Sur-Ron battery wire hack.

This procedure is to fix an issue with the B16 balance wire, it will not in any way bypass any BMS protection. Your BMS will still be able to balance the cells and protect them.

The most common symptoms are:
Dashboard, head lights, tail lights, USB port flashing ON & OFF five times after switching the ignition to ON and dies completely, then 30 second pause and it flashes again and again in a endless loop. The flashes are quick in a constant pulse, about 1 sec per ON/OFF cycle.

It's also possible that the Dashboard, head lights, tail lights, USB port will only flash once and shuts off completely. That symptom can be also a bad BMS but best is to try that procedure to see if the issue can be resolved with it.

If you measure the voltage from the charge port and unplug the battery once the BMS is tripped you will monitor the voltage go down (can be 0V up to 40V) for about 30secs and then it should go back to were it was depending on your state of charge.

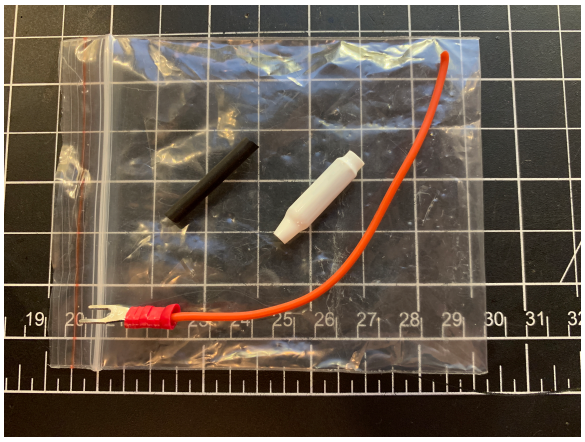
The procedure is simple and can be done with basic tools and electric knowledge:

Tools needed:

- 2.5mm hex key
- Philips head screwdriver
- Wire cutter and stripper (capable of stripping 22 & 26 awg wires)
- Plier, Vise grip, long nose, any plier will do.
- Adhesive (can be RTV, Silicone, hot glue) to replace the adhesive on the battery post.

Parts needed:

- The Luna Sur-Ron battery hack kit (just ask for one)
- Or just a piece of wire, a fork or ring terminal, butt crimp and piece of heat shrink.

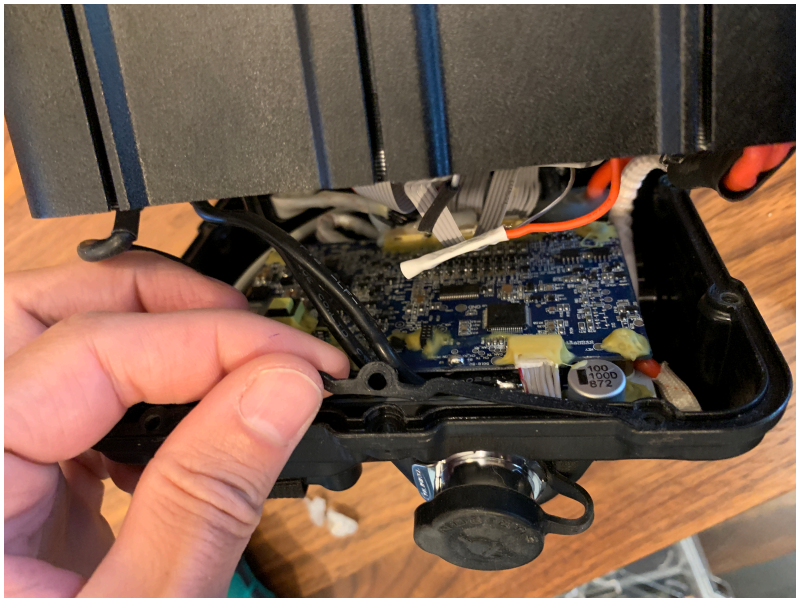


Procedure:

Note: The battery can be at any state of charge for this procedure, while the wire is “live” you cannot get shocked by it. But if by mistake you short-out the positive and negative terminals of the battery (the 2 buss bars where the 3 red and 3 black wire are secured to) then you will get a good spark, so pay attention to not put any metallic tools inside the battery!

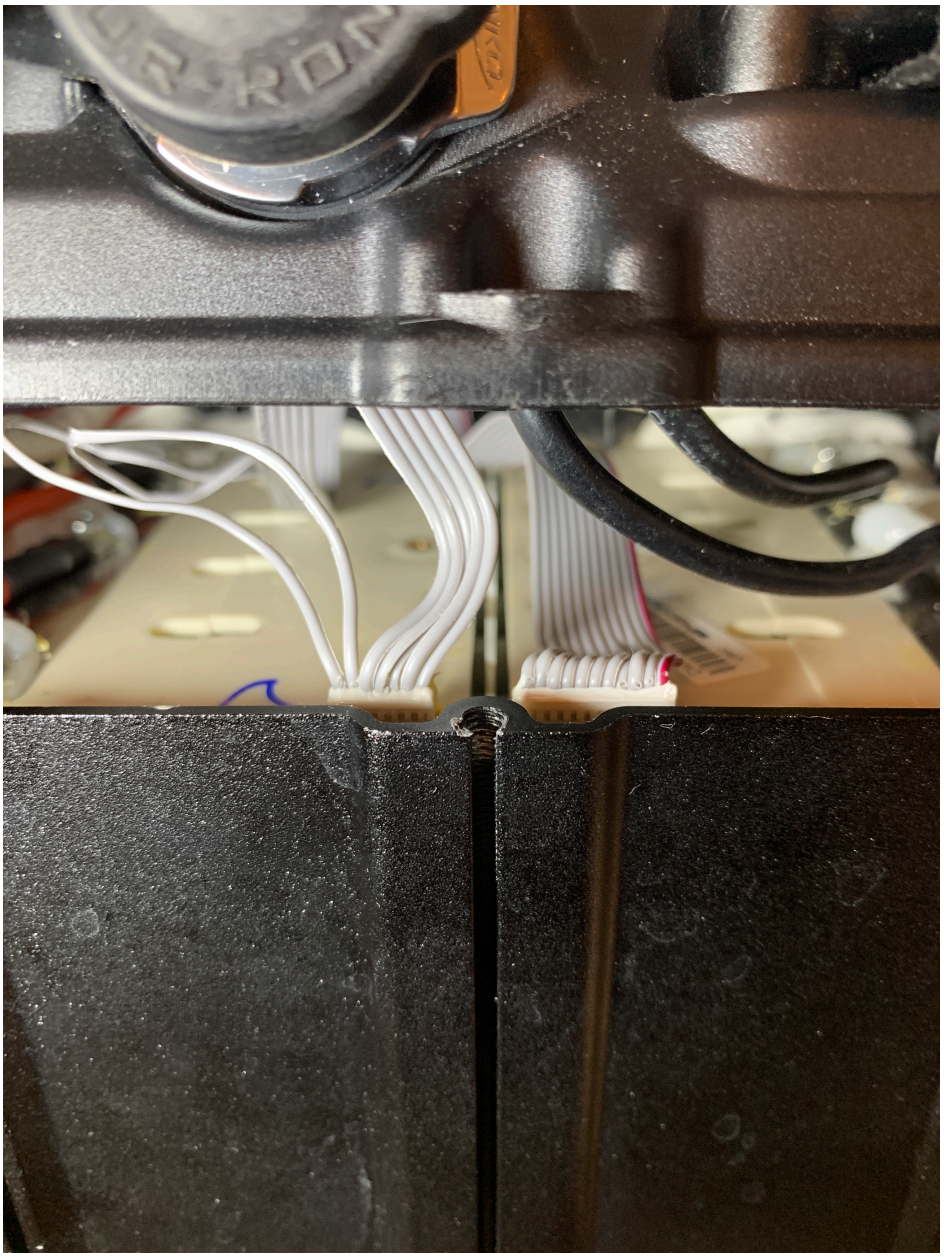
Steps:
1)Remove the 10 hex screws around the top of the battery

2)Gently pull the top off and make sure that the gasket does not get ripped or damaged



3)Put the gasket back into the BMS top cover groove

4) Locate the 7 wire ribbon cable and separate using a utility knife/blade the last 2 wires on the left from the rest. Pay attention not to cut the insulation off the wires. If it happens use some electrical tape to re-insulate the wire. Do not pull the wires from the connectors.



5) Locate and cut the second to last wire off the ribbon cable. This wire from now on will be called the B16 wire. Make sure to leave an inch from the connector as it be easier to insulate this wire later.

6) Remove the adhesive from the first positive battery post (red wire, left side on the previous photo)

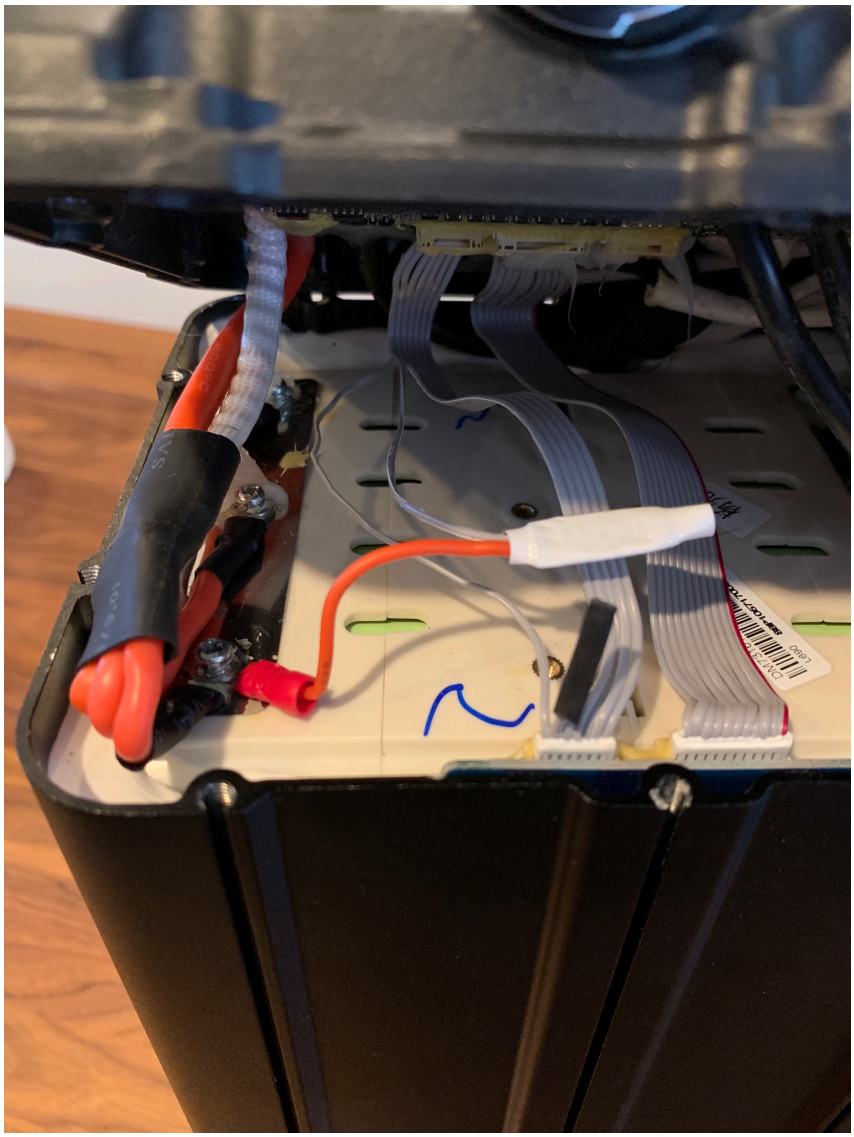
7) Loosen the Philips head screw enough so the fork terminal will fit in between the battery main positive wire and the washer. Tighten the screw back.

8) Strip 1cm (3/8”) of the end of the gray ribbon B16 wire, be gentle it’s easy to cut the copper strands and end up with not enough strands to make a good connection.

9) Strip 1cm (3/8”) of the end of the 20awg wire you received

10) twist both ends (gray B16 and loose wire) together and put the crimp over it. Make sure no copper stands are exposed. Use a plier to compress the crimp make sure you don't break the insulation.

11) Take the heat shrink and put it over the B16 wire, leave a few millimetres off and use heat to shrink it down, after a few seconds press on the heat shrink tip with your fingers. Now this wire is isolated and can't short out on anything.



12) Put adhesive on the battery screw like it was before. The goal is to lock it in place but also to prevent the screw from falling into the battery and shorting cells.

13) Make sure the gasket is still in the track and you can put the top back on. Don't over tighten the top screws.

You're done!