** port of the master battery. On some models this port has the label **EXT CAN**. Connect the side with the label “VE.Can” to the BMS-Can port of the GX device.
3. A Victron VE.Can RJ45 terminator in the BMS-Can port of the GX device.

The Type A cable has this pinout:

Function	Victron GX device (RJ45)	Dyness battery (RJ45)
CAN-H	Pin 7	Pin 4
CAN-L	Pin 8	Pin 5
GND	Pin 3	Pin 6

The Dyness battery uses pins 4 and 5 for the Victron connection. Pin 6 is not used in the battery.

Important: Do not use a standard network cable (straight-through RJ45). Do not use the Type B cable. On current Dyness models, the Type B cable connects the GX ground to pin 2, which is an RS485 signal pin.

5. CAN bus wiring

Parameter	Value
Baud rate	500 kbit/s
Termination at the GX end	VE.Can RJ45 terminator in the BMS-Can port
Termination at the battery end	Refer to section 11
Cable	VE.Can to CAN-bus BMS **Type A** (ASS030710018)

Dual-CAN GX devices (Cerbo GX, Ekrano GX): the BMS-Can port (500 kbit/s) is a different bus from VE.Can (250 kbit/s). Do not connect the Dyness battery to the bus that has the Victron VE.Can devices.

Single-CAN GX devices: when you set the CAN port to CAN-bus BMS (500 kbit/s) for the Dyness battery, you cannot use it for VE.Can (250 kbit/s) devices. Plan the system for this.

The battery can also operate at 250 kbit/s (DIP switch #4 ON). Victron has not tested the battery at 250 kbit/s on a VE.Can port.

6. GX device configuration

6.1 Select the CAN-bus profile

On the GX device, go to **Settings → Services → [BMS-Can port] → CAN-bus profile**.

Select **CAN-bus BMS (500 kbit/s)**.

When the communication operates, the battery shows in the device list as **DYNESS-L Battery**.

6.2 Set the battery monitor

Go to **Settings → System setup → Battery monitor**.

Make sure that the Dyness battery is the selected battery monitor. The GX device then uses the SOC, voltage and current from the BMS.

7. DVCC settings

DVCC (Distributed Voltage and Current Control) sends the charge and discharge limits from the BMS to the connected Victron devices. DVCC **must** be on for Dyness batteries.

Important: Venus OS does **not** set the DVCC settings automatically for Dyness batteries. You must set them manually. Go to **Settings → DVCC**.

DVCC setting	Value	Enforcement
DVCC	**ON**	Not enforced. Set manually.
Limit charge current	**OFF**	Not enforced. The system uses the CCL from the BMS.
Limit managed battery charge voltage	**OFF**	Not enforced. The system uses the CVL from the BMS.
SVS - Shared Voltage Sense	**OFF**	Not enforced. Set manually.
STS - Shared Temperature Sense	**OFF**	Not enforced. Set manually.
SCS - Shared Current Sense	**OFF**	Not enforced. Set manually.

If you set “Limit charge current” to ON, the system uses the lower value of the DVCC limit and the CCL from the BMS.

For a full explanation of each setting and how it works with a CAN-bus BMS, refer to the Victron DVCC manual.

8. Charge and discharge limits

The Dyness BMS sends CVL, CCL and DCL to the GX device over BMS-Can. The GX device sends these values to all connected inverter/chargers and solar chargers through DVCC.

Value	48 V models	51.2 V models
CVL	53.5 V	56.5 V
CCL at 100 % SOC	0 A	0 A
DCL at 15 % SOC	0 A	0 A

The BMS changes CCL and DCL with the SOC. When the battery is full, the BMS sets CCL to 0 A:

- **Without DC-coupled PV feed-in:** the GX device signal to the charge controllers to stop producing charge current.
- **With DC-coupled PV feed-in on (ESS with a VE.Bus inverter/charger):** the GX device does not limit the solar chargers. The CVL then controls the end of charge.

When the SOC decreases to 15 %, the BMS sets DCL to 0 A. The inverter then stops.

9. BMS protection

The Dyness BMS has its own protection, independent of the Victron system. In normal DVCC operation, Victron devices obey the CVL, CCL and DCL from the BMS and do not reach the protection

thresholds.

For the voltage, current and temperature protection values, refer to the Dyness user manual for your model.

10. Wake-up, sleep and recovery

- To turn on the battery, push and hold the **WAKE/SLEEP** (SW) button for 3 seconds. In a parallel bank, refer to the Dyness manual for the start sequence.
- The battery goes into sleep mode automatically after 72 hours with no load, no charge and no communication.

11. Parallel batteries

- Set the DIP switches on the **master** battery only. Refer to section 4.1. Keep the slave batteries at the factory setting (all OFF).
- If the system has only one battery, that battery is the master.
- Connect the GX device to the **CAN IN** port of the master battery.
- Connect the **CAN OUT** port of each battery to the **CAN IN** port of the next battery.
- When the bank has more than 12 batteries, install a Dyness CAN terminator in the **CAN OUT** port of the last battery.
- Keep the communication cables between the batteries short.
- Do not mix batteries of different models, or old and new batteries, in one bank.
- For the maximum number of batteries in parallel, refer to the Dyness manual for your model.

12. Inverter/charger and MPPT settings

Important: When DVCC is on, the system compares the BMS limits with the settings in VEConfigure or VictronConnect. The system always uses the more conservative value:

- **Charge voltage:** the lower value applies. If the BMS CVL is lower than the charger setting, the CVL applies. If the charger setting is lower than the CVL, the charger setting applies.
- **Discharge shut-down:** the higher voltage applies. If the inverter low-voltage shut-down setting is higher than the BMS limit, the inverter stops at its own setting.

LiFePO4 batteries do not need a conventional bulk, absorption and float cycle. When DVCC is on, the BMS limits the charge voltage through CVL.

In an ESS, select **System uses LiFePO4 with other type BMS** in the ESS assistant.

Fallback charger and shut-down voltages for use without CAN communication.

13. Minimum battery sizing

For reliable operation, you need a minimum number of batteries for each Victron inverter/charger

size. Contact your battery supplier for these values.

14. Troubleshooting

The battery does not show on the GX device

1. Make sure that **CAN-bus BMS (500 kbit/s)** is selected. Go to **Settings → Services → [CAN port] → CAN-bus profile**.
2. Make sure that the DIP switches of the master battery are correct, and that DIP switch #4 is OFF (500 kbit/s). Refer to section 4.1. Turn the battery off and on again after you change a DIP switch.
3. Make sure that the cable connects battery pins 4 and 5 to GX pins 7 and 8. A standard network cable does not operate. Refer to section 4.
4. Make sure that the cable is in the **CAN IN** port of the master battery.
5. Make sure that the VE.Can terminator is in the BMS-Can port of the GX device.
6. Restart the GX device.

The battery shows as a Pylontech battery

1. Venus OS versions before v2.90 show a Dyness battery as a Pylontech battery. Update the GX device to the minimum firmware or later. Refer to section 3.

DVCC warnings or unexpected charge behaviour

1. Go to **Settings → DVCC**. Make sure that **DVCC is ON** and **SVS, STS and SCS are OFF**. Venus OS does not set these values for Dyness batteries. Refer to section 7.
2. Make sure that the Dyness battery is the battery monitor. Go to **Settings → System setup → Battery monitor**.
3. Make sure that no other monitor (for example a SmartShunt) is the primary battery monitor.

The solar charge decreases when the battery is full

1. This is normal. At 100 % SOC the BMS sets CCL to 0 A. Without DC-coupled PV feed-in, the solar chargers then supply the loads only. Refer to section 8.

The inverter stops at about 15 % SOC

1. This is normal. At 15 % SOC the BMS sets DCL to 0 A. Refer to section 8.

The SOC is not correct

1. The BMS calculates the SOC. Let the battery charge to 100 % SOC at regular intervals so that the BMS can calibrate the SOC.
2. For control functions that must operate near an empty battery (for example a generator start),

use the battery voltage, not the SOC.

Communication alarms in a parallel bank

1. Make sure that all batteries in the bank are the same model and hardware version. Refer to section 11.
2. Make sure that only the master battery has the Victron DIP switch setting.
3. Examine the cables between the batteries. Make sure that each cable goes from **CAN OUT** to **CAN IN**.

15. Further documentation and support

Further details about installation and configuration are available from Dyness. Refer to the Dyness download center.

Support for this battery should first come from your battery supplier.

Support from Victron is limited to the online Victron Community.

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