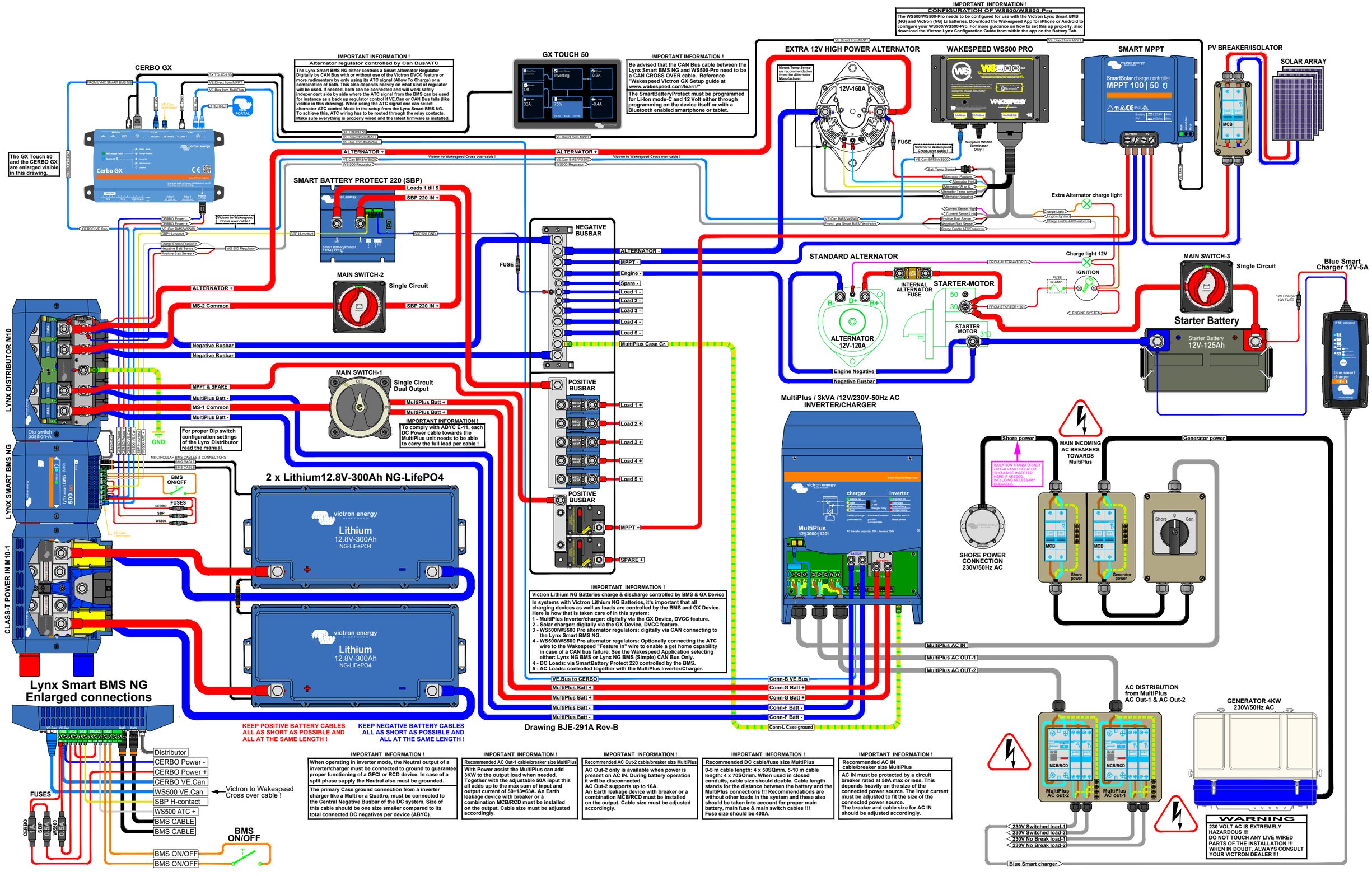
IMPORTANT INFORMATION !
CONFIGURATION OF WS500/WS500-Pro
The WS500/WS500-Pro needs to be configured for use with the Victron Lynx Smart BMS (NG) and Victron (NG) Li batteries. Download the Wakespeed App for iPhone or Android to configure your WS500/WS500-Pro. For more guidance on how to set this up properly, also download the Victron Lynx Configuration Guide from within the app on the Battery Tab.
IMPORTANT INFORMATION !
Alternator regulator controlled by Can Bus/ATC
The Lynx Smart BMS NG either controls a Smart Alternator Regulator Digitally by CAN Bus with or without use of the Victron DVCC feature or more rudimentary by only using its ATC signal (Allow To Charge) or a combination of both. This also depends heavily on what kind of regulator will be used. If needed, both can be connected and will work safely independent side by side where the ATC signal from the BMS can be used for instance as a back up regulator control if VE.Can or CAN Bus fails (like visible in this drawing). When using the ATC signal one can select alternator ATC control Mode in the setup from the Lynx Smart BMS NG. To achieve this, ATC wiring has to be routed through the relay contacts. Make sure everything is properly wired and the latest firmware is installed.
IMPORTANT INFORMATION !
Be advised that the CAN Bus cable between the Lynx Smart BMS NG and WS500-Pro need to be a CAN CROSS OVER cable. Reference "Wakespeed Victron GX Setup guide at www.wakespeed.com/learn/"
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.
CERBO GX
GX TOUCH 50
The GX Touch 50 and the CERBO GX are enlarged visible in this drawing.
EXTRA 12V HIGH POWER ALTERNATOR
12V-160A
WAKESPEED WS500 PRO
SMART MPPT
SmartSolar charge controller MPPT 100 | 50
PV BREAKER/ISOLATOR
SOLAR ARRAY
SMART BATTERY PROTECT 220 (SBP)
MAIN SWITCH-2
Single Circuit
MAIN SWITCH-1
Single Circuit Dual Output
NEGATIVE BUSBAR
POSITIVE BUSBAR
STANDARD ALTERNATOR
ALTERNATOR 12V-120A
STARTER-MOTOR
INTERNAL ALTERNATOR FUSE
IGNITION
Charge light 12V
Extra Alternator charge light
MAIN SWITCH-3
Single Circuit
Starter Battery
Starter Battery 12V-125Ah
Blue Smart Charger 12V-5A
LYNX DISTRIBUTOR M10
LYNX SMART BMS NG
CLASS-T POWER IN M10-1
Dip switch position-A
For proper Dip switch configuration settings of the Lynx Distributor read the manual.
IMPORTANT INFORMATION !
To comply with ABYC E-11, each DC Power cable towards the MultiPlus unit needs to be able to carry the full load per cable !
2 x Lithium12.8V-300Ah NG-LifePO4
Lithium 12.8V-300Ah NG-LiFePO4
MultiPlus / 3kVA /12V/230V-50Hz AC INVERTER/CHARGER
MultiPlus 12|3000|120
SHORE POWER CONNECTION 230V/50Hz AC
MAIN INCOMING AC BREAKERS TOWARDS MultiPlus
Shore power
Generator power
AC DISTRIBUTION from MultiPlus AC Out-1 & AC Out-2
GENERATOR 4KW 230V/50Hz AC
IMPORTANT INFORMATION !
Victron Lithium NG Batteries charge & discharge controlled by BMS & GX Device
In systems with Victron Lithium NG Batteries, it's important that all charging devices as well as loads are controlled by the BMS and GX Device. Here is how that is taken care of in this system:
1 - MultiPlus Inverter/charger: digitally via the GX Device, DVCC feature.
2 - Solar charger: digitally via the GX Device, DVCC feature.
3 - WS500/WS500 Pro alternator regulators: digitally via CAN connecting to the Lynx Smart BMS NG.
4 - WS500/WS500 Pro alternator regulators: Optionally connecting the ATC wire to the Wakespeed "Feature In" wire to enable a get home capability in case of a CAN bus failure. See the Wakespeed Application selecting either: Lynx NG BMS or Lynx NG BMS (Simple) CAN Bus Only.
4 - DC Loads: via SmartBattery Protect 220 controlled by the BMS.
5 - AC Loads: controlled together with the MultiPlus Inverter/Charger.
Lynx Smart BMS NG Enlarged connections
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 !
Drawing BJE-291A Rev-B
IMPORTANT INFORMATION !
When operating in inverter mode, the Neutral output of a 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 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 should be one size smaller compared to its total connected DC negatives per device (ABYC).
IMPORTANT INFORMATION !
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.
IMPORTANT INFORMATION !
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.
IMPORTANT INFORMATION !
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.
IMPORTANT INFORMATION !
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 AC IS EXTREMELY HAZARDOUS !!!
DO NOT TOUCH ANY LIVE WIRED PARTS OF THE INSTALLATION !!!
WHEN IN DOUBT, ALWAYS CONSULT YOUR VICTRON DEALER !!!