GX TOUCH 50

The GX Touch 50 and the CERBO GX are enlarged visible in this drawing.

CERBO GX

FROM LYNX SMART BMS NG
GX TOUCH 50
VE.Direct from MPPT
VE.Bus from MultiPlus
ETHERNET
VICTRON PORTAL
VE.Can terminator
VE.Direct
VE.Bus
VE.Can
CERBO VE.Can

IMPORTANT INFORMATION !
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.

SMART MPPT

PV BREAKER/ISOLATOR

SOLAR ARRAY

ORION-Tr SMART-1

ORION-Tr SMART-2

MAIN FUSES Orion Inputs as close to starter battery as possible

FROM MPPT TO CERBO
ORION's H CONNECTIONS
ATC CONNECTION LYNX BMS
VE.Direct
ORION-1 H-CON
ORION-2 H-CON

There are several configuration options possible. Read the Orion-Tr manual carefully and choose the one fitting your installation.

Dual terminal Stud M8 Neg Orion Tr GND

NEGATIVE BUSBAR Orion Tr GND connections as close to starter battery as possible

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 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 through the ATC contacts of the BMS and from there towards each Orion Tr H connection.
4 - DC Loads: via SmartBattery Protect 220 and ATD signal from the BMS.
5 - AC Loads: controlled together with the MultiPlus Inverter/Charger.

SMART BATTERY PROTECT 220 (SBP)

Loads 1 till 5
SBP 220 IN +
SBP H-contact
SBP220 GND
ORION's H Conn.
ENGINE Ignition

CERBO Power -
CERBO Power +
CERBO VE.Can
SBP H-contact
ORION's H Conn.
ENGINE Ignition

MAIN SWITCH-2
Dual Circuit
MS-2 circuit-1
MS-2 circuit-2
SBP 220 IN +
FUTURE USE

FUSE

NEGATIVE BUSBAR
Spare -
Spare -
Engine -
MPPT -
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 +
ORION 1 +
ORION 2 +

Drawing BJE-285A Rev-C

ALTERNATOR
STARTER-MOTOR
FROM ALTERNATOR D+
INTERNAL ALTERNATOR FUSE
FUSE 60A
Charge light
IGNITION
FUSE xx AMP
FROM STARTER(30)
ENGINE SYSTEM
ATC CONNECTION LYNX BMS
ALTERNATOR 12V-150A
STARTER MOTOR
Engine Negative
Negative Busbar

MAIN SWITCH-3
Single Circuit

Starter Battery
Starter Battery 12V-125Ah

Blue Smart Charger 12V-5A
12V Charger 10A FUSE

LYNX DISTRIBUTOR M10

Dip switch position-A

Negative Busbar
Negative Busbar
MPPT & Orion's
MultiPlus Batt-
MS-1 Common
MultiPlus Batt-

GND

For proper Dip switch configuration settings of the Lynx Distributor read the manual.

MAIN SWITCH-1
Single Circuit
Dual Output
MultiPlus Batt +
MultiPlus Batt +

LYNX SMART BMS NG

M8 CIRCULAR BMS CABLES & CONNECTORS
BMS CABLE
BMS CABLE

BMS ON/OFF

PRE-ALARM PIEZO BUZZER
12 Volt 30mA

FUSES
CERBO 5A
SBP 30A
Pre-Alarm 2A

VE.Can terminator

CLASS-T POWER IN M10

2 x Lithium12.8V-300Ah NG-LifePO4

Lithium
12.8V-300Ah
NG-LiFePO4

Lithium
12.8V-300Ah
NG-LiFePO4

IMPORTANT INFORMATION !
To comply with ABYC E-11, each DC Power cable towards the MultiPlus unit needs to be able to carry the full load per cable !

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

MultiPlus / 3KW/12V/120V-60Hz AC INVERTER/CHARGER

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

Shore power
ISOLATION TRANSFORMER OR GALVANIC ISOLATOR SHOULD BE INSERTED HERE IF NEEDED, INCLUDING NECESSARY BREAKERS.
SHORE POWER CONNECTION 120V/60Hz AC

MAIN INCOMING AC BREAKERS TOWARDS MultiPlus

Generator power

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

MultiPlus AC out-2
MultiPlus AC out-1

GENERATOR 4KW 120V/60Hz AC

120V Switched load-1
120V Switched load-2
120V No Break load-1
120V No Break load-2
Blue Smart charger

WARNING
120 VOLT AC IS EXTREMELY HAZARDOUS !!!
DO NOT TOUCH ANY LIVE WIRED PARTS OF THE INSTALLATION !!!
WHEN IN DOUBT, ALWAYS CONSULT YOUR VICTRON DEALER !!!

Lynx Smart BMS NG
Enlarged connections

Distributor
CERBO Power -
PRE-ALARM -
CERBO Power +
CERBO VE.Can
SBP H-contact
ORION's H Conn.
ENGINE Ignition
BMS CABLE
BMS CABLE
PRE-ALARM +
BMS ON/OFF
BMS ON/OFF

FUSES
Pre-Alarm 2A
SBP 30A
CERBO 5A

PRE-ALARM PIEZO BUZZER
12 Volt 30mA

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 !
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

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+25=75A. 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

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 25A.
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

0-5 m cable length: 4 x AWG 1/0, 5-10 m cable length: 4 x AWG 2/0. 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

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.