

# VP UPS 700VA~12kVA

- True on-line double conversion design
- Fully digitized microprocessor control
- Input Power Factor Correction (PFC)
- Pure sinewave output with less than 3% THD
- Wide input voltage range
- On-line output voltage selection
- High Efficiency mode selectable
- Cold Start function (DC Power On)
- Galvanic isolation transformer (optional)
- Generator compatible
- Free run mode setting
- Manual bypass setting
- Lightning and surge protection
- Network/Tel/Fax/Modem surge suppression\*
- EMI / RFI noise filter
- Emergency Power Off function (EPO)
- Fan speed auto-control when load varies
- Advanced Battery Management (ABM Technology)
- Automatic diagnostics & battery check
- Automatic battery charging in UPS Off mode
- Battery replacement warning
- Hot swappable battery replacement by user\*
- Display of "battery remaining time"\*
- Extended back up time with external battery pack
- Multi-function LCD display
- History record of power failure events
- Remote control panel
- RS-232 or USB communication port
- SNMP card slot for network management (optional)
- Software monitoring and control
- Scheduled shutdown & reboot
- Controllable load segmentation receptacles\*

\* Select models only



**YOUR ULTIMATE POWER  
PROTECTION PARTNER**

**w w w . p c e u p s . c o m**

**PCE<sup>®</sup>**  
**UPS SYSTEMS**

## Product Introduction

As businesses increase their dependence on technology in every aspect of their operations, the need for system availability becomes of paramount importance. The PCE VP Series UPS is designed for those applications that require maximum protection and availability. With its high-frequency, double conversion on-line technology, the VP UPS provides non-stop clean power along with features that add to its flexibility such as space-saving designs, advanced communications, and remote control.

Being an on-line UPS means that your equipment is always getting power from the VP UPS regardless of the status of your input. This ensures a pure sinewave output free of any input voltage fluctuations and disturbances. The on-line design also ensures that there is absolutely no switching time when the main power goes off, reducing the chances of glitches whenever the input goes off.

The VP UPS comes in a broad range of output power capacities (700VA to 12kVA) that accommodate any requirement an enterprise might need. In addition, external battery packs may be added to provide extended autonomy in case of a power failure.

All these features make the VP UPS an ideal power solution for network infrastructures, production servers, data centers, telecommunication equipment, and other critical applications.

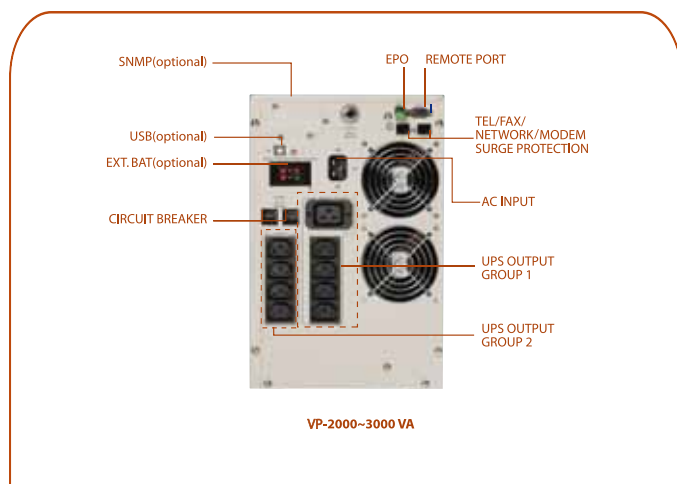
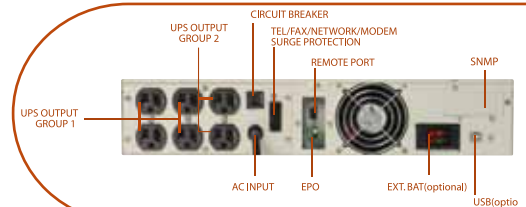
In addition to its proven design, the VP UPS offers Advanced Battery Management (ABM) and sophisticated communications to provide extra value to the user. ABM uses a three-stage charging technique that not only optimizes the charging time of the battery but also doubles its service life.

The PCE VP communication features allow for local network or remote monitoring, management, and control. The VP UPS includes the latest version of PCE's PowerTrack™ software suite, which coordinates power tasks with a PC and provides constant monitoring of the various UPS vital parameters.

With the VP UPS, PCE delivers a best-in-class power solution that provides maximum protection, availability, and peace of mind.



700~3kVA (2U)



VP-2000-3000 VA

## Applications

Data Centers, Network Infrastructures, Production Servers, and Industrial Equipment.

## Problems

The VP UPS protects your equipment against the following problems:

Power failures, Power sags, Power surges, Under-voltage, Over-voltage, Electrical line noise, Frequency Variation, Switching transient, Harmonic distortion.

Even when presented with the most severe cases of such power problems, the VP UPS output remains within a remarkable  $\pm 1\%$  of nominal voltage. This means that your loads always receive steady and clean power regardless of the input condition. In addition, the VP UPS transfers to back up mode with no break in power, making it the perfect UPS for running sensitive equipment in a poor power environment.

## 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.

- Wide Input Voltage Range

The VP UPS has a very wide input voltage tolerance (from 84V to 276V) which allows the UPS to provide a constant output voltage while keeping the batteries on the charger. This way, the batteries are not used as heavily, which maximizes the availability back up time and extends the battery life.

### High Availability

- Cold Start on battery power

This function ensures trouble-free start-up of your equipment even during a utility power outage.

- Automatic Bypass

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

- Hot-Swap Function

“Hot-swap” allows the maintenance of the VP UPS battery without taking the UPS and the connected loads offline.

### Ease of Use

- Easy installation and integration

- Tower or 19”-rack models
- Complete installation kit
- Easy connection to AC power
- Optional caster-mounted support for easy handling

- EPO port (Emergency Power Off)

A customer-supplied switch located remotely can be used to open the EPO connection and allow the UPS output receptacles to be switched off. Since the EPO shuts down the equipment immediately, orderly shutdown procedures are not followed by any power management software. The UPS will have to be manually restarted in order to regain power to the outlets.

- Network Transient protector (700-6000VA)

The Network Transient Protector isolates your modem, fax machine, and other electronic equipment from data line power surges. This protector, located on the back panel, has both IN and OUT jacks, and houses a single RJ-45 (10 Base T) network connector. Connect the input connector to the jack labeled IN, and the output connector to the jack labeled OUT to protect your equipment from harmful data line disturbances.

- Load segments (700-6000VA)

The power management software controls the sets of receptacles known as load segments which provide organized shutdown and startup of the equipment.

Less critical equipment can be turned off during power outages saving battery power for critical loads. The power management software manual has more details regarding this. The load group status can be viewed from the LCD display and can be changed if necessary. These load segments are usually handled with the UPS management software.

### PCE PowerTrack™ Suite

The industry’s most comprehensive software bundle, the PCE PowerTrack™ Software Suite comes included with every PCE VP UPS.

- PowerTrack™ wizard guides you through software selection and installation
- PowerTrack™ includes the following power management features

- Automatic shutdown
- User notification of power events
- Automatic reboot
- 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 available for:

Windows 95/98/2000/NT/ME/XP/2003

### Software and Communications Options

- USB port (optional) allows UPS to communicate with Windows 98/ME, 2000, XP and 2003 computers.
- RS-232 Port (standard) allows the UPS for interface with power management software.
- SNMP/Web card (optional) adds direct control and monitoring capabilities in SNMP-based networks. It provides the ability to monitor UPS status via a web browser.
- Relay card (optional) adds integration to industrial environment and Building Management Systems, as well as interconnection to IBM AS-400 machines.

## TECHNICAL SPECIFICATIONS - VP Series

VP Tower Model		VP-700	VP-1k	VP-1500	VP-2k	VP-3k	VP-4k	VP-5k	VP-6k	
Output power with $\cos\phi = 0.7$		700VA	1000VA	1500VA	2000VA	3000VA	4000VA	5000VA	6000VA	
		490W	700W	1050W	1400W	2100W	2800W	3500W	4200W	
Input	Voltage	220V, 230V, 240V, 1 $\Phi$ 2 wires								
	Voltage Range/Load	<u>Voltage Range</u>				<u>Load capacity</u>				
		84~139V 140~159V 160~276V				0~40% 0~70% 0~100%				
	Efficiency of rectifier	>99%								
	Frequency	50/60 Hz +/-10%								
Output	Voltage (on battery)	220V, 230V, 240V +/-1% (selectable output voltage)								
	Frequency (on battery)	50/60 Hz +/-0.1%								
	Transfer Time	0 ms								
	Overload Recovery	Auto transfer to UPS								
	High Efficiency of inverter	> 95%								
	UPS Design Technology	On-Line / Fully digitized microprocessor controlled								
	Output Wave Form	Pure Sinewave								
Harmonic distortion	< 3% of T.H.D. at linear load									
Crest Factor	3:1									
Protection & Filtering	Surge Protection	230V (IEEE C61000-4-5 level 3)								
	Overload Protection	125% for 3 minutes and 150% for 1 minute								
	Short Circuit Protection	UPS output cut off immediately /fuse/circuit breaker/electronic protection								
System Display Warning	LCD Indicators	Input/output voltage, input/output freq., on-line mode, back up mode, bat. capacity, load level								
	Audible Alarm (Batt. back up)	Beep every 5 sec								
	UPS Fault	Continuous beeping sound and LCD display								
Battery	Type	Sealed, maintenance-free lead acid batteries, 3-5 years typical life time								
	DC Voltage	24V	36V	72V	120V	240V				
	Typical Recharge Time to 90% Full	4 hours								
	Management	Self-test, adjustable battery transfer points and alarm settings								
	Battery Protection	Cuts off without draining any current when battery is low								
	Cold Start (DC start)	YES								
Back Up Time (1/2 Load)	17min	19min	15min	20min	17min	19min	18min	16min		
Extended back up time	Depends on batteries installed (optional)									
Communication	RS-232, USB	Detect Battery Low, schedule UPS On/Off, AC input/output power status display								
	SNMP (optional)	Monitoring capabilities in SNMP based networks								
	Compatibilitiy	Novell, SNMP, Windows 95/98/ME/2000/XP/2003								
Physical	Input Inlet	IEC 320 (230V) or optional country-specific receptacles					Hardwire			
	Output Connection	IEC 320 (230V) or optional country-specific receptacles					Hardwire			
	Dim.(WxDxH) mm	152 x 420 x 238 (6.0" x 16.5" x 9.4")			225 x 425 x 360 (8.9" x 16.7" x 14.2")		257 x 528 x 391 (10.15" x 20.8" x 15.4")		280 x 580 x 570 (10.9" x 22.7" x 22.4")	
	Net Weight kg (lb)	13.5(29.7)	16.2(35.6)	17.0(37.4)	31.1(68.4)	33.0(72.6)	50(116)		86(189.2)	

Model VP-RM Series		VP-RM 700	VP-RM 1000	VP-RM 1500	VP-RM 2k	VP-RM 3k	VP-RM 6k	
Battery	DC Voltage (1U)	24V	None					
	DC Voltage (2U)	24V	36V		72V		240V(3U)	
Physical	Input Inlet	IEC 320 (230V) or optional country-specific receptacles					Hardwire	
	Output Connection	IEC 320 (230V) or optional country-specific receptacles					Hardwire	
	Dim.(WxDxH) mm (inch)	428x525x44 1U (16.9"x20.7"x1.7")			428 x 635 x 84 (2U) (16.9" x 25.0" x 3.3")		428 x 597 x 130 (3U) * (16.9" x 23.6" x 5.1")	
		428 x 425 x 84 (16.9" x 16.7" x 3.3") 2U						
	1U	2U	2U			3U		
	15.5(34.1) 14.6(32.1)		17.1(37.6)	18.1(39.8)	31.6(69.5)	32.5(71.5)	20(44)	

\* without battery cabinet

## TECHNICAL SPECIFICATIONS - VP Series

VP Tower Model Series		VP-8k/11	VP-10k/11	VP-12k/11
		VP-8k/31	VP-10k/31	VP-12k/31
Output power with $\cos\phi = 0.7$		8000VA	10000VA	12000VA
		5600W	7000W	8400W
Input	Voltage Range/Load (Single Phase)	220V, 230V, 240V, 1 $\Phi$ 2 wires or 380V, 400V, 415V, 3 $\Phi$ 4 wires		
	Voltage Range (Three Phase)	<u>Voltage Range</u> 120~154V 155~285V		<u>Load capacity</u> 0~40% 0~100%
Efficiency of rectifier		208 ~ 490V, 3 $\Phi$ 4Wires >99%		
Frequency		50/60 Hz +/-10%		
Output	Voltage (on battery)	220V, 230V, 240V +/-1% (selectable output voltage)		
	Frequency (on battery)	50/60 Hz +/-0.1%		
	Transfer Time	0 ms		
	Overload Recovery	Auto transfer to UPS		
	High efficiency of inverter	> 95%		
	UPS Design Technology	On-Line / Fully digitized microprocessor controlled		
	Output Wave Form	Pure Sine wave		
	Harmonic distortion	< 3% of T.H.D. at linear load		
Crest Factor		3:1		
Protection & Filtering	Surge Protection	230V (IEEE C61000-4-5 level 3)		
	Overload Protection	125% for 3 minutes and 150% for 1 minute		
	Short Circuit Protection	UPS output cut off immediately /fuse/circuit breaker/electronic protection		
System Display Warning	LCD Indicators	Input/output voltage, input/output freq., on-line mode, back up mode, bat. capacity, load level		
	Audible Alarm (Batt. back up)	Beep every 5 sec		
	UPS Fault	Continuous beeping sound and LCD display		
Battery	Type	Sealed, maintenance-free lead acid batteries, 3-5 years typical life time		
	DC Voltage	240VDC		
	Typical Recharge Time to 90% Full	4 hours		
	Management	Self-test, adjustable battery transfer points and alarm settings		
	Battery Protection	Cuts off without draining any current when battery is low		
	Cold Start (DC start)	YES		
Back Up Time	12min full load/20min half load			
Extended back up time	Depends on batteries installed (optional)			
Communication	RS-232, USB	Detect Battery Low, schedule UPS On/Off, AC input/output power status display		
	SNMP (optional)	Monitoring capabilities in SNMP based networks		
	Compatibilty	Novell, SNMP, Windows 95/98/ME/2000/XP/2003		
Physical	Input Inlet	Hardwire		
	Output Connection	Hardwire		
	Dim.(WxDxH) mm (inch)	257 x 690 x 715 (10.1"x 27.2"x 28.2")	342 x 690 x 878 (13.5"x 27.2"x 34.6")	
	Net Weight kg (lb)	80 (176)		130 (286)

### Environment / Standards & Certifications for all VP Series

Environment	Operating Temperature	0 ~ 40°C / 32 ~ 104°F		
	Storage Temperature	-20 ~ 50°C / -4 ~ 122°F		
	Altitude	3,500 meters max		
	Audible Noise (1 meter from surface)	< 40 dBA		
Relative Humidity	0 ~ 95% humidity, non-condensing			
Standards & Certifications	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, & services	ISO 9001		
	Environment	ISO 14001 certified company		
	Marking & Certifications	CE, TUV/GS, UL, cUL, c-Tick		

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OUTPUT RECEPTACLE OPTIONS - ONLY FOR 700VA~3kVA



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