ACT GREEN

www.pceups.com

MX

1~10KVA

- True on-line double conversion design
- Fully digitized microprocessor control
- Digital Signal Processor Technology (DSP)
- Input power factor correction (PFC)
- N+1 Parallel redundancy configuration*
- Up to 4 units connected in parallel*
- Pure sinewave output with less than 3% 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)
- EPO Emergency Power Off
- Generator compatible
- Galvanic isolation transformer**
- Automatic By Pass
- Advanced Battery Management (ABM Technology)
- Automatic diagnostics & battery check
- Multi-function LCD display
- Smart RS-232
- AS-400 communication ports**
- SNMP card slot for network management**
- Software monitoring and control
- Scheduled shutdown & reboot

* For 6 and 10kVA only
** Optional

YOUR ULTIMATE

POWER PROTECTION PARTNER

PCE UPS SYSTEMS

Product Introduction

Today MX is designed to provide continuous utility AC power protection for critical system installation.

With its double conversion on-line technology, it delivers the optimum level of reliability, purity and power. This ensures a pure sinewave output free of any input voltage fluctuations and disturbances.

Via this technology, the MX UPS 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 MX ups comes in a broad range of output power (1KVA/2KVA/3KVA/6KVA/10KVA) in single phase that accommodate any requirement an enterprise may need. Furthermore, the MX UPS is compatible with a wide range of battery autonomies enabling it to provide long backup times whenever necessary for long back up models. Long backup models are allowed to connect external batteries to get prolonged backup time.

Problems

The MX 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 MX UPS output remains within a remarkable +/-1% of nominal voltage. This means that your loads always receive steady and clean power regardless of the input condition. In addition, the MX 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 MX UPS has a very wide input-voltage tolerance (from 110V to 300V) 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 backup time and extends the battery life.

• Output power factor 0.8
MX UPS is a high-density UPS with output power factor 0.8 to provide higher performance and efficiency to critical applications.

• Active input power factor correction 0.99
This feature will save more energy and its power factor performance is more stable to meet higher environment standards.

• Galvanic isolation transformer (Optional)
The isolation transformer may be used in situations where you increase the quality of your power output even more. This transformer ensures complete galvanic isolation of your power supply from the loads.

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 MX UPS automatically transfers the load to utility AC power.

Operating Modes

• 50/60 Hz frequency converter mode
Lock output frequency at 50Hz or 60Hz to suit power sensitive equipments.
• ECO for energy saving
It allows UPS to operate in high efficiency up to 98% in energy- saving ECO mode. In this operation mode, load is supplied by the mains. In the event of a mains failure, the inverter takes over the load and provides supply continuity to the connected systems.

LED display design

The MX LED display provides user-friendly menu control indicating the status conditions of the MX UPS (mode status (Back up mode, On-line mode, Bypass mode), battery and load level) and sending alarms whenever there are faults or operating problems occurring in the UPS system.

LCD display design

The MX 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 voltages, current, frequency. This LCD module is suitable for any make of on-line UPS system.
Drawing 1-10 KVA User manual

Reliability

The MX UPS uses an Intelligent Double Conversion technology for its operation.
This architecture combines the secure power provided by double conversion with efficiency provided by digital interactive technology.

Redundancy applied for 6k models and up

The MX 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 MX UPS units may be connected in parallel. When connected together, the MX 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.

Ease of Use

• Easy installation and integration
• EPO port (Emergency Power Off)
EPO switch 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.

Back panel for all models

Drawing user manual 1-10KVA

Advanced Battery Care

The MX 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 backup power source in our UPS solutions.

In addition, we have equipped the MX UPS 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 MX UPS employs are listed below:

• A wide input voltage acceptance range (up to 35%)
• 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 PowerTrack™ Suite

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

Communication Ports

MX UPS is equipped with multiple communication ports increasing the flexibility, functionality & reliability.
It offers three different communication ports for user selection RS-232, USB card, SNMP card and AS-400 card. Through either one of them, the user can control and monitor UPS status easily.

Applications

The MX UPS provides a secure power infrastructure for a wide range of applications from stand-alone home PCs to office workstations, servers, network equipments and communication systems.

Technical Specifications
MX Series

Model		MX 1K	MX 2K	MX 3K	MX 6K	MX 10K
Output Power with cosφ=0.8		1000VA	2000VA	3000VA	6000VA	10000VA
		800W	1600W	2400W	4800W	8000W
Input	Voltage	208V, 220V, 230V, 240V, 1Ø 2Wires				
	Frequency	40Hz~70Hz				
	Voltage range	176-300 VAC @ 100% load 110-300 VAC @ 50% load				
	Power Factor	>99%				
	THDi	<5%				
Output	Voltage (on battery)	208V, 220V, 230V, 240V, +/-1% (selectable output voltage), 1Ø 2Wires				
	Frequency (on battery)	50/60 Hz +/-0.25Hz			50/60 Hz +/-0.1Hz	
	Transfer Time	0 ms				
	UPS Design Technology	On-Line / Fully digitized microprocessor controlled				
	Output Wave Form	Pure Sinewave				
	Total Harmonic distortion (THD)	<2% of T.H.D. at linear load, <4% T.H.D. at non linear load			<3% of T.H.D. at linear load, <5% T.H.D. at non linear load	
	Crest Factor	3:1				
Protection	Overload Protection	125% for 10 minutes and 150% for 1 minute or 110% for 10min, 110~130% for 1 min,>130% for 1 sec				
	Short Circuit Protection	UPS output cut off immediately using input fuse/circuit breaker protection				
System Display	LED indicators	Sixteen LEDs indicating UPS status, Load level, Battery level, overload, fault, and programmable outlet information				
	LCD indicators	UPS Status, Load level, Battery level, Input/Output voltage, Discharge time, and Fault indicators				
Efficiency	AC Mode	90%	91%		92%	
	Battery Mode	88%	89%		90%	
Alarm	Battery mode	Beep every 4 second				
	Low battery	Beep every second				
	Overload	Beep twice every second				
	Fault	Continuously beeping				
Battery	Battery Type	Sealed, maintenance-free lead acid batteries, 3-5 years typical life time				
	Typical Recharge Time	4 hours to 90% Full capacity			7 hours to 90% capacity	9 hours to 90% capacity
	Charging Current	1A				
	DC Voltage	36VDC	72VDC		240VDC	
	Back up time(1/2 Load)	22 min		18 min	25 min	18 min
	Extended Back up time	Longer backup time depending on extra battery pack for models with external battery socket				
Physical	Dimension, W x D x H mm	145 X 397 X 220	190 X 421 X 318		250 x 592 x 576	250 x 592 x 576
	Net Weight kgs (lbs)	13 (28.6lbs)	26 (57.2lbs)	28 (61.6lbs)	81 (178.2lbs)	83 (182.6lbs)
Communication	USB or RS-232	Interface with power management software				
	SNMP*	Power Management from SNMP manager and web browser				
	Compatibiltiy	Windows 98/NT/2000/XP/2003, Linux, Sun Solaris, IBM Aix, Compaq True64, SGI IRIX, FreeBSD, HP-U X and MAC/ME				
Environment	Ambient operation	Maximum elevation at 3500m, 0 to 40˚C, 0 to 95% humidity (non-condensing)				
	Audible noise	<50dBA at 1 Meter			<55dBA at 1 Meter	<58dBA at 1 Meter
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 Class A, EN 55022/B,FCC 47 part 15 - Subpart B -				
	Design, production, and services	ISO 9001				
	Environment	ISO 14001 certified company				
	Marking & Certifications	CE, TUV/GS, UL, cUL, c-Tick				

*When using internal batteries from 18-19, the unit will de-rate according to below formula: P=Prating x N/20
NOTE 1: Derate to 60% of capacity in CVCF mode and to 90% when the output voltage is adjusted to 208VAC.
NOTE 2: If the UPS is installed or used in a place where the altitude is above than the rated altitude, the output power must be derated one percent per 100m.
** For optional features
***Poduct specifications ar subject to change without further notice

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