



# POWERVERIO™ TECHNICAL SPECIFICATIONS

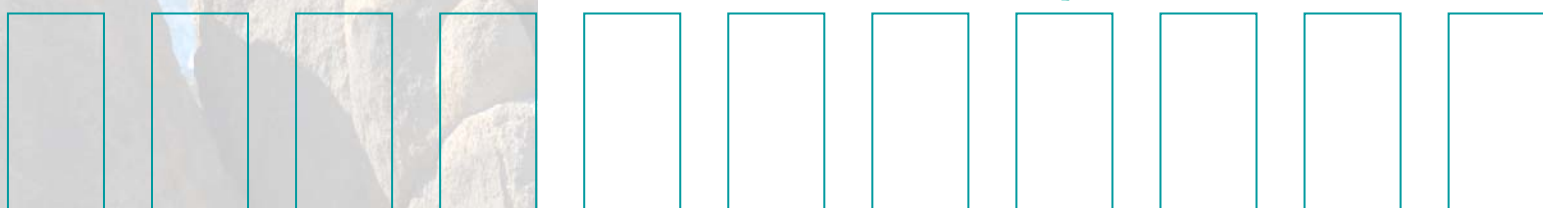
## PowerVario highlights at a glance

- Tower or Rack Version
- VFI, Voltage Frequency Independent
- Hot-Swap able battery exchange

**Intelligent True On-Line Uninterruptible Power Supply (UPS)  
For Corporate & IT User Installation Guide**

**Power range: 1000-3000VA per rack**

*Specifications are subject to change without notice*



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# 1 Technical Specifications

## 1.1 VA Rating

| Model                 | PVO11/1K                  | PVO11/2K  | PVO11/3K  |
|-----------------------|---------------------------|-----------|-----------|
| Apparent Output Power | 1000VA                    | 2000VA    | 3000VA    |
| Active Output Power   | 700Watts                  | 1400Watts | 2100Watts |
| Power Factor          | 0.7                       |           |           |
| Topology              | Double conversion On-Line |           |           |
| Type                  | Rack/Tower                |           |           |
| Agency Approvals      | CE                        |           |           |

## 1.2 Input

| Model                 | PVO11/1K                                     | PVO11/2K             | PVO11/3K       |  |
|-----------------------|--|----------------------|----------------|--|
| Voltage Window        | 230V   | 120/140/160 - 288Vac |                |  |
| Voltage Range         | Base on load percentage (0~33/33~66/66~100%) |                      |                |  |
|                       | Low Line Transfer                            | 230V                 | 120/140/160Vac |  |
|                       | Low Line Comeback                            | 230V                 | 170Vac         |  |
|                       | High Line Transfer                           | 230V                 | 288Vac         |  |
|                       | High Line Comeback                           | 230V                 | 278Vac         |  |
| Frequency             | 50/60 Hz auto-select, $\pm 5$ Hz             |                      |                |  |
| Phase                 | Single phase with ground                     |                      |                |  |
| PF                    | $>0.99$ at full rated linear load            |                      |                |  |
| Typical Transfer Time | 0 ms.  |                      |                |  |
| AC Leakage current    | 230V   | $\leq 3.5$ mA        |                |  |
| Surge Protection      | 230V   | 300 joules           |                |  |

## 1.3 Output

| Model              | PVO11/1K                      | PVO11/2K   | PVO11/3K                                |     |
|--------------------|-------------------------------|--|---|-----|
| Output (INV. mode) | Voltage                       | 230V   | 230V, adjustable to 200/208/220/230/240 |     |
|                    | Voltage Regulation            | $\leq \pm 1\%$ until low battery warning                       |   |     |
|                    | Frequency(Synchronized Range) | 3Hz or 1Hz (setting by software)                               |   |     |
|                    | Frequency(Battery Mode)       | $\pm 0.1\%$ (0.05~0.06Hz) unless synchronized to line          |   |     |
|                    | Current Crest Factor          | 3:1  |   |     |
|                    | Harmonic Distortion           | $\leq 3\%$ THD(Linear Load)<br>$\leq 7\%$ THD(Non-Linear Load) |   |     |
|                    | Transient Response(ms)        | $\leq 60$ ms/5%  |   |     |
|                    | Waveform                      | Pure Sine wave   |   |     |
| Efficiency         | To AC Mode (Full load)        | 85%  | 85%                                     | 88% |
|                    | To Battery Mode (Full load)   | 83%  | 83%                                     | 85% |

## 1.4 Battery System

| Model                   | PVO11/1K   | PVO11/2K     | PVO11/3K     |
|-------------------------|--|--------------|--------------|
| Type                    | 12V/7.2Ah  | 12V/7.2Ah    | 12V/9Ah      |
| Numbers of Batteries    | 3  | 6            | 6            |
| Backup Time(Full Load)  | >7min.   | >7min.       | >5min.       |
| Recharging Time         | 4 Hours to 90%   |              |              |
| Charging Current (Max.) | 1.1A   | 2.16A        | 2.7A         |
| Charging Voltage        | 41.0Vdc±0.5V   | 82.0Vdc±0.5V | 82.0Vdc±0.5V |
| Hot Swappable Battery   | Yes  |              |              |
| Internal battery        | Yes  |              |              |
| DC leakage current      | ≤ 30uA (±10uA) with no AC applied and the unit in the off position |              |              |
| Battery type            | Sealed, non-spillage, maintenance-free, lead acid                  |              |              |

## 1.5 Transfer Time

| Model              | PVO11/1K                           | PVO11/2K | PVO11/3K |
|--------------------|------------------------------------|----------|----------|
| AC to DC           | Zero                               |          |          |
| Inverter to Bypass | 2.5ms(Typical)                     | Zero     |          |
| DC Start           | Yes                                |          |          |
| Self Diagnostics   | Upon Power-on and Software Control |          |          |

## 1.6 Front Panel

| Model | PVO11/1K   | PVO11/2K | PVO11/3K |
|-------|--|----------|----------|
| LED   | Load Level/Battery Level/ Battery Mode/ Normal Mode/Bypass Mode/ Self-Test/ Weak/Bad Battery/Site Wiring Fault/ Fault/ Overload/Programmable Outlet1//Programmable Outlet2 |          |          |
| Key   | ON Button/ OFF Button/ (Test/Alarm Reset Button)   |          |          |

## 1.7 Protection

| Model    | PVO11/1K  | PVO11/2K | PVO11/3K |
|----------|---|----------|----------|
| Overload | (AC Mode )<br>105 continuous<br>106 120 for 30 seconds transfer to bypass<br>121 150 for 10 seconds transfer to bypass<br>150 for immediately transfer to bypass<br>Buzzer continuously alarms. |          |          |
|          | (Battery Mode)<br>105 continuous<br>106 120 for 30 seconds shuts down<br>121 150 for 10 seconds shuts down<br>150 for immediately shuts down<br>Buzzer continuously alarms.                     |          |          |

|                  |  |                            |
|------------------|--|----------------------------|
|                  | (Bypass Mode)<br>105 continuous<br>106 120 for 250 seconds shuts down<br>121 130 for 125 seconds shuts down<br>131 135 for 50 seconds shuts down<br>136 145 for 20 seconds shuts down<br>146 148 for 5 seconds shuts down<br>149 157 for 2 seconds shuts down<br>158 176 for 1 seconds shuts down<br>177 187 for 0.32 seconds shuts down<br>188 for 0.16 seconds shuts down<br>Buzzer continuously alarms. |                            |
| Short Circuit    | Bypass mode : Input Fuse/Input Breaker<br>Normal Mode: Output Breaker/Electronic Circuit<br>Battery Mode: Output Breaker/Electronic Circuit  |                            |
| Battery          | ABDM   |                            |
| EPO              | UPS shuts down immediately   |                            |
| Over Temperature | Transfer to Bypass Mode  | Transfer to Bypass Mode    |
|                  | UPS shuts down immediately   | UPS shuts down immediately |

## 1.8 Audible Alarm

| Model        | PVO11/1K   | PVO11/2K | PVO11/3K |
|--------------|--|----------|----------|
| Battery Mode | Sounding once every 1.5 seconds                          |          |          |
| Low Battery  | Sounding once every 0.2 seconds                          |          |          |
| Overload     | Sounding once every 3 second                             |          |          |
| Fault        | Continuously Sounding ( or Sounding once every 3 second) |          |          |

## 1.9 Physical

| Model                   | PVO11/1K                 | PVO11/2K            | PVO11/3K                                   |
|-------------------------|--------------------------|---------------------|--|
| Dimensions(HxWxD in mm) | 88(2U)x440(17")x405      | 88(2U)x440(17")x650 | 88.8(2U)x440(17")x650                      |
| Weights                 | 34.5lb(15.7kg)           | 64.7lb(29.4kg)      | 65.3lb(29.7kg)                             |
| Input Connection        | 230V<br>10A, IEC 320-C14 | 10A, IEC 320-C14    | 16A, IEC 320-C20                           |
| Output Connection       | 230V                     | (6) 10A,IEC 320-C13 | (4) 10A,IEC 320-C13<br>(1) 16A,IEC 320-C19 |

## 1.10 Environmental

| Model                 | PVO11/1K                        | PVO11/2K | PVO11/3K |
|-----------------------|---------------------------------|----------|----------|
| Operation Temperature | 0-40                            |          |          |
| Noise Level           | 50dBA                           |          |          |
| Relative Humidity     | 0 to 90% (Without condensation) |          |          |

## 1.11 Interface

| Model                | PVO11/1K   | PVO11/2K | PVO11/3K |
|----------------------|--|----------|----------|
| Interface Type       | 1 *USB port+ 1*RS-232 port                         |          |          |
| SNMP(option)         | Power management from SNMP manager and Web browser |          |          |
| Compatible platforms | Windows Unix, OS/2, Novell, Apple                  |          |          |

## 1.12 Standards and Certification

| Model       | PVO11/1K  | PVO11/2K | PVO11/3K |
|-------------|---|----------|----------|
| Safety      | IEC/EN 62040-1-1, IEC 60950-1   |          |          |
| Performance | IEC/EN 62040-3  |          |          |
| EMC         | EN50091-2/IEC 62040-2 class A<br>IEC 61000-4-2/-3/-4/-6-8/-11, IEC 61000-3-2/-3 |          |          |
| Markings    | CE, cUL, FCC additional versions on request                                     |          |          |



## CONTACT INFORMATION

### Newave Group Companies

**Newave Energy Holding SA**  
Via Luserte Sud 9  
6572 Quartino  
Switzerland  
Tel. +41 91 850 29 29  
Fax +41 91 840 12 54  
[info@newave.ch](mailto:info@newave.ch)  
[www.newaveups.com](http://www.newaveups.com)

### Head office: Operations, Sales & Marketing

**Newave SA**  
Via Luserte Sud 9  
6572 Quartino  
Switzerland  
Tel. +41 91 850 29 29  
Fax +41 91 840 12 54  
[info@newave.ch](mailto:info@newave.ch)  
[www.newaveups.com](http://www.newaveups.com)

### Subsidiaries

**Austria**  
Newave Österreich GmbH  
Ungargasse 36  
A-1030 Wien  
Österreich  
Tel. +43 (1) 710 96 70 16  
Fax +43 (1) 710 96 70 12  
[info@newaveups.at](mailto:info@newaveups.at)  
[www.newaveups.at](http://www.newaveups.at)

**Brazil**  
Newave South America LTDA  
Rua Clodomiro Amazonas No. 1422  
Suite 68  
BR-04537-002 - São Paulo  
Tel. +55 11 3045 0809  
Fax +55 11 3045 0764  
[info@newavesam.com](mailto:info@newavesam.com)  
[www.newaveups.com](http://www.newaveups.com)

**Finland**  
Newave Finland OY  
Niittiyäntie 5 (postal)  
Läkkisepänkuja 6 (visiting)  
FIN-00620 Helsinki  
Tel. +358 9 751 46 100  
Fax +358 9 751 46 120  
[info@newaveups.fi](mailto:info@newaveups.fi)  
[www.newaveups.fi](http://www.newaveups.fi)

**Germany**  
Newave USV Systeme GmbH  
Summerside Ave. C 207  
Baden Airpark  
D-77386 Rheinmünster  
Tel. +49 7229 1866-0  
Fax +49 7229 1866-33  
[zentrale@newave-usv.de](mailto:zentrale@newave-usv.de)  
[www.newave-usv.de](http://www.newave-usv.de)

**Hong Kong & China**  
Newave Energy Hong Kong Ltd  
Room 2506, West Tower, Shun Tak Centre  
HK-168-200 Connaught Road Central  
Tel. +31642215512  
[info@newave.cn.com](mailto:info@newave.cn.com)

**with branch office in China:**  
Newave Energy (Jiangmen) Limited  
9/F Kawa House, 49 Jiangshe Road,  
Jiangmen, GuangDong, China  
Postal Code: 529000  
Tel. +86 750 3680239  
Fax +86 750 3680229  
[info@newave.cn.com](mailto:info@newave.cn.com)  
[www.newave.com.cn](http://www.newave.com.cn)

**India**  
Newave Energy India Private Limited  
102/103 Tanishka, Akurli Road,  
Near Big Bazar, Kandivali East  
IN-400 101 Mumbai  
Tel. +91 (22) 42179292  
Fax +91 (22) 42179200  
[rshah@absothermindia.com](mailto:rshah@absothermindia.com)  
[www.newaveups.com](http://www.newaveups.com)

**Italy**  
NEWAVE Italia  
Via Vincenzo Ussani, 90  
I-00151 Roma  
Tel. +39 06 87451674  
Fax. +39 06 39389924  
[newaveitalia@gmail.com](mailto:newaveitalia@gmail.com)  
[www.newaveups.it](http://www.newaveups.it)

**Spain**  
Newave España SA  
Arturo Soria 329 1 D  
ES-28033 Madrid  
Tel. +34 (91) 768 22 22  
Fax +34 (91) 383 21 50  
[newave@newave.es](mailto:newave@newave.es)  
[www.newave.es](http://www.newave.es)

**Switzerland**  
ServiceNet AG  
Industriestrasse 5  
CH-5432 Neuenhof  
Switzerland  
Tel. +41 56 416 01 01  
Fax +41 56 416 01 00  
[info@servicenet.ch](mailto:info@servicenet.ch)  
[www.servicenet.ch](http://www.servicenet.ch)

**with branch office in Biel:**  
Am Wald 36  
CH-2504 Biel  
Switzerland  
Tel. +41 32 366 60 30  
Fax +41 32 366 60 35  
[biel@servicenet.ch](mailto:biel@servicenet.ch)

**The Netherlands**  
Newave UPS Systems BV  
Stephensonweg 9  
NL-4207 HA Gorinchem  
Tel. +31 183 64 6474  
Fax +31 183 62 3540  
[info@newaveups.nl](mailto:info@newaveups.nl)  
[www.newaveups.nl](http://www.newaveups.nl)

### Newave Certifications & Recognitions

