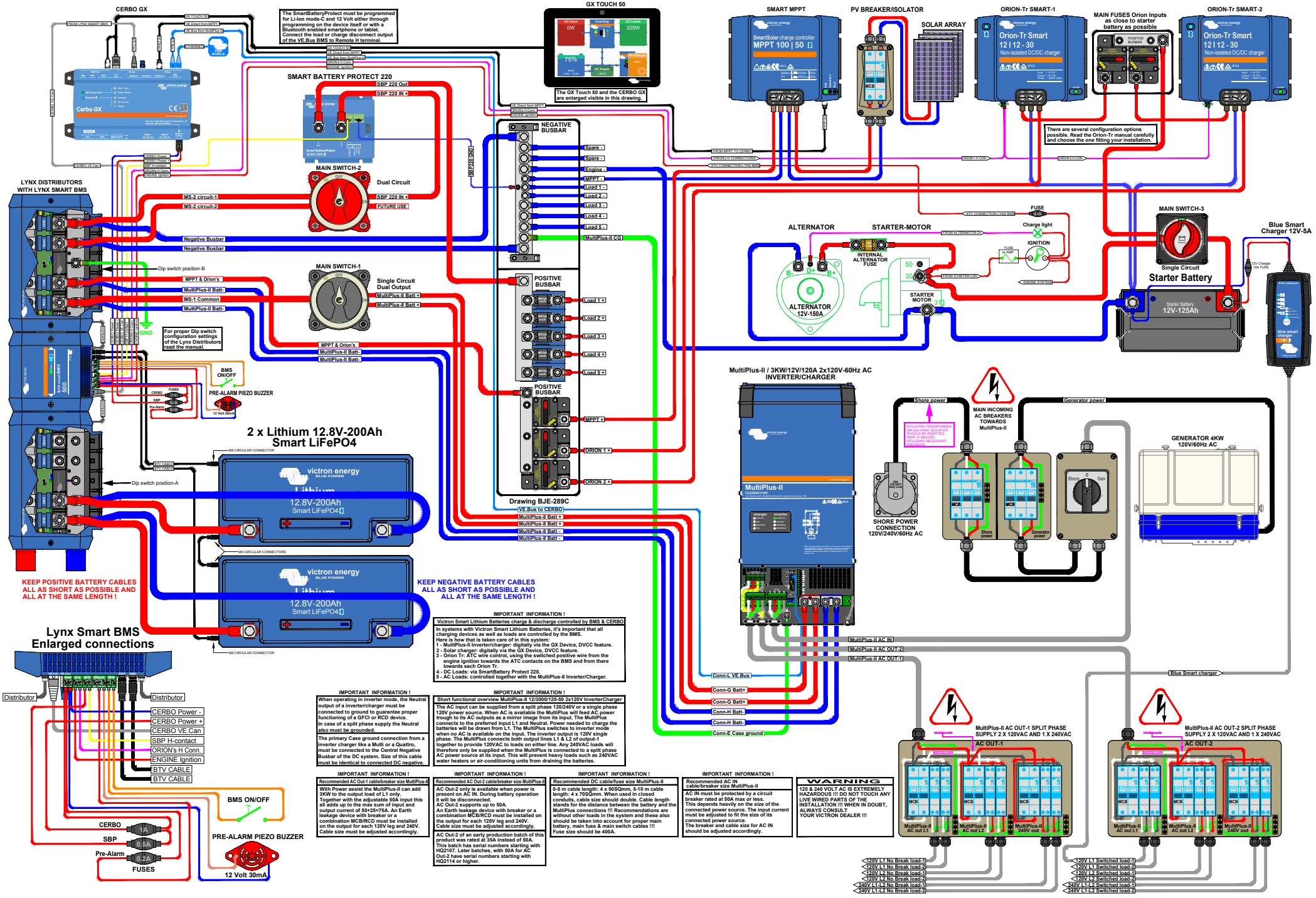
CERBO GX
The SmartBatteryProtect must be programmed for Li-ion mode-C and 12 Volt either through programming on the device itself or with a Bluetooth enabled smartphone or tablet. Connect the load or charge disconnect output of the VE.Bus BMS to Remote H terminal.
GX TOUCH 50
The GX Touch 50 and the CERBO GX are enlarged visible in this drawing.
SMART MPPT
PV BREAKER/ISOLATOR
SOLAR ARRAY
ORION-Tr SMART-1
MAIN FUSES Orion Inputs as close to starter battery as possible
ORION-Tr SMART-2
There are several configuration options possible. Read the Orion-Tr manual carefully and choose the one fitting your installation.
SMART BATTERY PROTECT 220
SBP 220 Out
SBP 220 IN +
MAIN SWITCH-2
Dual Circuit
SBP 220 IN +
FUTURE USE
NEGATIVE BUSBAR
Spare -
Spare -
Engine -
MPPT -
Load 1 -
Load 2 -
Load 3 -
Load 4 -
Load 5 -
MultiPlus-II C-G
LYNX DISTRIBUTORS WITH LYNX SMART BMS
MS-2 circuit-1
MS-2 circuit-2
Negative Busbar
Negative Busbar
Dip switch position-B
MAIN SWITCH-1
Single Circuit Dual Output
MPPT & Orion's
MultiPlus-II Batt-
MS-1 Common
MultiPlus-II Batt-
MultiPlus-II Batt +
MultiPlus-II Batt +
For proper Dip switch configuration settings of the Lynx Distributors read the manual.
MPPT & Orion's
MultiPlus-II Batt-
MultiPlus-II Batt-
POSITIVE BUSBAR
Load 1 +
Load 2 +
Load 3 +
Load 4 +
Load 5 +
POSITIVE BUSBAR
MPPT +
ORION 1 +
ORION 2 +
Drawing BJE-289C
VE.Bus to CERBO
MultiPlus-II Batt +
MultiPlus-II Batt +
MultiPlus-II Batt -
MultiPlus-II Batt -
ALTERNATOR
STARTER-MOTOR
INTERNAL ALTERNATOR FUSE
ALTERNATOR 12V-150A
STARTER MOTOR
FUSE
Charge light
IGNITION
MAIN SWITCH-3
Single Circuit
Starter Battery
Starter Battery 12V-125Ah
Blue Smart Charger 12V-5A
12V Charger 15A FUSE
BMS ON/OFF
PRE-ALARM PIEZO BUZZER
12 Volt 30mA
2 x Lithium 12.8V-200Ah Smart LiFePO4
victron energy
Lithium
12.8V-200Ah
Smart LiFePO4
M8 CIRCULAR CONNECTOR
M8 CIRCULAR CONNECTORS
Dip switch position-A
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 !
MultiPlus-II / 3KW/12V/120A 2x120V-60Hz AC INVERTER/CHARGER
MultiPlus-II
Shore power
Generator power
MAIN INCOMING AC BREAKERS TOWARDS MultiPlus-II
GENERATOR 4KW 120V/60Hz AC
SHORE POWER CONNECTION 120V/240V/60Hz AC
MultiPlus-II AC IN
MultiPlus-II AC OUT-2
MultiPlus-II AC OUT-1
Conn-L VE.Bus
Conn-G Batt+
Conn-G Batt+
Conn-H Batt-
Conn-H Batt-
Conn-E Case ground
Blue Smart charger
MultiPlus-II AC OUT-1 SPLIT PHASE SUPPLY 2 X 120VAC AND 1 X 240VAC
AC OUT-1
MultiPlus-II AC OUT-2 SPLIT PHASE SUPPLY 2 X 120VAC AND 1 X 240VAC
AC OUT-2
MCB
MultiPlus-II AC out L1
MultiPlus-II AC out L2
MultiPlus-II 240V out
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
Lynx Smart BMS Enlarged connections
Distributor
Distributor
CERBO Power -
CERBO Power +
CERBO VE.Can
SBP H-contact
ORION's H Conn.
ENGINE Ignition
BTV CABLE
BTV CABLE
BMS ON/OFF
CERBO
SBP
Pre-Alarm
1A
0.5A
0.2A
FUSES
PRE-ALARM PIEZO BUZZER
12 Volt 30mA
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 - MultiPlus-II Inverter/charger: digitally via the GX Device, DVCC feature.
2 - Solar charger: digitally via the GX Device, DVCC feature.
3 - Orion Tr: ATC wire control, using the switched positive wire from the engine ignition towards the ATC contacts on the BMS and from there towards each Orion Tr.
4 - DC Loads: via SmartBattery Protect 220.
5 - AC Loads: controlled together with the MultiPlus-II Inverter/Charger.
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.
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 trough 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 !
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
0-5 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-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 !!!