TANK LEVEL SENSORS

LYNX DISTRIBUTORS WITH LYNX SMART BMS

LYNX DISTRIBUTOR-2

LYNX DISTRIBUTOR-1

LYNX SMART BMS NG-1

LYNX SMART BMS NG-2

CLASS-T POWER IN M10

2 x Lithium 25.6V-200Ah NG LiFePO4 Batteries

GX TOUCH 70

CERBO GX

The GX Touch 70 and the CERBO GX are enlarged visible in this drawing.

For proper Dip switch configuration settings of the Lynx Distributors read the manual !

Tank level sensor-1

Tank level sensor-2

Alternator + Port

Alternator - Port

Alternator + Stbd

Alternator - Stbd

SMART BATTERY PROTECT-1/220

SMART BATTERY PROTECT-2/220

Loads 1 till 5

Loads 6 till 10

SBP-1 220 IN+

SBP-2 220 IN+

SBP-1/220 GND

SBP-2/220 GND

MAIN SWITCH-2

Dual Circuit

MS-2 circuit-2

MS-2 circuit-1

Negative Busbar

MAIN SWITCH-1

Single Circuit Dual Output

MPPT Port & Stbd

MPPT & Spare

MultiPlus Batt -

MultiPlus Batt +

MS-1 Common

BMS-2 to Distributor-1 -

BMS-2 to Distributor-1 +

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 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 !

To comply with ABYC E-11, each cable towards the MultiPlus need to be able to carry the entire load per cable !

Lynx Smart BMS-1 500 NG
Enlarged parallel connections

Lynx Smart BMS-2 500 NG
Enlarged parallel connections

Distributor

Fuses 5x20mm
ZEUS 0,5A
SBP 0,5A
CERBO 1A

Diode Terminals
2 x 1N4007

ZEUS ATC+ Port
ZEUS ATC+ Stbd
VE.Can BMS-1
VE.Can CERBO
CERBO Power -
CERBO Power +
SBP H-contacts

BMS-1 ON/OFF

BMS-2 ON/OFF

MULTICORE

VE.Can BMS 1-2

VE.Can BMS-2

VE.Can ZEUS Port

BTV CABLE

M8 CIRCULAR CONNECTORS

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 Lithium NG Batteries charge & discharge controlled by BMS NG & CERBO

In systems with Victron Lithium NG Batteries, it's important that all charging devices as well as loads are controlled by the BMS NG (also in Parallel).
Here is how that is taken care of in this system:
1 - MultiPlus Inverter/charger: digitally via the GX Device, DVCC feature.
2 - SmartSolar charge controllers: digitally via the GX Device, DVCC feature.
3 - ZEUS alternator regulators: digitally via the GX Device, DVCC feature.
4 - ZEUS alternator regulators: when VE.Can fails, one can use the positive wire from the ATC contact of the BMS NG also running trough its relay contacts further towards the ZEUS regulators enable ATC connections, forcing the regulators with alternators to stop charging completely when the ATC signal is switched off. (On recommendation from Arco Marine)
5 - DC Loads: via ATD power towards SmartBattery Protect 220 one & two.
6 - AC Loads: controlled together with the MultiPlus Inverter/Charger.

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.

IMPORTANT INFORMATION !

The Cerbo tank level ports can 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 300 Ohm.
This requires firmware v2.80 or higher.

NEGATIVE BUSBAR

POSITIVE BUSBAR

Load 1 -

Load 2 -

Load 3 -

Load 4 -

Load 5 -

Spare -

MPPT Port -

Engine Port-

Spare -

MPPT Stbd -

Engine Stbd-

Load 6 -

Load 7 -

Load 8 -

Load 9 -

Load 10 -

MultiPlus Case Gr.

Load 1 +

Load 2 +

Load 3 +

Load 4 +

Load 5 +

Load 6 +

Load 7 +

Load 8 +

Load 9 +

Load 10 +

MPPT Port +

MPPT Stbd +

Drawing BJE-358A Rev-A

IMPORTANT INFORMATION !

Recommended AC Out-1 cable/breaker size MultiPlus

With Power assist the MultiPlus 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 In cable/breaker size MultiPlus

AC In 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 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.

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 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 DC cable/fuse size MultiPlus

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 MultiPlus. 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.

IMPORTANT INFORMATION !

The primary Case ground connection from a inverter charger like a MultiPlus, must be connected to the Central Negative Busbar of the DC system. Size of this cable must be identical to connected DC negative.

KEEP POSITIVE MultiPlus CABLES ALL AS SHORT AS POSSIBLE AND ALL AT THE SAME LENGTH !

KEEP NEGATIVE MultiPlus CABLES ALL AS SHORT AS POSSIBLE AND ALL AT THE SAME LENGTH !

MultiPlus Batt +

MultiPlus Batt -

Conn-G Batt+

Conn-F Batt-

Conn-B VE.Bus

Conn-L Case ground

MultiPlus 5kVA/24V/230V AC INVERTER/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 for advice !

MultiPlus AC IN

MultiPlus AC OUT-1

MultiPlus AC OUT-2

AC DISTRIBUTION FROM MultiPlus AC Out-1 & AC Out-2

AC DISTRIBUTION TOWARDS MultiPlus AC In

Shore Power

ISOLATION TRANSFORMER OR GALVANIC ISOLATOR MAY BE INSERTED HERE IF NEEDED, INCLUDING NECESSARY BREAKERS.

SHORE POWER CONNECTION 230V/50Hz

Switched load-1

Switched load-2

Switched load-3

No Break load-1

No Break load-2

No Break load-3

Blue Smart chargers

Blue Smart Chargers AC Junction Box

ZEUS ALTERNATOR REGULATOR PORT

EXTRA 24V HIGH POWER ALTERNATOR PORT

HIGH POWER ALTERNATOR SHUNT 500A Protective cover

24V-185A APS 185 HPI

SMART MPPT PORT

PV BREAKER/ISOLATOR

SOLAR ARRAY

IMPORTANT INFORMATION !

CONFIGURATION OF ZEUS REGULATOR:

For proper functioning with Victron equipment install Venus OS firmware v3.14 or higher into the CERBO. The alternator shunt is required to work with DVCC. The ZEUS regulator needs to be configured for use with the Victron Lynx Smart BMS NG and Victron NG Li batteries. Go to ARCOMARINE.COM/ZEUS and download the APP to make all necessary settings. For questions and trouble shooting, contact ARCO Marine at ARCOMARINE.COM to help you further.

IMPORTANT INFORMATION !

Please note that the Arco Zeus can not be daisy chained in a VE.Can network. It is designed as a drop device and therefore must be located at the end of a VE.Can network.

Please note that Alternator specifications can change ! Check to make sure that the fuse size for the ALT V+ (A/B) wire and the ALT Field (F) wire are correct.

24V Alternator charge light

STANDARD 12V ALTERNATOR PORT

ALTERNATOR 12V-120A

STARTER-MOTOR

IGNITION

12V Alternator charge light

MAIN SWITCH-3

Single Circuit

Starter Battery Port

12V-125Ah Starter Battery

Blue Smart Charger 12V-5A

ZEUS ALTERNATOR REGULATOR STBD

EXTRA 24V HIGH POWER ALTERNATOR STBD

SMART MPPT STBD

PV BREAKER/ISOLATOR

SOLAR ARRAY

STANDARD 12V ALTERNATOR STBD

MAIN SWITCH-4

Single Circuit

Starter Battery Stbd

12V-125Ah Starter Battery

Blue Smart Charger 12V-5A