

# MultiPlus-II 2x120V Inverter/Charger

## 120/240V input and output, or 120V input and output (always 120V output when in inverter mode)

The AC input can be supplied from a split phase 120/240V source, or single phase 120V source. When an AC source is available, the MultiPlus will feed through the AC to its output. The output will therefore mirror the AC input.

The inverter/charger connects to the neutral and the preferred input line (L1). Power needed to charge the batteries will therefore be drawn from L1.

The MultiPlus switches to inverter operation when no AC source is available. The inverter output is 120V single phase. In invert mode, the MultiPlus connects both output lines (L1 and L2) together to provide 120VAC to loads on either line.

Any 240V loads will therefore be supplied only when the MultiPlus is supplied by a split phase AC source. This prevents heavy loads such as water heaters or 240V air conditioners from discharging the battery.

## PowerControl and PowerAssist - Boosting the capacity of the grid or a generator

A maximum grid or generator current can be set. The MultiPlus will then take account of other AC loads and use whatever is extra for battery charging, thus preventing the generator or grid from being overloaded (PowerControl function).

PowerAssist takes the principle of PowerControl to a further dimension. Where peak power is so often required only for a limited period, the MultiPlus-II will compensate insufficient generator, shore or grid power with power from the battery. When the load reduces, the spare power is used to recharge the battery (available on L1 input only).

## Two AC Outputs

The main output has no break functionality. The MultiPlus takes over the supply to the connected 120V loads in the event of a grid failure or when shore/generator power is disconnected. The transfer time of the L1 output is less than 18 milliseconds so that computers and other electronic equipment will continue to operate without disruption. The transfer time of the L2 output is longer: approximately 40 milliseconds.

The second (auxiliary) output is live only when AC is available on the input of the MultiPlus. Loads that should not discharge the battery can be connected to this output.

## Virtually unlimited power thanks to parallel and three phase operation

Up to 6 Multis can operate in parallel to achieve higher power output.

In addition to parallel connection, three units of the same model can be configured for three phase output. In multi-phase setups, L2 is disabled on all units.

## On-site system configuring, monitoring and control

Settings can be changed in a matter of minutes with VEConfigure software (computer or laptop and MK3-USB interface needed).

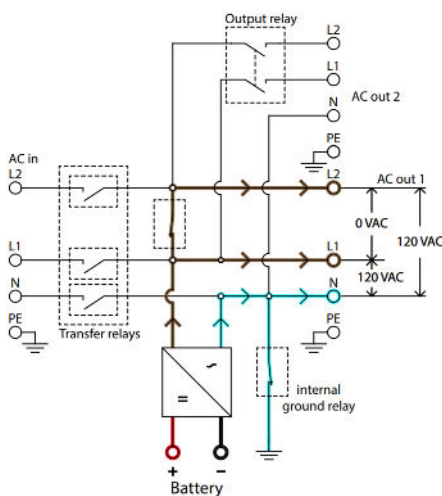
Several monitoring and control options are available: Cerbo GX, Color Control GX, Venus GX, CANvu GX, laptop, computer, Bluetooth (with the optional VE.Bus Smart dongle), Battery Monitor, Digital Multi Control Panel.

## Remote configuring and monitoring

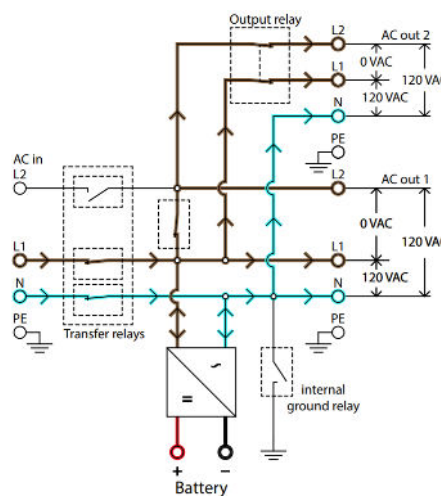
Install a Cerbo GX or other GX product to connect to the internet.

Operational data can be stored and displayed on our VRM (Victron Remote Management) website, free of charge.

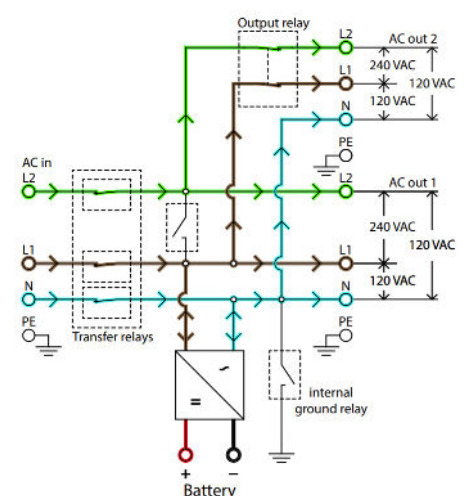
When connected to the internet, systems can be accessed remotely, and settings can be changed.



Power flow: inverter mode



Power flow, 120VAC-input



Power flow, split phase input



### Cerbo GX with GX Touch 50

Provides intuitive system control and monitoring  
 Besides system monitoring and control the Cerbo enables access to our free remote monitoring website: the VRM Online Portal



### VRM Portal

Our free remote monitoring website (VRM) will display all system data in a comprehensive graphical format. System settings can be changed remotely via the portal. Alarms can be received by e-mail.



### VRM app

Monitor and manage your Victron Energy system from your smart phone and tablet. Available for both iOS and Android.



### VE.Bus Smart Dongle

Measures battery voltage and temperature and allows monitoring and control with a smart phone or other Bluetooth enabled device.



Connection Area



### Current sensor 100A:50mA

To implement PowerControl and PowerAssist and to optimize self-consumption with external current sensing.  
 Maximum current: 50A resp. 100A.



### Digital Multi Control Panel

A convenient and low-cost solution for remote monitoring, with a rotary knob to set PowerControl and PowerAssist levels.

MultiPlus-II 2x120V	12/3000/120-50	24/3000/70-50
PowerControl & PowerAssist	Yes (on L1 input)	
Transfer switch	50 A	
Maximum AC input current	50A (each leg)	
<b>INVERTER</b>		
DC Input voltage range	9,5 – 17 V	19-33V
Output when in inverter mode	Output voltage: 120 VAC ± 2% Frequency: 60 Hz ± 0,1% (1)	
Cont. output power at 25°C (3)	3000 VA	
Cont. output power at 25°C	2400 W	
Cont. output power at 40°C	2200 W	
Cont. output power at 65°C	1700 W	
Maximum apparent feed-in power	2500 VA	
Peak power	5500 W	
Maximum efficiency	93%	94%
Zero load power	15W	11W
Zero load power in AES mode	10W	8W
Zero load power in Search mode	4W	4W
<b>CHARGER</b>		
AC Input	Split phase: 180-280 VAC	45 – 65 Hz
	Single phase: 90-140 VAC	45 – 65 Hz
Charge voltage 'absorption'	14,4 V	28,8 V
Charge voltage 'float'	13,8 V	27,6 V
Storage mode	13,2 V	26,4 V
Maximum battery charge current (4)	120 A	70 A
Battery temperature sensor	Yes	
<b>GENERAL</b>		
Auxiliary output (5)	50 A (each leg) See note 8	
External AC current sensor (optional)	100 A	
Programmable relay (6)	Yes	
Protection (2)	a – g	
VE.Bus communication port	For parallel and three phase operation, remote monitoring and system integration	
General purpose com. Port (7)	Yes, 2x	
Remote on-off	Yes	
Operating temperature range	-40 to +65°C (-40 -150°F) Fan assisted cooling	
Humidity (non-condensing)	max 95%	
<b>ENCLOSURE</b>		
Material & Colour	Steel, blue RAL 5012	
Protection category	IP22	
Battery-connection	2x2 M8 bolts	2 M8 bolts
120/240 V AC-connection	Screw terminals 21 mm <sup>2</sup> (4 AWG)	
Weight	22 kg (48 lb)	
Dimensions (h x w x d)	578 x 275 x 148 mm (23 x 11 x 6 inch)	578 x 275 x 148 mm (23 x 11 x 6 inch)
<b>STANDARDS</b>		
Safety	EN-IEC 60335-1, EN-IEC 60335-2-29, UL 458	
Emission, Immunity	EN 55014-1, EN 55014-2 EN-IEC 61000-3-2, EN-IEC 61000-3-3 IEC 61000-6-1, IEC 61000-6-2, IEC 61000-6-3	
1) Can be adjusted to 50 Hz	3) Non-linear load, crest factor 3:1	
2) Protection key:	4) Up to 75 ° F / 25 ° C ambient	
a) output short circuit	5) Switches off when no external AC source available	
b) overload	6) Programmable relay that can a.o. be set for general alarm, DC under voltage or genset start/stop function	
c) battery voltage too high	AC rating: 120 V/4 A	
d) battery voltage too low	DC rating: 4 A up to 35 VDC, 1 A up to 60 VDC	
e) temperature too high	7) A. o. to communicate with a Lithium-Ion battery BMS	
f) 120 VAC on inverter output	8) The auxiliary output of an early production batch of this product was rated at 35A instead of 50A. This batch has serial numbers starting with HQ2107. Later batches, with 50A aux. output have serial numbers starting with HQ2114 or higher.	
g) input voltage ripple too high		