

2003 Catalina 34 MKII "JUNO" #1637

Solar / LiFePo4 / Inverter Installations

None of this constitutes advice. It's just to show what I did and inspire ideas and exchanges.

There is rarely perfection as every solution involves tradeoffs based on circumstances.

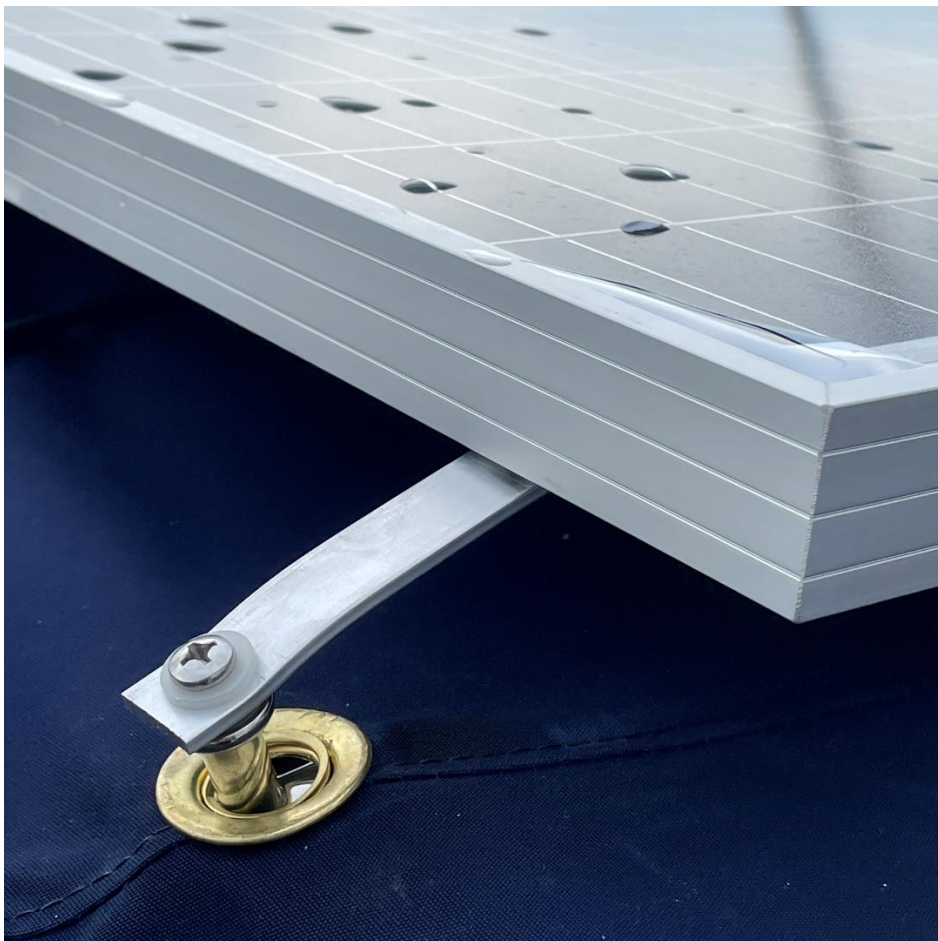


Solar Panels are 200w/24v Rich Solar : <https://richsolar.com/products/200-watt-24-volt-solar-panel>

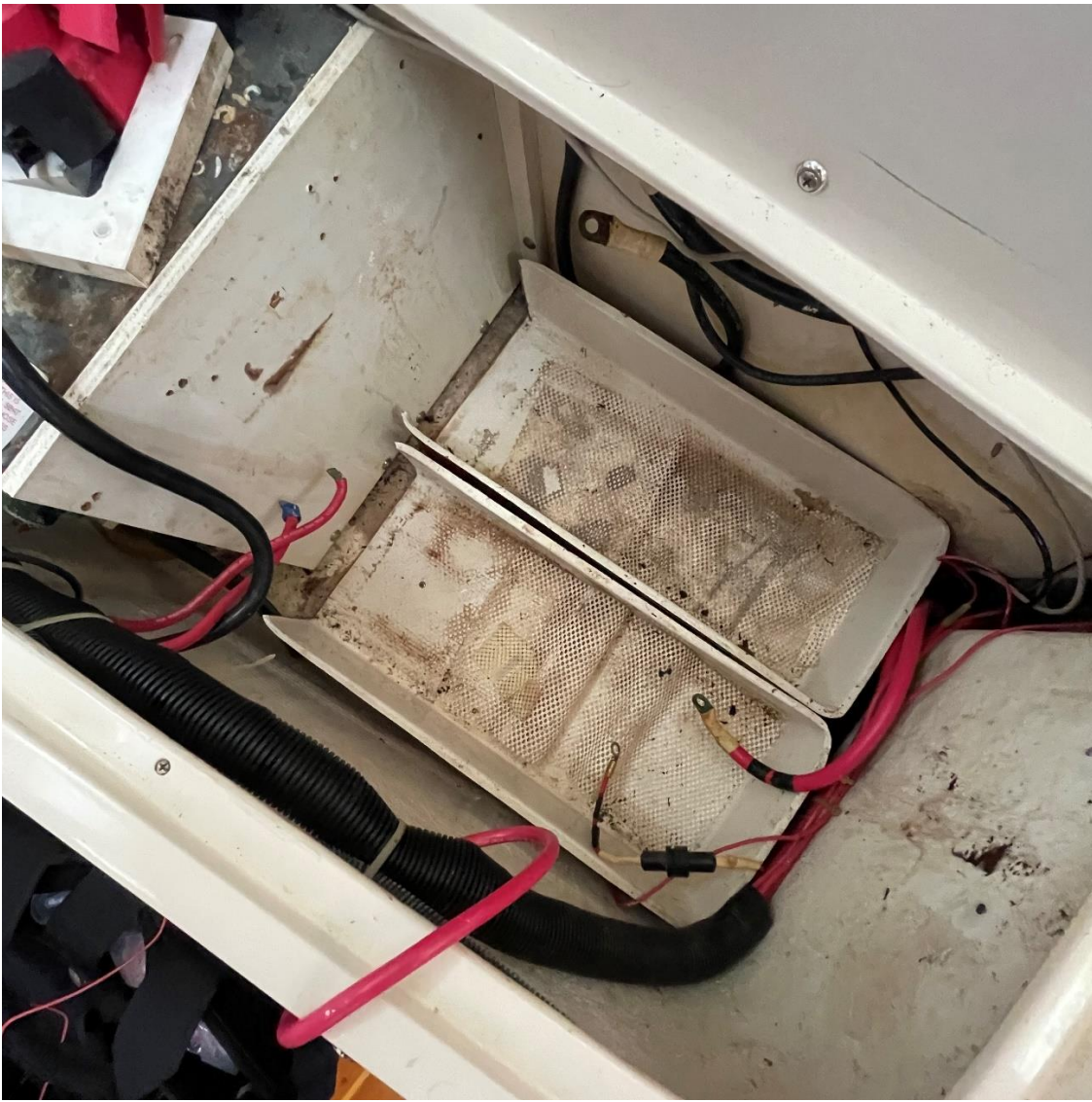
Gemini GEMSJ-1 Split Side Mounts <https://www.defender.com/product.jsp?id=6720963>

Aluminum bar from hardware store, 3/4" Brass gromets from Amazon (had to "oval" them slightly to get them over the stainless mount's crown.)

There's room for one more (3rd) 200w panel should I choose to expand in the future.



While in theory this should leak, to my own surprise, I've never had rain drip around these gromets. Whatever slight water gets there follows the stainless tube down to deck level. The idea was to get a simple, low-profile, and inexpensive mounting system. I'm happy with it and so far, it's survived a 50-60kts mega-squall at my dock.



Removed 4x 6v lead-acid Powertron 2000 batteries at 58 lbs each for a

Total: -232 lbs.

Replaced with single 300-amp AmpereTime LiFePo4 battery at 70 lbs.

Completely separated house from starter and alternator.

They can be combined for emergency starting.

Water drops on battery are sweat dripping from my brow... (Miami!)





Cutout a notch in the shelf under the galley sink to fit the Victron Multi-Plus 12/3000.

Breaker box is where the old 15 amp shore power battery charger was, and that charger is now part of the isolated starter system.

The Multi-Plus only charges the house lithium.

Shore power comes straight into the inverter (after the breaker) and then to the old 120v panel at the chart table.

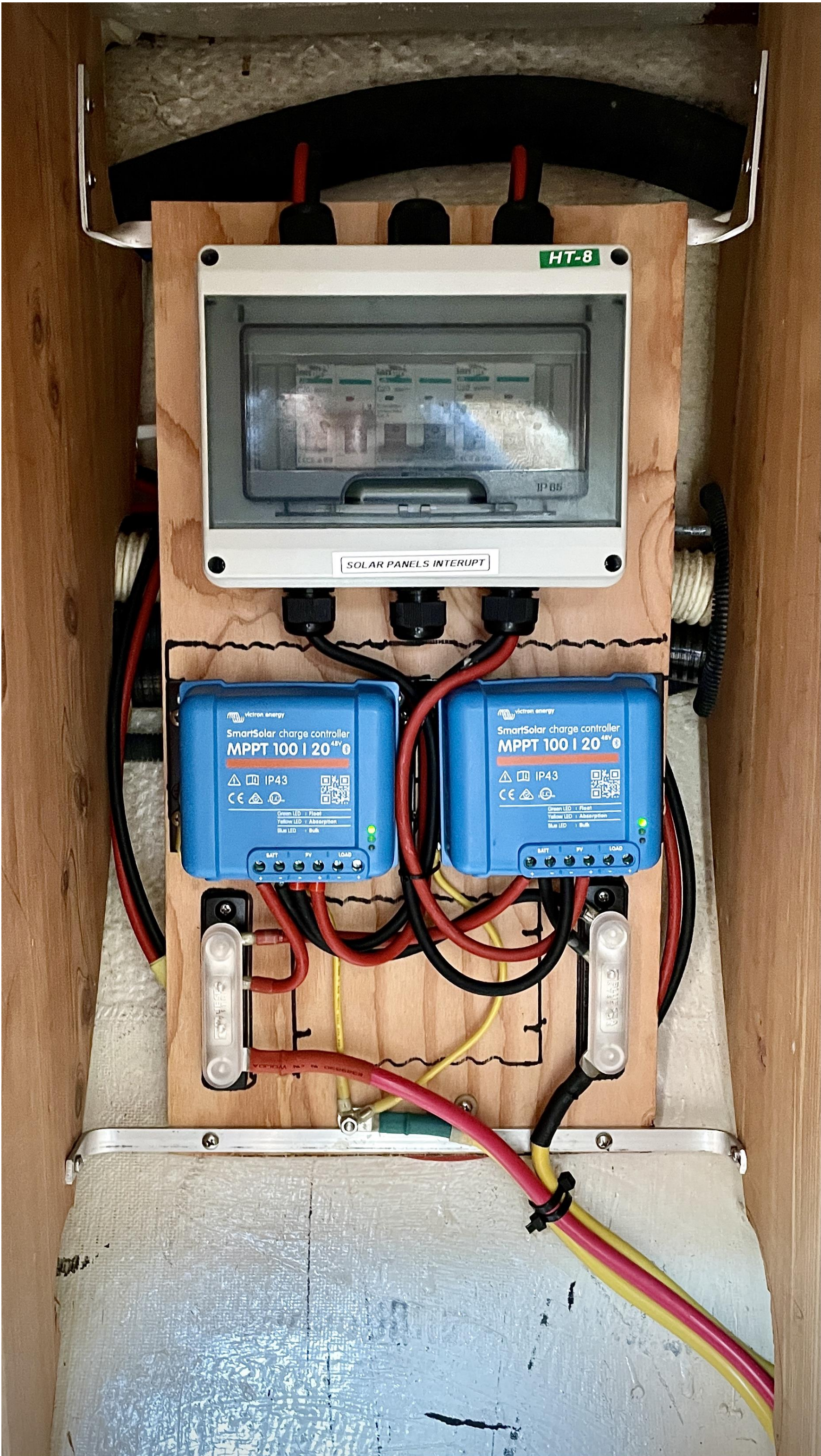




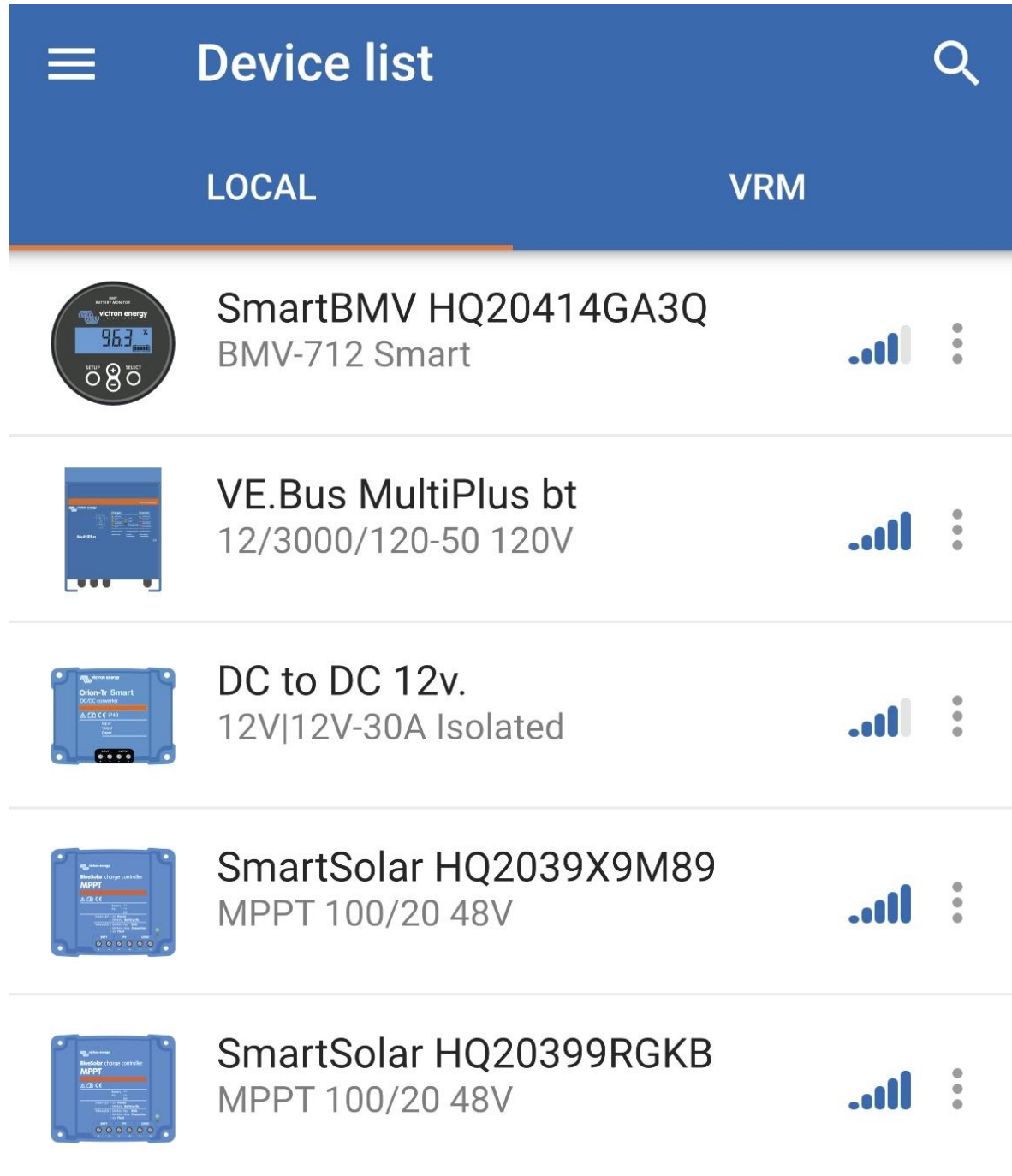
Starter battery is fused and connected to starter and alternator as before. Leads come off the battery to distribution blocks to connect to the 12v to 12v charger, which **charges the house system, indirectly from the alternator, at a controlled 30 amps**. This prevents the lithium battery from frying the alternator.

There are other solutions, like serpentine belts/pulleys and higher end alternators but at a much higher cost. Old charger repurposed to handle only the starter battery.





Individual solar charge controllers are apparently best at minimizing “partial shade” issues from hampering charging rates. Victron’s MPPT controller’s are joined in a “talk” group. They also could provide redundancy in the rare event of a failure. I’ve left room for expansion to a third MPPT controller. So far not thinking I need more than the 400w solar that I already have. Your geographic location plays a big role in determining how much you’ll need.



The screenshot shows the 'Device list' interface of the Victron mobile application. At the top, there is a blue header with a menu icon on the left, the title 'Device list' in the center, and a search icon on the right. Below the header, there are two tabs: 'LOCAL' (which is selected and highlighted with an orange underline) and 'VRM'. The main content area displays a list of five devices, each with a small icon, a name, a model number, and a signal strength indicator (represented by three bars) and a three-dot menu icon.

Device Name	Model
SmartBMV HQ20414GA3Q	BMV-712 Smart
VE.Bus MultiPlus bt	12/3000/120-50 120V
DC to DC 12v.	12V 12V-30A Isolated
SmartSolar HQ2039X9M89	MPPT 100/20 48V
SmartSolar HQ20399RGKB	MPPT 100/20 48V

Going all Victron gives me a single interface on my mobile device to keep an eye on things.