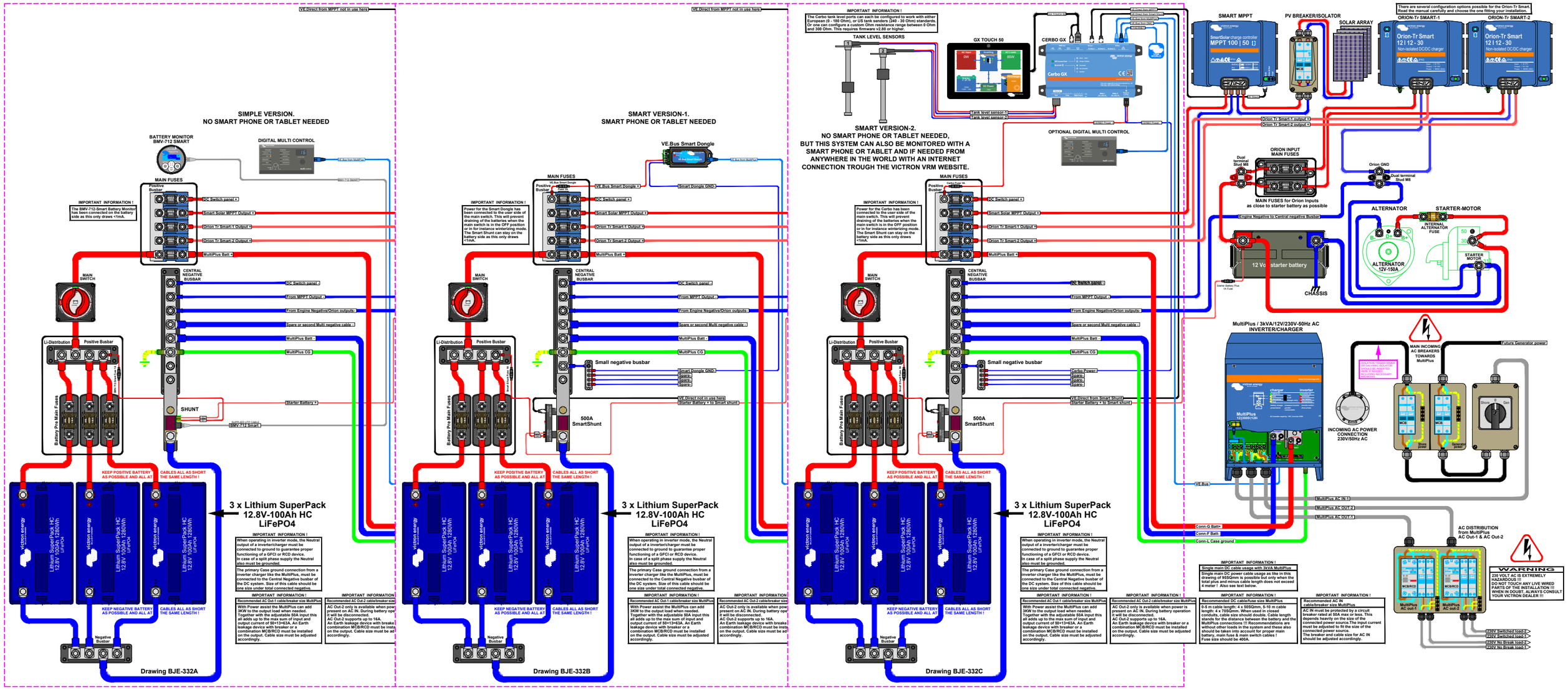
SIMPLE VERSION.
NO SMART PHONE OR TABLET NEEDED
SMART VERSION-1.
SMART PHONE OR TABLET NEEDED
SMART VERSION-2.
NO SMART PHONE OR TABLET NEEDED,
BUT THIS SYSTEM CAN ALSO BE MONITORED WITH A
SMART PHONE OR TABLET AND IF NEEDED FROM
ANYWHERE IN THE WORLD WITH AN INTERNET
CONNECTION TROUGH THE VICTRON VRM WEBSITE.
BATTERY MONITOR BMV-712 SMART
DIGITAL MULTI CONTROL
VE.Direct from MPPT not in use here
VE.Bus Smart Dongle
TANK LEVEL SENSORS
GX TOUCH 50
CERBO GX
OPTIONAL DIGITAL MULTI CONTROL
SMART MPPT
PV BREAKER/ISOLATOR
SOLAR ARRAY
ORION-Tr SMART-1
ORION-Tr SMART-2
There are several configuration options possible for the Orion-Tr Smart. Read the manual carefully and choose the one fitting your installation.
ORION INPUT MAIN FUSES
MAIN FUSES for Orion Inputs as close to starter battery as possible
Engine Negative to Central negative busbar
12 Volt starter battery
ALTERNATOR
STARTER-MOTOR
CHASSIS
MAIN FUSES
MAIN SWITCH
CENTRAL NEGATIVE BUSBAR
Li-Distribution
Positive Busbar
Battery Pre Main Fuses
SHUNT
500A SmartShunt
Small negative busbar
MultiPlus / 3kVA/12V/230V-50Hz AC INVERTER/CHARGER
INCOMING AC POWER CONNECTION 230V/50Hz AC
MAIN INCOMING AC BREAKERS TOWARDS MultiPlus
Future Generator power
AC DISTRIBUTION from MultiPlus AC Out-1 & AC Out-2
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 !!!
3 x Lithium SuperPack 12.8V-100Ah HC LiFePO4
KEEP POSITIVE BATTERY AS POSSIBLE AND ALL AT
CABLES ALL AS SHORT THE SAME LENGTH !
KEEP NEGATIVE BATTERY AS POSSIBLE AND ALL AT
Negative Busbar
Drawing BJE-332A
Drawing BJE-332B
Drawing BJE-332C
IMPORTANT INFORMATION !
The BMV-712-Smart Battery Monitor has been connected on the battery side as this only draws <1mA.
Power for the Smart Dongle has been connected on the battery side of the main switch. This will prevent draining of the batteries when the main switch is in the OFF position or in for instance winterizing mode. The Smart Shunt can stay on the battery side as this only draws <1mA.
The Cerbo tank level ports can each be configured to work with either European (0 - 180 Ohm), or US tank senders (240 - 30 Ohm) standards. Or one can configure a custom Ohm resistance range between 0 Ohm and 500 Ohm. This requires firmware v2.80 or higher.
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 the MultiPlus, must be connected to the Central Negative busbar of the DC system. Size of this cable should be one size under total connected negative.
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.
Recommended AC Out-2 cable/breaker size
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.
Single main DC cable usage with 3kVA MultiPlus
Single main DC power cable usage as like in this drawing of 95SQmm is possible but only when the total plus and minus cable length does not exceed 4 meter ! Also see text below.
Recommended DC cable/fuse size MultiPlus
0-5 m cable length: 4 x 95SQmm, 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.
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.