

VPML Modular

6kVA~20kVA

Double conversion on-line parallel system

- True on-line double conversion design
- Fully digitized microprocessor control
- Digital Signal Processor Technology (DSP)
- N+1 parallel redundancy configuration
- Expandable output power capacity
- Up to three VPML units connected in parallel
- Input power factor correction (PFC)
- Pure sinewave output with less than 2% THD
- Wide input voltage range
- On-line output voltage selection
- Auto self-testing system while turning on the UPS
- Cold start function (DC Power On)
- Generator compatible
- Maintenance bypass setting
- Advanced Battery Management (ABM Technology)
- Automatic diagnostics & battery check
- Two step battery charging mode
- External battery banks for extended back up time
- Multi-function LCD display
- Smart RS-232, AS-400 communication ports
- SNMP card slot for network management
- Software monitoring and control
- Scheduled shutdown & reboot



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UPS SYSTEMS

**YOUR ULTIMATE
POWER PROTECTION PARTNER**

Product Introduction

Today VPML is designed to provide continuous utility AC power protection for critical system installation and to facilitate flexibility in expanding power distribution requirements via parallel redundancy.

It can be configured to parallel redundancy which increases flexibility and reliability to maximum power, and it is very cost effective to upgrade the system without a large investment.

With its double conversion on-line technology, it delivers the optimum level of reliability and scalability. This ensures a pure sinewave output free of any input voltage fluctuations and disturbances. Via this technology, the VPML is particularly suitable for use in areas where power supply is consistently in shortage.

It absolutely prevents power failures, power surges, brownouts, line noise, high voltage spikes, frequency variations, harmonic distortion and switching transients ensuring no transfer time in the event of a power failure.

Outstanding power range

The VPML series comes in a broad range of output power (6kVA/10kVA/15kVA /20kVA) in both single phase and three phase input that accommodate any requirement an enterprise may need. Furthermore, the VPML series is compatible with a wide range of battery autonomies enabling it to provide long back up times whenever necessary.

Leading technology

PCE UPS SYSTEMS Inc. has designed the VPML UPS so that it would be equipped with the latest innovations in Uninterruptible Power Supply technology.

Several features have gone into the design to ensure that the VPML UPS is capable of being a central cornerstone in any high quality power protection solution.

Because the control of the inverter is of utmost importance for the quality of the output voltage, especially in critical operating situations, PCE UPS SYSTEMS Inc. employs a Space Vector Modulation Digital Control Technology to increase the performance of power components and enable active conditioning of the load in a straightforward way.

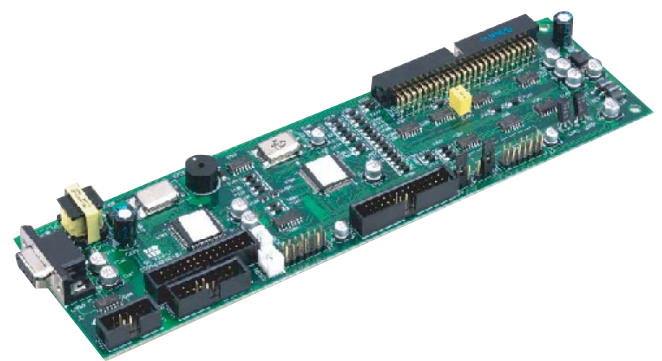
With the use of digital signal processors (DSP), the realization of very complex control structures with flexible adapting mechanisms is possible.

DSP implementation gives redundant operation and the highest possible operating reliability for the most mission critical applications.

The VPML UPS not only utilizes DSP technology but also digital power quality management system PWM (Pulse Width Modulation) controlled IGBT (Isolation Gate Bipolar Transistor) to improve the performance of the power components.

Many benefits are realized using the Vector Control Technology:

- Using an IGBT rectifier, the VPML can provide superior Power Factor Correction (PFC) reducing input harmonic distortion.
- The pure sinewave output that the VPML delivers makes it perfect for powering highly sensitive equipment operating in environments where power supply quality is not reliable.
- Improved performance for specific unbalanced load conditions.
- Improved fault clearing capacity for downstream short circuits.
- Improved efficiency through easy installation times and reduced servicing.
- Customization easily achieved via simple software modifications.
- Perfect load distribution among different VPML units connected in parallel and synchronization of the inverters.
- Phase-synchronous operation of the UPS output with the feeding mains to be able to switch to it anytime without any switching gap.



Features

High Performance and Reliability

- On-line Double Conversion Technology

This technology guarantees consistent high power quality. Whatever the disturbances on the distribution system are, a pure sinewave is regenerated via AC to DC to AC double conversion process. The battery supplies the load with power at all times so that no switching time is noticed at the output when the input power goes off.

- Parallel redundancy

The VPML UPS is capable of acting in a parallel configuration which is ideal for redundancy and load sharing, while maintaining high utilization efficiency at the same time. Up to three UPS can be connected in parallel. When connected together, the VPML units automatically detect the presence of their neighbors and coordinate load sharing and protection accordingly. This simple upgrade setup enables you to easily modify your existing solution whenever your load requirements change.

Parallel redundancy feature increases power and redundancy of the supply system whilst controlling costs.



User Friendly - Only a 25 pin-one to one shield cable required for parallel redundant

High Availability

- Cold Start on battery power

This function elaborates the emergency standby capability of UPS to a sufficient extent.

- Automatic Bypass

In the event of an overload or a UPS fault, the VPML UPS automatically transfers the load to utility AC power.

Ease of Use

Easy installation and integration

- Complete installation kit

- Easy connection to AC power

Advanced Battery Management

The VPML UPS employs unique technologies to increase the life of the batteries. It uses two step charging technique that optimizes the charging time.

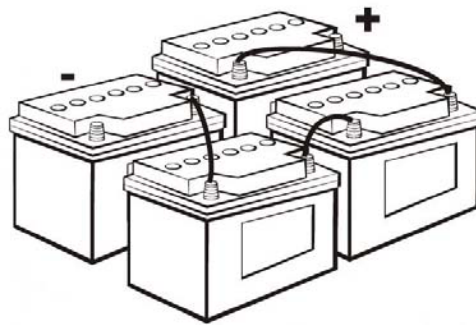
The battery is one of the most important components that make up an Uninterruptible Power Supply system, and the degree of power protection that such system provides is closely tied to the quality of the batteries installed. This is a fact that PCE never tires of stressing, and, for this reason, you will only find Sealed Lead Acid batteries of the most superior quality as a back up power source in our UPS solutions.

In addition, we have equipped the VPML Series with the capability to continuously monitor your power input and output status and operate with extreme efficiency accordingly. Such mechanisms increase the system's battery life by up to 60%.

Some of the advanced battery care features that the VPML UPS employs are listed below:

- A wide input voltage acceptance range
- Temperature-compensated battery charger
- Intelligent battery charger
- Charge and discharge cycle control
- End of discharge voltage compensated with time
- Minimum ripple current values
- Algorithm to calculate battery life expectancy
- Periodic battery testing
- Different options for battery placement

All these features put together sum up to considerable savings in your running costs.



PCE Power Track Suite™

The industry's most comprehensive software bundle, the PCE PowerTrack™ Software Suite comes included with every PCE VPMLUPS.

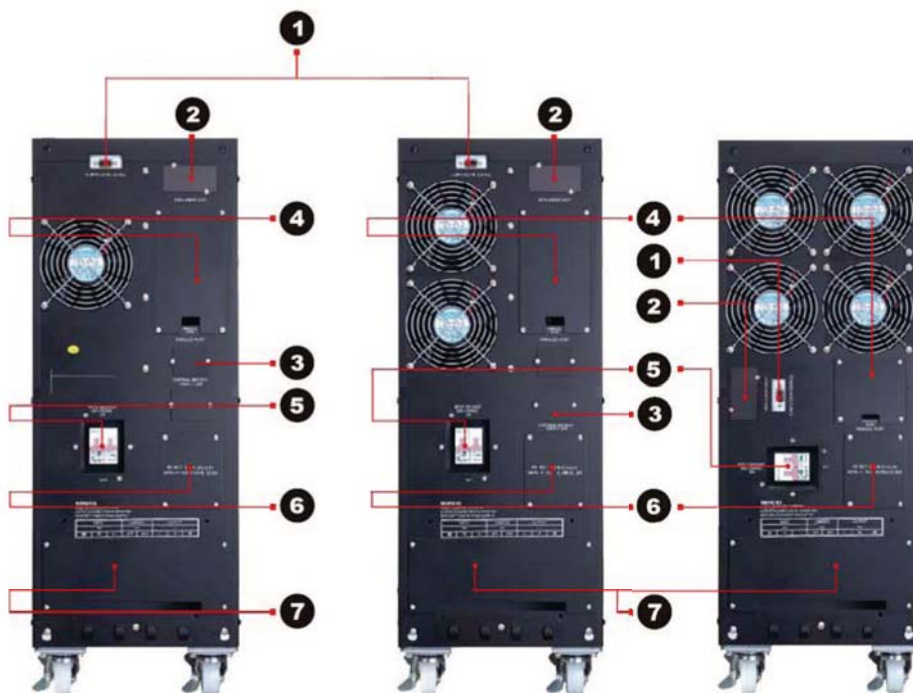
- PowerTrack™ wizard guides you through software selection and installation
- PowerTrack™ performs critical power management functions

- Automatic shutdown/ reboot
- User notification of power events
- Broadcast power abnormal status
- Smart save file
- Scheduled system shutdown/reboot
- UPS Battery low warning
- Real-time graphical display
- Power quality data log
- Printing power events list
- Graphic display by meter
- Support Windows Services and auto-start

PowerTrack™ is compatible with several operating system: Windows 95/98/2000/NT/ME/XP/2003/Vista, Linux, Sun Solaris, MAC/ME

Back Panel for all models

- 1.Communication Port
- 2.Intelligent Slot
- 3.External Battery Socket
- 4.Parallel Port
- 5.Input Breaker
- 6.Maintenance Switch
- 7.Terminal

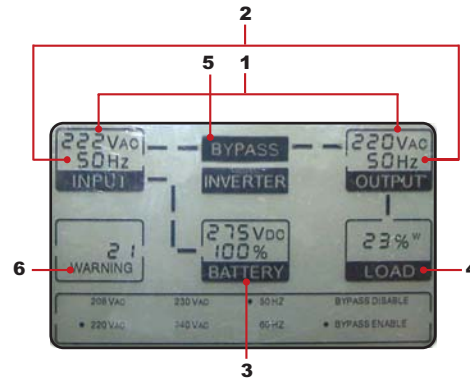


Applications

The VPML series provides a secure power infrastructure for a wide range of applications including:

- Data Centers
- Network Infrastructures
- Production Servers
- Industrial Equipment

LCD Display



- 1.Input/Output voltage
- 2.Input/Output frequency
- 3.Battery level
- 4.Load level
- 5.Mode status (Back up mode, On-line mode, Bypass mode)
- 6.Fault codes/Warning

Model		VPML 6k	VPML 10k	VPML 10K/31	VPML 15K/31	VPML 20K/31
Output power with cos φ = 0.7		6kVA/4200W	10kVA/7000W	10kVA/7000W	15kVA/10500W	20kVA/14000W
Input	Voltage	208V/220V/230V/240V, 1Ø 2Wires		360V/380V/400V/415V, 3Ø4Wires		
	Frequency	50/60 Hz +/-10%				
	Voltage range	154V-286V		267V-495V		
	Efficiency of rectifier THDI	≥99%		≥98%		
Output	Voltage (on battery)	208V,220V, 230V, 240V, +/-1% (selectable output voltage), 1Ø 2Wires				
	Frequency (on battery)	50/60 Hz +/-0.1%				
	Transfer Time	0 ms				
	Overload Recovery	Auto transfer to UPS within 0ms				
	Efficiency	>94%				
	UPS Design Technology	On-Line / Fully digitized microprocessor controlled				
	Output Wave Form	Pure Sinewave				
Protection	Total Harmonic distortion (THD)	< 2% of T.H.D. at linear load , < 5% T.H.D. at non linear load				
	Crest Factor	3:1				
System Display/Warning	Overload Protection	125% for 10 minutes and 150% for 1 minute				
	Short Circuit Protection	UPS output cut off immediately using input fuse/circuit breaker/electronic protection				
Battery	LCD indicators	Input/output voltage, input/output frequency, on-line mode, back up mode, battery capacity, load level				
	Audible Alarm	Beep every 4 second				
	Overload Alarm	Beep twice every second				
Communication	Battery Type	Sealed, maintenance-free lead acid batteries, 3-5 years typical life time				
	Typical Recharge Time	Depending on external batteries				
	DC Voltage	240VDC				
	Management	Self-test, adjustable battery transfer points and alarm settings				
	Cold Start	YES				
Physical	Battery Protection	Cuts off without draining any current when battery is low				
	Extended back up time	Longer backup time depending on extra battery pack for models with external battery socket				
Standards & Certifications	AS-400*, RS-232	Interface with power management software				
	SNMP*	Power Management from SNMP manager and web browser				
	Compatilbity	Windows 98/NT/2000/XP/2003/Vista, Linux, Sun Solaris, IBM Aix, Compaq True64, SGI IRIX, FreeBSD, H MAC/ME				
Environment	W x D x H	260 x 570x 717 mm				
	Net Weight	35Kg(77lb)	38Kg(83.6lb)	39Kg(85.8lb)	55Kg(121lb)	
Standards & Certifications	Operating Temperature	0°C ~40°C				
	Storage Temperature	-20°C ~ 50°C				
	Altitude	3,500 meters max				
	Audible noise	<42dBA at 1 Meter		<45dBA at 1 Meter		
Standards & Certifications	Relative Humidity	20 ~ 90% humidity, non-condensing				
	Performance	EN50091-3/IEC 62040-3				
	Safety	UL 1778, CE, EN 50091-1,EN 60950 (RD/), IEC 60950				
	EMC (EMS / EMI)	IEC 61000-4-2/-3/-4/-5/-6/-8/-11, IEC 61000-3-2/-3,FCC Part 15, CISPR 22, EN 50091-2/IEC62040-2 EN 55022/B,FCC 47 part 15 - Subpart B - Class A				
	Design, production, and services	ISO 9001				
Standards & Certifications	Environment	ISO 14001 certified company				
	Marking & Certifications	CE, TUV/GS, UL, cUL, c-Tick				

* For optional features

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