



**victron energy**  
B L U E P O W E R

MultiPlus inverter / charger

## MultiPlus inverter / charger 3kVA (120V/60Hz)

### Multi-functional, with intelligent power management

The MultiPlus is a powerful true sine wave inverter, a sophisticated battery charger that features adaptive charge technology, and a high-speed AC transfer switch in a single compact enclosure. Next to these primary functions, the MultiPlus has several advanced features, as outlined below.

### Automatic and uninterruptible switching

In the event of a supply failure or when the generating set is switched off, the MultiPlus will switch over to inverter operation and take over the supply of the connected devices. This is done so quickly that operation of computers and other electronic devices is not disturbed (Uninterruptible Power Supply or UPS functionality). This makes the MultiPlus highly suitable as an emergency power system in industrial and telecommunication applications.

### Virtually unlimited power thanks to parallel operation

Up to six Multi's can operate in parallel to achieve higher power output. Six 24/3000/70 units, for example, provide 15kW / 18kVA output power with 420 Amps of charging capacity.

### Three phase capability

In addition to parallel connection, three units can be configured for three-phase output. But that's not all: with three strings of six parallel units a 45kW / 54kVA three phase inverter and 1260A charger can be built.

### Split phase options

Two units can be stacked to provide 120-0-120V, and additional units can be paralleled up to a total of 6 units per phase, to supply up to 30kW / 36kVA of split phase power.

Alternatively, a split phase AC source can be obtained by connecting our autotransformer (see data sheet on [www.victronenergy.com](http://www.victronenergy.com)) to a 'European' inverter programmed to supply 240V / 60Hz.

### PowerControl - Dealing with limited generator, shore side or grid power

The MultiPlus is a very powerful battery charger. It will therefore draw a lot of current from the generator or shore side supply (nearly 20A per 3kVA MultiPlus at 120VAC). With the Multi Control Panel a maximum generator or shore current can be set. The MultiPlus will then take account of other AC loads and use whatever is extra for charging, thus preventing the generator or shore supply from being overloaded.

### PowerAssist - Boosting the capacity of shore or generator power

This feature takes the principle of PowerControl to a further dimension. It allows the MultiPlus to supplement the capacity of the alternative source. Where peak power is so often required only for a limited period, the MultiPlus will make sure that insufficient shore or generator power is immediately compensated for by power from the battery. When the load reduces, the spare power is used to recharge the battery.

### Four stage adaptive charger and dual bank battery charging

The main output provides a powerful charge to the battery system by means of advanced 'adaptive charge' software. The software fine-tunes the three stage automatic process to suit the condition of the battery, and adds a fourth stage for long periods of float charging. The adaptive charge process is described in more detail on the Phoenix Charger datasheet and on our website, under Technical Information. In addition to this, the MultiPlus will charge a second battery using an independent trickle charge output intended for a main engine or generator starter battery.

### System configuring has never been easier

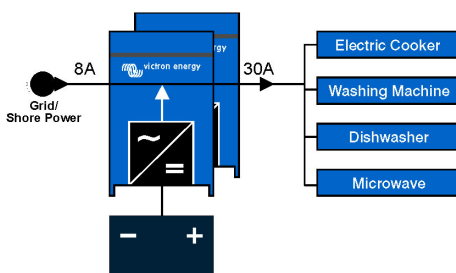
After installation, the MultiPlus is ready to go.

If settings have to be changed, this can be done in a matter of minutes with a DIP switch setting procedure. Even parallel and 3-phase operation can be programmed with DIP switches: no computer needed!

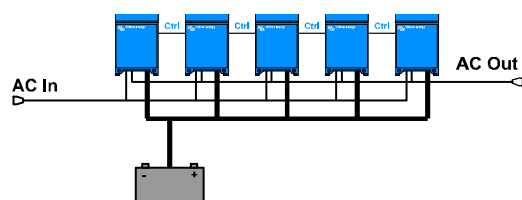
Alternatively, VE.Net can be used instead of the DIP switches.

And sophisticated software (VE.Bus Quick Configure and VE.Bus System Configurator) is available to configure several new, advanced, features.

### PowerAssist with 2x MultiPlus in parallel



### Five parallel units: output power 12,5 kW



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## Specifications

# MultiPlus inverter / charger

<b>MultiPlus</b>	<b>12 Volt 24 Volt</b>	<b>12/3000/120 24/3000/70</b>	
<b>PowerControl</b>		<b>yes</b>	
<b>PowerAssist</b>		<b>yes</b>	
<b>Transfer switch (A)</b>		<b>50</b>	
<b>INVERTER</b>			
Input voltage range (V DC)		9,5 – 17 V	19 – 33 V
Output		Output voltage: 120 VAC ± 2%	Frequency: 60 Hz ± 0,1% (1)
Cont. output power at 75 °F (VA) (4)		3000	
Cont. output power at 75 °F (W)		2500	
Cont. output power at 100 °F (W)		2000	
Peak power (W)		6000	
Maximum efficiency (%)		93 / 94	
Zero-load power (W)		15 / 15	
Zero load power in AES mode (W)		10 / 10	
Zero load power in Search mode (W)		4 / 5	
<b>CHARGER</b>			
AC Input		Input voltage range: 95-140 VAC	Input frequency: 45 – 65 Hz    Power factor: 1
Charge voltage 'absorption' (V DC)		14,4 / 28,8	
Charge voltage 'float' (V DC)		13,8 / 27,6	
Storage mode (V DC)		13,2 / 26,4	
Charge current house battery (A) (3)		120 / 70	
Charge current starter battery (A)		4	
Battery temperature sensor		yes	
<b>GENERAL</b>			
Programmable relay (5)		yes	
Protection (2)		a - g	
Common Characteristics		Operating temp. range: 0 - 120°F (fan assisted cooling)	Humidity (non condensing) : max 95%
<b>ENCLOSURE</b>			
Common Characteristics		Material & Colour: aluminum (blue RAL 5012)	Protection category: IP 21
Battery-connection		M8 bolts (2 plus and 2 minus connections)	
120 V AC-connection		screw-terminal AWG 6 (13mm <sup>2</sup> )	
Weight		19kg    40 lbs	
Dimensions (hwxwd in mm and inches)		362x258x218 mm    14.3x10.2x8.6 inch	
<b>STANDARDS</b>			
Safety		EN 60335-1, EN 60335-2-29	
Emission / Immunity		EN55014-1, EN 55014-2, EN 61000-3-3	

1) Can be adjusted to 50 Hz;

2) Protection

- a. Output short circuit
- b. Overload
- c. Battery voltage too high
- d. Battery voltage too low
- e. Temperature too high
- f. 120 V AC on inverter output
- g. Input voltage ripple too high

3) At 75 °F ambient

4) Non linear load, crest factor 3:1

5) Programmable relay which can be set for general alarm, DC under voltage or genset start signal function  
AC rating: 230V/4A  
DC rating: 4A up to 35VDC, 1A up to 60VDC

## Accessories



### Digital Multi Control

This panel is intended for both Multi's and Quattro's.

It allows PowerControl and PowerAssist current limit setting for two AC sources: a generator and shore-side current for example. Setting range: up to 200 Amps.

The brightness of the LED's is automatically reduced during night time.



### Computer controlled operation and monitoring (Victron Interface MK2)

Every MultiPlus is ready to communicate with a computer through its RS-485 data port. All you need to link to your PC is the data link as shown. This enables you to set and read out all parameters. (see also 'A guide to VEConfigure')



### BMV-600 Battery Monitor

The BMV-600 Battery Monitor features an advanced microprocessor control system combined with high resolution measuring systems for battery voltage and charge/discharge current. Besides this, the software includes complex calculation algorithms, like Peukert's formula, to exactly determine the state of charge of the battery. The BMV-600 selectively displays battery voltage, current, consumed Ah or time to go. The monitor also stores a host of data regarding performance and use of the battery.

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