GX TOUCH 50

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

CERBO GX

FROM LYNX SMART BMS
GX TOUCH 50
VE.Direct from MPPT
VE.Bus from MultiPlus
VE.HS-RS485
VE.Can terminator
VICTRON VE.Can
CERBO Power -
CERBO Power +

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

SmartSolar charge controller MPPT 100 | 50

PV BREAKER/ISOLATOR

MCB

SOLAR ARRAY

ORION-Tr SMART-1

Orion-Tr Smart 12 | 12 - 30 Non-isolated DC/DC charger

ORION-Tr SMART-2

Orion-Tr Smart 12 | 12 - 30 Non-isolated DC/DC charger

MAIN FUSES Orion Inputs as close to starter battery as possible

POSITIVE BUSBAR

VE.Direct

FROM MPPT TO CERBO
ORION's H CONNECTIONS
ATC CONNECTION LYNX BMS

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 +

ALTERNATOR

STARTER-MOTOR

FROM ALTERNATOR D+

Charge light

IGNITION

FUSE xx AMP

ENGINE SYSTEM

INTERNAL ALTERNATOR FUSE

STARTER MOTOR

FROM STARTER (30)

ALTERNATOR 12V-150A

Engine Negative
Negative Busbar

MAIN SWITCH-3

Single Circuit

Blue Smart Charger 12V-5A

12V Charger 10A FUSE

Starter Battery

Starter Battery 12V-125Ah

LYNX DISTRIBUTOR M10

Negative Busbar
Negative Busbar
MPPT & Orion's

MAIN SWITCH-1

Single Circuit
Dual Output

MultiPlus Batt -
MS-1 Common
MultiPlus Batt -

MultiPlus Batt +
MultiPlus Batt +

Dip switch position-A

GND

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

MultiPlus / 3kVA /12V/230V-50Hz AC INVERTER/CHARGER

MultiPlus 12|3000|120

charger
inverter

AC transfer capacity: 50A | Inverter 230V

LYNX SMART BMS NG

CLASS-T POWER IN M10

M8 CIRCULAR BMS CABLES & CONNECTORS

BMS CABLE
BMS CABLE

BMS ON/OFF

PRE-ALARM PIEZO BUZZER

12 Volt 30mA

FUSES

CERBO
SBP
Pre-Alarm

VE.Can terminator

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

victron energy
Lithium
12.8V-300Ah
NG-LiFePO4

victron energy
Lithium
12.8V-300Ah
NG-LiFePO4

Drawing BJE-286B Rev-B

VE.Bus to CERBO
Conn-B VE.Bus

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 !

MultiPlus Batt +
MultiPlus Batt +
MultiPlus Batt -
MultiPlus Batt -

Conn-G Batt +
Conn-G Batt +
Conn-F Batt -
Conn-F Batt -
Conn-L Case ground

MultiPlus AC IN
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 230V/50Hz AC

MAIN INCOMING AC BREAKERS TOWARDS MultiPlus

Generator power

MCB
MCB
Shore
Gen
Shore power
Generator power

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

MCB/RCD
MCB/RCD
MultiPlus AC out-2
MultiPlus AC out-1

GENERATOR 4KW 230V/50Hz AC

230V Switched load-1
230V Switched load-2
230V No Break load-1
230V No Break 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 !!!

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
SBP
CERBO

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+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.

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 16A.
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 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

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.