

# MODU 6 UPS

4kVA-24kVA

*Double conversion N+1  
parallel redundant power modules*

- True on-line double conversion design
- Fully digitized microprocessor control
- Digital Signal Processor Technology (DSP)
- N+1 parallel redundancy configuration
- Up to six modules connected in parallel
- Expandable output power capacity from 4kVA to 24kVA
- Input power factor correction (PFC)
- Pure sinewave output with less than 3% THD
- Wide input voltage range
- Modular design for easy maintenance
- Generator compatible
- Galvanic isolation transformer (optional)
- Auto self-testing system while turning on the UPS
- Advanced Battery Management (ABM Technology)
- Additional external battery pack for extended back up time
- Power status LCD display
- Smart RS-232, intelligent slot/RS-485 and AS-400 communication ports
- SNMP management capability
- Environment monitoring card
- Dual monitoring interfaces
- Software monitoring and control
- Scheduled shutdown & reboot



**PCE**<sup>®</sup>  
UPS SYSTEMS

**YOUR ULTIMATE  
POWER PROTECTION PARTNER**

**Product introduction**

Today Modu6 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. Its modular design for 6 modules redundancy is a key of reliability and an ideal way to provide the highest quality online protection for mission critical installations from 4kVA to 24kVA.

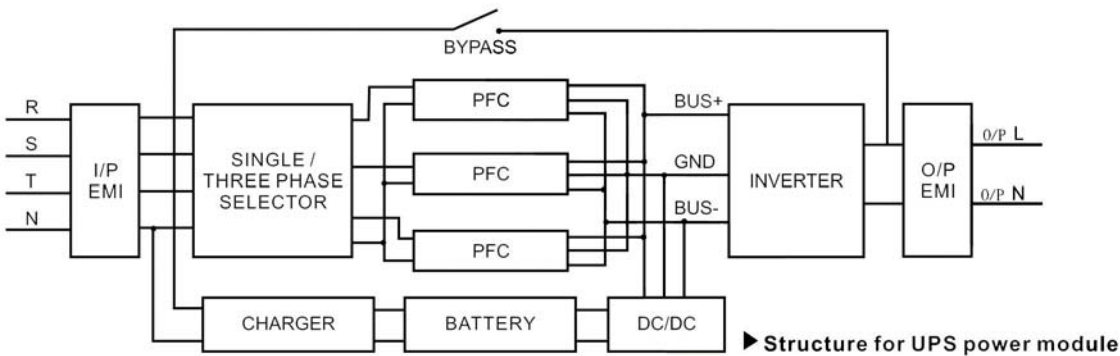
The Modu6 can be configured to parallel redundancy which increases flexibility and reliability to maximum power and it is very cost effective to upgrade the system without a large investment.

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 Modu6 series 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 Modu6 series comes in a broad range of output power (4kVA/8kVA/12kVA/16kVA/20kVA/24kVA) in both single phase and three phase input which is able to automatically self-recognize either single or three phase input.

Symptoms	Standard On-line UPS	Modu6
<b>UPS Fails</b>	Standard online UPS is unable to work. The users must bring the defective system to service center.	If one UPS power module goes offline for any reason, there are other power modules to assume the load. The UPS power modules can be hot-swapped out without interrupting the supply of the load.
<b>Load Capacity</b>	The users must buy a new online UPS again.	Modu6 provides the capacity expansion which is capable to parallel a number of UPS modules for upgrading higher VA ratings.
<b>Battery Banks</b>	The users must purchase an additional battery bank from original manufacturer because of an exclusive battery design.	The users can buy a standard additional battery bank in the market which is without spending too much money.



**Digital signal processor & pure sinewave output design**

Modu6 is a true double conversion & pure sinewave output on-line design, it features the highest efficiency up to 94% for 4kVA to 24kVA range. On-line double conversion with DSP digital control gives redundant operation and the highest possible operating reliability for the most mission critical applications.

**Modular design with hot swappable modules**

Modular design for 6 modules redundancy is a key of flexibility and an ideal way to provide the highest quality on-line power protection for the mission critical applications from 4kVA to 24kVA. The modules can be hot-swapped and enabled true continuity of power to the load without any interruption of service.

It also designs for 19" rack mount.

**Additional external battery pack**

Modu6 is designed for robust operations including the ability to add unlimited extended battery packs for multiple hours back up time.

This system ensures high quality power supply for computer loads and optimized battery life as well as compatibility with engine generator for even longer back up requirements.

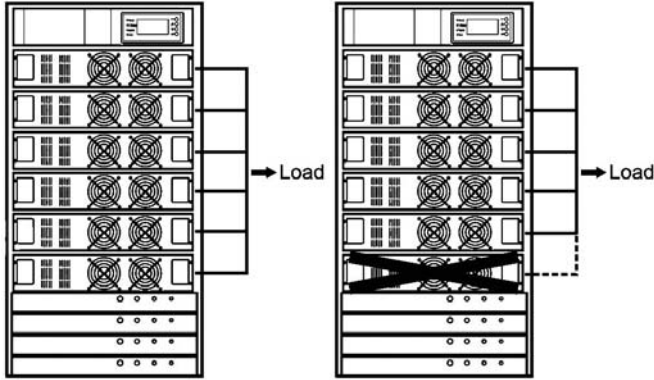


## Features

### 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

Parallel redundancy feature among UPS has been used as a way of delivering higher levels of load sharing and reliability. If one UPS power module goes offline for any reason, there are other power modules to assume the load. The UPS power modules can be hot swapped out without interrupting the supply of the load. On the other hand, in the parallel capacity systems additional modules can be added to increase overall system capacity and added an unlimited battery packs allowing a seamless growth path as needs change. This approach is cost effective and essential for mission critical applications, or in demanding environment.

### 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 Modu6 UPS automatically transfers the load to utility AC power.

### Ease of Use

Easy installation and integration

- Tower and 19" rack models available
- Complete installation kit
- Compact and light weight with screwless design
- Easy connection to AC power



With Isolation Box

### Advanced Battery Management

The Modu6 UPS employs unique technologies to increase the life of the batteries.

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 Modu6 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 Modu6 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 Modu6 UPS.

- 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

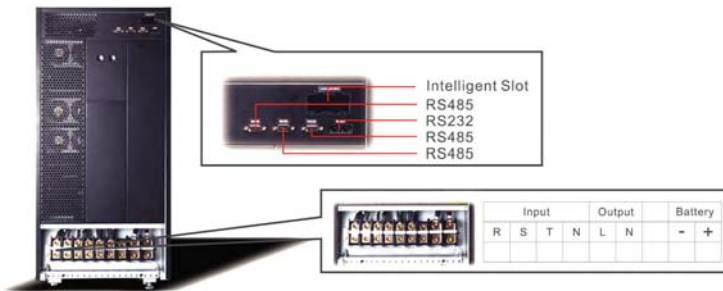
PowerTrack™ is compatible with several operating system:  
Windows 95/98/2000/NT/ME/XP/2003, Linux, Novell

### Communication ports

Modu6 is equipped with multiple communication ports increasing the flexibility, functionality & reliability.

Dual monitoring interfaces are capable of using both RS-232 and RS-485/intelligent slot and the intelligent slot can be plugged into AS-400 or SNMP card increasing the system monitoring detective abilities with free software downloads. It supports the environment monitoring card which works with AS-400 or SNMP card.

This card can provide environmental information such as humidity and temperature.



### LCD display design

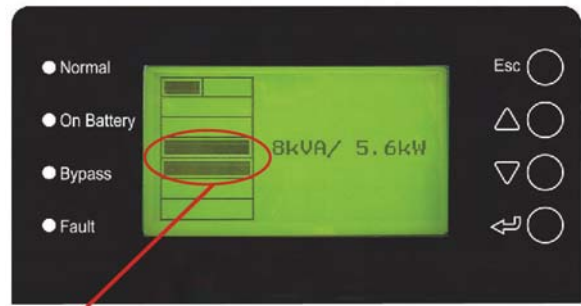
The Modu6 LCD display provides user-friendly menu control and delivers messages to the ability to manage, configure, control and diagnose the UPS directly.

It connects with LCD modules for monitoring various UPS parameters such as input and output voltage, current and frequency, power factor and phase form. This LCD module is suitable for any make of on-line UPS systems.

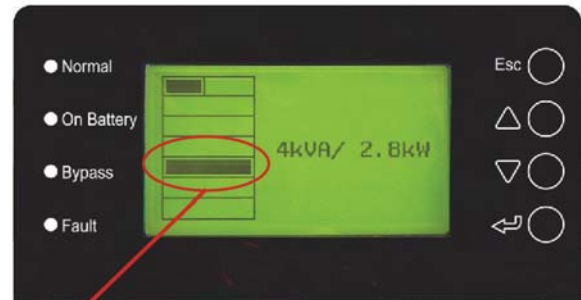
### LCD Module



- 1-Appear "green light"
- 2-Appear "yellow light"
- 3-Appear "yellow light"
- 4-Appear "red light" and warning alarm
- 5-Escape Key
- 6-Up Key
- 7-Down Key
- 8-ENTER Key
- 9-Operation message



This position has been installed the module of the Modu6.



This position has not been installed the module of the Modu6.

### Applications

The Modu6 series provides a secure power infrastructure for a wide range of applications including:

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

Model		Modu 6			
Output power with $\cos \phi = 0.7$		4kVA~24kVA/2800W~16800W			
Input	Voltage	220V/ 230V/ 240V, 1Ø 2 Wires or 380V/ 400V/ 415V, 3Ø 4 Wires			
	Voltage range/Load	Voltage range	Load capacity	Voltage range	Load capacity
		118-139V	0-50%	204-240V	0-50%
		140-300V	50- 100%	241-520V	50- 100%
	Frequency	50/60 Hz +/-10%			
	Efficiency	>0.98			
THDi	<5%				
Output	Voltage (on battery)	110V*/220V +/-1%, 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 Sine wave			
	Harmonic distortion	< 3% of T.H.D. at linear load			
Crest Factor	3:1				
Protection	Overload Protection	110~130% after 10 min transfer to bypass and >130% after 30 seconds transfer to bypass			
	Short Circuit Protection	UPS output cut off immediately using input fuse/circuit breaker protection			
System Display / Warning	Visual Display (LCD model)	Input/output voltage, input/output frequency, on-line mode, back up mode, battery capacity, load level			
	Audible Alarm	Beep every 4 second (Battery back up)			
	Overload Alarm	Beep twice every second			
Communication	AS-400**, RS-232, RS-485	Interface with power management software			
	SNMP**	Power Management from SNMP manager and web browser			
	Compatibility	Windows 98/NT/2000/XP/2003, Linux, Novell, SNMP			
Battery	Battery Type	VRLA, WET			
	Typical Recharge Time	Depending on external batteries installed (to 90% Full)			
	Operating Voltage	120VDC(10 batteries per pack)			
	Management	Self-test, adjustable battery transfer points and alarm settings			
	Battery Protection	Cuts off without draining any current when battery is low			
	Extended back up time	Longer back up time depending on extra battery pack			
Physical	W x D x H (Module/Chassis)	Per module:405x 530x 87 mm/chassis:442x 700 x 965 mm			
	Chassis & down voltage ISO transformer (option)	442 x 700 x 1265 mm			
	Net Weight(Module/Chassis)	Per module:15KG(33lb)/chassis:75Kg(165lb)			
	Chassis & down voltage ISO transformer (option)	211Kg(464.2lb)			
Environment	Operating Temperature	0°C - 40°C			
	Storage Temperature	-20°C- 50°C			
	Altitude	3,500 meters max			
	Audible Noise	< 48 dBA at 1 meter			
	Relative Humidity	20 ~ 90% 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 and services	ISO 9001			
	Environment	ISO 14001 certified company			
	Marking & Certifications	CE, TUV/GS, UL, cUL, c-Tick			

\* Optional isolation box \*\* For optional features

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