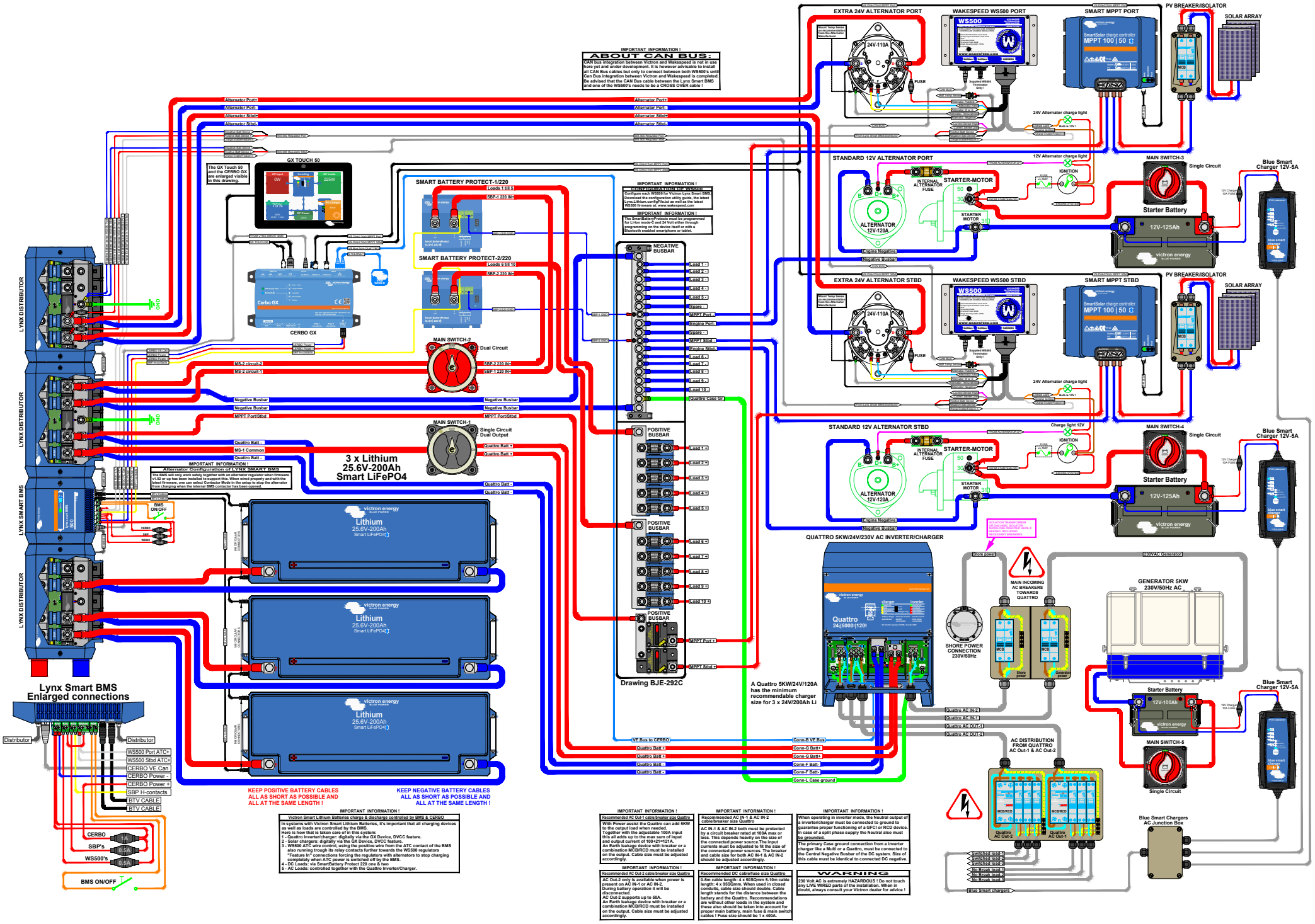
IMPORTANT INFORMATION !
ABOUT CAN BUS:
CAN bus integration between Victron and Wakespeed is not in use here yet and under development. It is however advisable to install all CAN Bus cables but only to connect between both WS500's until Can Bus integration between Victron and Wakespeed is completed. Be advised that the CAN Bus cable between the Lynx Smart BMS and one of the WS500's needs to be a CROSS OVER cable !
EXTRA 24V ALTERNATOR PORT
WAKESPEED WS500 PORT
SMART MPPT PORT
PV BREAKER/ISOLATOR
SOLAR ARRAY
24V-110A
FUSE
24V Alternator charge light
STANDARD 12V ALTERNATOR PORT
12V Alternator charge light
INTERNAL ALTERNATOR FUSE
STARTER-MOTOR
IGNITION
ALTERNATOR 12V-120A
MAIN SWITCH-3
Single Circuit
Starter Battery
12V-125Ah
Blue Smart Charger 12V-5A
EXTRA 24V ALTERNATOR STBD
WAKESPEED WS500 STBD
SMART MPPT STBD
STANDARD 12V ALTERNATOR STBD
Charge light 12V
MAIN SWITCH-4
GX TOUCH 50
The GX Touch 50 and the CERBO GX are enlarged visible in this drawing.
SMART BATTERY PROTECT-1/220
SMART BATTERY PROTECT-2/220
IMPORTANT INFORMATION !
CONFIGURATION OF WS500
Configure each WS500 for Victron Lynx Smart BMS. Download the configuration utility guide, the latest Lynx.Lithium.config?file.txt as well as the latest WS500 firmware at: www.wakespeed.com
IMPORTANT INFORMATION !
The SmartBatteryProtects 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.
CERBO GX
MAIN SWITCH-2
Dual Circuit
MAIN SWITCH-1
Single Circuit
Dual Output
3 x Lithium
25.6V-200Ah
Smart LiFePO4
IMPORTANT INFORMATION !
Alternator Configuration of LYNX SMART BMS
The BMS will only work safely together with an alternator regulator when firmware v1.02 or up has been installed to support this. When wired properly and with the latest firmware, one can select Contactor Mode in the setup to stop the alternator from charging when the internal BMS contactor has been opened.
LYNX DISTRIBUTOR
LYNX SMART BMS
BMS ON/OFF
NEGATIVE BUSBAR
POSITIVE BUSBAR
Drawing BJE-292C
QUATTRO 5KW/24V/230V AC INVERTER/CHARGER
A Quattro 5KW/24V/120A has the minimum recommendable charger size for 3 x 24V/200Ah Li
ISOLATION TRANSFORMER OR CHAINING ISOLATION TRANSFORMER MUST BE USED IF NAKEDEL INCLUDING REQUIRED WIRING
SHORE POWER CONNECTION 230V/50Hz
MAIN INCOMING AC BREAKERS TOWARDS QUATTRO
GENERATOR 5KW 230V/50Hz AC
Starter Battery
12V-100Ah
MAIN SWITCH-5
Single Circuit
Blue Smart Chargers AC Junction Box
AC DISTRIBUTION FROM QUATTRO AC Out-1 & AC Out-2
Lynx Smart BMS Enlarged connections
Distributor
WS500 Port ATC+
WS500 Stbd ATC+
CERBO VE.Can
CERBO Power -
CERBO Power +
SBP H-contacts
BTV CABLE
CERBO
SBP's
WS500's
BMS ON/OFF
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 !
IMPORTANT INFORMATION !
Victron Smart Lithium Batteries charge & discharge controlled by BMS & CERBO
In systems with Victron Smart Lithium Batteries, it's important that all charging devices as well as loads are controlled by the BMS.
Here is how that is taken care of in this system:
1 - Quattro Inverter/charger: digitally via the GX Device, DVCC feature.
2 - Solar chargers: digitally via the GX Device, DVCC feature.
3 - WS500 ATC wire control, using the positive wire from the ATC contact of the BMS also running trough its relay contacts further towards the WS500 regulators "Feature In" connections forcing the regulators with alternators to stop charging completely when ATC power is switched off by the BMS.
4 - DC Loads: via SmartBattery Protect 220 one & two
5 - AC Loads: controlled together with the Quattro Inverter/Charger.
IMPORTANT INFORMATION !
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 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
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.
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 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 sources. The breaker and cable size for both AC IN-1 & AC IN-2 should be adjusted accordingly.
IMPORTANT INFORMATION !
Recommended DC cable/fuse size Quattro
0-5m cable length: 4 x 50SQmm 5-10m cable length: 4 x 95SQmm. When used in closed conduits, cable size should double. Cable length stands for the distance between the battery and the Quattro. 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.
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 must be identical to connected DC negative.
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 for advice !