Battery Compatibility

Victron inverter/chargers, inverters, chargers, solar chargers, and other products work with common lead-based battery technologies such as AGM, Gel, OPzS, OPzV, traction batteries and more.

For lithium and other battery chemistries we also provide some documentation and guidelines when communication is required between the power electronics and the battery management hardware.

These are mostly connected via “BMS-Can” (CANBus) on a GX device.

Specific information about batteries that have been tested by Victron

- Aquion AHI
- AXIstorage 7S/9S
- BattleBorn
- Bluenova Energy Storage
- BMZ ESS 7.0 / ESS 9.0 / ESS X and ESS Z
- BSLBATT Lithium battery
- BYD B-Box
- Cegasa eBick
- Discover AES
- Exide
- Freedom Won LiTE and eTower
- Hubble Lithium
- LG Chem Resu - (Grid Connected ESS Only)
- MG Energy Systems
- Pylontech
- Redflow ZBM2 / ZCell
- Rolls LFP
- SimpliPhi Power
- SolarMD
- Victron Lithium Batteries

General information about batteries that are not on above list

Many additional 3rd party batteries are also compatible with Victron, and are recommended by local dealers.

Using these batteries is permitted under warranty, and they will require additional information and support from a local supplier.

Victron provides our battery protocol specification to these battery manufacturers on request from a regional manager.

DIY / Self-build oriented BMSes

The information above refers to manufactured battery packs with a supplied BMS.

Besides those, there are also companies selling seperate BMS-es intended to be used with self built lithium batteries. These are typically used when manufactured batteries with integrated BMSes don't meet the requirement of the application, or to save costs.

SUPPORT WARNING: At Victron, we offer very limited support to systems running on these custom BMS batteries.

The following BMS systems are known to correctly follow the Victron battery specification (but are not tested by Victron!):

- 123\SmartBMS - Victron instructions
- REC BMS - https://www.rec-bms.com/ (various Victron documentation on their website)
- Boostech GmbH BMS - https://www.boostech.de/bms-konfigurator/

Common issues we have seen from other DIY / Self-build oriented BMSes

Batteries with a BMS that blocks charge or discharge current, or sets CCL to 0 when full, cause all sorts of warnings and alarms, which can often be very confusing or misleading.

In this case the Victron inverter/charger reports overload, and time is spent in diagnosing the Victron and understanding why it gives an overload on site, but then works perfectly when on a test bench; to find the cause is a custom BMS with a DIY battery.

Another common example is Victron requires the BMS to change the Charge Voltage Limit to restrict power flowing to the battery as it gets full. If the BMS attempts restriction using the Charge Current Limit without adjusting the Charge Voltage Limit it can cause Overcharge, Overvoltage or Overcurrent warnings.

SAFETY WARNING

Batteries can be dangerous. And Lithium Batteries even more so, though don't under estimate the danger of gassing lead acid batteries either. Some types of lithium cells are somewhat intrinsically safe in the way that they won't catch fire when treated wrongly. Note though that while mostly not burning, there will be an enormous mess and smell.

Other lithium technologies are less/not intrinsically safe and they will easily catch fire by overcharging them for example. To go into more detail about all this is beyond the scope of this page - but please take this seriously and also be aware that Victron does not take any responsibility for this.

Worded simply: a battery must be intrinsically safe, and include its own large disconnect mechanism such as a contactor. Only relying on digital signals telling our inverters and chargers to stop charging is not sufficient.

Same message in more words is also here in this blog post: https://www.victronenergy.com/blog/2019/09/19/msol-gmbh-a-pv-energy-storage-ups-project/, as well as available all over the internet when reading into this issue.

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