

# MultiPlus Inverter/Charger

800 VA – 5 kVA Lithium Ion battery compatible

[www.victronenergy.com](http://www.victronenergy.com)



**MultiPlus**  
24/3000/70

### Two AC Outputs

The main output has no break functionality. The MultiPlus takes over the supply to the connected loads in the event of a grid failure or when shore/generator power is disconnected. This happens so fast (less than 20 milliseconds) that computers and other electronic equipment will continue to operate without disruption.

The second output is live only when AC is available on one of the inputs of the MultiPlus. Loads that should not discharge the battery, like a water heater for example can be connected to this output (second output available on models rated at 3 kVA and more).

### Virtually unlimited power thanks to parallel operation

Up to 6 Multis can operate in parallel to achieve higher power output. Six 24/5000/120 units, for example, will provide 25 kW / 30 kVA output power with 720 Amps charging capacity.

### Three phase capability

In addition to parallel connection, three units of the same model can be configured for three phase output. But that's not all: up to 6 sets of three units can be parallel connected for a huge 75 kW / 90 kVA inverter and more than 2000 Amps charging capacity.

### 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 10 A per 5 kVA Multi at 230 VAC). 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.

### Solar energy: AC power available even during a grid failure

The Quattro can be used in off grid as well as grid connected PV and other alternative energy systems. Loss of mains detection software is available.

### System configuring

- In case of a stand-alone application, if settings have to be changed, this can be done in a matter of minutes with a DIP switch setting procedure.
- Parallel and three phase applications can be configured with VE.Bus Quick Configure and VE.Bus System Configurator software.
- Off grid, grid interactive and self-consumption applications, involving grid-tie inverters and/or MPPT Solar Chargers can be configured with Assistants (dedicated software for specific applications).

### On-site Monitoring and control

Several options are available: Battery Monitor, Multi Control Panel, Ve.Net Blue Power Panel, Color Control Panel, smartphone or tablet (Bluetooth Smart), laptop or computer (USB or RS232).

### Remote Monitoring and control

Victron Ethernet Remote, Victron Global Remote and the Color Control Panel.

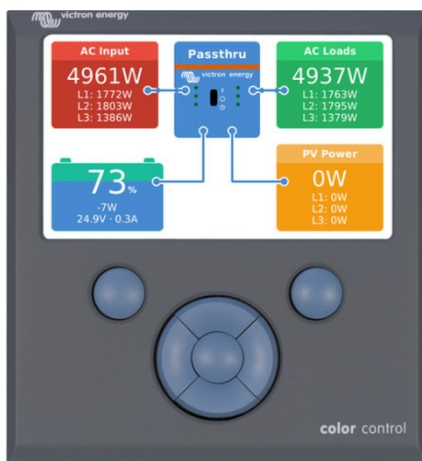
Data can be stored and displayed on our VRM (Victron Remote Management) website, free of charge.

### Remote configuring

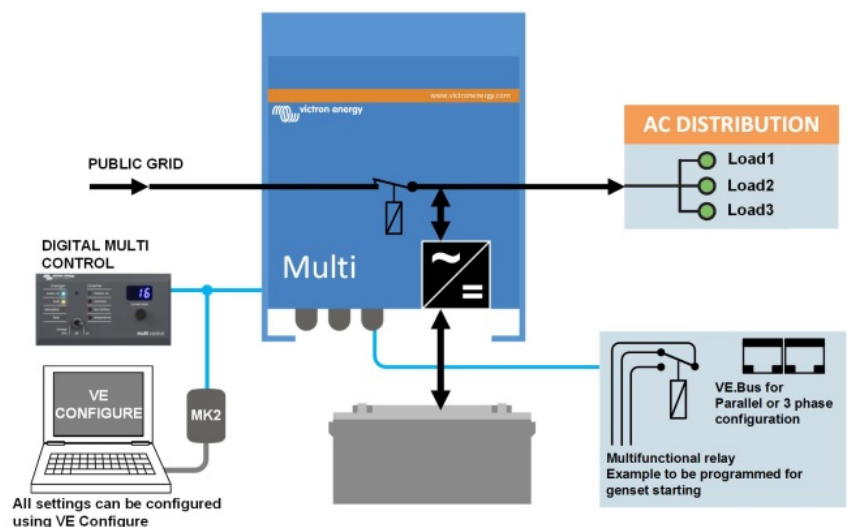
When connected to the Ethernet, systems with a Color Control panel can be accessed and settings can be changed.



**MultiPlus Compact**  
12/2000/80



**Color Control Panel, showing a PV application**



| MultiPlus                                           | 12 Volt<br>24 Volt<br>48 Volt                                                                    | C 12/800/35<br>C 24/ 800/16 | C 12/1200/50<br>C 24/1200/25 | C 12/1600/70<br>C 24/1600/40 | C 12/2000/80<br>C 24/2000/50                   | 12/3000/120<br>24/3000/70<br>48/3000/35 | 24/5000/120<br>48/5000/70 |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------|------------------------------|------------------------------|------------------------------------------------|-----------------------------------------|---------------------------|
| <b>PowerControl</b>                                 |                                                                                                  | <b>Yes</b>                  | <b>Yes</b>                   | <b>Yes</b>                   | <b>Yes</b>                                     | <b>Yes</b>                              | <b>Yes</b>                |
| <b>PowerAssist</b>                                  |                                                                                                  | <b>Yes</b>                  | <b>Yes</b>                   | <b>Yes</b>                   | <b>Yes</b>                                     | <b>Yes</b>                              | <b>Yes</b>                |
| <b>Transfer switch (A)</b>                          |                                                                                                  | <b>16</b>                   | <b>16</b>                    | <b>16</b>                    | <b>30</b>                                      | <b>16 or 50</b>                         | <b>100</b>                |
| <b>INVERTER</b>                                     |                                                                                                  |                             |                              |                              |                                                |                                         |                           |
| Input voltage range (V DC)                          | 9,5 – 17 V    19 – 33 V    38 – 66 V                                                             |                             |                              |                              |                                                |                                         |                           |
| Output                                              | Output voltage: 230 VAC ± 2%    Frequency: 50 Hz ± 0,1% (1)                                      |                             |                              |                              |                                                |                                         |                           |
| Cont. output power at 25°C (VA) (3)                 | 800                                                                                              | 1200                        | 1600                         | 2000                         | 3000                                           | 5000                                    |                           |
| Cont. output power at 25°C (W)                      | 700                                                                                              | 1000                        | 1300                         | 1600                         | 2500                                           | 4500                                    |                           |
| Cont. output power at 40°C (W)                      | 650                                                                                              | 900                         | 1200                         | 1450                         | 2200                                           | 4000                                    |                           |
| Peak power (W)                                      | 1600                                                                                             | 2400                        | 3000                         | 4000                         | 6000                                           | 10.000                                  |                           |
| Maximum efficiency (%)                              | 92 / 94                                                                                          | 93 / 94                     | 93 / 94                      | 93 / 94                      | 93 / 94 / 95                                   | 94 / 95                                 |                           |
| Zero load power (W)                                 | 8 / 10                                                                                           | 8 / 10                      | 8 / 10                       | 9 / 11                       | 15 / 15 / 16                                   | 25 / 25                                 |                           |
| Zero load power in AES mode (W)                     | 5 / 8                                                                                            | 5 / 8                       | 5 / 8                        | 7 / 9                        | 10 / 10 / 12                                   | 20 / 20                                 |                           |
| Zero load power in Search mode (W)                  | 2 / 3                                                                                            | 2 / 3                       | 2 / 3                        | 3 / 4                        | 4 / 5 / 5                                      | 5 / 6                                   |                           |
| <b>CHARGER</b>                                      |                                                                                                  |                             |                              |                              |                                                |                                         |                           |
| AC Input                                            | Input voltage range: 187-265 VAC    Input frequency: 45 – 65 Hz    Power factor: 1               |                             |                              |                              |                                                |                                         |                           |
| Charge voltage 'absorption' (V DC)                  | 14,4 / 28,8 / 57,6                                                                               |                             |                              |                              |                                                |                                         |                           |
| Charge voltage 'float' (V DC)                       | 13,8 / 27,6 / 55,2                                                                               |                             |                              |                              |                                                |                                         |                           |
| Storage mode (V DC)                                 | 13,2 / 26,4 / 52,8                                                                               |                             |                              |                              |                                                |                                         |                           |
| Charge current house battery (A) (4)                | 35 / 16                                                                                          | 50 / 25                     | 70 / 40                      | 80 / 50                      | 120 / 70 / 35                                  | 120 / 70                                |                           |
| Charge current starter battery (A)                  | 4 (12 V and 24 V models only)                                                                    |                             |                              |                              |                                                |                                         |                           |
| Battery temperature sensor                          | yes                                                                                              |                             |                              |                              |                                                |                                         |                           |
| <b>GENERAL</b>                                      |                                                                                                  |                             |                              |                              |                                                |                                         |                           |
| Auxiliary output (5)                                | n. a.                                                                                            | n. a.                       | n. a.                        | n. a.                        | Yes (16A)                                      | Yes (25A)                               |                           |
| 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                           | n. a.                                                                                            | n. a.                       | n. a.                        | n. a.                        | Yes                                            | Yes                                     |                           |
| Remote on-off                                       | Yes                                                                                              |                             |                              |                              |                                                |                                         |                           |
| Common Characteristics                              | Operating temp. range: -40 to +50°C (fan assisted cooling)    Humidity (non-condensing): max 95% |                             |                              |                              |                                                |                                         |                           |
| <b>ENCLOSURE</b>                                    |                                                                                                  |                             |                              |                              |                                                |                                         |                           |
| Common Characteristics                              | Material & Colour: aluminium (blue RAL 5012)    Protection category: IP 21                       |                             |                              |                              |                                                |                                         |                           |
| Battery-connection                                  | battery cables of 1.5 meter                                                                      |                             |                              | M8 bolts                     | Four M8 bolts (2 plus and 2 minus connections) |                                         |                           |
| 230 V AC-connection                                 | G-ST18i connector                                                                                |                             |                              | Spring-clamp                 | Screw terminals 13 mm <sup>2</sup> (6 AWG)     |                                         |                           |
| Weight (kg)                                         | 10                                                                                               | 10                          | 10                           | 12                           | 18                                             | 30                                      |                           |
| Dimensions (hwxwd in mm)                            | 375x214x110                                                                                      |                             |                              | 520x255x125                  | 362x258x218                                    | 444x328x240                             |                           |
| <b>STANDARDS</b>                                    |                                                                                                  |                             |                              |                              |                                                |                                         |                           |
| Safety                                              | EN-IEC 60335-1, EN-IEC 60335-2-29, IEC 62109-1                                                   |                             |                              |                              |                                                |                                         |                           |
| Emission, Immunity                                  | EN 55014-1, EN 55014-2, EN 61000-3-3, EN 61000-6-3, EN 61000-6-2, EN 61000-6-1                   |                             |                              |                              |                                                |                                         |                           |
| Automotive Directive                                | 2004/104/EC                                                                                      |                             |                              |                              |                                                |                                         |                           |
| Anti-islanding                                      | See our website                                                                                  |                             |                              |                              |                                                |                                         |                           |
| 1) Can be adjusted to 60 HZ; 120 V 60 Hz on request | 3) Non-linear load, crest factor 3:1                                                             |                             |                              |                              |                                                |                                         |                           |
| 2) Protection key:                                  | 4) At 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,                                    |                             |                              |                              |                                                |                                         |                           |
| c) battery voltage too high                         | DC under voltage or genset start/stop function                                                   |                             |                              |                              |                                                |                                         |                           |
| d) battery voltage too low                          | AC rating: 230 V/4A                                                                              |                             |                              |                              |                                                |                                         |                           |
| e) temperature too high                             | DC rating: 4 A up to 35 VDC, 1 A up to 60 VDC                                                    |                             |                              |                              |                                                |                                         |                           |
| f) 230 V AC on inverter output                      |                                                                                                  |                             |                              |                              |                                                |                                         |                           |
| g) input voltage ripple too high                    |                                                                                                  |                             |                              |                              |                                                |                                         |                           |



### Digital Multi Control Panel

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



### Blue Power Panel

Connects to a Multi or Quattro and all VE.Net devices, in particular the VE.Net Battery Controller. Graphic display of currents and voltages.



### Computer controlled operation and monitoring

Several interfaces are available:

- **MK2.2 VE.Bus to RS232 converter**  
Connects to the RS232 port of a computer (see 'A guide to VEConfigure')
- **MK2-USB VE.Bus to USB converter**  
Connects to a USB port (see 'A guide to VEConfigure')
- **VE.Net to VE.Bus converter**  
Interface to VE.Net (see VE.Net documentation)
- **VE.Bus to NMEA 2000 converter**
- **Victron Global Remote**  
The Global Remote is a modem which sends alarms, warnings and system status reports to cellular phones via text messages (SMS). It can also log data from Victron Battery Monitors, Multis, Quattros and Inverters to a website through a GPRS connection. Access to this website is free of charge.
- **Victron Ethernet Remote**  
To connect to the Ethernet.
- **Color Control panel (see picture on page 1)**

Behind the color LCD a Linux microcomputer runs open source software. The Color Control (CCGX) provides intuitive control and monitoring for all products connected to it. The list of Victron products that can be connected is endless: Inverters, Multis, Quattros, all our latest MPPT Solar Chargers, BMV-700, BMV-600, Lynx Ion + Shunt and more. The information can also be forwarded to our free remote monitoring website: the VRM Online Portal.

### BMV Battery Monitor

The BMV 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 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. Several models available (see battery monitor documentation).