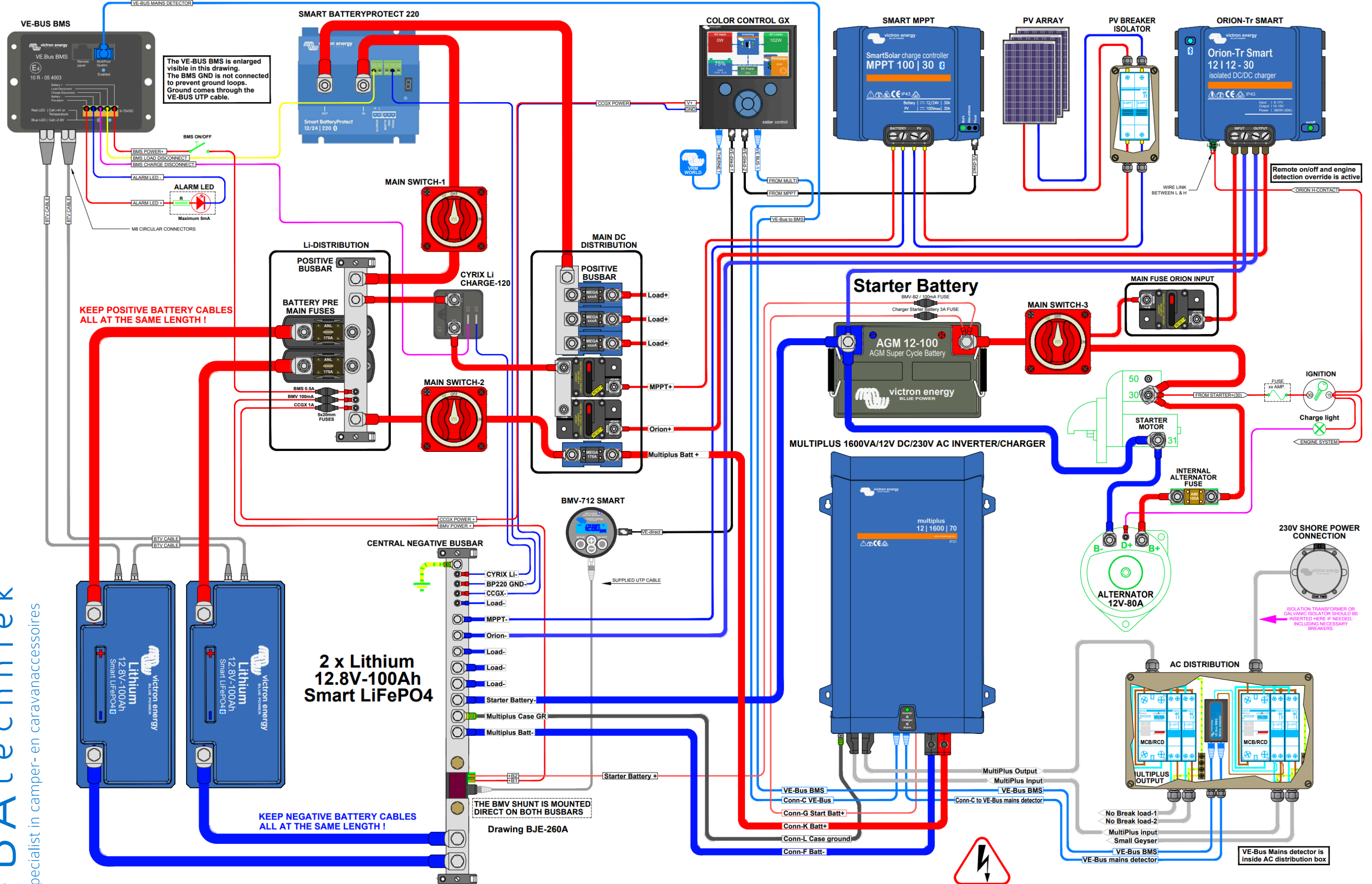


**Recommended AC Out cable/breaker size MultiPlus**  
With Power assist the MultiPlus can add 1.3 kW to the output load when needed. Together with the adjustable 16A input this all adds up to the max sum of input and output current of 16+5.6=21.6A. An Earth leakage with breaker or a combination MCB/RCD must be installed on the output. Cable size must be adjusted accordingly.

**Recommended DC cable/fuse size MultiPlus**  
0-5 m cable length: 50SQmm  
Cable length stands for the total distance between the battery connections plus and minus and the MultiPlus connections! Recommendations are without other loads in the system and these also should be taken into account for proper main battery, main fuse & main switch cables!  
INTERNAL Fuse size should be 200A.

**Recommended AC in cable/breaker size MultiPlus**  
AC IN must be protected by a circuit breaker rated at 16A max or less. This depends heavily on the size of the connected power source. The input current must be adjusted to fit the size of the connected power source. The breaker and cable size for AC IN should be adjusted accordingly.

**WARNING**  
230 VOLT IS EXTREMELY HAZARDOUS DO NOT TOUCH ANY LIVE WIRED PARTS OF THE INSTALLATION! WHEN IN DOUBT, ALWAYS CONSULT YOUR VICTRON DEALER!

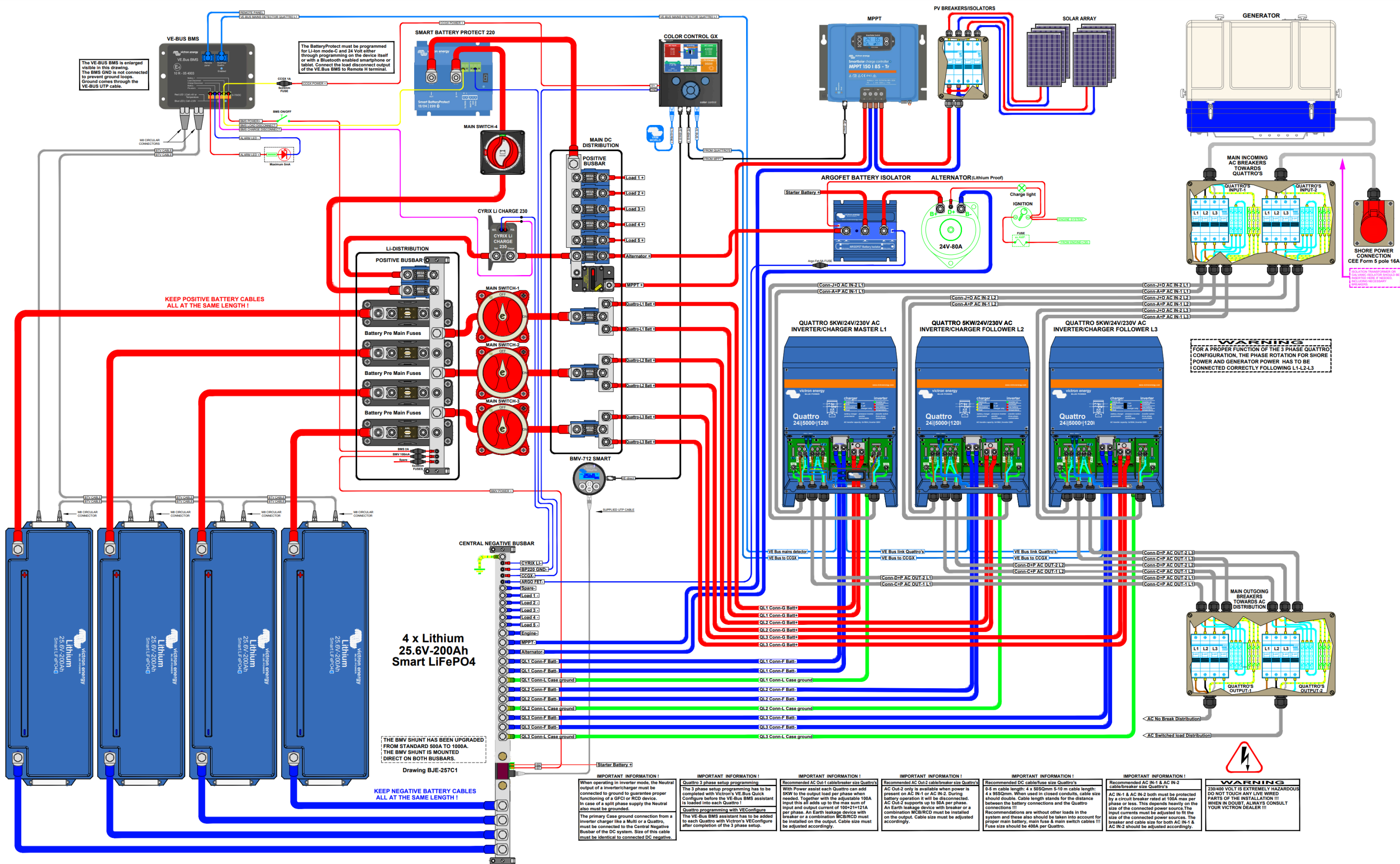


**Recommended AC Out cable/breaker size MultiPlus**  
With Power assist the MultiPlus can add 1.3 KW to the output load when needed. Together with the adjustable 16A input this all adds up to the max sum of input and output current of 16+5.6=21.6A. An Earth leakage with breaker or a combination MCB/RCD must be installed on the output. Cable size must be adjusted accordingly.

**Recommended DC cable/fuse size MultiPlus**  
0-5 m cable length: 50SQmm  
Cable length stands for the total distance between the battery connections plus and minus and the MultiPlus connections! Recommendations are without other loads in the system and these also should be taken into account for proper main battery, main fuse & main switch cables!  
INTERNAL Fuse size should be 200A.

**Recommended AC In cable/breaker size MultiPlus**  
AC IN must be protected by a circuit breaker rated at 16A max or less. This depends heavily on the size of the connected power source. The input current must be adjusted to fit the size of the connected power source. The breaker and cable size for AC IN should be adjusted accordingly.

**WARNING**  
230 VOLT IS EXTREMELY HAZARDOUS  
DO NOT TOUCH ANY LIVE WIRED PARTS OF THE INSTALLATION!  
WHEN IN DOUBT, ALWAYS CONSULT YOUR VICTRON DEALER!



The VE-BUS BMS is enlarged visible in this drawing. The BMS GND is not connected to prevent ground loops. Ground comes through the VE-BUS UTP cable.

The BatteryProtect must be programmed for Li-Ion mode-C and 24 Volt either through programming on the device itself or with a Bluetooth enabled smartphone or tablet. Connect the load disconnect output of the VE-Bus BMS to Remote H terminal.

KEEP POSITIVE BATTERY CABLES ALL AT THE SAME LENGTH!

4 x Lithium 25.6V-200Ah Smart LiFePO4

THE BMV SHUNT HAS BEEN UPGRADED FROM STANDARD 500A TO 1000A. THE BMV SHUNT IS MOUNTED DIRECT ON BOTH BUSBARS.  
Drawing BJE-257C1

KEEP NEGATIVE BATTERY CABLES ALL AT THE SAME LENGTH!

**IMPORTANT INFORMATION!**  
When operating in inverter mode, the Neutral output of a invertercharger must be connected to ground to guarantee proper functioning of a GFCI or RCD device.  
In case of a split phase supply the Neutral also must be grounded.  
The primary Case ground connection from a inverter charger like a Multi or a Quattro, must be connected to the Central Negative Busbar of the DC system. Size of this cable must be identical to connected DC negative.

**IMPORTANT INFORMATION!**  
Quattro 3 phase setup programming  
The 3 phase setup programming has to be completed with Victor's VE-Bus Quick Configure before the VE-Bus BMS assistant is loaded into each Quattro!  
Quattro programming with VEConfigure  
The VE-Bus BMS assistant has to be added to each Quattro with Victor's VEConfigure after completion of the 3 phase setup.

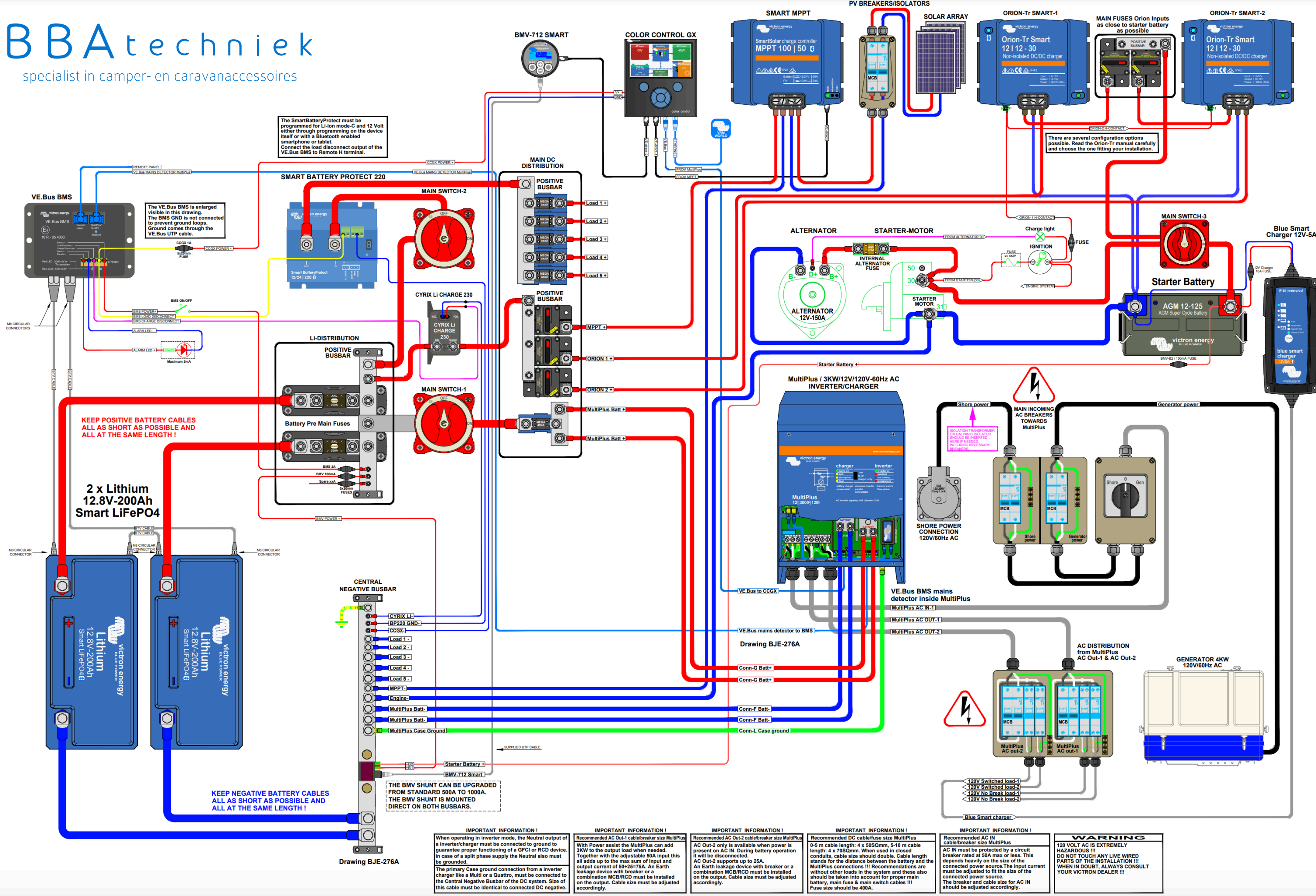
**IMPORTANT INFORMATION!**  
Recommended AC Out-1 cable/breaker size Quattro's  
With Power assist each Quattro can add 5KW to the output load per phase when needed. Together with the adjustable 100A input this all adds up to the max sum of input and output current of 100+21=121A per phase. An Earth leakage device with breaker or a combination MCB/RCD must be installed on the output. Cable size must be adjusted accordingly.

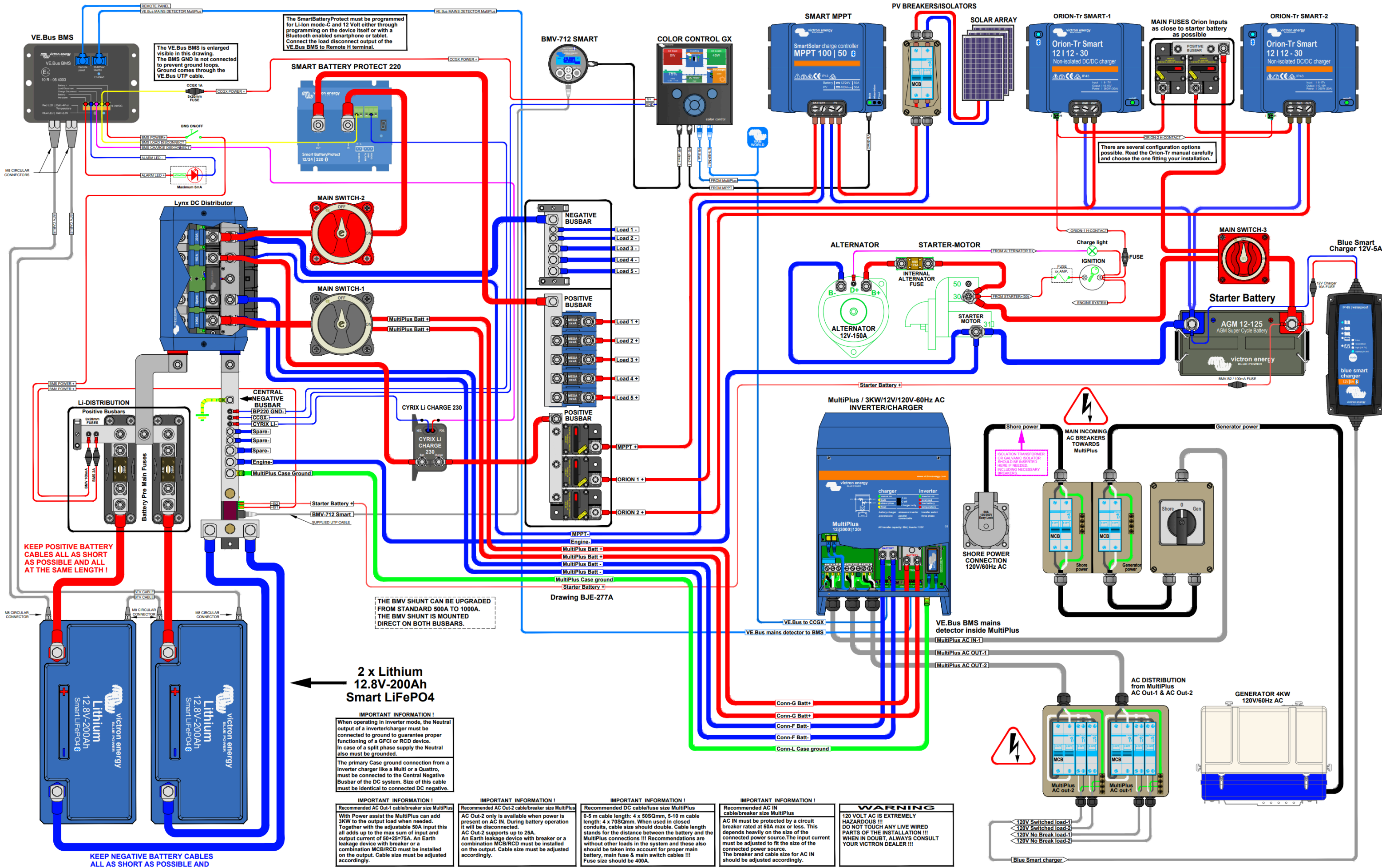
**IMPORTANT INFORMATION!**  
Recommended AC Out-2 cable/breaker size Quattro's  
AC Out-2 only is available when power is present on AC IN-1 or AC IN-2. During battery operation it will be disconnected. AC Out-2 supports up to 50A per phase. An Earth leakage device with breaker or a combination MCB/RCD must be installed on the output. Cable size must be adjusted accordingly.

**IMPORTANT INFORMATION!**  
Recommended DC cable/fuse size Quattro's  
0-5 m cable length: 4 x 50SQmm 5-10 m cable length: 4 x 95SQmm. When used in closed conduits, cable size should double. Cable length stands for the distance between the battery connections and the Quattro connections!!!  
Recommendations are without other loads in the system and these also should be taken into account for proper main battery, main fuse & main switch cables!!! Fuse size should be 400A per Quattro.

**IMPORTANT INFORMATION!**  
Recommended AC IN-1 & AC IN-2 cable/breaker size Quattro's  
AC IN-1 & AC IN-2 both must be protected by a circuit breaker rated at 100A max per phase or less. This depends heavily on the size of the connected power source. The input currents must be adjusted to fit the size of the connected power sources. The breaker and cable size for both AC IN-1 & AC IN-2 should be adjusted accordingly.

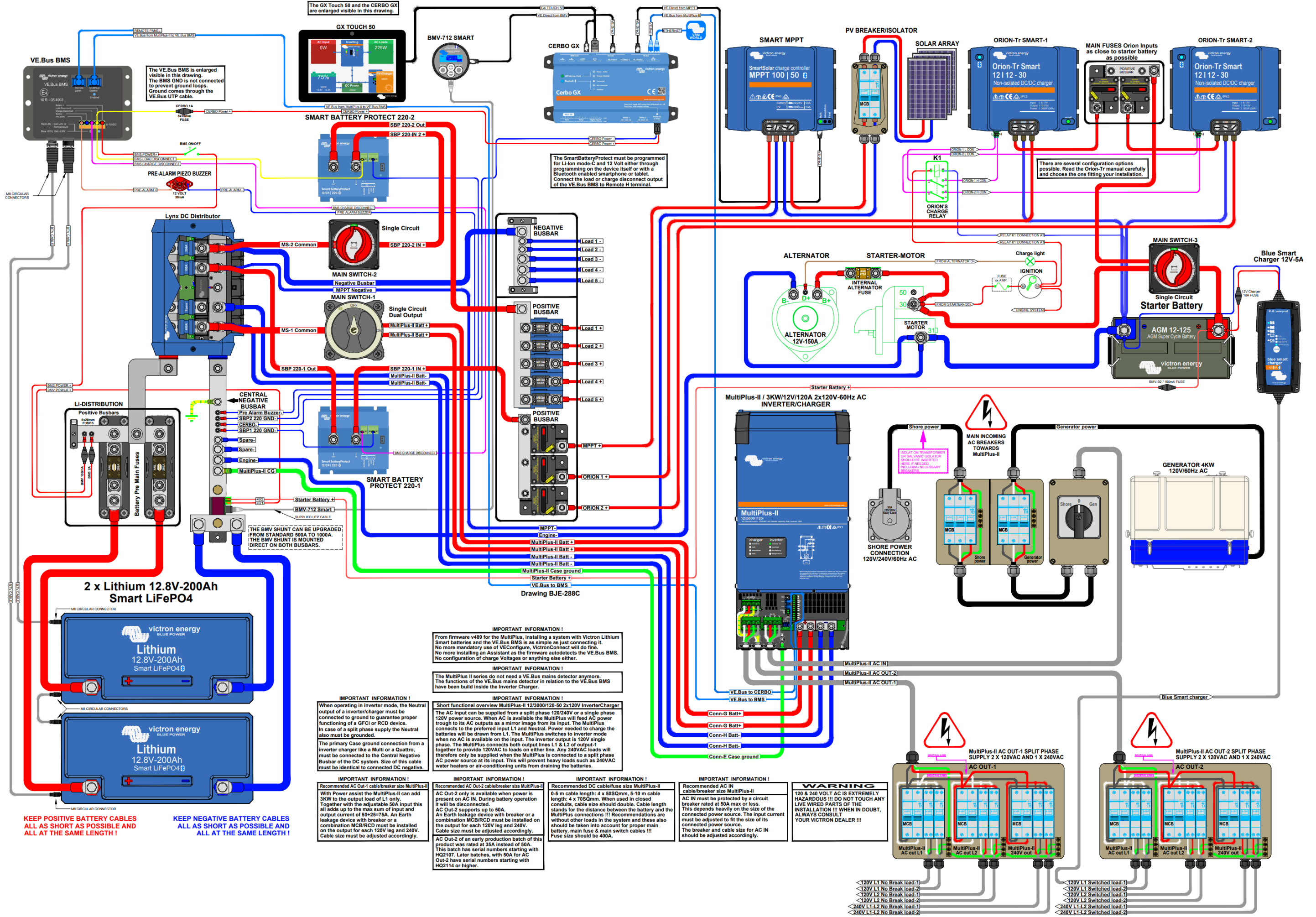
**WARNING!**  
230/400 VOLT IS EXTREMELY HAZARDOUS DO NOT TOUCH ANY LIVE WIRED PARTS OF THE INSTALLATION!!! WHEN IN DOUBT, ALWAYS CONSULT YOUR VICTRON DEALER!!!





MultiPlus 3KW 120VAC 12VDC 400Ah Li VEBus BMS generator  
MPPT BMV CCGX Orion-Tr Smart Lynx distributor

BBAtechniek  
specialist in camper- en caravanaccessoires



The VE-Bus BMS is enlarged visible in this drawing. The BMS GND is not connected to prevent ground loops. Ground comes through the VE-Bus UTP cable.

The GX Touch 50 and the CERBO GX are enlarged visible in this drawing.

The SmartBatteryProtect must be programmed for Li-Ion mode-C and 12 Volt either through programming on the device itself or with a Bluetooth enabled smartphone or tablet. Connect the load or charge disconnect output of the VE-Bus BMS to Remote II terminal.

There are several configuration options possible. Read the Orion-Tr manual carefully and choose the one fitting your installation.

THE BMV SHUNT CAN BE UPGRADED FROM STANDARD 50A TO 100A. THE BMV SHUNT IS MOUNTED DIRECT ON BOTH BUSBARS.

**IMPORTANT INFORMATION !**  
From firmware v489 for the MultiPlus, installing a system with Victron Lithium Smart batteries and the VE-Bus BMS is as simple as just connecting it. No more mandatory use of VEConfigure, VictronConnect will do fine. No more installing an Assistant as the firmware autodetects the VE-Bus BMS. No configuration of charge Voltages or anything else either.

**IMPORTANT INFORMATION !**  
The MultiPlus II series do not need a VE-Bus mains detector anymore. The functions of the VE-Bus mains detector in relation to the VE-Bus BMS have been build inside the Inverter Charger.

**IMPORTANT INFORMATION !**  
Short functional overview MultiPlus-II 12/3000/120-50 2x120V InverterCharger  
The AC input can be supplied from a split phase 120/240V or a single phase 120V power source. When AC is available the MultiPlus will feed AC power through to its AC outputs as a mirror image from its input. The MultiPlus connects to the preferred input L1 and Neutral. Power needed to charge the batteries will be drawn from L1. The MultiPlus switches to inverter mode when no AC is available on the input. The inverter output is 120V single phase. The MultiPlus connects both output lines L1 & L2 of output-1 together to provide 120VAC to loads on either line. Any 240VAC loads will therefore only be supplied when the MultiPlus is connected to a split phase AC power source at its input. This will prevent heavy loads such as 240VAC water heaters or air-conditioning units from draining the batteries.

**IMPORTANT INFORMATION !**  
When operating in inverter mode, the Neutral output of an inverter/charger must be connected to ground to guarantee proper functioning of a GFCI or RCD device. In case of a split phase supply the Neutral also must be grounded.  
The primary Case ground connection from an inverter charger like a Multi or a Quattro, must be connected to the Central Negative Busbar of the DC system. Size of this cable must be identical to connected DC negative.

**IMPORTANT INFORMATION !**  
Recommended AC Out-1 cable/breaker size MultiPlus-II  
With Power assist the MultiPlus-II can add 3kW to the output load of L1 only. Together with the adjustable 50A input this all adds up to the max sum of input and output current of 50+25=75A. An Earth leakage device with breaker or a combination MCB/RCD must be installed on the output for each 120V leg and 240V. Cable size must be adjusted accordingly.

**IMPORTANT INFORMATION !**  
Recommended AC Out-2 cable/breaker size MultiPlus-II  
AC Out-2 only is available when power is present on AC IN. During battery operation it will be disconnected. AC Out-2 supports up to 50A. An Earth leakage device with breaker or a combination MCB/RCD must be installed on the output for each 120V leg and 240V. Cable size must be adjusted accordingly.  
AC Out-2 of an early production batch of this product was rated at 35A instead of 50A. This batch has serial numbers starting with HQ2107. Later batches, with 50A for AC Out-2 have serial numbers starting with HQ2114 or higher.

**IMPORTANT INFORMATION !**  
Recommended DC cable/fuse size MultiPlus-II  
0-8 m cable length: 4 x 60S95mm, 5-10 m cable length: 4 x 70S125mm. When used in closed conduits, cable size should double. Cable length stands for the distance between the battery and the MultiPlus connections !!! Recommendations are without other loads in the system and these also should be taken into account for proper main cable size must be adjusted accordingly !!! Fuse size should be 400A.

**IMPORTANT INFORMATION !**  
Recommended AC IN cable/breaker size MultiPlus-II  
AC IN must be protected by a circuit breaker rated at 50A max or less. This depends heavily on the size of the connected power source. The input current must be adjusted to fit the size of its connected power source. The breaker and cable size for AC IN should be adjusted accordingly.

**WARNING**  
120 & 240 VOLT AC IS EXTREMELY HAZARDOUS !!! DO NOT TOUCH ANY LIVE WIRED PARTS OF THE INSTALLATION !!! WHEN IN DOUBT, ALWAYS CONSULT YOUR VICTRON DEALER !!!

KEEP POSITIVE BATTERY CABLES ALL AS SHORT AS POSSIBLE AND ALL AT THE SAME LENGTH !

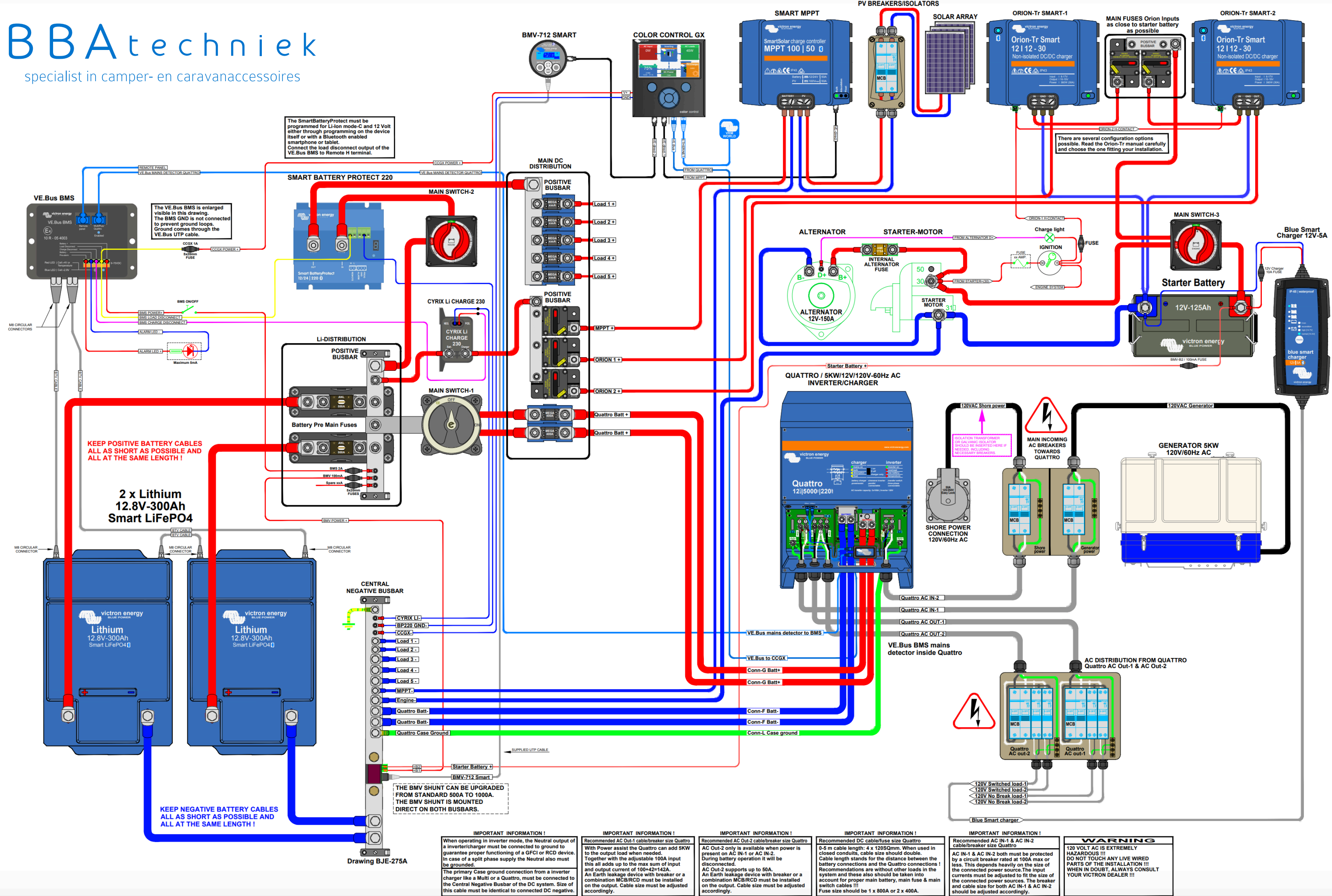
KEEP NEGATIVE BATTERY CABLES ALL AS SHORT AS POSSIBLE AND ALL AT THE SAME LENGTH !

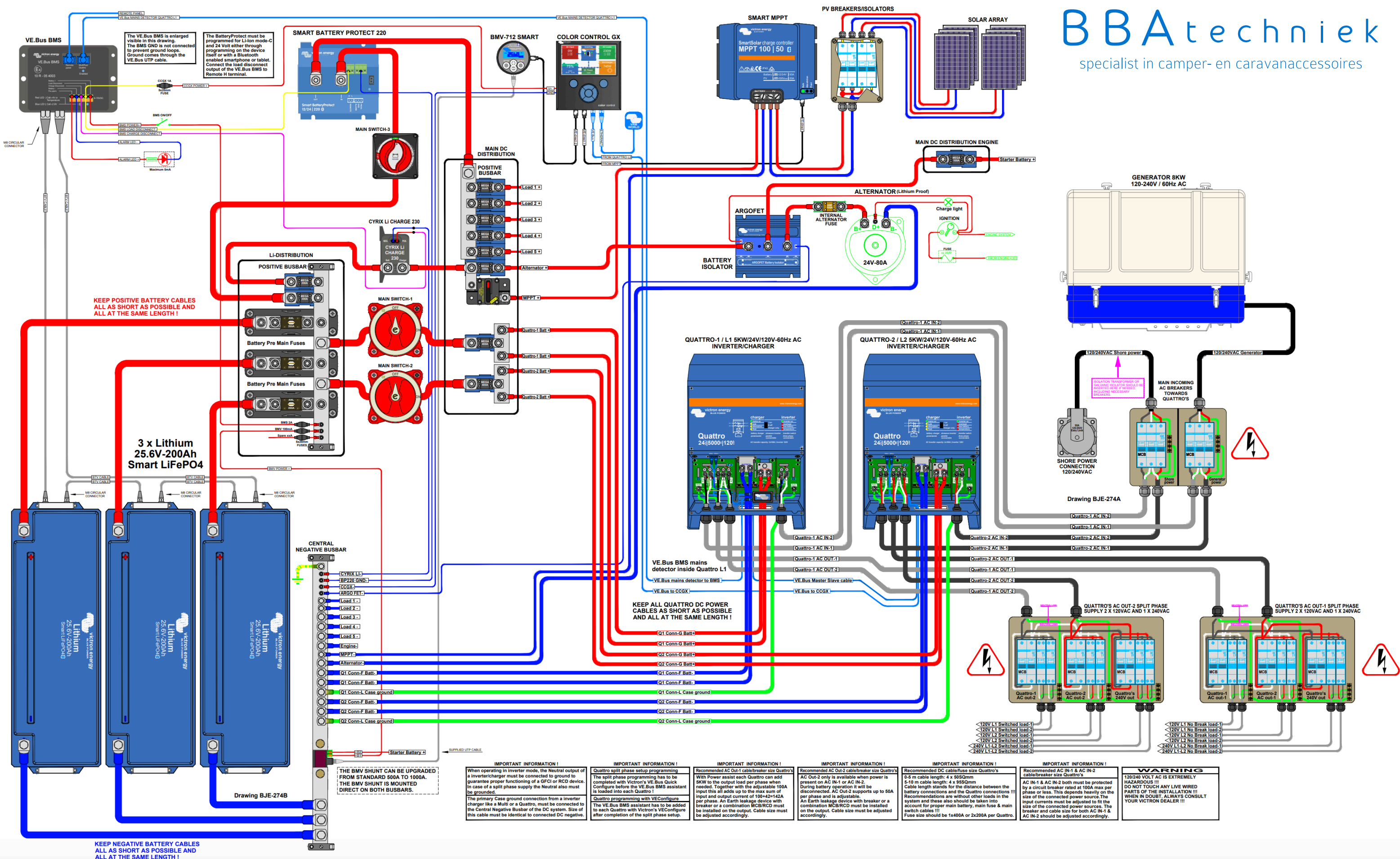
- <120V L1 No Break load-1
- <120V L1 No Break load-2
- <120V L2 No Break load-1
- <120V L2 No Break load-2
- <240V L1-L2 No Break load-1
- <240V L1-L2 No Break load-2

- <120V L1 Switched load-1
- <120V L1 Switched load-2
- <120V L2 Switched load-1
- <120V L2 Switched load-2
- <240V L1-L2 Switched load-1
- <240V L1-L2 Switched load-2

# MultiPlus-II 3kW 2x120VAC 12VDC 400Ah Li VE.Bus BMS

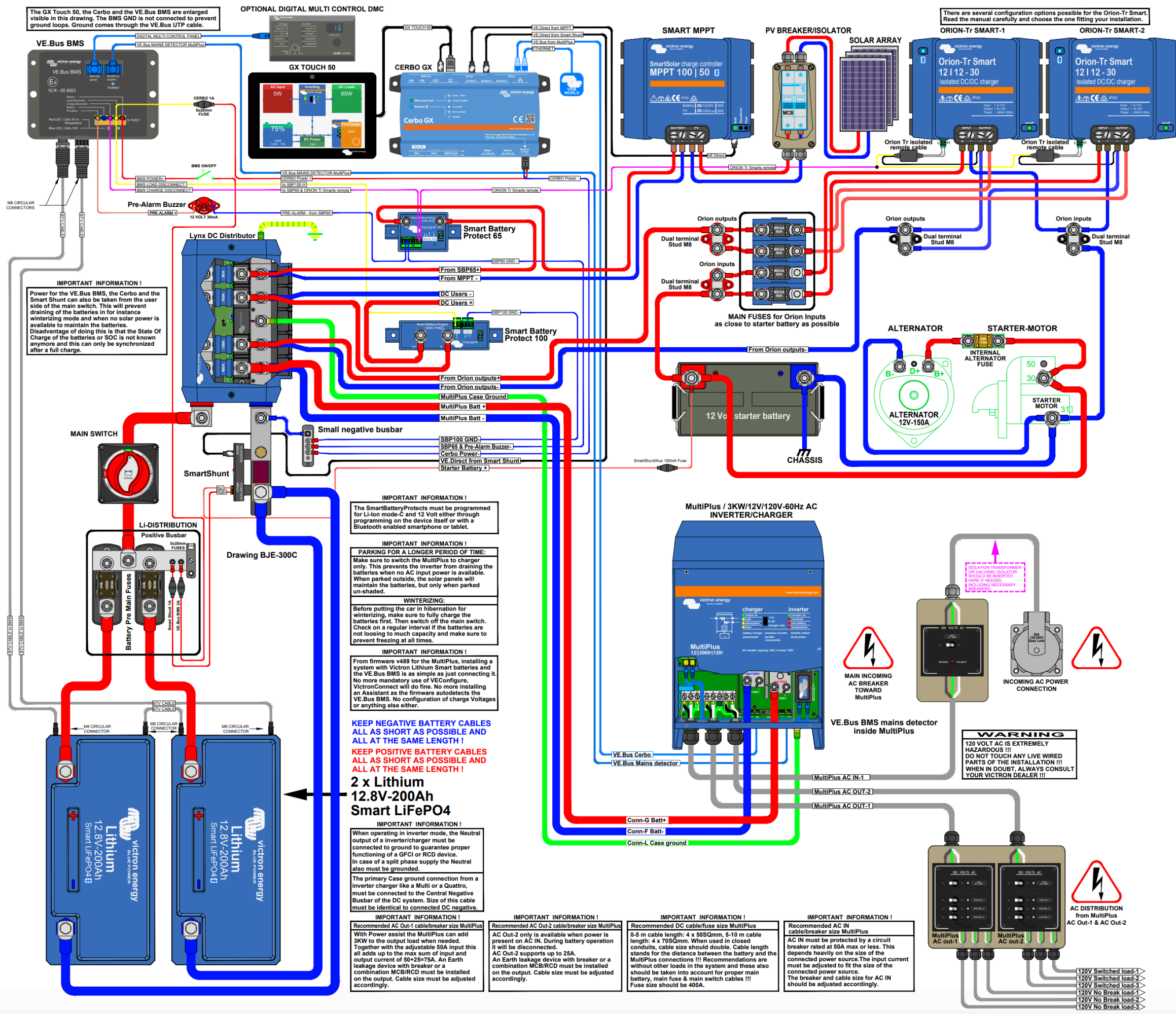
## Cerbo GX Touch generator MPPT Orion-Tr Smart



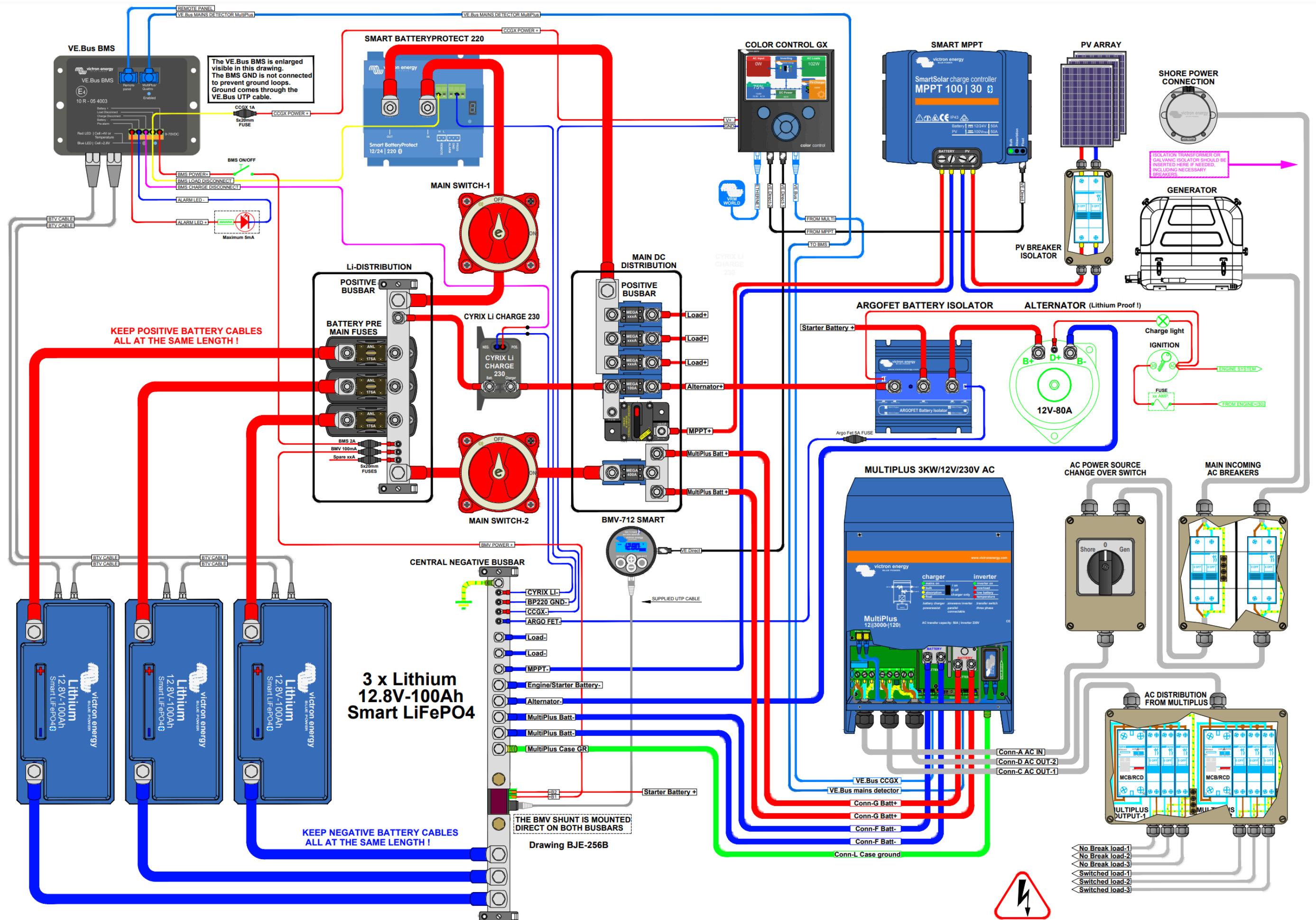


**Quattro split phase 120-240VAC-24VDC setup 600Ah Li VE-Bus BMS generator MPPT BMV CCGX**





**US-VAN Drawing VEBus BMS MultiPlus 3KW DMC 400Ah Li Cerbo SBP 100A & 65A SmartShunt MPPT 100-50 OrionTr**



**Smart BatteryProtect programming**  
The BatteryProtect must be programmed for Li-Ion mode and 12 Volt either through programming on the device itself or with a Bluetooth enabled smartphone or tablet. Connect the load disconnect output of the VE.Bus BMS to Remote H terminal.

**Recommended AC Out-2 cable/breaker size MultiPlus**  
AC Out-2 only is available when power is present on AC IN. During battery operation it will be disconnected. AC Out-2 supports up to 16A. An Earth leakage device with breaker or a combination MCB/RCD must be installed on the output. Cable size must be adjusted accordingly.

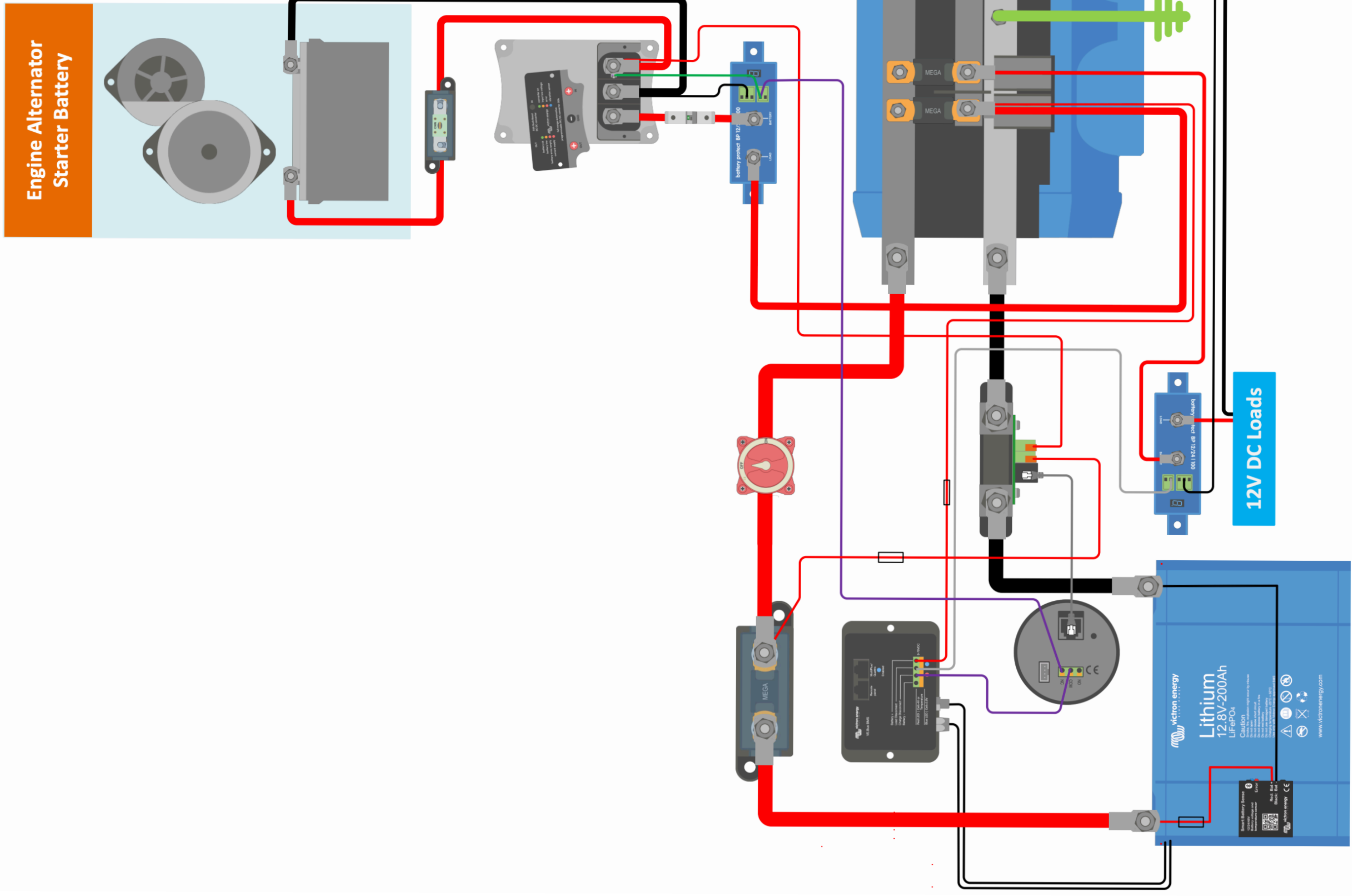
**Recommended AC Out-1 cable/breaker size MultiPlus**  
With Power assist the MultiPlus can add 3kW to the output load when needed. Together with the adjustable 50A input this all adds up to the max sum of input and output current of 50+13=63A. An Earth leakage device with breaker or a combination MCB/RCD must be installed on the output. Cable size must be adjusted accordingly.

**Recommended DC cable/fuse size MultiPlus**  
0.5 m cable length: 4 x 50Sqmm, 5-10 m cable length: 4 x 70Sqmm. When used in closed conduits, cable size should double. Cable length stands for the distance between the battery and the MultiPlus connections !!! Recommendations are without other loads in the system and these also should be taken into account for proper main battery, main fuse & main switch cables !!! Fuse size should be 400A.

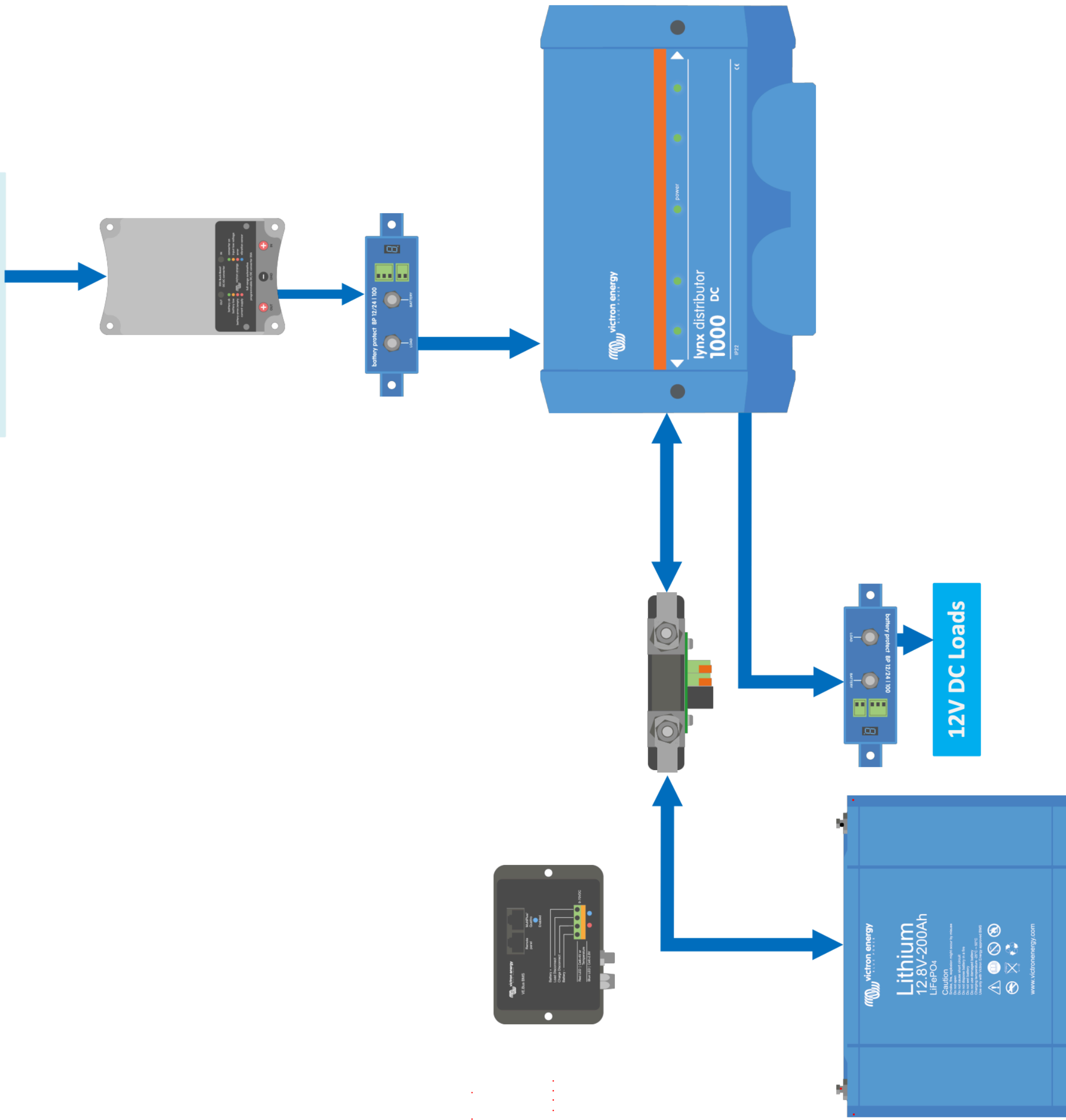
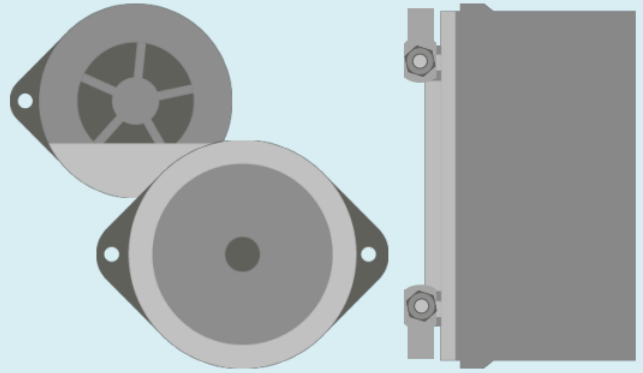
**Recommended AC IN cable/breaker size MultiPlus**  
AC IN must be protected by a circuit breaker rated at 50A max or less. This depends heavily on the size of the connected power source. The input current must be adjusted to fit the size of the connected power source. The breaker and cable size for AC IN should be adjusted accordingly.

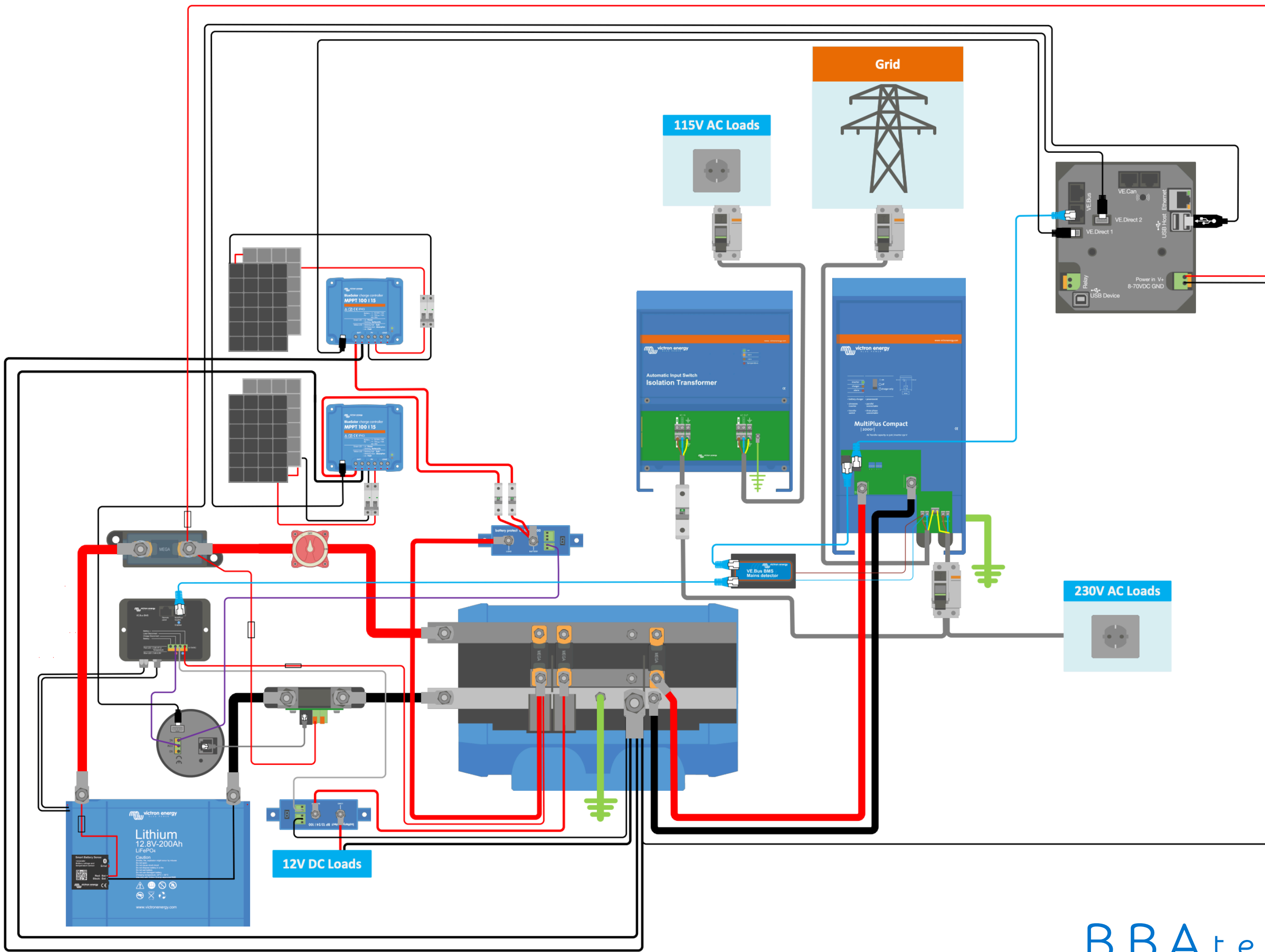
**WARNING**  
230 VOLT IS EXTREMELY HAZARDOUS DO NOT TOUCH ANY LIVE WIRED PARTS OF THE INSTALLATION !!! WHEN IN DOUBT, ALWAYS CONSULT YOUR VICTRON DEALER !!!

- < No Break load-1
- < No Break load-2
- < No Break load-3
- < Switched load-1
- < Switched load-2
- < Switched load-3

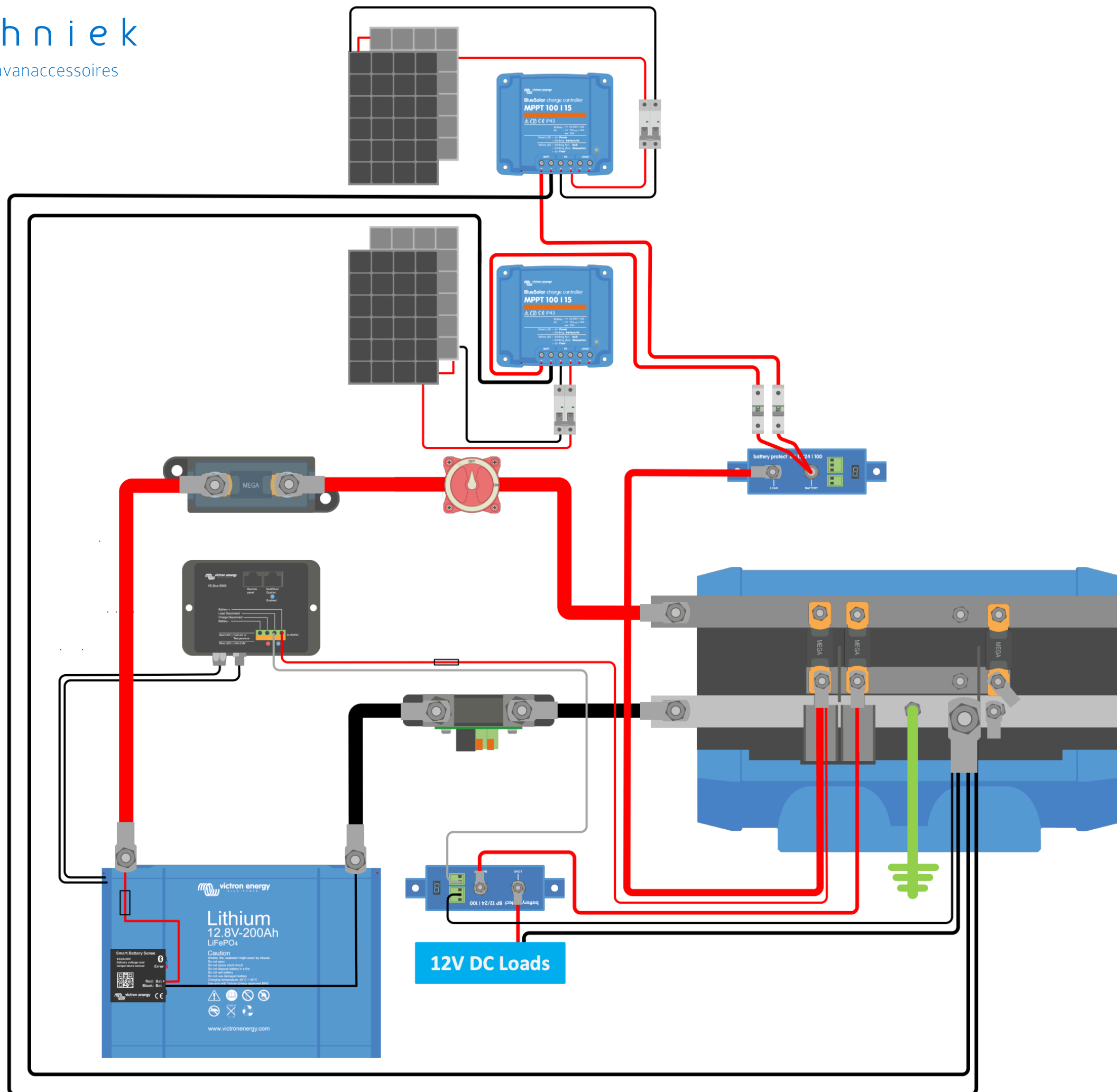


## Engine Alternator Starter Battery





# Victron Van - Automotive - Multi (ds)



## Victron Van - Automotive - Solar (ds)

