

# Lynx Smart BMS

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Lynx Smart BMS



Front angle



VictronConnect

The Lynx Smart BMS is a dedicated Battery Management System (BMS) for the [Victron Smart lithium batteries](#). These batteries are Lithium Iron Phosphate (LiFePO4) batteries and are available in 12.8V or 25.6V in various capacities. They can be connected in series, parallel and series/parallel so that a battery bank can be built for system voltages of 12V, 24V or 48V. The maximum number of batteries in one system is 20, which results in a maximum energy storage of 84kWh in a 12V and up to 102kWh in a 24V<sup>1)</sup> and 48V<sup>1)</sup> system.

For more information on these batteries, visit the [Victron Smart lithium battery product page](#).

Out of the various available BMSes, the Lynx Smart BMS is the most feature rich and complete option and integrates seamlessly into the [Lynx Distributor system](#).

### Built-in 500A contactor

The contactor acts as a secondary safety system to protect the battery in case the primary controls (ATC, ATD and/or DVCC) fail to disable loads and/or chargers when required and is also suitable as a remote controllable main system switch.

### Pre-charge circuit

In addition to the contactor, a built-in pre-charge circuit prevents high inrush currents when connecting a capacitive load such as a MultiPlus/Quattro or other inverter, eliminating the need for external pre-charging.

### Monitoring and control

Monitor and control the BMS via Bluetooth using the [VictronConnect App](#) or a GX device such as a [Cerbo GX](#) and the [VRM Portal](#). A built-in battery monitor that operates in a similar fashion as the other [Victron Energy battery monitors](#), provides data such as state of charge, voltage, current, historical data, status info and more in real time, and with [Instant Readout](#) even without the need to connect to the BMS, allowing diagnostic at a glance.

### DVCC closed loop control as well as ATC/ATD contacts

Compatible Victron inverter/chargers and solar chargers are automatically controlled via a connected GX device and [DVCC](#). The ATC/ATD contacts can be used to control other chargers and loads that have a remote on/off port.

### Programmable relay

The relay can be used either as an alarm relay (combined with the pre-alarm) or to control an alternator via its external regulator (ignition cable). In Alternator ATC mode, the relay will only activate when the contactor is closed. Alternator ATC contact of the alternator opens first and then with a delay of 2 seconds the contactor. These 2 seconds ensure that the alternator is switched off before the battery is disconnected from the system.

### AUX terminal

The advantage of the onboard auxiliary power supply (1.1A @ system voltage) is to provide power to specific loads (i.e. a GX device) after the BMS has shut down the loads in the event of a low cell voltage event. If no charge voltage is detected within 5 minutes, the BMS including the AUX connection switches off.

### VE.Can and NMEA 2000 data communication

VE.Can allows for easy connection (standard RJ45 network cable) and communication with a GX device. Since the CANbus protocol is based on NMEA 2000 (and J1939), it is easy to integrate into a marine network and feed your marine MFD with data (requires a [VE.Can to NMEA 2000 micro-C male cable](#)).

### Lynx Distributor fuse monitoring

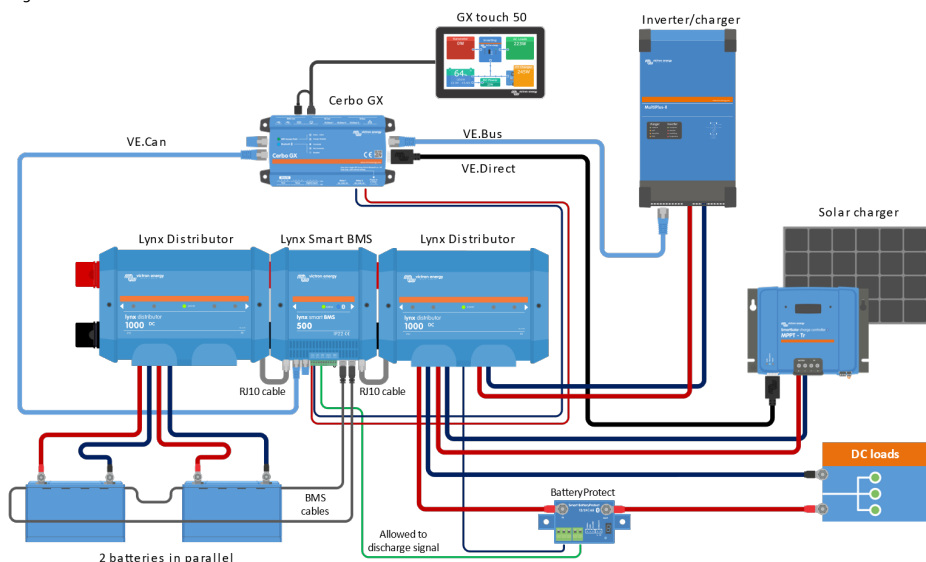
Read out fuse status and receive an alarm in case a fuse is blown. The Lynx Smart BMS monitors up to 4 connected Lynx Distributors and their fuses via VictronConnect or a GX device

<sup>1)</sup> To reduce required balancing time, we recommend to use a little different batteries in series as possible for the application. 24V systems are best built using 24V batteries. And 48V systems are best built using two 24V batteries in series. While the alternative, four 12V batteries in series, will work, it will require more periodic balancing time.

## System example – Lynx Smart BMS, 2x Lynx Distributor and lithium batteries

This system contains the following components:

- Lynx Distributor with 2 fused paralleled Lithium Smart batteries.
- Lynx Smart BMS with BMS, contactor and battery monitor.
- A second Lynx Distributor provides fused connections for inverter/charger(s), loads and chargers. Additional modules can be added if more connections are needed.
- A Cerbo GX (or other GX device) to read out the Lynx Smart BMS and Lynx Distributor data.



Lynx Smart BMS	LYN034160200
POWER	
Battery voltage range	9 - 58Vdc
Maximum input voltage	75Vdc
Supported system voltages	12, 24 or 48V
Reverse polarity protection	No
Main safety contactor continuous current rating	500A dc continuous
Main safety contactor peak current rating	600A for 5 minutes
Power consumption OFF mode	0.3mA for all system voltages
Power consumption in Standby mode	Approximately 0.6W (50mA at 12V)
Power consumption in ON mode	Approx. 2.6W (217mA at 12V) depending on the state of the relays
Minimum load resistance for pre-charging	10Ω and above for 12V systems 20Ω and above for 24V and 48V systems
AUX output maximum current rating	1.1A continuous, protected by resettable fuse
Allow-to-charge port Maximum current rating	0.5A at 60Vdc, protected by resettable fuse
Allow-to-discharge port Maximum current rating	0.5A at 60Vdc, protected by resettable fuse
Alarm relay (SPDT) Maximum current rating	2A at 60Vdc
CONNECTIONS	
Busbar	M8 (Torque: 10 Nm)
VE.Can	RJ45
I/O	Removable multi-connector with screw terminals
Battery BTV cables	Male and female circular 3-pole connector with M8 screw ring Up to 20 batteries can be connected in one system
Lynx Distributor fuse monitoring (up to 4 modules)	RJ10 (cable ships with each Lynx Distributor)
PHYSICAL	
Enclosure material	ABS
Enclosure dimensions (h x w x d)	190 x 180 x 80 mm
Unit weight	1.9 kg
Busbar material	Tinned copper
Busbar dimensions (h x w)	8 x 30 mm
ENVIRONMENTAL	
Operating temperature range	-40°C to +60°
Storage temperature range	-40°C to +60°
Humidity	Max. 95% (non-condensing)
Protection class	IP22

