MultiPlus Inverter/Chargers 2 kVA and 3 kVA

(120 V/60 Hz) Lithium-Ion battery compatible

**MultiPlus Inverter/Chargers**

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.

**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 the input 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 3kVA and more).

**Virtually unlimited power thanks to parallel operation**
Up to six MultiPlus 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 45 kW / 54 kVA three phase inverter and 1260 A charger can be built.

**Split phase options**
Two units can be stacked to provide 120-0-120 V, and additional units can be paralleled up to a total of 6 units per phase, to supply up to 30 kW / 36 kW of split phase power. Alternatively, a split phase AC source can be obtained by connecting our autotransformer (see data sheet on www.victronenergy.com) to a ‘European’ inverter programmed to supply 240 V / 60 Hz.

**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 20 A per 3 kVA MultiPlus at 120 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.

**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.
### Multis and Quattro Inverter Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage range (V DC)</td>
<td>9.5 – 17 V</td>
</tr>
<tr>
<td>Output voltage: 120 VAC ± 2%</td>
<td>9.5 – 17 V</td>
</tr>
<tr>
<td>Frequency: 60 Hz ± 0.1%</td>
<td>8.5 – 13.5 V</td>
</tr>
<tr>
<td>Cont. output power at 25°C / 77°F (VA)</td>
<td>2000</td>
</tr>
<tr>
<td>Cont. output power at 25°C / 77°F (W)</td>
<td>1600</td>
</tr>
<tr>
<td>Cont. output power at 40°C / 104°F (W)</td>
<td>1450</td>
</tr>
<tr>
<td>Cont. output power at 65°C / 150°F (W)</td>
<td>1100</td>
</tr>
<tr>
<td>Peak power (W)</td>
<td>4000</td>
</tr>
<tr>
<td>Maximum efficiency (%)</td>
<td>92 / 94</td>
</tr>
<tr>
<td>Zero load power (W)</td>
<td>9 / 11</td>
</tr>
<tr>
<td>Zero load power in AES mode (W)</td>
<td>7 / 8</td>
</tr>
<tr>
<td>Zero load power in Search mode (W)</td>
<td>3 / 4</td>
</tr>
</tbody>
</table>

### General Features

- **Monitors and Controls**: Provides monitoring and control. Locally, and also remotely on a single screen, view historical data, and to customize settings. Several interfaces are available.
- **Bluetooth**: Connects to a Bluetooth enabled device to monitor all important data on a single screen, view historical data, and to customize settings. Several interfaces are available.
- **Configuration**: Connects to a VEConfigure, Connects to a USB port, if available.
- **Protection**: Programmable relay that can a.o. set for general purpose com. port.
- **Power**: Programmable relay that can a.o. be set for general purpose com. port, For parallel and three phase operation, remote monitoring and system integration, remote monitoring, with a rotary knob to set PowerControl and PowerAssist levels.
- **Dimensions**: 520x255x125 mm, 20.5x10.0x5.0 inch
- **Weight**: 13 kg, 25 lbs.
- **Material & Colour**: Aluminium (blue RAL 5012)
- **Protection category**: IP 21
- **Operating temp. range**: -40 - +65°C / -40 to 150°F (fan assisted cooling)
- **Humidity**: max 95%

### Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Input</td>
<td>Input voltage range: 95-140 VAC</td>
</tr>
<tr>
<td>Charge voltage 'absorption' (V DC)</td>
<td>14.4 / 28.8</td>
</tr>
<tr>
<td>Charge voltage 'float' (V DC)</td>
<td>13.8 / 27.6</td>
</tr>
<tr>
<td>Storage mode (V DC)</td>
<td>13.2 / 26.4</td>
</tr>
<tr>
<td>Charge current house battery (A)</td>
<td>80 / 50</td>
</tr>
<tr>
<td>Charge current starter battery (A)</td>
<td>4</td>
</tr>
<tr>
<td>Battery temperature sensor</td>
<td>yes</td>
</tr>
<tr>
<td>AC Input</td>
<td>Input frequency: 45 – 65 Hz</td>
</tr>
<tr>
<td>Power factor</td>
<td>1</td>
</tr>
</tbody>
</table>

### Standards

- **IEC61729, IEC61727**
- **EN 55014-1, EN 55014-2, EN 61000-3-3**
- **EN 60335-1, EN 60335-2-9**
- **EN 55014-1, EN 60335-2-2, EN 60100-3-3**
- **Safety**
- **EMISSION IMMUNITY**
- **Classification**
- **Protection category**: IP 21
- **Battery-connection**: M8 bolts
- **AC-connection**: Screw-terminal 6 AWG (13 mm²)
- **Material & Colour**: aluminium (blue RAL 5012)
- **Remote on-off**: Yes
- **Auxiliary output**: n. a.
- **Programmable relay**: Yes (1x)
- **Protection (2)**: Yes (3x)
- **VE.Bus communication port**: For parallel and three phase operation, remote monitoring and system integration
- **General purpose com. port (7)**: n. a.
- **Remote switch**: Yes
- **Common Characteristics**
- **Operating temp. range**: -40 - +65°C / -40 to 150°F (fan assisted cooling)
- **Humidity (non-condensing)**: max 95%

### Computer controlled operation and monitoring

Several interfaces are available:

- **Digital Multi Control**: A convenient and low cost solution for remote monitoring, with a rotary knob to set PowerControl and PowerAssist levels.
- **VE.Bus Smart Dongle**: Measures battery voltage and temperature and allows monitoring and control of Multis and Quattro with a smartphone or other Bluetooth enabled device.

### Color Control GX and other GX devices

- Provides monitor and control. Locally, and also remotely on the VRM Portal.
- MK3-USB VE.Bus to USB interface
- Connects to a USB port (see A guide to VEConfigure)
- VE.Bus to NMEA 2000 interface
- Connects to a NMEA2000 marine electronics network. See the NMEA2000 & MFD integration guide

### BMV-712 Smart Battery Monitor

- Use a smartphone or other Bluetooth enabled device to:
  - customize settings,
  - monitor all important data on single screen,
  - view historical data, and to
  - update the software when new features become available.