

SOK LITHIUM BATTERY FAQ



Curious
CAMPERVANS

AGM → LITHIUM

You can swap your AGM batteries out for Lithium usually with no issues. Check your charging sources (solar charge controller, DC-DC charger, shore power connection, etc) to see if they have a lithium setting or custom settings that allow you to change the charge parameters. Lithium and AGM batteries have slightly different preferences for how they like to be charged, so you just want to make sure you can customize your charging sources to give the lithium batteries the charge they like. If you can set custom charge parameters, set them to as follows:

- Bulk / Absorption: 14.6V
- Float: 13.8V

100AH VS 206AH

Pros of going with 1x 206Ah = more space and cost efficient. Pros of going with 2x 100Ah = can connect them in parallel to charge / discharge at double max capacity. 200a vs. 100a discharge, 100a vs. 50a charge.

CANADIAN CERTIFICATION

The SOK battery cells are UL1973 & IEC62619 certified.

WARRANTY REGISTRATION

There is a warranty registration card in the box with the battery. You need to email info@sokbattery.com with your Curious Campervans order number (on your invoice) to register. The warranty period is 7 years, and covers anything that fails or doesn't stand up to the manufacturer's specs; it includes both the cells and the BMS.

NON-HEATED VS HEATED:

Non-Heated Batteries

The non-heated batteries have a low-temperature disconnect, which means they will not accept any charge when temps go below 0°C. This protects the batteries from damage if left in colder temperatures. You can, however, continue to discharge them at lower temperatures.

Heated Batteries

The new heated batteries contain an internal heating pad; the heating pad allows you to charge and discharge your batteries down to -20°C. The heating pad gets power from the charger, not the battery. So if you leave your heated batteries in storage with no charger, the heaters won't activate.

Can The Heating Pads Be Turned Off?

No, the heating pad is automatic, based on temperature sensors inside the battery. You can disconnect the heater inside the battery if you prefer not to have it. Also see above - if you disconnect any chargers from the battery, the heating pad will not activate.

How Much Energy Do The Heating Pads Draw?

The 100Ah batteries each draw 40 watts, and the 206Ah batteries each draw 70 watts.

Will The Heating Pads Kill My Batteries In The Winter?

If there's nothing charging the batteries and they are in freezing conditions the heaters will NOT turn on. The heaters will only kick on when the cells are below zero and the battery is receiving a charge - when they warm back up the heaters turn off until the temp drops below zero again.

Can The Heated Batteries Be Connected In Series?

Previous versions of the SOK heated batteries cannot be connected in series; batteries with the updated V8 BMS can be connected in series. However, you will require a battery voltage balancer. We recommend this one from Victron: <https://www.victronenergy.com/batteries/battery-balancer>

Can I Connect Non-Heated And Heated Batteries Together?

You can do this if the batteries will always be in positive temperatures. Once the heater kicks on in one of the batteries, they won't be able to properly balance. They will rebalance after a few charge/discharge cycles.

RECEIVING AND STORING YOUR BATTERIES:

Are The Batteries Fully Charged When Shipped?

No, the batteries are approx. 10% - 60% charged when shipped, due to shipping restrictions.

How Do I Store My Batteries?

For optimal battery health it's best to charge the batteries to 13.2V for longer term storage and leave it alone. Every 3-4 months, it's recommended to charge the battery back up to 13.2V if you plan on continued storage.

MOUNTING AND HOOKING UP YOUR BATTERIES:

Can I Mount The Batteries On Their Sides?

Yes, you can mount both the non-heated and heated batteries in any configuration, except upside down (terminals facing down).

Do I Have To Do Anything Special When Initially Connecting My Batteries?

In most cases, the answer is no. However, it is ideal to charge your batteries up to 100% before connecting them in parallel.

Do These Batteries Fit In Standard “Group Size” Battery Boxes?

No, these batteries are too large to fit into your standard battery box. Many customers have had great luck installing these batteries in tool boxes or similar enclosures that provide protection from the elements. If you wish to install these batteries on the tongue of a trailer, we recommend using the marine (plastic case) version.

Which Wall Charger Is Recommended?

We recommend using the [Victron Blue Smart IP67 Battery Charger 12/25\(1\) 120V NEMA 5-15](#).

Charge Settings (same for 100Ah and 206Ah)

General settings that apply to most equipment.

Multiply voltages by 2 for 24v systems and by 4 for 48v systems.

Bulk charge: 14.6V, Absorption charge: 14.6V, Float charge: 13.8V, Charged voltage: 13.8V

BLUETOOTH APP:

Bluetooth And Battery Management System (BMS)

The new non-heated and heated batteries both come with bluetooth technology and an updated BMS - a built-in battery management system that protects your cells from excessive currents, short circuits, overcharging or discharging, and extreme temperatures.

Bluetooth App

Search for “ABC BMS” in the google or apple store to locate the app. Link for more information:

<https://www.us.sokbattery.com/forum/questions-answers/how-to-read-and-set-the-abc-bms-app>

Incorrect Cycles Showing On Bluetooth App

It’s likely that the stats on the app are incorrect when first connecting the battery. You will need to run the battery through a few cycles (discharge, charge) before the stats will sync up properly. SOK will be releasing an app update soon, that will fix this issue.

Can The Bluetooth Be Disconnected Or Turned Off?

The bluetooth feature cannot be turned off in the app, however you can physically disconnect it inside the battery if you prefer.

In order to save battery power, the bluetooth turns off after 6 hours of inactivity. As soon as charge or discharge is detected the bluetooth will turn back on.

Settings for Victron SmartShunt & BMV-712

Battery Capacity: Varies depending on system.
Charged Voltage: 13.8 (*2 for 24v & *4 for 48v Systems)

Discharge Floor: 10%

Tail Current: 2.00%

Charged Detection Time: 3m

Peukert Exponent: 1.05

Charge Efficiency Factor: 98%

Current Threshold: 0.10a

Time-to-go averaging Period: 3m

Battery Starts Synchronized: Disabled

(NOTE: you will need to fully charge your battery to sync up SOC%)

State of Charge: 30%

(NOTE: Set this to 30% with brand new, untouched batteries. They ship at 30% SOC%.)

Comment on Discharge Floor:

Let's say you set this at 10%; when you get to 10%, the Smartshunt will indicate 10% remaining and 0 minutes until empty. If you choose to fully discharge your battery (not recommended) then set this to 0%. If you want to be more conservative on your time remaining, then set this to 20%

Settings for Victron MPPT Charge Controllers:

Battery Voltage: Set depending on system, normally 12v.

Max Charge Current: OK to set as high as desired, but no more than 50a per battery

Charger: Enabled

Battery Preset: User Defined

Expert Mode: ON

Absorption Voltage: 14.6v

Float Voltage: 13.8v

Equalization Voltage: 14.6v

Rebulk Voltage Offset: 0.40v

Absorption Duration: Fixed

Absorption Time: 15 Minutes

(This allows for proper cell balancing)

Tail Current: Disabled

Equalize Current: 0%

(For safety we don't want equalization at all.)

Automatic Equalization: Disabled

Equalize Stop Mode: Automatic (On voltage)

Maximum Equalize duration: 0 Minutes

Manual equalization: DO NOT CLICK START

Temperature Compensation: Disabled

Low Temperature Cutoff: Disabled (unless you add a temp sensor, the BMS has this protection built in)

Settings for Renogy Charge Controllers (Wanderer, etc):

IMPORTANT:

For battery type, select "USER"

High Voltage Disconnect: 15.0

Charge Limit Voltage: 14.6v

Equalize Charge Voltage: 14.4

Boost Charge Voltage: 14.6v

Float Charge Voltage: 13.8v

Boost Charge Return Voltage: 13.4

Over Discharge Return Voltage: 12.0v

Low voltage Alarm: 11.8v

Over Discharge Voltage: 11.0v

Discharge Limit Voltage: 10.5

Over Discharge Delay Time: 5s

Equalize Charge Time: 0

Boost Charge Time: 15 min

Equalize Charge Interval: 0

Temperature Compensation: 0