

# PCEE<sup>®</sup>

## UPS SYSTEMS

YOUR ULTIMATE  
POWER PROTECTION PARTNER

[www.pceups.com](http://www.pceups.com)



## Description



## MX33 10~30kVA

### Uninterruptible Power Supply

True online double conversion design	✓	Output power factor 0.9	✓
Active input Power Factor Correction (PFC 0.99)	✓	Pure sinewave output with less than 3% THD	✓
Fully digitized microprocessor control	✓	50/60 Hz frequency converter mode	✓
Wide input voltage range	✓	Built in Automatic bypass	✓
N+X parallel redundancy configuration <sup>1</sup>	✓	Automatic diagnostics & battery check	✓
Emergency power off function (EPO)	✓	High overload capability and enhanced short circuit protection	✓
DSP technology guarantees high performance	✓	Advanced battery management (ABM Technology)	✓
Input power factor correction (PFC)	✓	Generator compatible	✓
On-line output voltage selection	✓	Multi-function LCD display	✓
Programmable power management outlets	✓	SNMP/USB/RS-232/AS-400 communications	✓
Cold start function (DC power On)	✓	Software monitoring and control	✓
Eco mode for energy saving	✓	3 phase in & 3 phase out	✓

## Product Introduction

The MX 33 UPS is now available from 10VA to 30kVA in three-phase output version and is ideal for all company sizes and requirements.

The true on-line intelligent double conversion design of the MX 33 UPS enables it to act as a secure power infrastructure that guarantees the delivery of the highest power quality to your loads. The MX 33 UPS provides a multitude of features allowing it to meet the diverse requirements that an organization might have: it provides high tolerance to input voltage and frequency fluctuations while supplying a pure sinewave output with less than 2% of Total Harmonic Distortion (THD).

The MX 33 UPS is designed with high-availability in mind. For this reason, it comes packed with features that allow it to keep operating under a variety of possible power disruptions.

## Applications

The MX 33 Series provides a secure power infrastructure for a wide range of applications including:

- Commercial Processing System
- Storage Area Networks (SAN)
- Control Systems
- Industrial Automation
- Broadcasting and Telecommunications System
- Data Centers

## Problems

The MX 33 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 33 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 33 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.

- DSP technology

A DSP controller provides an improved and cost-effective solution with high performance.

- Wide Input Voltage Range

The MX 33 UPS has a very wide input-voltage tolerance (from 190V to 520V) 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 0.9

MX 33 UPS is a high-density UPS with output power factor 0.9 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 33 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.

## Reliability

The MX 33 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

The MX 33 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 four MX 33 UPS units may be connected in parallel. When connected together, the MX 33 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.

The MX 33 Series power systems can operate in the following redundant configurations:

- Distributed Parallel (Optional): increases power and redundancy of the supply system whilst controlling costs
- Hot Stand-By: increases redundancy by reducing the probability of power supply being cut off and improves the quality of output power

### Simple Power Upgrade

The ability of the MX 33 UPS to operate in parallel configurations makes the upgrade of your power infrastructure a simple procedure. This feature makes your investment in the MX 33 UPS “future-proof” since you do not need to drastically replace your power infrastructure already installed every time your power consumption needs increase.

### 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.
- User-friendly LCD display
- A Liquid Crystal Display (LCD) provides clear multilingual information on various operating parameters.

### Advanced Battery Care

The MX 33 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 33 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 MX 33 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.

### Communications

The MX 33 UPS is equipped with several communication options designed to simplify monitoring and control. These options include the following:

- An USB port
- An RS-232 port
- An SNMP network card slot
- An AS-400 card

This diversity of options allows you to choose the communication method most suitable for your particular back-up power installation.

### Monitoring

PCE UPS SYSTEMS Inc. realizes that the efficient management of your assets leads to immediate productivity in your organization. For this reason, we have equipped the MX 33 UPS with several management options, all designed to simplify and accelerate daily monitoring and maintenance tasks.

First, the MX 33 UPS features a Liquid Crystal Display screen which provides clear multilingual information on operating parameters.

In addition, the MX 33 UPS is fitted with RS-232 & USB ports to interface with a nearby computer for management and monitoring purposes.

Optionally, the MX 33 UPS may be fitted with an SNMP card which enables it to be remotely controlled and monitored over a local area network. Using this feature, one central PC station may be used to conveniently monitor and control all the PCE UPS units on premises. It is also fitted with a relay card that adds integration to industrial environment and Building Management Systems, as well as interconnection to IBM AS-400 machines.

The MX 33 UPS is fully compatible with PCE’s suite of connectivity solutions allowing you to preserve critical data and perform controlled shutdown equipment in the event of power disturbance.

### Secure Power At All Times

Supplying you with a UPS alone will never deliver the level of business continuity you require. PCE UPS SYSTEMS Inc. bundles its superior products with a range of maintenance plans designed to:

- Extend the life of your power protection equipment
- Provide a proactive approach to disaster recovery
- Ensure the reliability of power to your load
- Optimize your capital expenditure
- Provide risk management at a fixed cost

Please contact your local PCE sales office or visit our web site at [www.pceups.com](http://www.pceups.com) for more information.

Model	Model	MX 10K 33	MX 15K 33	MX 20K 33	MX 30K 33
Input	Rating	10000VA	15000VA	20000VA	30000VA
	Output Power	9000W	13500W	18000W	27000W
	Voltage	380V, 400V, 415V (selectable) , 3Ø4wires			
	Frequency	40~70Hz			
	Voltage range	285-478 VAC @100% load; 180-520@50% load			
Output	Power Factor	>99%			
	THDi	<2%			
	Voltage (on battery)	380V, 400V, 415V +/-1% (selectable output voltage), 3Ø 4Wires			
	Frequency (on battery)	50/60 Hz +/-0.1%			
	Transfer Time	0 ms			
	UPS Design Technology	On-Line / Fully digitized microprocessor controlled			
	Output Wave Form	Pure Sine wave			
Protection	Total Harmonic distortion (THD)	< 2% of THD at linear load , < 4% THD at non linear load			
	Crest Factor	3:1			
	Overload Protection	125% for 10 minutes and 150% for 1 minute or 110% for 10min, 110~130% for 1 min, >130% for 1 sec			
System Display	Short Circuit Protection	UPS output cut off immediately using input fuse/circuit breaker protection			
	LED indicators	On-line mode, back up mode, CVCF mode, Eco mode, batt. test, fault status			
Battery	LCD indicators	UPS Status, Load level, Battery level, Input/Output voltage, Discharge time, and Fault indicators			
	Battery Type	Sealed, maintenance-free lead acid batteries, 3-5 years typical life time			
	Typical Recharge Time	5 hours to 90% Full capacity			
	Charging Current (A)	1	2	4	
	Battery number (Pcs)	20	20 x 2 strings	20 x 3 strings	
Audible Alarm	Back up time(1/2 Load)	18 min	25 min	18 min	
	Battery mode	Beep every 4 second			
	Low battery	Beep every second			
	Overload	Beep twice every second			
Communication	Fault	Continuously beeping			
	USB, RS-232	Interface with power management software			
	SNMP, AS-400 <sup>1</sup>	Power Management from SNMP manager and web browser			
Physical	Compatibility	Supports Windows family, Linux, Unix, and Mac			
	W x D x H (mm)	250 x 815 x 826			300 x 815 x 1000
Efficiency	Net Weight (kgs)	109	164	233.5	
	AC Mode	90.5%	91.5%	92.1%	
Environment	Battery Mode	87%	88%	89%	
	Ambient operation	Maximum elevation at 3500m, 0 to 40°C, 0 to 95% humidity (non-condensing)			
Standards & Certifications	Audible noise	<50dBA at 1 Meter	<55dBA at 1 Meter		
	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			

1 \* For optional features

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