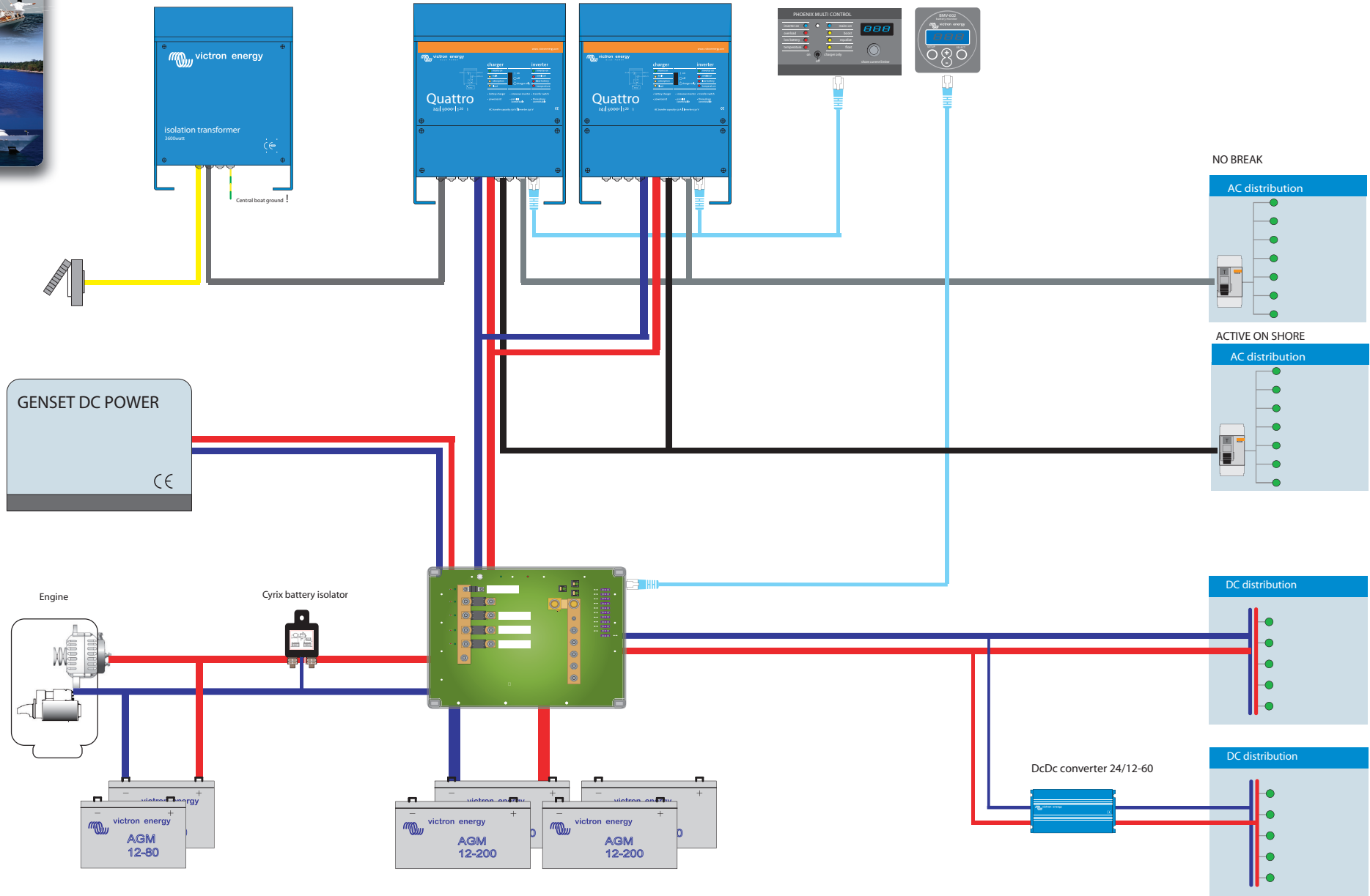
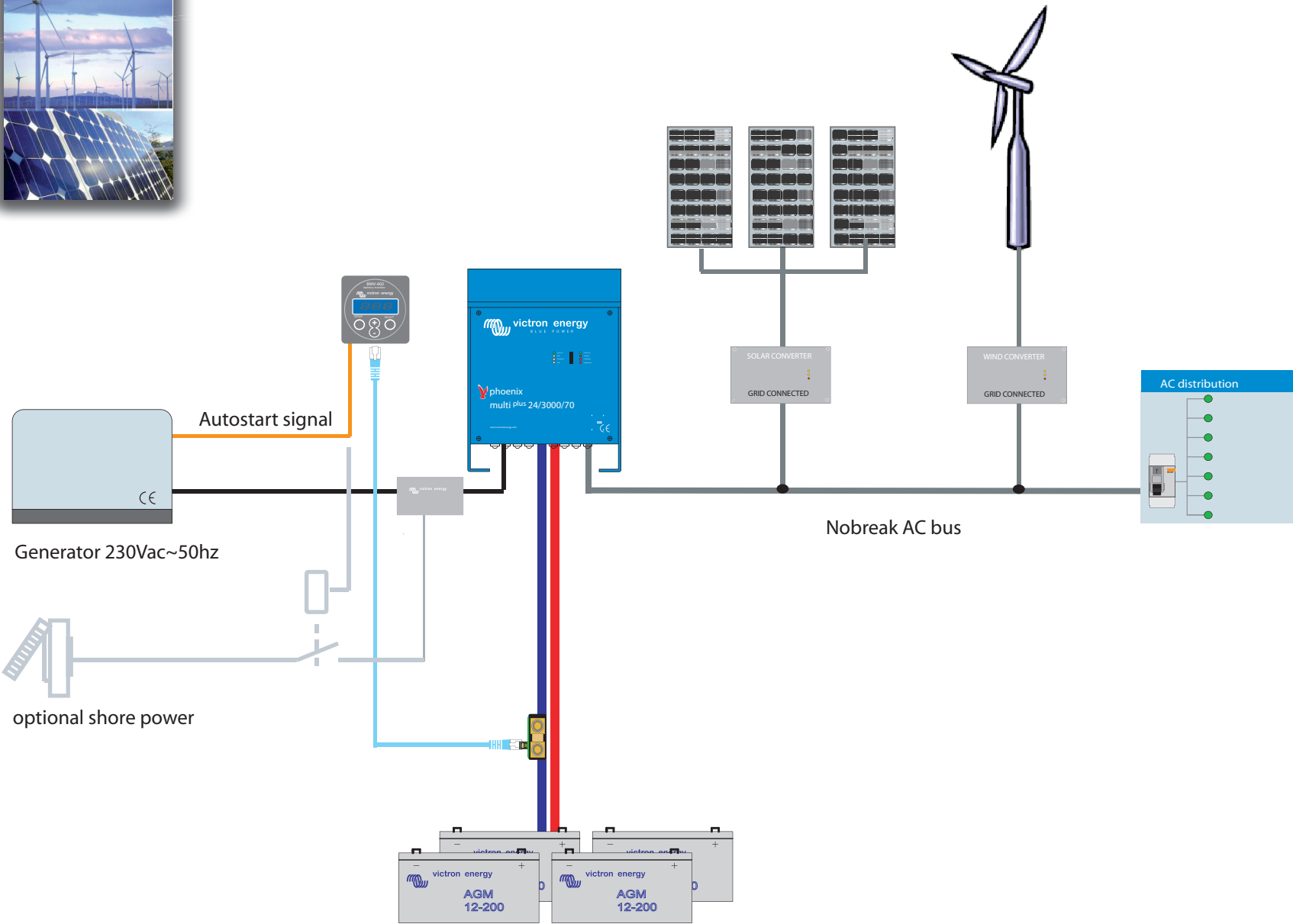


(For single phase input on this system a dongle is required !)

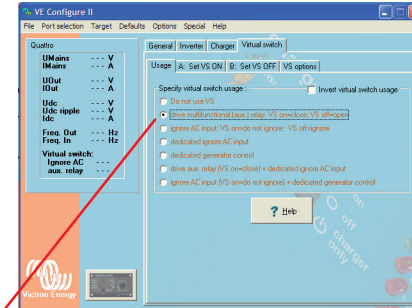


# Multi with grid connected converter for solar and/or wind turbine

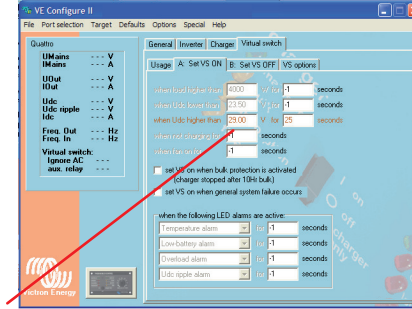
RENEWABLE



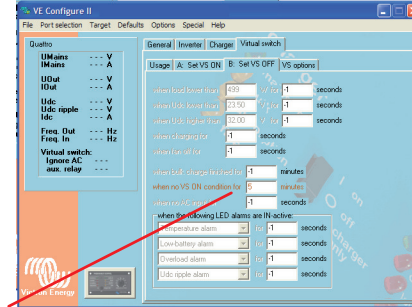
VE Configure settings



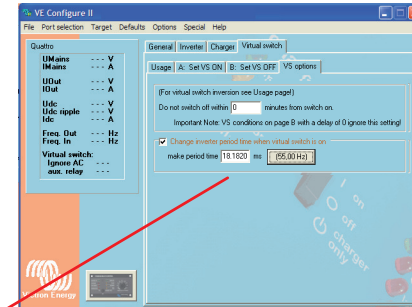
Activate programmable relay



Set maximal charge voltage / time

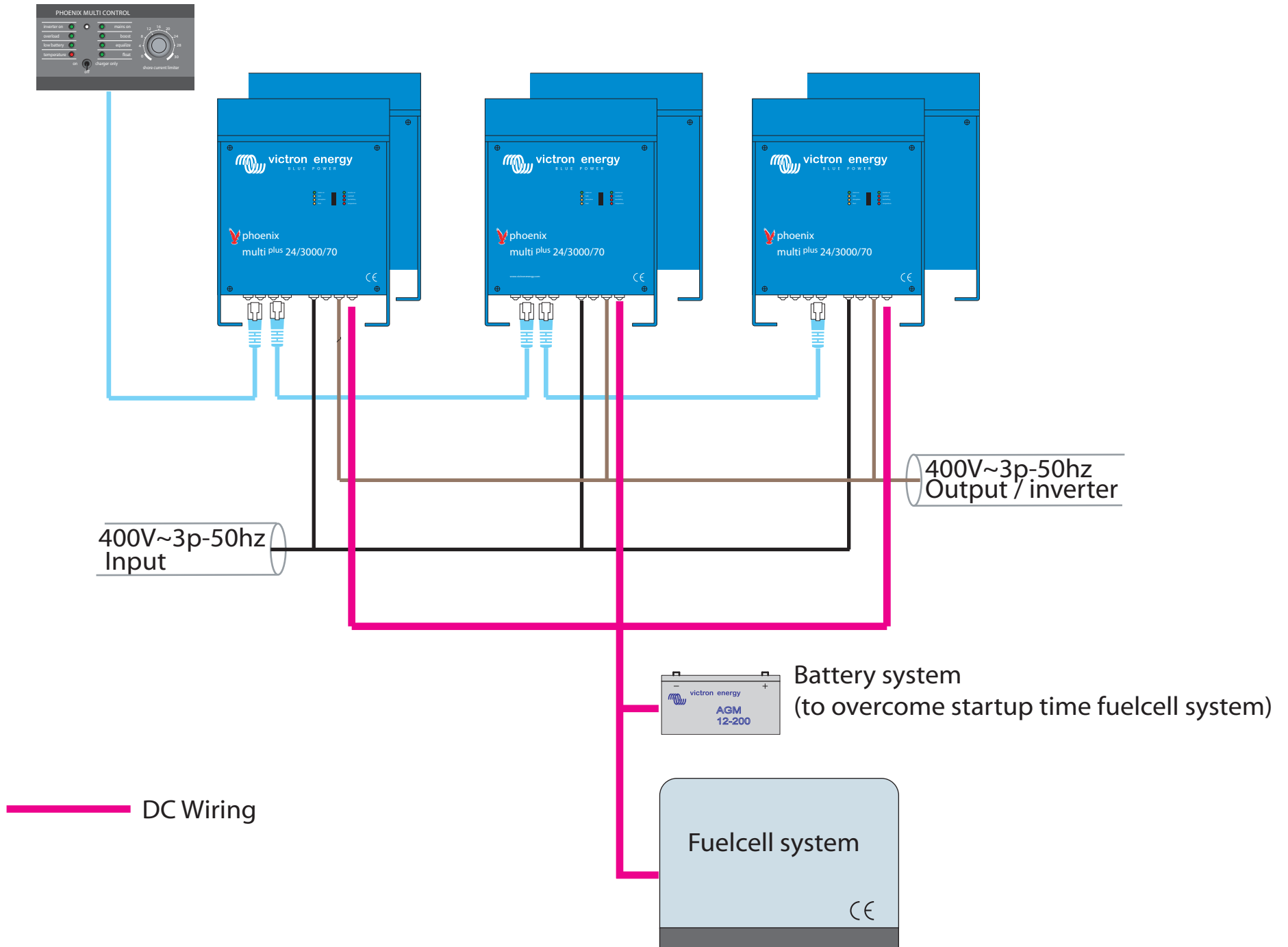


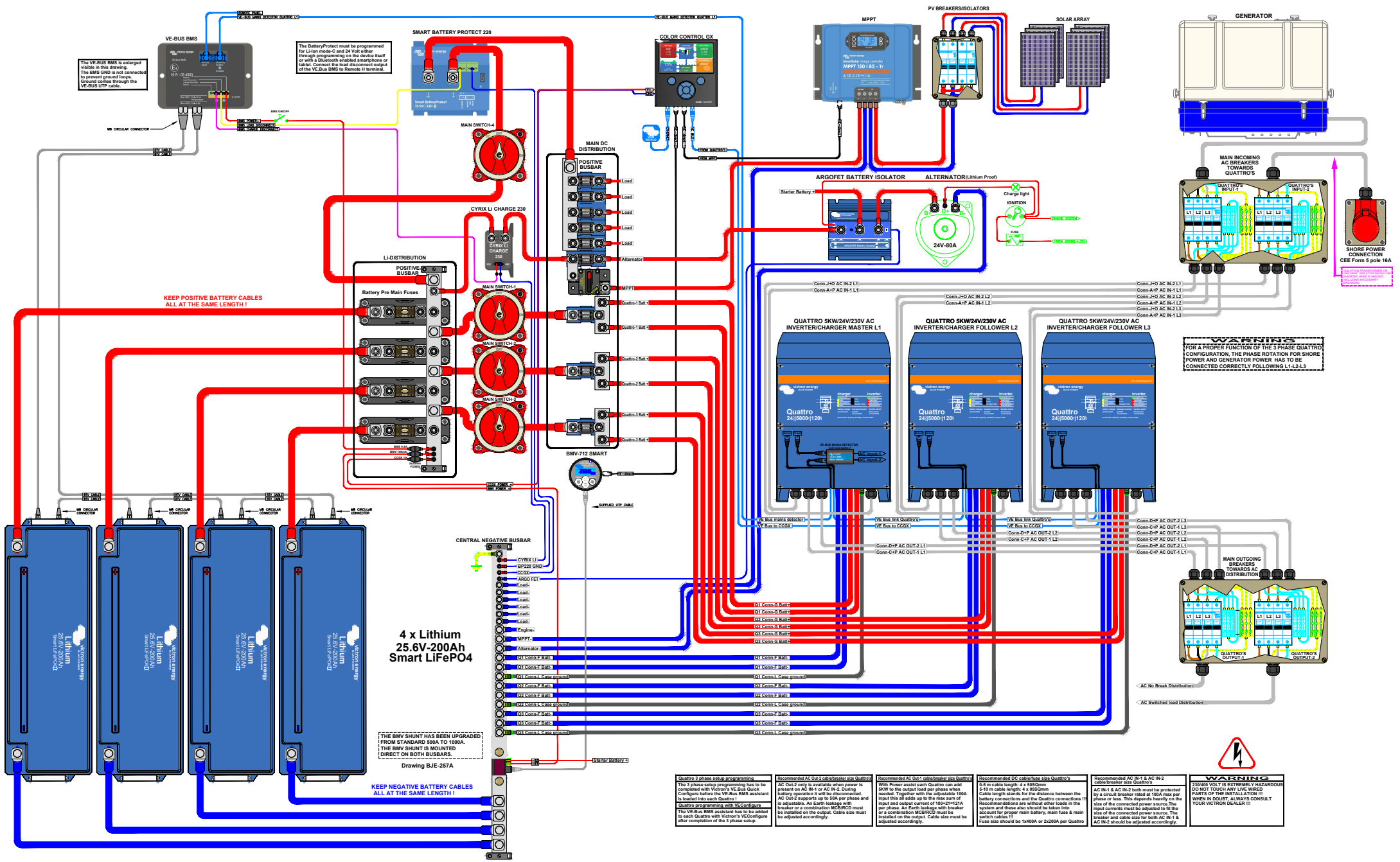
Set charge interval delay



Set frequency shift to disconnect grid-converter

# VE BUS three phase nobreak system with fuelcell





The VE-BUS BMS is a shunt type and 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.

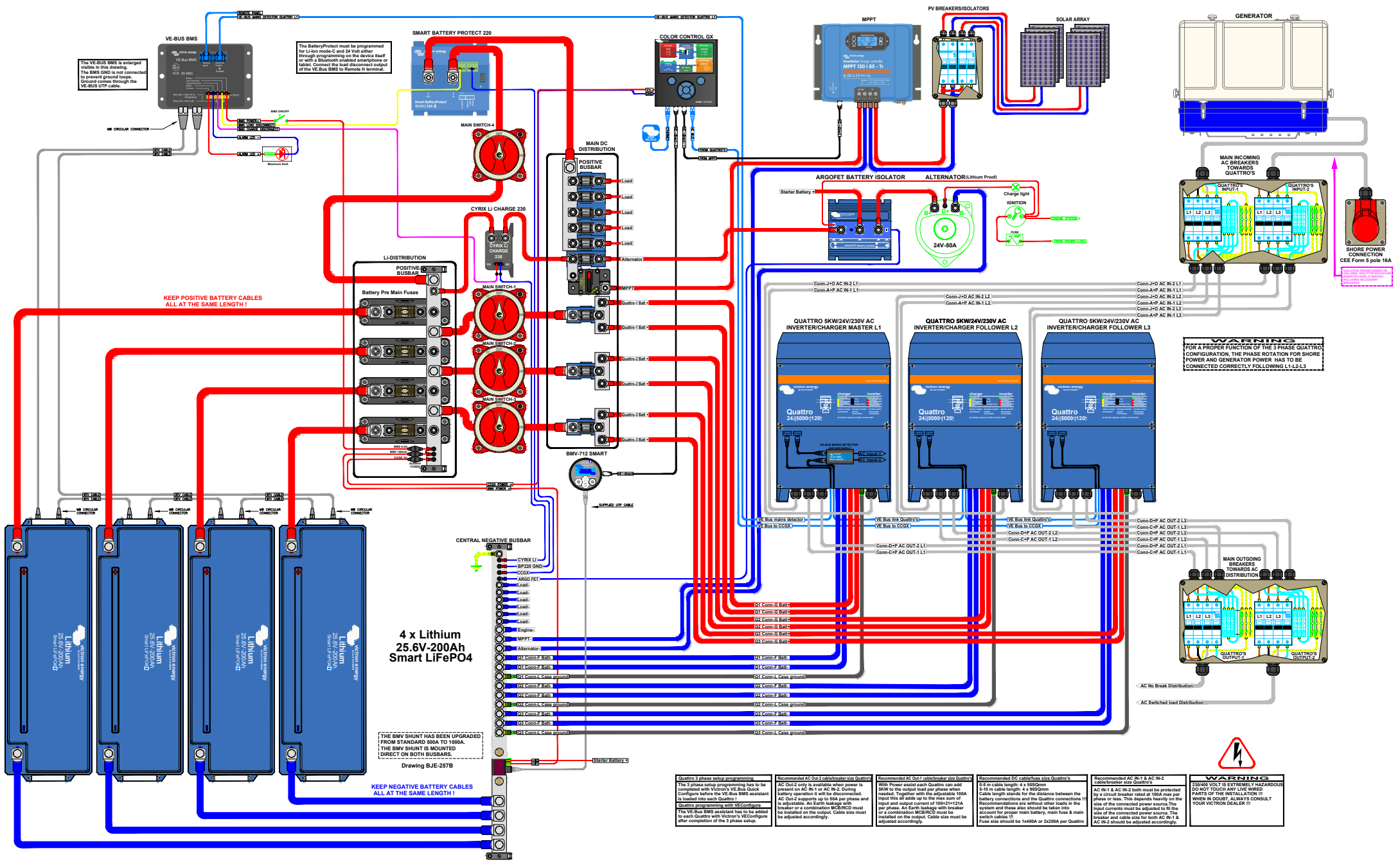
KEEP NEGATIVE BATTERY CABLES ALL AT THE SAME LENGTH

Drawing BJE-257A

- 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:** With Power assist each Quattro can assist 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 185SDmm. 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 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. 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.
- WARNING:** 230-240VOLT IS EXTREMELY HAZARDOUS. DO NOT TOUCH ANY LIVE WIRING 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.





The VE-BUS BMS is highlighted 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 installed in the output. Cable size must be adjusted accordingly.

**Recommended AC Out-1 cable/breaker size Quattro's**  
WV 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 in the output. Cable size must be adjusted accordingly.

**Recommended DC cable/breaker size Quattro's**  
6.8 m cable length: 4 x 95Gmm  
5-10 m cable length: 4 x 185Gmm  
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 breaker and cable size for AC IN-1 & AC IN-2. 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. The 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. AC IN-2 should be adjusted accordingly.

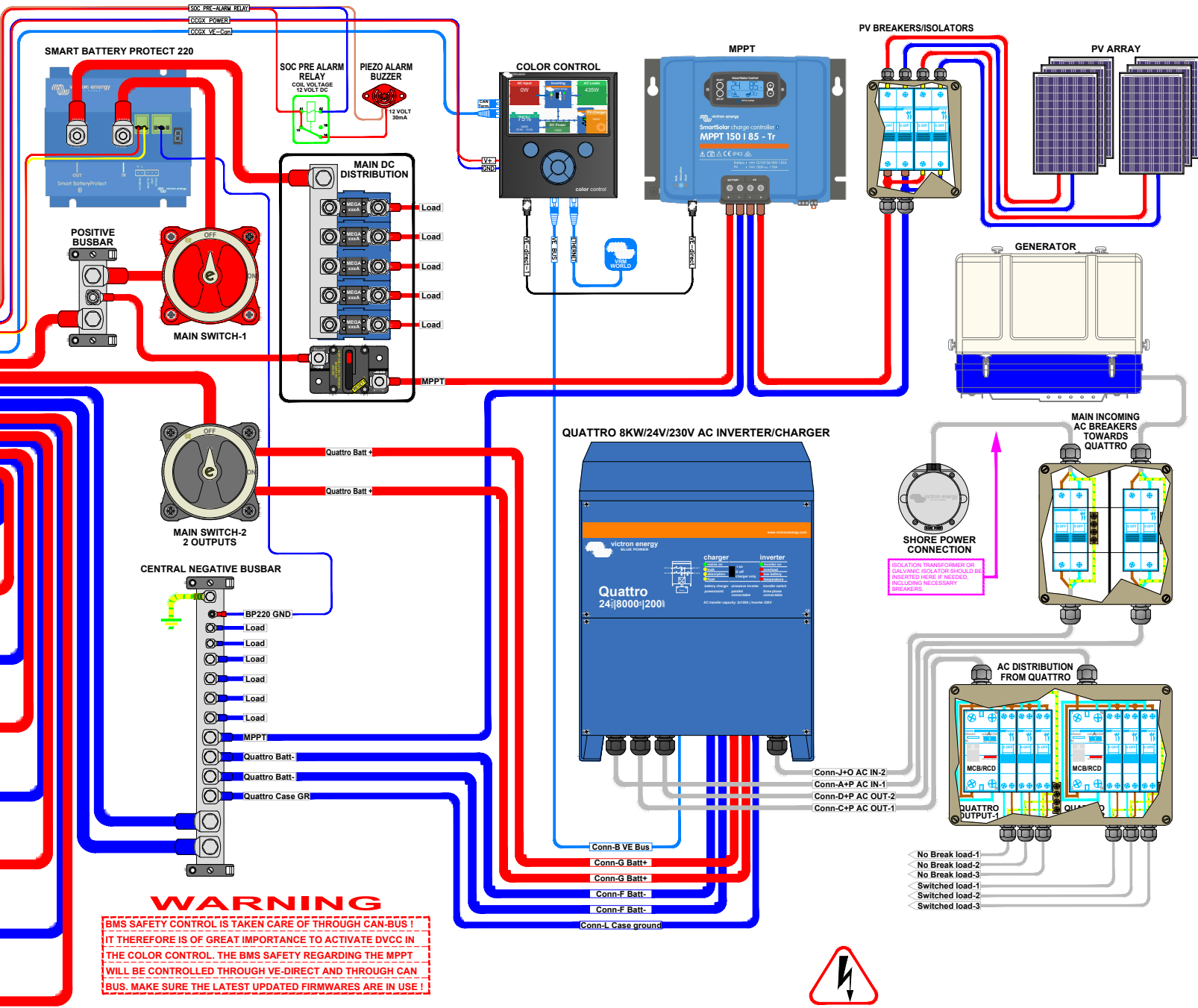
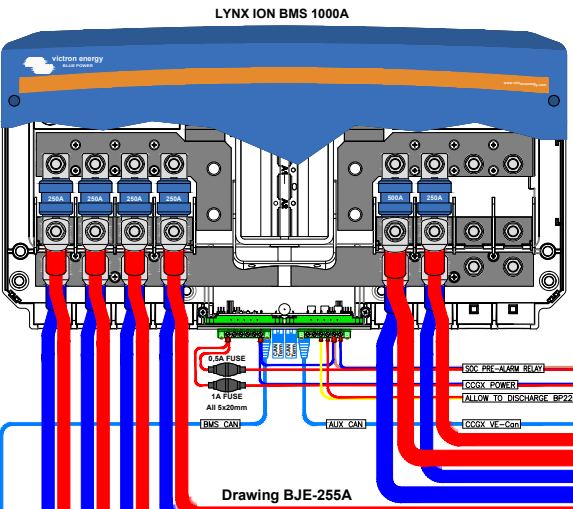
**WARNING**  
230-240VOLT IS EXTREMELY HAZARDOUS. DO NOT TOUCH ANY LIVE WIRE OR PARTS OF THE INSTALLATION !!! WHEN IN DOUBT, ALWAYS CONSULT YOUR VICTOR DEALER !!!

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.

SHORE POWER CONNECTION  
CEE Form 5 pole 16A



THE SOC PRE-ALARM WILL SIGNAL AN ALARM BEFORE THE LOADS ARE BEING DISCONNECTED REGARDING TEMPERATURE OR VOLTAGE ISSUES, AN AUDIBLE ALARM AS PER THIS DRAWING, WILL WARN USERS TO TAKE PREVENTIVE MEASURES.



**WARNING**

BMS SAFETY CONTROL IS TAKEN CARE OF THROUGH CAN BUS IT THEREFORE IS OF GREAT IMPORTANCE TO ACTIVATE DVCC IN THE COLOR CONTROL. THE BMS SAFETY REGARDING THE MPPT WILL BE CONTROLLED THROUGH VE-DIRECT AND THROUGH CAN BUS. MAKE SURE THE LATEST UPDATED FIRMWARES ARE IN USE !!!

KEEP POSITIVE BATTERY CABLES ALL AT THE SAME LENGTH !!!  
KEEP NEGATIVE BATTERY CABLES ALL AT THE SAME LENGTH !!!

**Recommended AC Out-2 cable/breaker size Quattro**  
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 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**  
With Power assist the Quattro can add 8kW to the output load when needed. Together with the adjustable 100A input this all adds up to the max sum of input and output current of 100-35+135A. 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 Quattro**  
0-5 m cable length: 4 x 70Smm  
5-10 m cable length: 4 x 120Smm  
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 1 x 500A or 2 x 250A

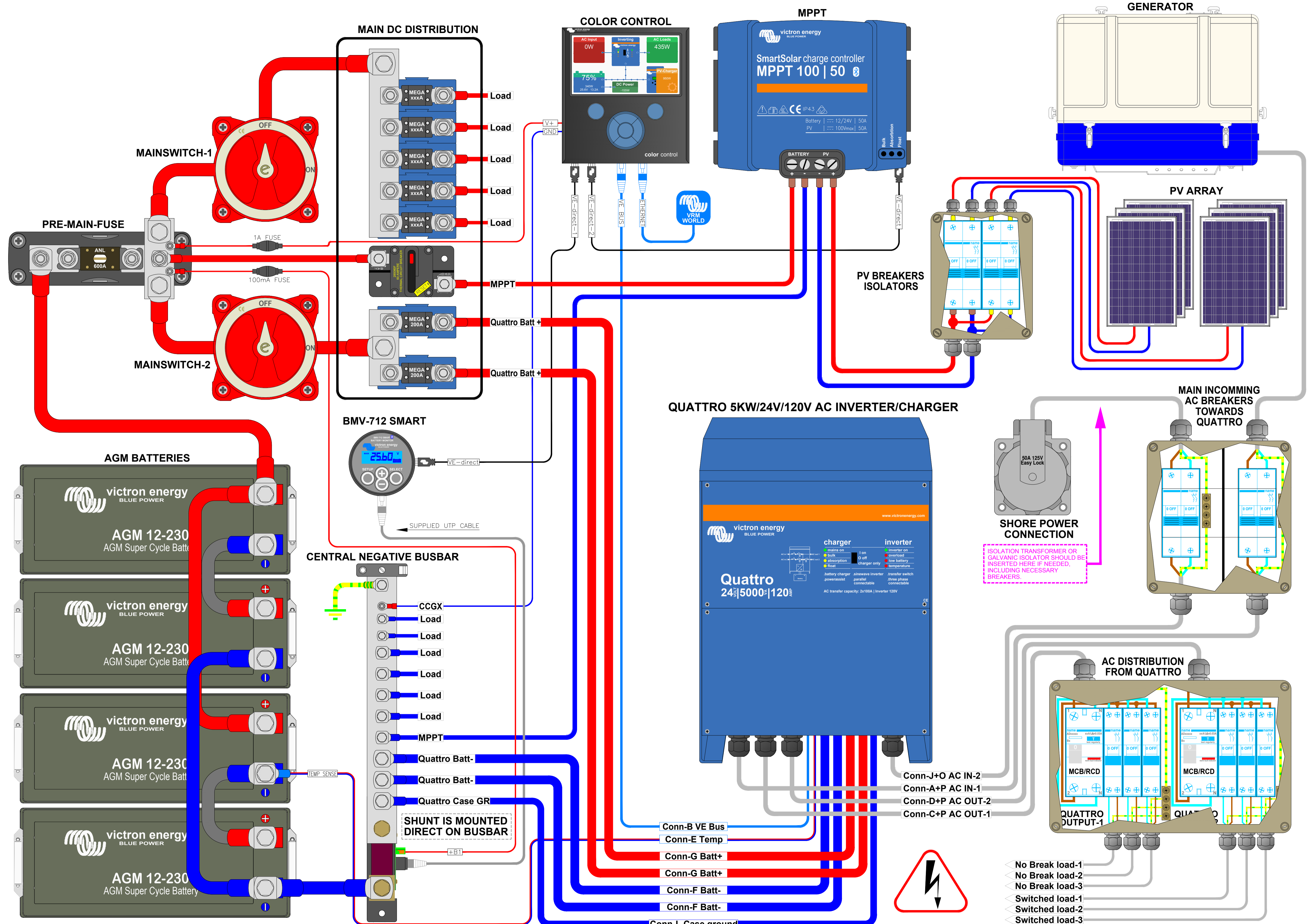
**Recommended AC IN-1 & AC IN-2 cable/breaker size Quattro**  
AC IN-1 & AC IN-2 both must be protected by a circuit breaker rated at 100A max or less. This depends heavily on the size of the connected power source. The input currents must be adjusted to fit the size of the connected power source. The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

**WARNING**  
230 VOLT IS EXTREMELY HAZARDOUS DO NOT TOUCH ANY LIFE 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





**Recommended AC Out-2 cable/breaker size Quattro**  
 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 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.

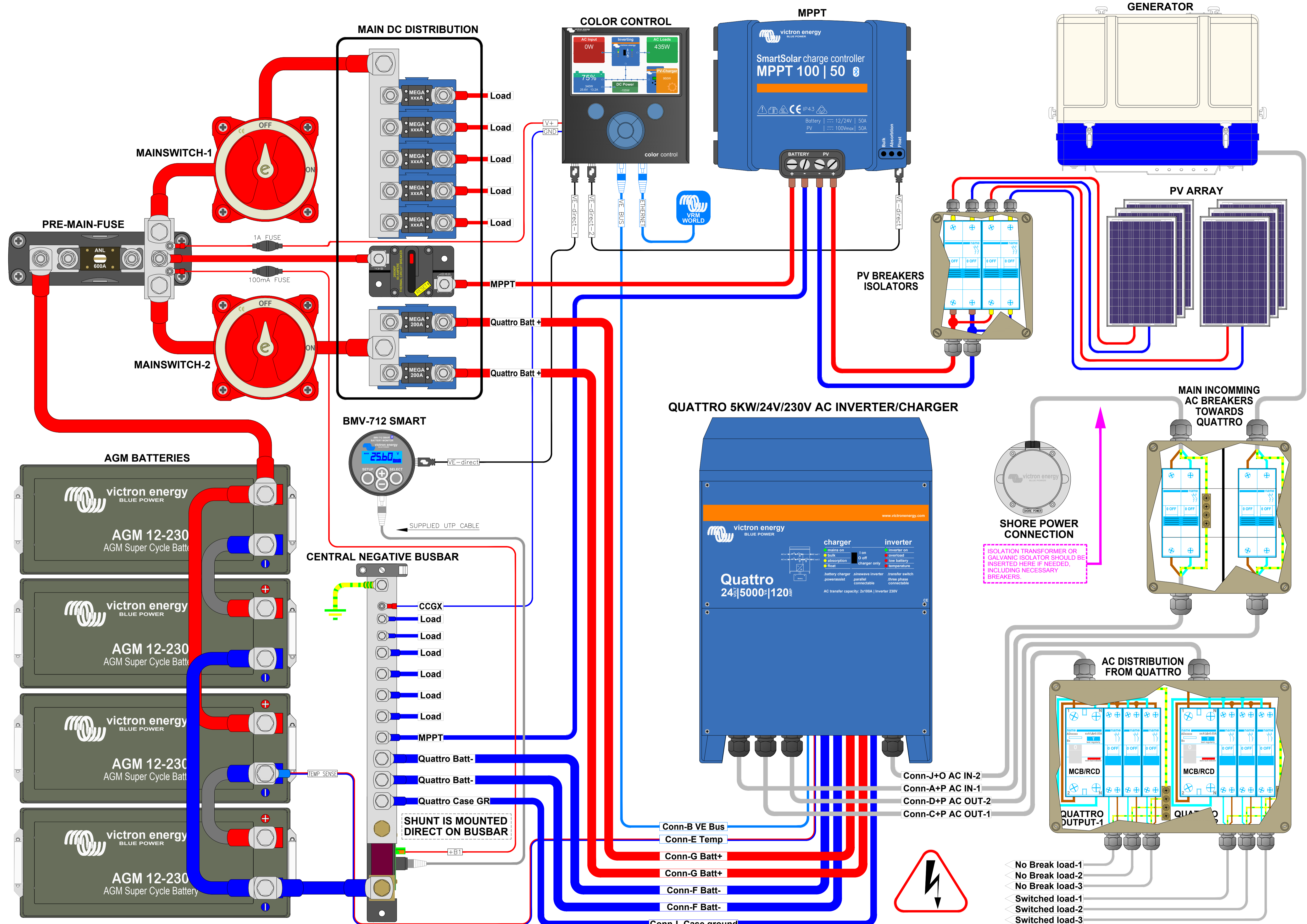
**Recommended AC Out-1 cable/breaker size Quattro**  
 With Power assist the Quattro can add 5KW to the output load when needed. Together with the adjustable 100A input this all adds up to the max sum of input and output current of 100+42=142A. An Earth leakage with breaker or a combination MCB/RCD must be installed on the output. Cable size must be adjusted accordingly.

**Recommended DC cable/fuse size Quattro**  
 0-5 m cable length: 4 x 50SQmm  
 5-10 m cable length: 4 x 95SQmm  
 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 1 x 400A or 2 x 200A

**Recommended AC IN-1 & AC IN-2 cable/breaker size Quattro**  
 AC IN-1 & AC IN-2 both must be protected by a circuit breaker rated at 100A max 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 both AC IN-1 & AC IN-2 should be adjusted accordingly.

**WARNING**  
 120 VOLT IS EXTREMELY HAZARDOUS  
 DO NOT TOUCH ANY LIFE 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



**Recommended AC Out-2 cable/breaker size Quattro**  
 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 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**  
 With Power assist the Quattro can add 5KW to the output load 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. 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 Quattro**  
 0-5 m cable length: 4 x 50SQmm  
 5-10 m cable length: 4 x 95SQmm  
 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 1 x 400A or 2 x 200A

**Recommended AC IN-1 & AC IN-2 cable/breaker size Quattro**  
 AC IN-1 & AC IN-2 both must be protected by a circuit breaker rated at 100A max 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 both AC IN-1 & AC IN-2 should be adjusted accordingly.

**WARNING**  
 230 VOLT IS EXTREMELY HAZARDOUS DO NOT TOUCH ANY LIFE 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

