



## Installation Manual Table of Contents

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## Suggested Tools For Installation

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Here is a list of some of the tools that might be needed for your installation. If you feel this list is too ambiguous or potentially intimidating, now would be a great time to schedule your installation work with the professionals at AM Solar.

- Sturdy Ladder
- Hammer Crimper
- Heat Gun
- Wire Crimper
- Wire stripper
- Cable Cutter
- Multimeter
- Screwdriver
- Smartphone
- Drill
- Box knife
- 91% Isopropyl Alcohol
- Cleaning rags
- Crescent wrench
- Safety glasses

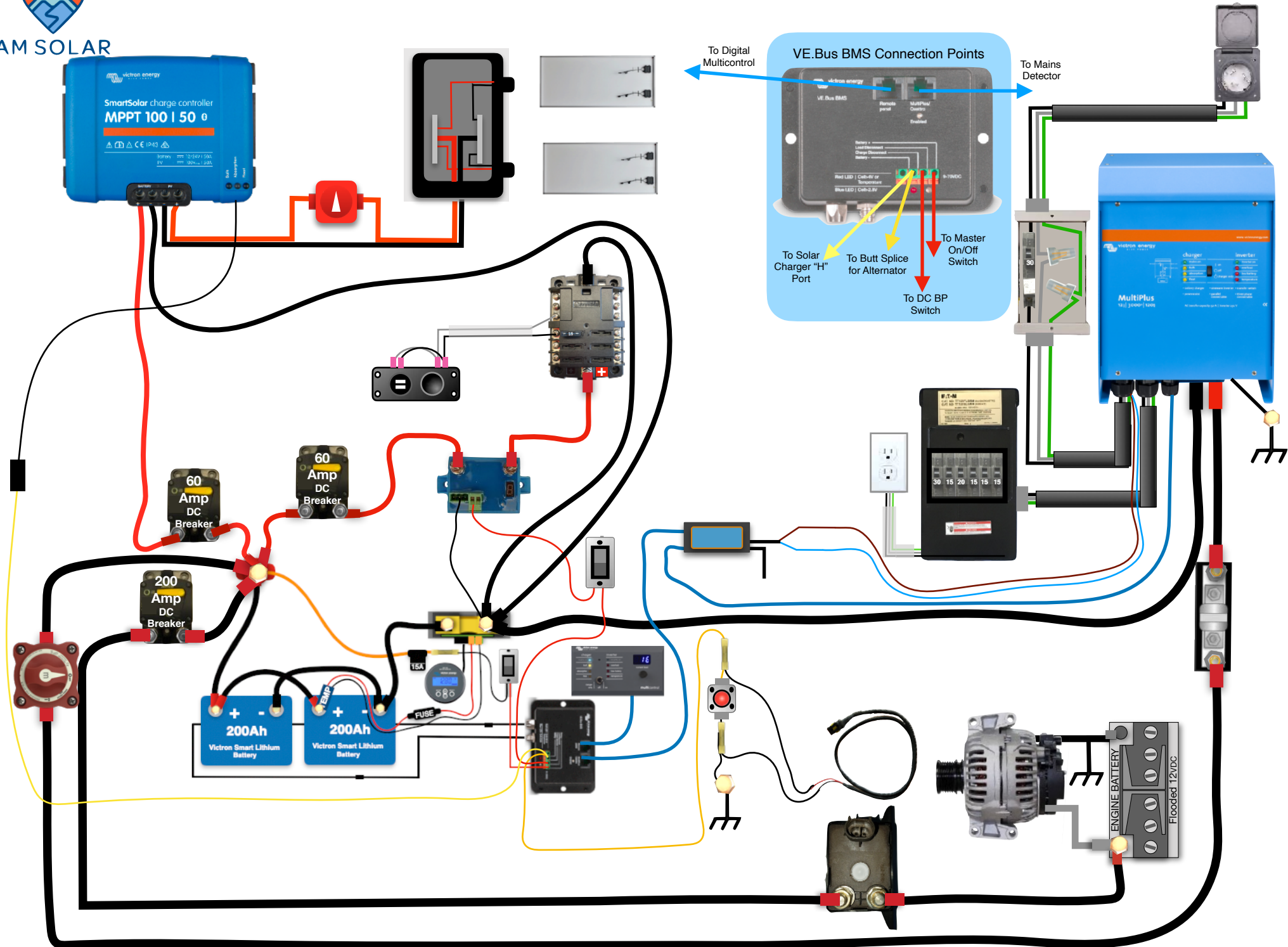




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# Victron Van Kit - Complete System

20200827





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# Victron Van Kit - Victron 30A Solar

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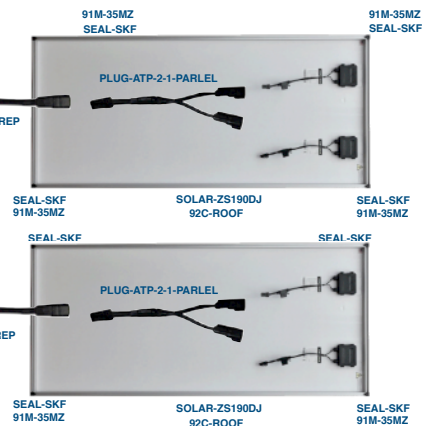
If the connections seem tight on the MPPT, that is normal. Scan here for assistance.



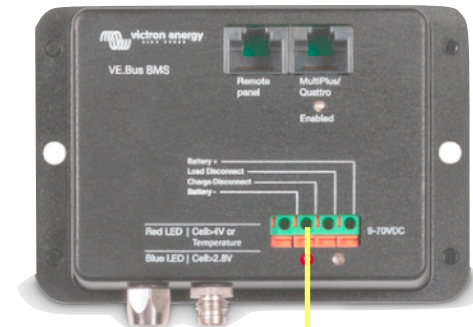
21-ROOF  
Roof Combiner Box



Solar wire penetrates roof here



VE.Bus BMS Connection Point



6ga

92C-INTR

CABLE-6GA-2-GRY  
6ga

6ga  
CABLE-6GA-2-GRY

93B-060A

60  
Amp  
DC  
Breaker

93T-POS-6GA

93T-NEG-6GA



FUSE



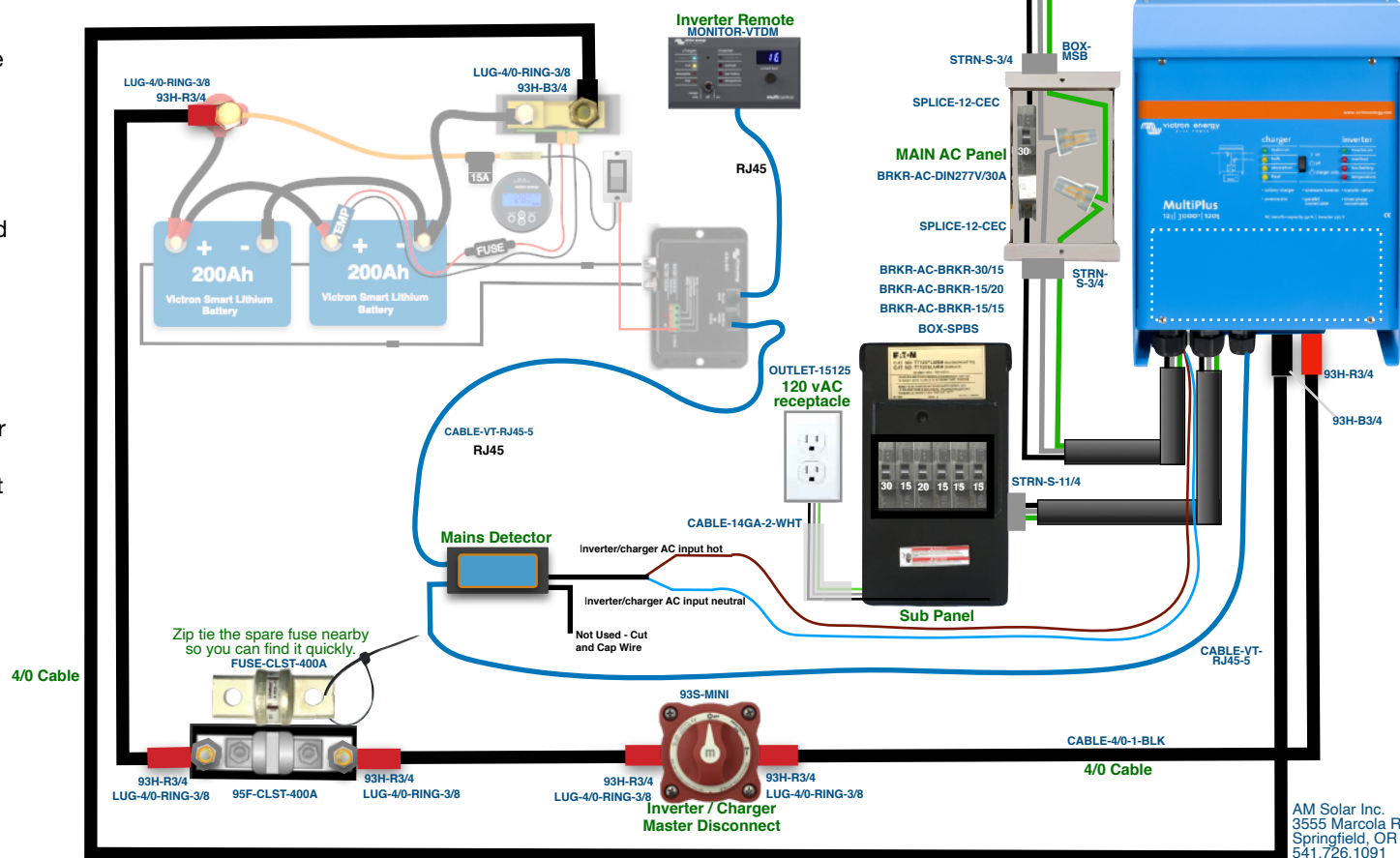




## AC Input & Output

The AC Input/Output system is capable of plugging into a standard 30A shore power outlet. (Note: Adapters from 30A to 15A outlets can be purchased at hardware or RV supply stores). The shore power charges the battery bank and can also be passed through the inverter to the AC loads. If the loads draw more current than the shore power connection can provide, the inverter can meet the demand up to the rating of the inverter by simultaneously drawing from the battery bank. When not plugged into shore power, the inverter will draw from the battery bank to power the AC loads. When not in use, save energy by turning off the inverter via Digital Multicontrol included in the kit.

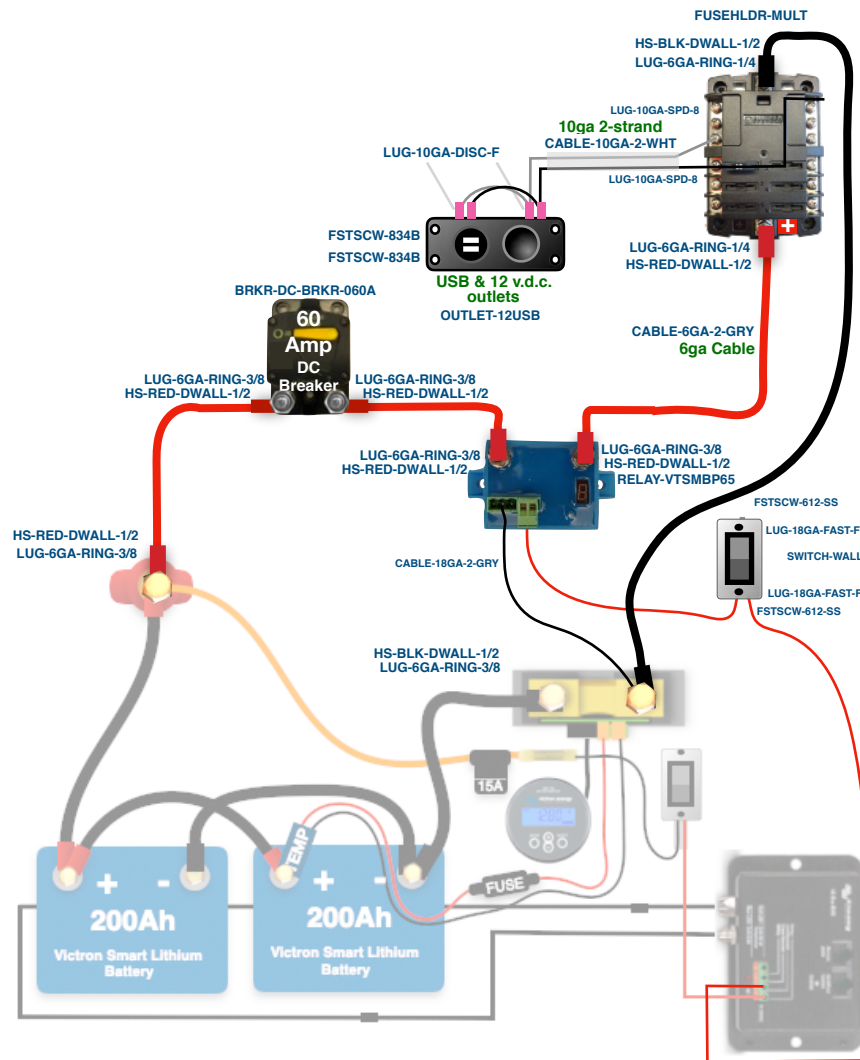
1. **Position the components** prior to connecting the cables. The cable run from the battery bank to the inverter has the potential for the highest current in the entire system, therefore it is important to keep these cable run as short as possible, ideally less than 5'.
2. **Install the AC Input cable** from the shore power inlet to the Main AC Panel with the breaker (in the OFF position) to the inverter. Be sure to use the strain reliefs around the cable.
3. **Install the AC Sub Panel** with its three duplex breakers and connect the AC outlet. Additional outlets and AC loads can be connected to the panel. Be sure the current rating of the load is less than the rating of the breaker it is connected to. Make sure all the breakers are in the OFF position.
4. **Install the Digital Multicontrol** in an easily accessible location since it will be used frequently to adjust charger settings and turn ON or OFF the inverter.
5. **Connect to the battery bank** with the master disconnect switch in the OFF position. Make sure the Class-T fuse is between the master disconnect switch and the positive terminal of the most positive battery. Secure your spare fuse nearby with a zip tie. Connect the temperature sensor to the battery negative.
6. **Verify Connections**, check polarity, tighten terminals and permanently secure all components.
7. **Activate the system** by turning on all the breakers and the Digital Multicontrol.



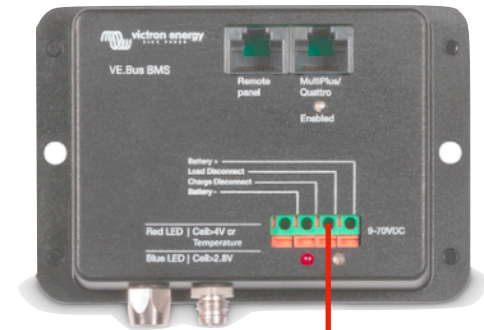


## DC Distribution

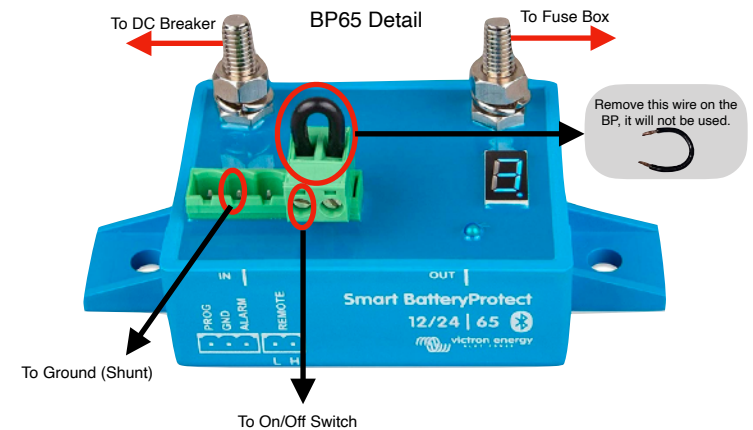
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### VE.Bus BMS Connection Point



To BP Switch



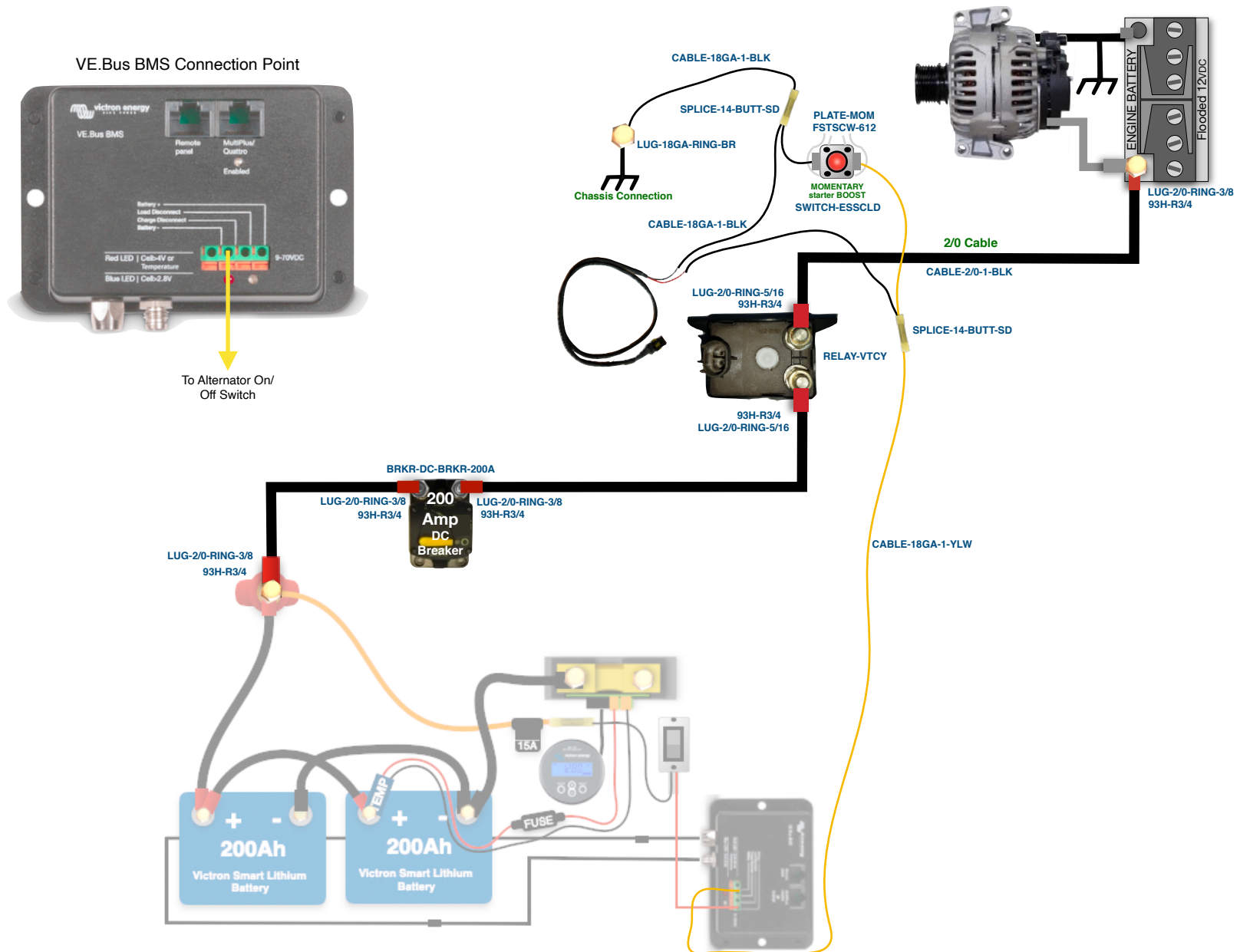


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# Victron Van Kit - Alternator Charging Kit

Rev.20200901

## Alternator Charging







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### Programming Your BMV-712 Smart Battery Monitor for Victron Lithium Batteries

#### Programming on the BMV-712 Battery Monitor in the Victron Connect App:

1. Download "VictronConnect" from the Google Play Store (picture 1).
2. Turn on your Phone's Bluetooth, and get as close as possible to your Victron Component(s).
3. Open the Victron Connect app, and after it takes a moment to scan it will recognize your BMV-712.

NOTE: If your device is not shown, it is probably signal interference. Try closing the app and moving to a different location before re-entering the app in a location that can pick up the BMV's signal.

4. Select the BMV-712 on the Device List (picture 2).
5. Press the gear icon in the top right corner (picture 3).
6. Enter "Battery" and change the values to match the colored box at the top right (screen shown on picture 4):

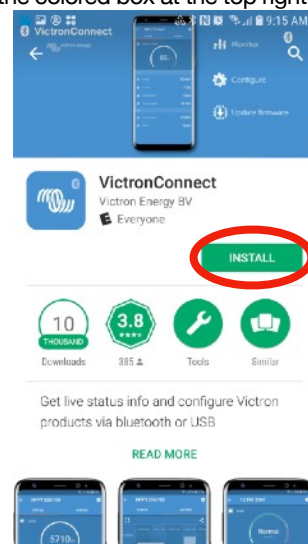
7. **Changing Battery Capacity:** 200Ah
8. **Charged Voltage:** 13.9
9. **Tail Current:** 2%
10. **Peukert Exponent:** 1.00
11. **Charge Efficiency Factor:** 99%
12. Go back to Settings, enter "Misc"
13. **Aux Input:** Select "Temperature"
14. **Temperature Unit:** Select "Fahrenheit"
15. **Temperature coefficient:** .9%cap/F
16. Exit from settings, you have completed programming.

NOTE: Only one phone can be connected to each device at a time. Be sure to completely disconnect and close the app to log out.

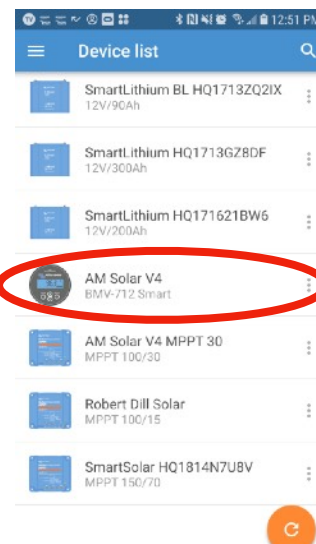


#### Program Settings for Victron Lithium Batteries

- **Battery Capacity:** 200Ah
- **Charged Voltage:** 13.9
- **Tail Current:** 2%
- **Peukert Exponent:** 1.00
- **Charge Efficiency Factor:** 99%
- **Aux Input:** "Temperature"
- **Temperature Unit:** "Celsius" or "Fahrenheit"
- **Temperature Coefficient:** .9%cap / F



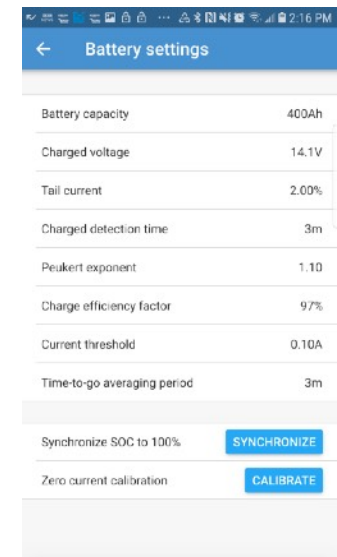
1



2



3



4

NOTE: To change the PIN code from the app, go back to the device list page in the app. Click on the three circles to the right of your device, and select "Reset PIN code".



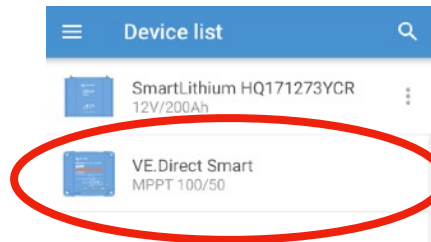
## Programming / Commissioning Your System - The Charge Controller

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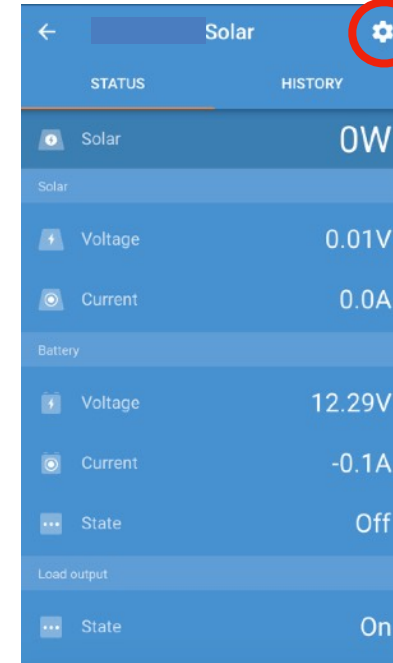
### Charge Control Settings for Victron Lithium Batteries:

1. Download the "VictronConnect" App to your phone.
2. Open the App.
3. You'll see a selection for your SmartSolar MPPT Charger, select it.
4. Type **000000** to login for the first time.  
NOTE: To change the PIN code, go back one step to the main screen. Click on the 3 buttons to the right of the controller image, and select "Reset PIN Code".
5. Click on the **gear** in the top right corner.
6. Click on "Battery".
7. Click on the settings and adjust them accordingly to match below:

- Battery voltage: 12V
- Max charge current: 50A (In this example)
- Charger enabled: ON
- Battery Preset: User defined
- Expert Mode: ON
- Absorption voltage: 14.20 V
- Float voltage: 13.50 V
- Equalization voltage: 14.20 V
- Re-bulk voltage offset: 0.10V
- Absorption Duration: Fixed (Must Enable Expert Mode within Victron Connect)
- Absorption Time: 01:00 (60 minutes)
- Tail Current: .5A per 100Ah of total capacity
- Auto Equalization: Disabled (Off)
- Temperature compensation: Disabled (Off)

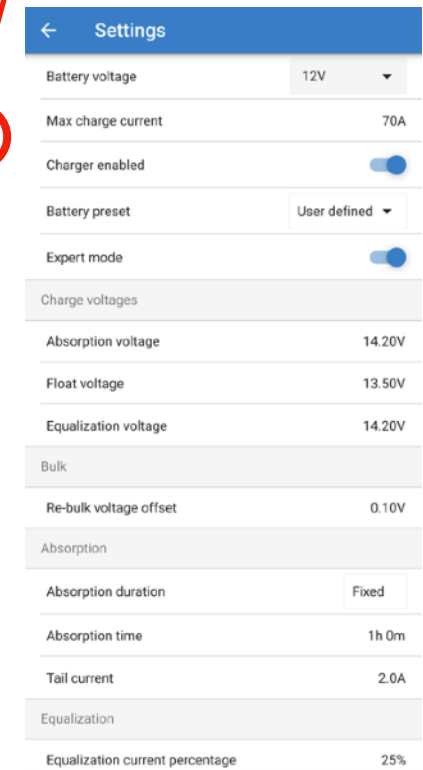


Device List within  
VictronConnect



MPPT Charge Controller  
Screen

Absorption Voltage	14.2v
Activate Expert Mode	Yes
Absorption Duration	Fixed
Absorption Time Limit	60 Minutes
Float Voltage	13.5v
Equalization Voltage	14.2v
Tail Current	.5 per 100Ah
Auto Equalization	No
Temperature Compensation	Off



Battery Settings Screen



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## Creating The Network

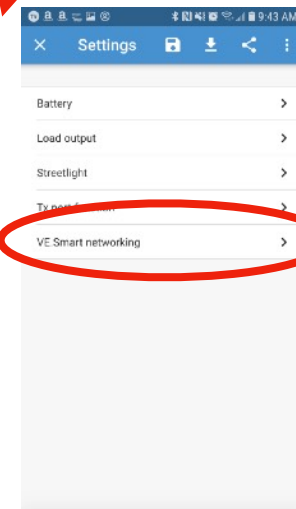
1. When in the Victron Connect App, click on one of your devices.
2. Go to “Settings” (shown as a gear symbol in the top right, picture 1).
3. Go to “VE.Smart networking” (picture 2).
4. Go to “Create Network” (picture 3).
5. Enter a name for your network (picture 4).

## Linking Each Device:

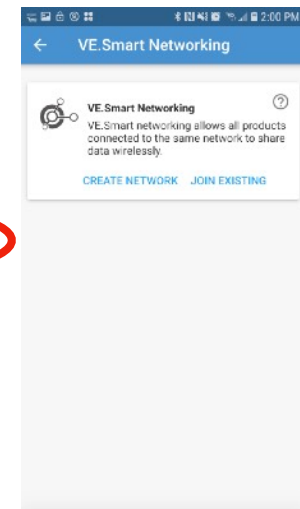
1. Enter the Victron Connect App and click on a device.
2. Go to “Settings” (shown as a gear symbol in the top right, picture 1).
3. Go to “VE.Smart networking” (picture 2)
4. Go to “Join Existing Network” (picture 3)
5. Select the network you just created (picture 5).
6. This device is now joined to the network (picture 6). Repeat this step for every other bluetooth enabled device.



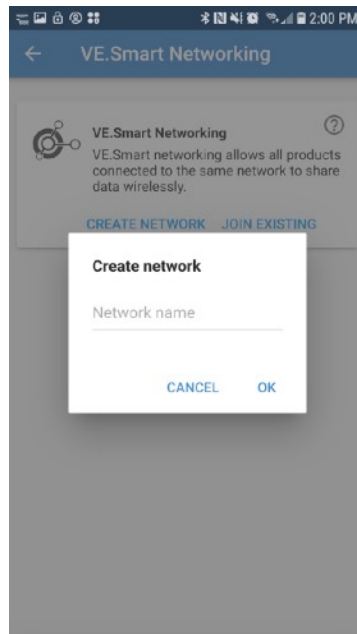
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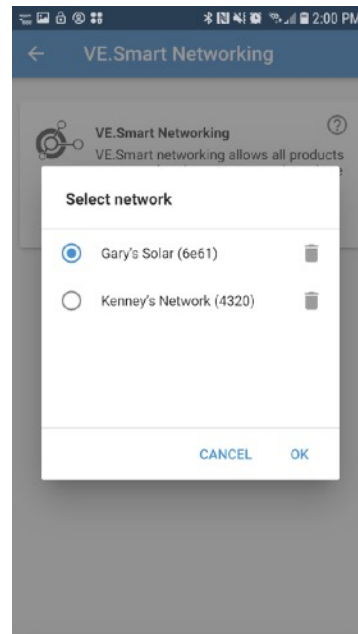
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3



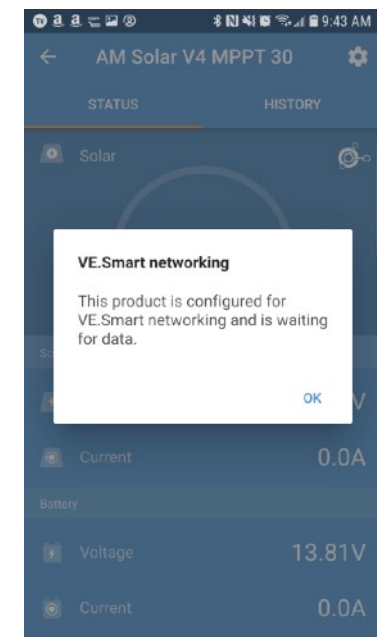
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5



6

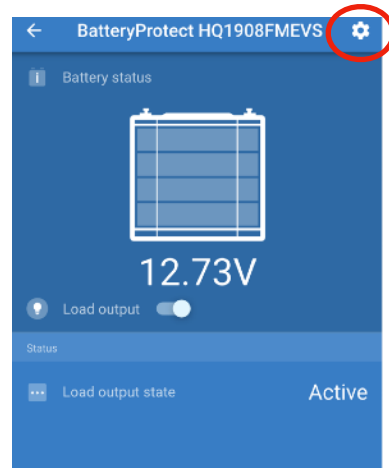
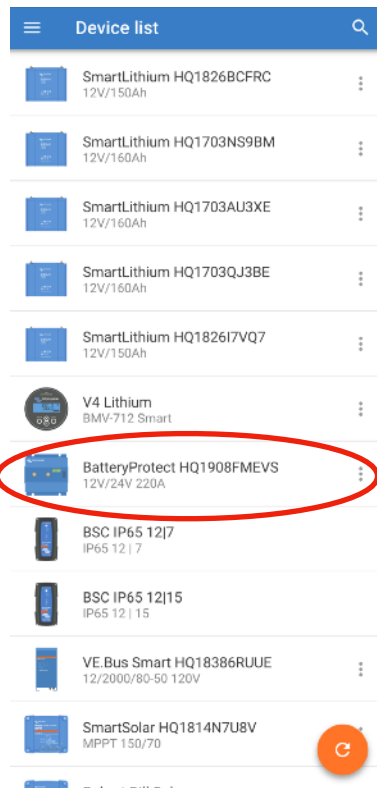
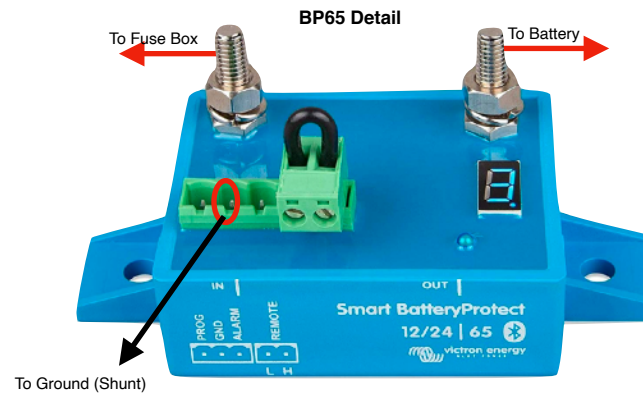




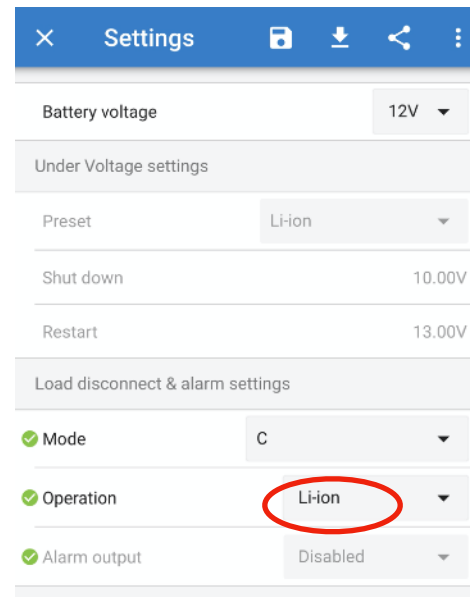
## Programming / Commissioning Your System - The Smart BP-65 Battery Protection

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1. Supply 12V power to the BP (+ to IN post, - to GND pin).
2. Open VictronConnect and select the Battery Protect.
3. The first screen has a switch to manually toggle the relay.
4. Click the gear in the top right to enter Settings.
5. Operation Mode: Select "Li-ion"



4. Select the gear icon



5. Select "Li-ion" mode for operation

**NOTE:** If your battery protect shuts down your loads, it's important you recharge your batteries up to a full charge as soon as possible.

2. Select BatteryProtect from VictronConnect