



ACT GREEN

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MX RM

10~20KVA 31

- True online double conversion design
- Fully digitized microprocessor control
- Digital Signal Processor technology (DSP)
- Rack-Tower 2 in 1 design
- N+1 parallel redundancy configuration*
- Up to 4 units connected in parallel*
- Input Power Factor Correction (PFC)
- High output power factor 0.8
- 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
- Eco mode for energy saving
- Frequency converter mode
- Cold start function (DC power on)
- Galvanic isolation transformer*
- Generator compatible
- Automatic and Manual bypass setting
- External maintenance bypass switch
- Network/Tel/Modem/Fax spike protection
- Remote Emergency Power Off function (EPO)
- Advanced Battery Management (ABM Technology)
- Automatic diagnostics and battery check
- Display of battery remaining time
- Battery replacement warning
- Smart battery charging design for optimized performance
- Adjustable battery number
- Adjustable charging current via LCD or software
- Multi-function LCD display
- Smart RS-232 or USB communication port
- SNMP/AS-400/dry contact slot communication port*
- Software monitoring and control

* Optional



YOUR ULTIMATE
POWER PROTECTION PARTNER

PCE
UPS SYSTEMS

Product Introduction

The MX RM UPS is now available from 10VA to 20kVA in single phase output version.

The true on-line intelligent double conversion design of the MX RM UPS enables it to act as a secure power infrastructure that guarantees the delivery of the highest power quality to your loads. The MX RM 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 RM 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 RM 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 RM 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 RM 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 RM 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 RM 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 0.8

MX RM 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 RM 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.

Redundancy

The MX RM 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 RM UPS units may be connected in parallel. When connected together, the MX RM 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 RM Series power systems can operate in the following redundant configurations:

- Distributed Parallel (Optional): increases power and redundancy of the supply system whilst controlling costs

Simple Power Upgrade

The ability of the MX RM UPS to operate in parallel configurations makes the upgrade of your power infrastructure a simple procedure. This feature makes your investment in the MX RM 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
 - Easy connection to AC power
- 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 RM 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 RM 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 RM 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 RM 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 UPS with several management options, all designed to simplify and accelerate daily monitoring and maintenance tasks.

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

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

Optionally, the MX RM 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 RM 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 for more information.

Technical Specifications

MX RM 31 Series

Model		MX RM 10K 31	MX RM 15K 31	MX RM 20K 31
Output Power with $\cos\phi=0.8$		10000VA	15000VA	20000VA
		8000W	12000W	16000W
Input	Voltage	380V, 400V, 415V (selectable) , 3Ø4wires		
	Frequency	50/60 Hz +/-10%		
	Voltage range	305-478 VAC @ 100% load; 190-520 @ 50% load		
	Power Factor	>99%		
	THDi	<3%		
Output	Voltage (on battery)	220V, 230V, 240V, +/-1% (selectable output voltage), 1Ø 2Wires		
	Frequency (on battery)	50/60 Hz +/-0.2%		
	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 , < 5% T.H.D. at non linear load		
	Crest Factor	3:1		
Efficiency	AC Mode	94%		
	Battery Mode	89%	91%	90%
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	On-line mode, back up mode, CVCF mode, Eco mode, batt. test, fault status		
	LCD indicators	UPS Status, Load level, Battery level, Input/Output voltage, Discharge time, and Fault indicators		
Alarm	Battery Mode	Sounding every 4 seconds		
	Low Battery	Sounding every second		
	Overload	Beep twice every second		
	Fault	Continuously sounding		
Battery	Battery Type	Sealed, maintenance-free lead acid batteries, 3-5 years typical life time		
	Typical Recharge Time	5 hours to 90% capacity		
	Charging Current	1A	2A	
	Battery number	20 pcs (18 - 20 pcs adjustable)*	20 pcs (18 - 20 pcs adjustable)*x2 strings	
	Back up time(1/2 Load)	18 min	25 min	18 min
Communication	USB, RS-232, AS-400**	Interface with power management software		
	SNMP**	Power Management from SNMP manager and web browser		
	Compatibilty	Windows 98/NT/2000/XP/2003, Linux, Sun Solaris, IBM Aix, Compaq True64, SGI IRIX, FreeBSD, HP-U X and MAC/ME		
Physical	W x D x H mm	UPS: 438 X 668 x 133[3U] Battery Pack:438 x 580 x 133[3U]	UPS: 438 X 668 x 266[6U] Battery Pack:438 x 580 x 133[3U] x 2 pcs	
	Net Weight kgs(lbs)	UPS: 22(48.4lbs) Battery: 63(138.6lbs)	UPS: 45 (99lbs) Battery: 63 (138.6lbs)x2pcs	
Environment	Ambient operation	Maximum elevation at 3500m, 0 to 40°C, 0 to 95% humidity (non-condensing)		
	Audible noise	<50dBA 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 & Certificationsment	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
 ***Product specifications as subject to change without further notice

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