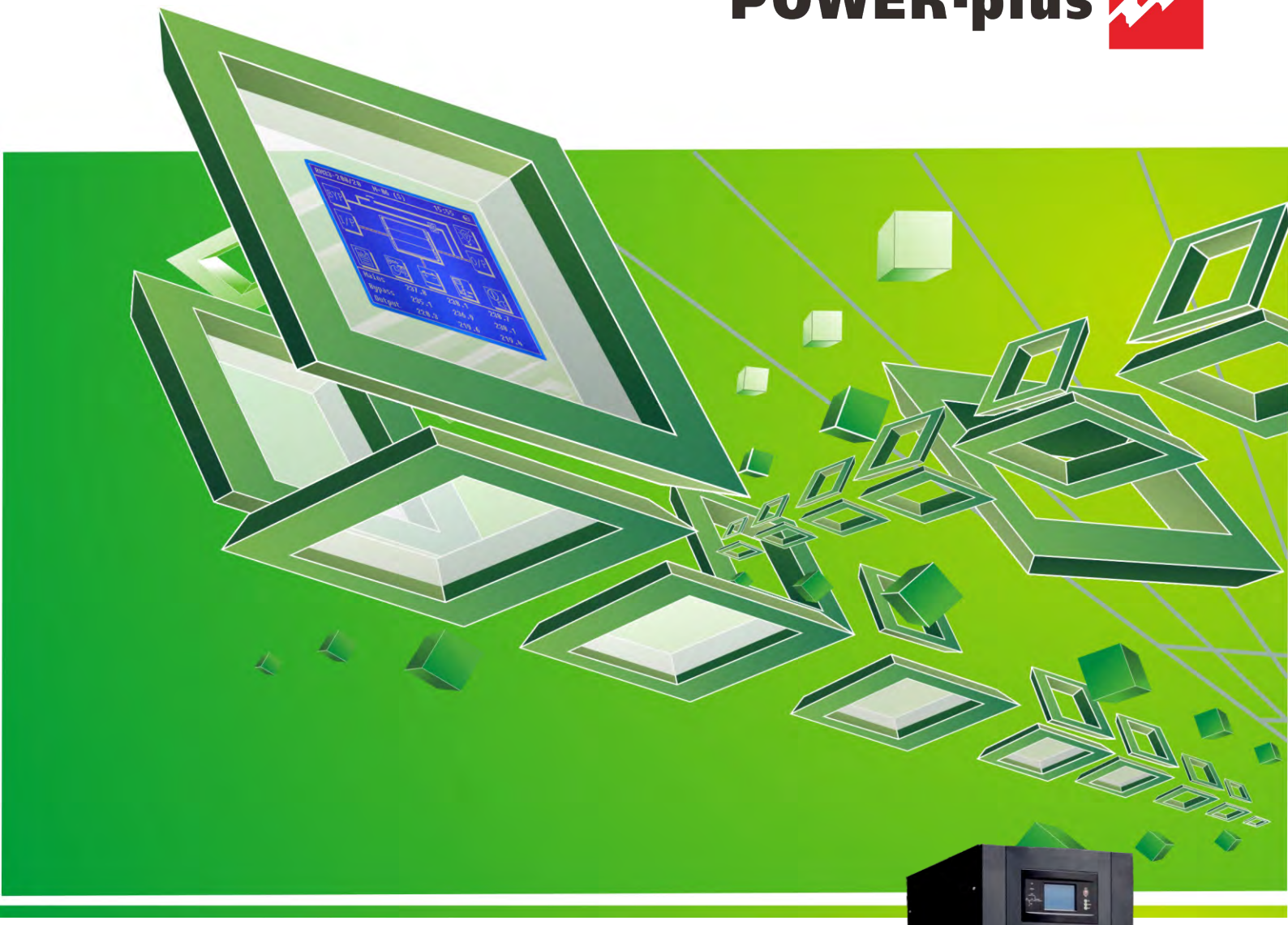
POWER-plus



PowerPlus XM Series
Uninterruptible Power System

PowerPlus MX Series (10-200KVA) UPS

- **Online double-conversion modular UPS**
- **High reliability**
- **Strong load adaptability**

Engineered in UK

Overview:

PowerPlus XM series UPS is a modular parallel redundant UPS system. Modular design ensures high level reliability and flexible options for expansion. Redundant UPS technology allows users to scale their power capacity and provide load with N+1 to N+X levels of protection. Great power density ensures a small footprint and low heat dissipation. Rich management and communication functions ensure a user- and environment-friendly system. Ideal Applications for kinds of fields such as financial, telecommunication, government, manufacturer, transportation, energy resource industries etc.

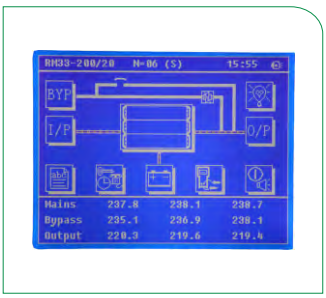
Features:

Green Power and Energy-Saving

a) High frequency and Full Digitalizing

b) >95% High System Efficiency, Low Noise (<55DB)

c) High input power factor (>0.99), low input THDi (<3%)



Incredible Reliability

a) IGBT power modules rather than discrete components are applied in XM series modular UPS, offering the advantages as below:

- High current carrying ability of the power semiconductor, thus increase the load adjustability of the UPS power module.
- Decrease the number of the semiconductors and simplify the layout of the power circuit. Thus increase the reliability of the power module and EMI/EMC performance.
- Increase the thermal ability of the power module, the temperature margin is high even on full load condition.

b) Force cooling with redundant and speed controlled fans, prolong fan lift-time. Honeycomb design of front door, good looking and high ventilation rate.

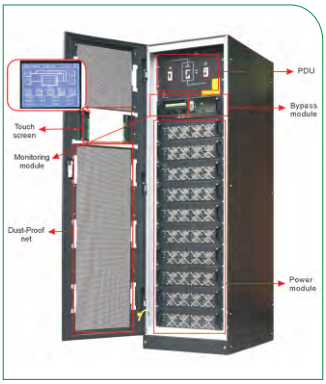
c) Independent Dual-DSP Intelligent Controller for individual power module. Digital control for the whole parts including rectifier, inverter, charger and discharger.

d) Strong load adaptability for linear and nonlinear load. Each module can handle full and overload as the tower UPS, and the load can be linear and nonlinear load. Each module can handle crest factor 3:1 load.

e) Intelligent module and system protection design

f) Digital paralleling technology, very low circle current between modules

g) Very wide rectifier input range, avoid unnecessary battery discharging.



High Availability

a) N+X topology More than one module can be chosen as redundant module to make sure high system reliability.
b) Online expansion of 10KVA to 200KVA system
c) No need to stop whole system when single module fails.
d) No data loss will be caused by UPS fault.
e) The generator configuration ratio with XM series UPS can be 1:1.
f) Multiple Application Options, including:

- SNMP communication card
- BCB box for battery
- Lightning protection module
- Dry contact module
- Battery temperature compensation module
- Alarm and message module for mobile phone

Easy Maintenance

a) Easy maintenance, safe and reliable
b) Hot swappable for each module
c) Totally front access, top and bottom cable connection
d) Technician can replace modules online at sites
e) MTTR is less than 5 minutes for module UPS. 8 hours are needed for traditional UPS.

Friendly Human Machine Interface

a) 32-bit DSP is used to realize data acquisition and management.
b) Display panel adopts 320*240 touch screen LCD technology, high definition.
c) The operation of whole UPS system and modules are monitored.
e) LED Display for each module
f) Interface adopts multi-key navigation which is easy and flexible.
g) RS232, RS485 and dry contacts are standard configuration.
h) SNMP card can be configured to provide remote monitoring.

Intelligent battery management

a) Independent charging system for each module
b) Digital controlled independent charger, intelligent battery management system
d) The battery is managed through independent sub-system rather than connect directly to the DC bus.

Advanced technology

a) Integrated IGBT Module helps to increase system efficiency. Meanwhile reliability is increased due to lower temperature rising on IGBT and heat sink
b) Three-Level Inverter reduces ripple current and harmonic current, increases transient response capability, improves parallel operation condition and reduces power loss to achieve higher efficiency.
c) Vienna PFC technology to achieve best input characteristics
e)Adaptive Synchronic Control technology realizes no limitation of parallel units
f) Multi-pole distributed control technology to reduce operation risk at most
g) Serial Differential sampling to reduce interference at most
h) The rectifier adopts CCM technology to reduce RF interference

Technical Parameter:

208V

Model	PXM 6	PXM 10	PXM 12	PXM 18	PXM 20	PXM 24	PXM 30	PXM 36	PXM 40
Capacity（kVA/kW）	6	10	12	18	20	24	30	36	40
Main Input									
Input voltage	200/208V(line to line)								
Input frequency	50/60Hz								
Power factor	>0.99								
Input cuurent THD	<3%(Total Harmonic Distortion)								
Input voltage window	-40%~+25%								
Frequency window	40-70HZ								
Battery									
Battery voltage	±240VDC								
Charger power	20%*Power								
Charger voltage precision	1%								
Bypass									
Bypass voltage	200/208V, three phase or one phase								
Bypass voltage window	-20%-+15%, full load, settable								
Bypass overload capabiltiy	150%, long time operation								
	180%, shut down after 10 minutes								
	>180%, shut down after 200ms								
Output									
Output voltage	200/208V, three phase or one phase								
Voltage precision	±0.5% (balance load),±1% (unbalance load)								
Voltage THD(Total Harmonic Distortion)	THD<1%(linear load),THD<3%(nonlinear load)								
Power factor	1								
Phase tolerance	120°±0.5° (balance and unalance load)								
Crest factor	3:1								
Overload capabiltiy	110%, transfer to bypass after 1hour								
	125%, transfer to bypass after 10 minutes								
	150%, transfer to bypass after 1 minute								
	>150%, transfer to bypass after 200ms								
System									
System efficiency	Normal mode: 94%								
	ECO mode: 99%								
Battery mode efficiency	94%								
Display	LCD+LED, Touch screen and keyboard								
IP class	IP20								
Interface (Communication Ports)	RS232,RS485,Dry contacts,SNMP card,EPO,Generator interface								
Installation/Connection	Top or bottom cable connection								
Operation temperature	0-40℃								
Storage temperature	-25℃~70℃								
Relative humidity	0-95% (non-con densing)								
Noise(dB)	<55dB								
Weight(KG)	6-module cabinet	150KG							
	10-module cabinet	180KG							
	Module	6KVA: 20KG							
		10KVA: 22KG							
Dimension(W*D*H)(mm)	6-module cabinet	600*900*1600							
	10-module cabinet	600*900*2000							
	Module	400*600*133 (6KVA/10KVA)							

Technical Parameter:

208V

Model	PXM 42	PXM 48	PXM 50	PXM 54	PXM 60	PXM 70	PXM 80	PXM 90	PXM 100
Capacity（kVA/kW）	42	48	50	54	60	70	80	90	100
Main Input									
Input voltage	200/208V(line to line)								
Input frequency	50/60Hz								
Power factor	>0.99								
Input cuurent THD	<3%(Total Harmonic Distortion)								
Input voltage window	-40%~+25%								
Frequency window	40-70HZ								
Battery									
Battery voltage	±240VDC								
Charger power	20%*Power								
Charger voltage precision	1%								
Bypass									
Bypass voltage	200/208V, three phase or one phase								
Bypass voltage window	-20%-+15%, full load, settable								
Bypass overload capabiltiy	150%, long time operation								
	180%, shut down after 10 minutes								
	>180%, shut down after 200ms								
Output									
Output voltage	200/208V, three phase or one phase								
Voltage precision	±0.5% (balance load),±1% (unbalance load)								
Voltage THD(Total Harmonic Distortion)	THD<1%(linear load),THD<3%(nonlinear load)								
Power factor	1								
Phase tolerance	120°±0.5° (balance and unalance load)								
Crest factor	3:1								
Overload capabiltiy	110%, transfer to bypass after 1hour								
	125%, transfer to bypass after 10 minutes								
	150%, transfer to bypass after 1 minute								
	>150%, transfer to bypass after 200ms								
System									
System efficiency	Normal mode: 94%								
	ECO mode: 99%								
Battery mode efficiency	94%								
Display	LCD+LED, Touch screen and keyboard								
IP class	IP20								
Interface (Communication Ports)	RS232,RS485,Dry contacts,SNMP card,EPO,Generator interface								
Installation/Connection	Top or bottom cable connection								
Operation temperature	0-40℃								
Storage temperature	-25℃~70℃								
Relative humidity	0-95% (non-con densing)								
Noise(dB)	<55dB								
Weight(KG)	6-module cabinet	150KG							
	10-module cabinet	180KG							
	Module	6KVA: 20KG							
		10KVA: 22KG							
Dimension(W*D*H)(mm)	6-module cabinet	600*900*1600							
	10-module cabinet	600*900*2000							
	Module	400*600*133 (6KVA/10KVA)							

Technical Parameter:

380V

Model	PXM 10	PXM 20	PXM 30	PXM 40	PXM 60	PXM 80	PXM 100	PXM 120	PXM 160	PXM 200
Capacity（kVA/kW）	10/8	20/16	30/24	40/32	60/54	80/64	100/80	120/96	160/128	200/160
Main Input										
Input voltage	380V/400V/415V(line to line)									
Input frequency	50/60Hz									
Power factor	>0.99									
Input cuurent THD	<3%(Total Harmonic Distortion)									
Input voltage window	-40%~+25%									
Frequency window	40-70HZ									
Battery										
Battery voltage	±240VDC									
Charger power	20%*Power									
Charger voltage precision	1%									
Bypass										
Bypass voltage	380V/400V/415V, three phase or one phase									
Bypass voltage window	-20%-+15%, full load, settable									
Bypass overload capabiltiy	150%, long time operation									
	180%, shut down after 10 minutes									
	>180%, shut down after 200ms									
Output										
Output voltage	380V/400V/415V, single phase or three phase									
Voltage precision	±0.5% (balance load),±1% (unbalance load)									
Voltage THD(Total Harmonic Distortion)	THD<1%(linear load),THD<3%(nonlinear load)									
Power factor	0.8									
Phase tolerance	120°±0.5° (balance and unalance load)									
Crest factor	3:1									
Overload capabiltiy	110%, transfer to bypass after 1hour									
	125%, transfer to bypass after 10 minutes									
	150%, transfer to bypass after 1 minute									
	>150%, transfer to bypass after 200ms									
System										
System efficiency	Normal mode: 95%									
	ECO mode: 99%									
Battery mode efficiency	95%									
Display	LCD+LED, Touch screen and keyboard									
IP class	IP20									
Interface (Communication Ports)	RS232,RS485,Dry contacts,SNMP card,EPO,Generator interface									
Installation/Connection	Top or bottom cable connection									
Operation temperature	0-40℃									
Storage temperature	-25℃~70℃									
Relative humidity	0-95% (non-con densing)									
Noise(dB)	<55dB									
Weight(KG)	Cabinet			150KG			six-module cabinet			
				180KG			10-module cabinet			
	Module			10KVA: 20KG						
				15KVA: 21KG						
				20KVA: 22KG						
Dimension(W*D*H)(mm)	Cabinet			600*900*1600			six-module cabinet			
				600*900*2000			10-module cabinet			
	Module			400*600*133 (10KVA/15KVA/20KVA)						

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