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.
FROM LYNX SMART BMS NG
VE.Direct from MPPT
VE.Bus from MultiPlus-II
VE.NET
VRM PORTAL
CERBO VE.Can
VE.Can terminator
CERBO CAN
VE.Direct from SBP/H
VE.Bus from MultiPlus-II

GX TOUCH 50

EXTRA 12V HIGH POWER ALTERNATOR
Mount Temp Sense no recommendation from the Alternator Manufactor
12V-160A
FUSE
Victron to Wakespeed Cross over cable !
ALTERNATOR +
VE.Can BMS/WS500
WS500 Regulator
Batt Temp Sense
Alternator Positive
Alternator Field
Alternator W or R
Alternator Temp sense
Alternator Negative

WAKESPEED WS500 PRO
Supplied WS500 Terminator Only !
Current Sense High
Current Sense Low
Positive Batt Sense
Negative Batt Sense
Charge Enable ATC/Feature in

SMART MPPT
SmartSolar charge controller MPPT 100 | 50
Battery | 12/24V | 50A
PV | 150Vmax | 50A
BATTERY
PV

PV BREAKER/ISOLATOR
MCB
SOLAR ARRAY

Extra Alternator charge light
Charge Light
Engine Ignition
Charge Enable ATC/Feature in
From Lynx Smart BMS/Distributor

SMART BATTERY PROTECT 220 (SBP)
Loads 1 till 5
SBP 220 IN +
SBP220 GND
SBP H-contact
Smart BatteryProtect 12/24 | 220 | 1
CERBO Power +
CERBO Power -
VE.Can BMS/WS500
Victron to Wakespeed Cross over cable !
Charge Enable/Feature in
Negative Batt Sense -
Positive Batt Sense +
WS 500 Regulator

MAIN SWITCH-2
Single Circuit
SBP 220 IN +

NEGATIVE BUSBAR
ALTERNATOR -
MPPT -
Engine -
Spare -
Load 1 -
Load 2 -
Load 3 -
Load 4 -
Load 5 -
MultiPlus Case Gr.

POSITIVE BUSBAR
Load 1 +
Load 2 +
Load 3 +
Load 4 +
Load 5 +
MPPT +
SPARE +

FUSE
ALTERNATOR +
MS-2 Common
Negative Busbar
Negative Busbar

STANDARD ALTERNATOR
FROM ALTERNATOR D+
INTERNAL ALTERNATOR FUSE
STARTER-MOTOR
FROM STARTER(50)
B-
D+
B+
ALTERNATOR 12V-120A
STARTER MOTOR
Engine Negative
Negative Busbar
Charge light 12V
IGNITION
FUSE xx AMP
ENGINE SYSTEM

MAIN SWITCH-3
Single Circuit
Starter Battery
Starter Battery 12V-125Ah
Blue Smart Charger 12V-5A
12V Charger 10A FUSE
blue smart charger

LYNX DISTRIBUTOR M10
Dip switch position-A
For proper Dip switch configuration settings of the Lynx Distributor read the manual.
GND

MAIN SWITCH-1
Single Circuit Dual Output
MPPT & SPARE
MultiPlus-II Batt-
MS-1 Common
MultiPlus-II Batt-
MultiPlus-II Batt +
MultiPlus-II Batt +
IMPORTANT INFORMATION !
To comply with ABYC E-11, each DC Power cable towards the MultiPlus-II unit needs to be able to carry the full load per cable !

MultiPlus-II / 3kVA/12V/120A 230V-50Hz AC INVERTER/CHARGER
MultiPlus-II
12|3000|120-50

LYNX SMART BMS NG
M8 CIRCULAR BMS CABLES & CONNECTORS
BMS CABLE
BMS CABLE
BMS ON/OFF
CERBO
SBP
WS500
FUSES
VE.Can Terminator
Lynx smart BMS (M10)
500 amp

2 x Lithium12.8V-300Ah NG-LifePO4
victron energy
Lithium
12.8V-300Ah
NG-LiFePO4

CLASS-T POWER IN M10

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-II 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-II Inverter/Charger.

VE.Bus to CERBO
MultiPlus-II Batt +
MultiPlus-II Batt +
MultiPlus-II Batt -
MultiPlus-II Batt -
Conn-L VE.Bus
Conn-G Batt+
Conn-G Batt+
Conn-H Batt-
Conn-H Batt-
Conn-F Case ground

MultiPlus-II AC IN
MultiPlus-II AC OUT-2
MultiPlus-II AC OUT-1

Lynx Smart BMS NG Enlarged connections
Distributor
CERBO Power -
CERBO Power +
CERBO VE.Can
WS500 VE.Can
SBP H-contact
WS500 ATC +
BMS CABLE
BMS CABLE
FUSES
CERBO 1A
SBP 0.5A
WS500 0.5A
Victron to Wakespeed Cross over cable !
BMS ON/OFF
BMS ON/OFF
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 !

Drawing BJE-320A 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-II
With Power assist the MultiPlus-II can add 3KW to the output load when needed. Together with the adjustable 32A input this all adds up to the max sum of input and output current of 32+13=45A. 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-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 32A.
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-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-II 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 32A 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.

Shore power
ISOLATION TRANSFORMER OR GALVANIC ISOLATOR SHOULD BE INSERTED HERE IF NEEDED. INCLUDING NECESSARY BREAKERS.
SHORE POWER CONNECTION 230V/50Hz AC
MAIN INCOMING AC BREAKERS TOWARDS MultiPlus
Generator power
MCB
MCB
Shore power
Generator power
Shore
0
Gen

AC DISTRIBUTION from MultiPlus-II AC Out-1 & AC Out-2
MCB/RCD
MCB/RCD
MultiPlus-II AC out-1
MultiPlus-II AC out-2
GENERATOR 4KW 230V/50Hz AC
230V No Break load-1
230V No Break load-2
230V Switched load-1
230V Switched load-2
Blue Smart charger

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 !!!