

## ARGO FET Battery Isolator with alternator energize input

### ENGLISH

**Warning:** hot surface, mount the Argo Diode on non-flammable surface only!

#### No voltage loss

In contrast with diode battery isolators, FET isolators have virtually no voltage loss. Voltage drop is less than 0,02 Volt at low current and averages 0,1 Volt at higher currents.

When using ARGO FET Battery Isolators, there is no need to also increase the output voltage of the alternator. Care should taken however to keep cable lengths short and of sufficient cross section.

Example:

When a current of 100 A flows through a cable of 50 mm<sup>2</sup> cross section (AWG 0) and 10 m length (30 ft), the voltage drop over the cable will be 0,26 Volt. Similarly a current of 50 A through a cable of 10 mm<sup>2</sup> cross section (AWG 7) and 5 m length (15 ft) will result in a voltage drop of 0,35 Volt!

#### 12/24 Volt auto ranging

The Argofet will automatically adjust to a 12V or 24V system.

#### Alternator energize input

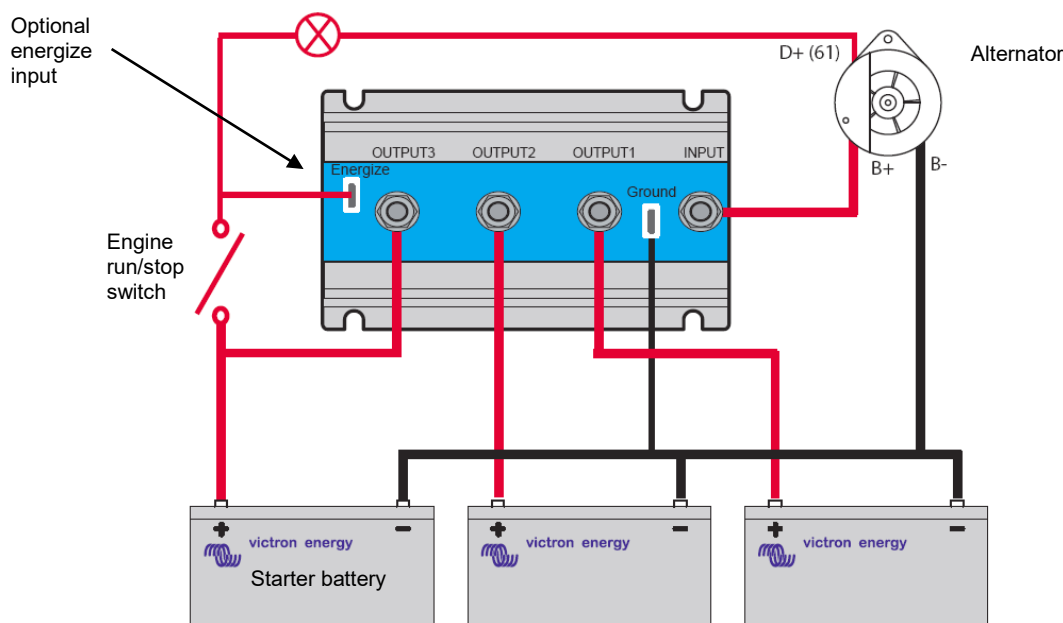
Some alternators need DC voltage on the B+ output to start charging. Obviously, DC will be present when the alternator is directly connected to a battery. Inserting a Diode or FET splitter will however prevent any return voltage/current from the batteries to the B+, and the alternator will not start.

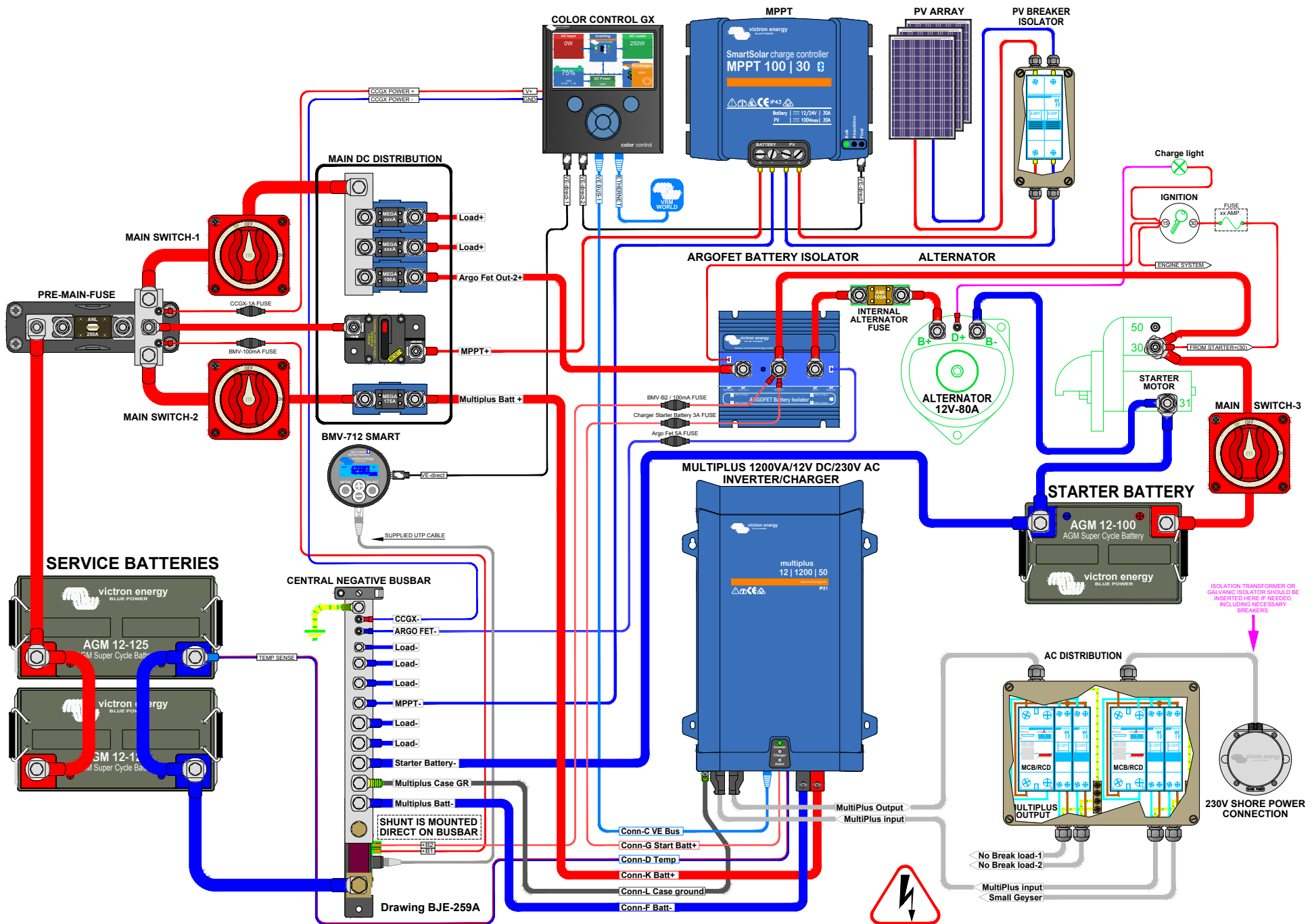
The new Argofet isolators have a special current limited energize input that will power the B+ when the engine run/stop switch is closed.

#### Installation (see figure below)

1. Always disconnect the battery minus cables before making alterations to the electrical system.
2. Connect the positive output of the supplying source (alternator) to the input of the battery isolator.
3. Connect the positive connection of the battery sets to output 1, 2 and (optional) 3 respectively.
4. Connect the 'Energize' blade terminal to the engine run/stop switch (optional). Minimum cable cross section: 2,5 mm<sup>2</sup>.
5. Connect the 'Ground' blade terminal to the common negative bus bar. Minimum cable cross section: 2,5 mm<sup>2</sup>.
6. Connect the negative poles of the battery sets to the common negative bus bar.

The blue LED will light up when voltage is present on the input of the Argofet.



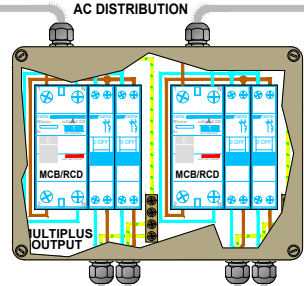
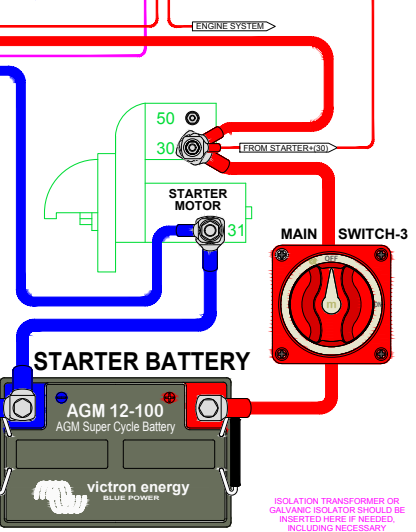
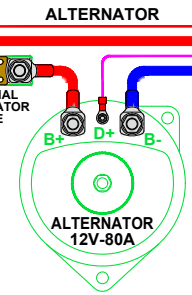
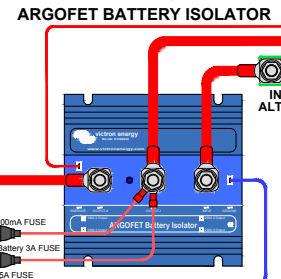
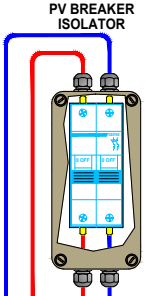
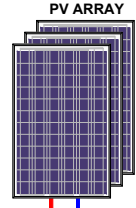
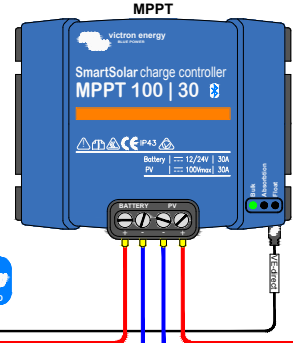
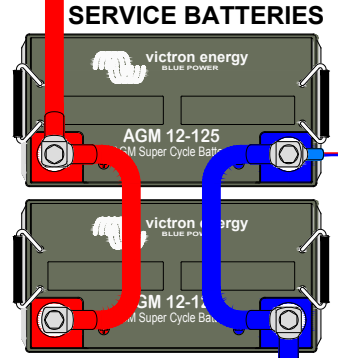
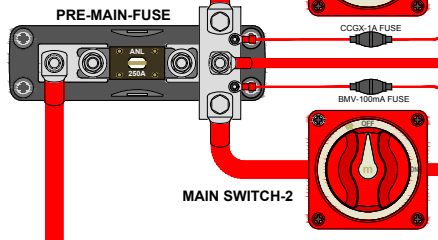
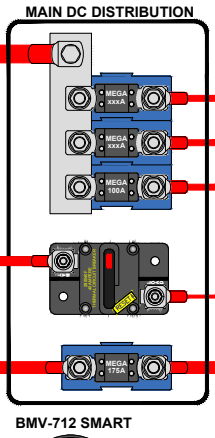
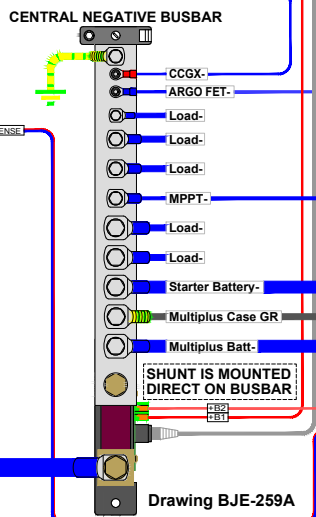
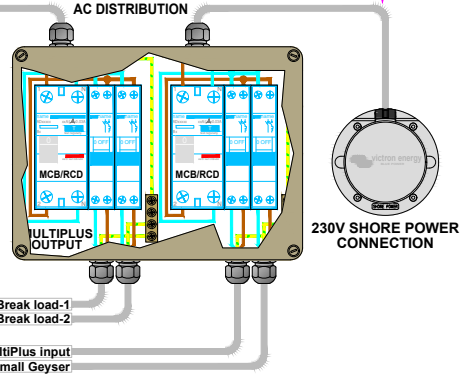


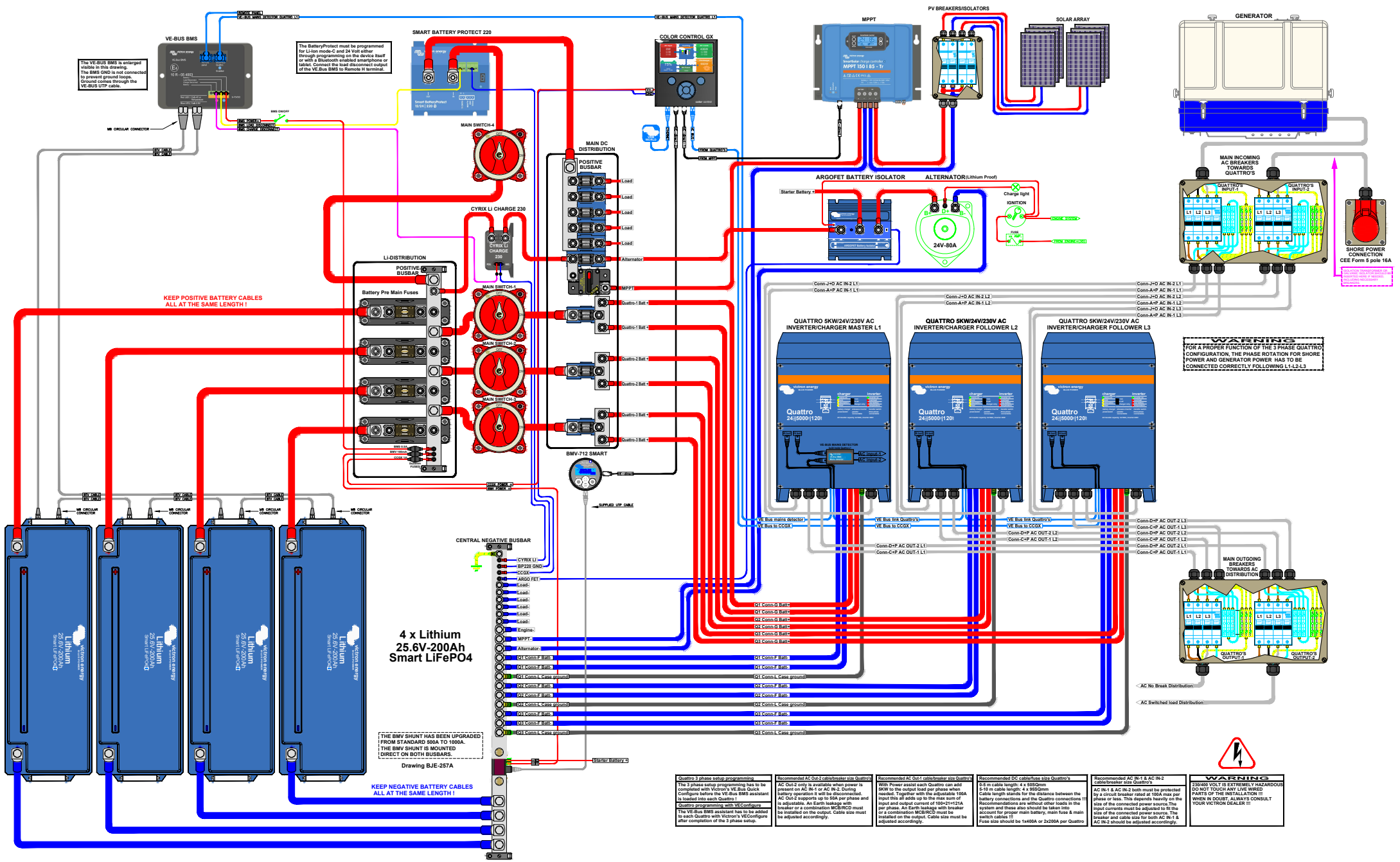
**Recommended AC Out cable/breaker size MultiPlus**  
 With Power assist the MultiPlus can add 1 kW to the output load when needed. Together with the adjustable 16A input this all adds up to the max sum of input and output current of 16+4.3=20.3A. An Earth leakage with breaker or a combination MCB/RCD must be installed on the output. Cable size must be adjusted accordingly.

**Recommended DC cable/fuse size MultiPlus**  
 0-5 m cable length: 35Sqmm  
 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 highlighted 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 LiIon 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 if terminal.

KEEP POSITIVE BATTERY CABLES ALL AT THE SAME LENGTH!

4 x Lithium 25.6V-200Ah Smart LiFePO4

KEEP NEGATIVE BATTERY CABLES ALL AT THE SAME LENGTH

THE BMV SHUNT HAS BEEN UPGRADED FROM STANDARD 500A TO 1000A. THE BMV SHUNT IS MOUNTED DIRECT ON BOTH BUSBARS.

Drawing BJE-257A

- CYRUX LI
- BP230 GND
- CCO
- ARND FET
- Load
- Load
- Load
- Load
- Engine
- MPPT
- Alternator
- Q1 Comm 1 Bat
- Q1 Comm 2 Bat
- Q1 Comm 3 Bat
- Q1 Comm 4 Bat
- Q1 Comm 1-4 wire ground
- Q2 Comm 1 Bat
- Q2 Comm 2 Bat
- Q2 Comm 3 Bat
- Q2 Comm 4 Bat
- Q2 Comm 1-4 wire ground
- Q3 Comm 1 Bat
- Q3 Comm 2 Bat
- Q3 Comm 3 Bat
- Q3 Comm 4 Bat
- Q3 Comm 1-4 wire ground
- Q4 Comm 1 Bat
- Q4 Comm 2 Bat
- Q4 Comm 3 Bat
- Q4 Comm 4 Bat
- Q4 Comm 1-4 wire ground

**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 1.

**Quattro programming with VE Configure:**  
The VE-Bus BMS assistant has to be added to each Quattro with Victor's VE Configure after completion of the 3 phase setup.

**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 60A per phase and is adjustable. An Earth leakage 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 Quattro's:**  
W/B Power assist each Quattro can add 80W to the output load per phase when needed. Together with the adjustable 10A input this all adds up to the max sum of input and output current of 10A + 12.5A per phase. 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/breaker size Quattro's:**  
6.8 m cable length: 4 x 95SDmm  
5-10 m cable length: 4 x 95SDmm  
Cable length inside 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 breaker and cable size for AC IN-1 & AC IN-2 should be adjusted accordingly.

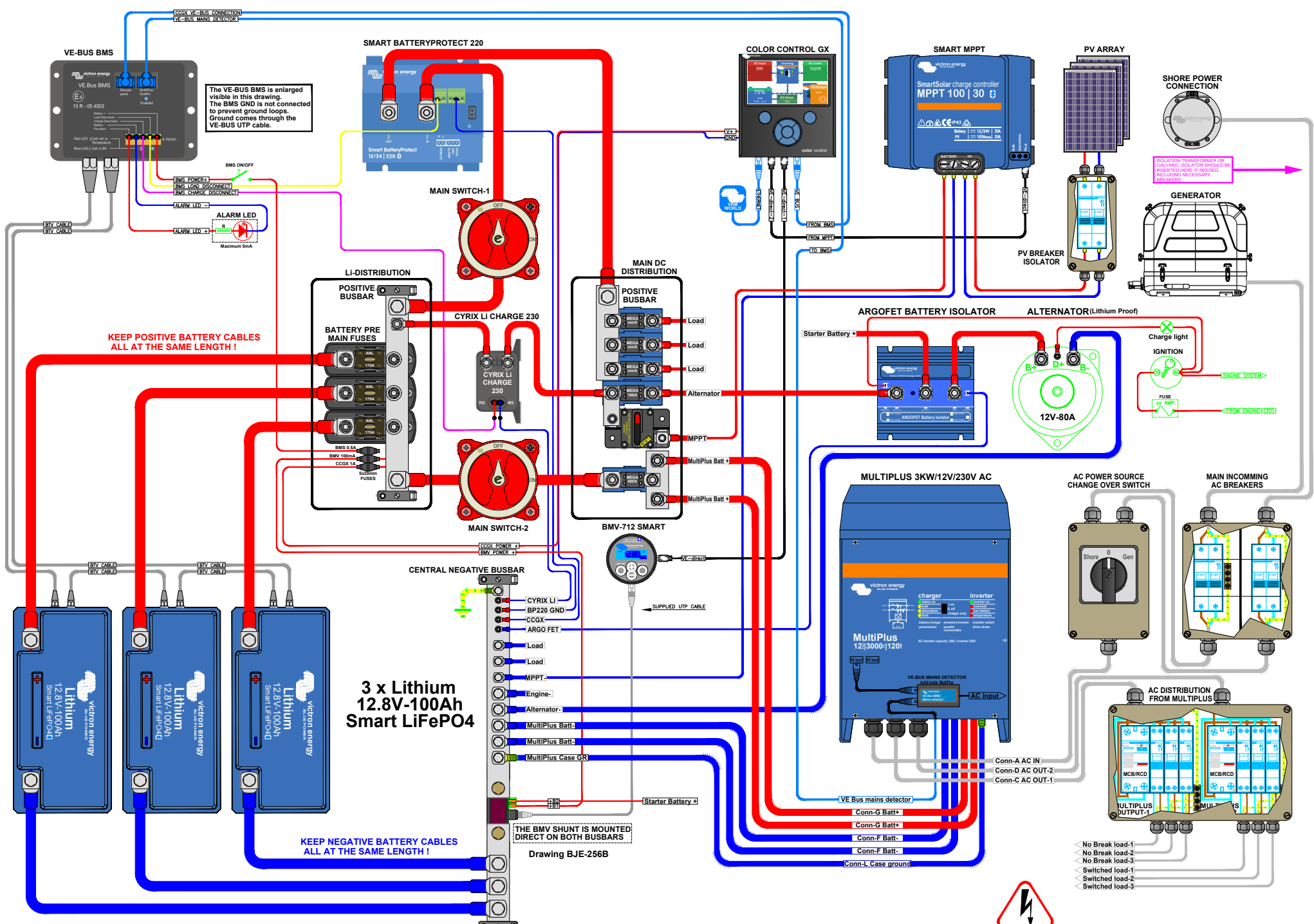
**Recommended AC IN-1 & AC IN-2 cable/breaker size Quattro's:**  
AC IN-1 & AC IN-2 both must be protected by a circuit breaker rated at 100A max per phase or less. This depends heavily on the size of the connected power source. The input currents must be adjusted to fit the size of the connected power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

**WARNING:**  
230-240VOLT IS EXTREMELY HAZARDOUS. DO NOT TOUCH ANY LIVE WIRE PARTS OF THE INSTALLATION!! WHEN IN DOUBT, ALWAYS CONSULT YOUR VICTOR DEALER!!!

FOR A PROPER FUNCTION OF THE 3 PHASE QUATTRO CONFIGURATION, THE PHASE ROTATION FOR SHORE POWER AND GENERATOR POWER HAS TO BE CONNECTED CORRECTLY FOLLOWING L1-L2-L3.

- AC No Break Distribution  
- AC Switched load Distribution





**Smart BatteryProtect programming**  
 The BatteryProtect must be programmed for Li-Ion mode 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.

**Recommended AC Out-2 cable/breaker size MultiPlus**  
 AC Out-2 only is available when power is present on AC In-1. During battery operation it will be disconnected. AC Out-2 supports up to 16A and is adjustable. An Earth leakage with breaker or a combination MCB/RCD must be installed on the output. Cable size must be adjusted accordingly.

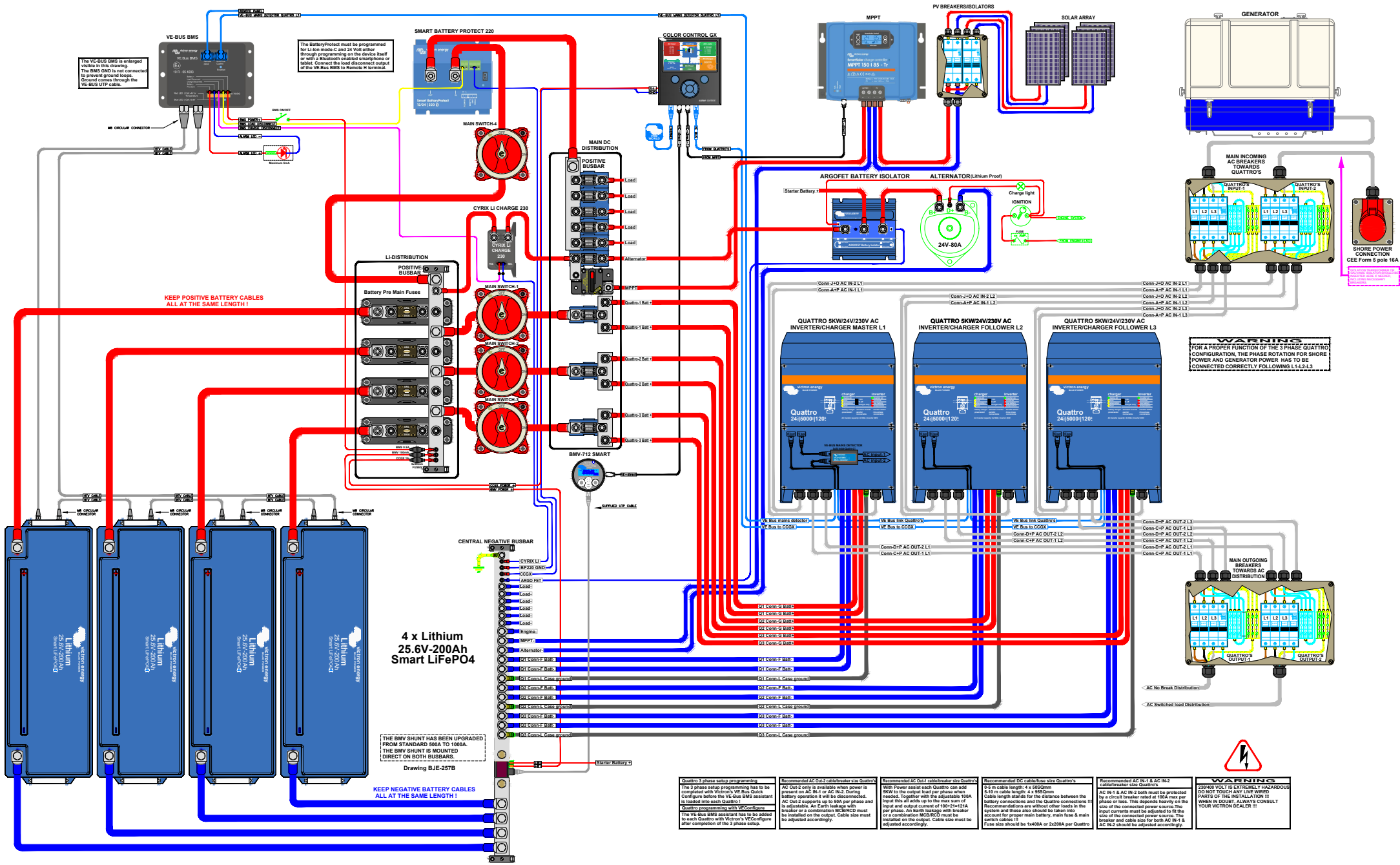
**Recommended AC Out-1 cable/breaker size MultiPlus**  
 With Power assist the MultiPlus can add 3KW to the output load when needed. Together with the adjustable 50A input this all adds up to the max sum of input and output current of 50+13=63A. An Earth leakage with breaker or a combination MCB/RCD 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 50Sqrmm  
 5-10 m cable length: 4 x 70Sqrmm  
 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 1 x 400A or 2 x 200A

**Recommended AC IN cable/breaker size MultiPlus**  
 AC IN must be protected by a circuit breaker rated at 50A 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 source. The breaker and cable size for AC IN should be adjusted accordingly.

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Drawing BJE-256B



The VE-BUS BMS is highlighted 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 LiIon 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 if 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.

KEEP NEGATIVE BATTERY CABLES ALL AT THE SAME LENGTH!

Drawing 5JE-257B

- 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 1.
- Quattro programming with VE Configure:** The VE-Bus BMS assistant has to be added to each Quattro with Victor's VE Configure after completion of the 3 phase setup.
- 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 and is adjustable. An Earth leakage 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 Quattro's:** RVN Power assist each Quattro can assist 8kW to the output load per phase when input and output current of 100A max per phase. Input this all adds up to the max sum of input and output current of 100A + 120A per phase. 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/breaker size Quattro's:** 6.8 m cable length: 4 x 95SDmm. 5-10 m cable length: 4 x 95SDmm. Cable length inside 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 breaker and cable size for AC IN-1. Fuse size should be 1x400A or 2x200A per Quattro.
- Recommended AC IN-1 & AC IN-2 cable/breaker size Quattro's:** AC IN-1 & AC IN-2 both must be protected by a 100A 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 source. The breaker and cable size for AC IN-1 & AC IN-2 should be adjusted accordingly.
- WARNING:** 230-240VOLT IS EXTREMELY HAZARDOUS. DO NOT TOUCH ANY LIVE WIRE OR PARTS OF THE INSTALLATION!! WHEN IN DOUBT, ALWAYS CONSULT YOUR VICTOR DEALER!!!