

# HM Plus Series

10kVA ~ 800kVA

110/220/348VDC

Online Double Conversion (VFI)



## Product

HM Plus series is a fully intelligent and digital UPS with its output isolation, double online conversion design and its high speed. It is also designed with excellent compatibility between the IGBT rectifier and phase controlled rectifier, allowing the use to choose between the two to meet the different requirements necessary. HM Plus series possesses a power factor more than 0.975 after adopting IGBT component's PFC function technology. With the reduction of input harmonic and reactive power loss, it becomes an energy saving UPS with high efficiency. It also incorporates a user-friendly one-touch 7" colour LCD screen control with configurable electrical characteristics to meet the different power supply standards of various countries. Key PCB boards with conforming coating treatment to ensure damp-proof, salt fog proof, mildew proof - thus suitable for any high pollution industrial environment. With excellent overload capacity, adopting five-stage overload protection technology, it is suitable for the most demanding industrial load. It has adopted advanced detection and protection measures and technology prevents the current to flow backwards while common conduction of IGBT components to improve the reliability of the system. Having a high efficiency of up to 0.93 also helps to reduce energy consumption in the UPS.



## Features

- Output isolated low frequency transformer
- IGBT rectifier module with PFC
- Full bridge IGBT inverter module
- Static bypass components
- Double independent large scale DSP control
- Hardware and software mutual redundancy
- LCD touch screen control
- Three-stage intelligent battery management system
- Strong steel structure for industrial environment
- Intelligent fan rotation rate control redundant device
- Expandable parallel components
- Dry contacts and RS232/RS485 (MODBUS) port

Capacity (kVA)	10	20	30	40	50	60
Rectifier	IGBT rectifier with power factor correction (6-pulse or 12-pulse, phase controlled rectifier)					
Inverter	3-Phase independent full bridge IGBT inverter					
<b>Input</b>						
Voltage	380/400/415/480 VAC 3P3W or 3P4W Other specification required are available					
Voltage Range	± 25%					
Frequency	50/60 Hz, ± 10%					
Power Factor	>0.95					
<b>Output</b>						
Voltage	AC 110/220/230/240/277V, 1P2W AC 380/400/415/480V, 3P3W or 3P4W Other specification required are available					
Voltage Regulation	± 1%					
THD	2% @ Linear load, 5% @ Non-linear load					
Frequency	50/60 Hz, ± 0.1%					
Phase Shift	<0.5°					
Power Factor	0.8					
Overload Capacity	<110%for 60 min,125%for 10 min 150%for 1 min, 200%for 10 sec					
Crest Ratio	3 : 01					
Efficiency (100%)	≥93%					
<b>Battery</b>						
Input Voltage	DC 110/125/220/384V Other specification required are available					
Battery Cold Start	Yes					
<b>Environment</b>						
Ambient Temperature	40 °C continuous, 50 °C less than 8 hours					
Relative Humidity	< 90% non-condensing Altitude					
Altitude	<1000m above sea level					
Shell Protection Level	IP 20, other IP protection levels required are available					
Audible Noise	<60dB@1 meter					
<b>Physical</b>						
Dimension, W*D*H (mm)	500*800*1800					
Net Weight (kg)	250	280	380	450	520	650
Colour	RAL7035 light grey ultra-violet resistance, or RAL7032					
<b>Partial Standard</b>						
Safety Standard (CE Standard)	EN50091-1					
Electromagnetic Compatibility	EN50091-2					
Emanation & Safety Standard	FCC Class A CE					
EMC/EMI	Conduction	EN50091-2				
	Eradiation	EN50091-2, Class A				
	Harmonics	IEC1000-3-4				
	Interference	EN61000-4-2.3.4.6.8.9.11 Level III, EN61000-4-5 Level IV				
Protection	Short circuit, lightning, EMC filter, isolation					
Communication Interface	Dry contact, RS232, RS485 (MODBUS)					

Capacity (kVA)	80	100	120	160	200	240
Rectifier	IGBT rectifier with power factor correction (6-pulse or 12-pulse, phase controlled rectifier)					
Inverter	3-Phase independent full bridge IGBT inverter					
<b>Input</b>						
Voltage	380/400/415/480 VAC 3P3W or 3P4W Other specification required are available					
Voltage Range	± 25%					
Frequency	50/60 Hz, ± 10%					
Power Factor	>0.95	>0.985			>0.80	
<b>Output</b>						
Voltage	AC 110/220/230/240/277V, 1P2W AC 380/400/415/480V, 3P3W or 3P4W Other specification required are available					
Voltage Regulation	± 1%					
THD	2% @ Linear load, 5% @ Non-linear load					
Frequency	50/60 Hz, ± 0.1%					
Phase Shift	<0.5°					
Power Factor	0.8					
Overload Capacity	<110%for 60 min,125%for 10 min 150%for 1 min, 200%for 10 sec					
Crest Ratio	3 : 01					
Efficiency (100%)	≥93%					
<b>Battery</b>						
Input Voltage	DC 110/125/220/384V Other specification required are available					
Battery Cold Start	Yes					
<b>Environment</b>						
Ambient Temperature	40°C continuous, 50°C less than 8 hours					
Relative Humidity	< 90% non-condensing Altitude					
Altitude	<1000m above sea level					
Shell Protection Level	IP 20, other IP protection levels required are available					
Audible Noise	<60dB@1 meter			<65dB@1 meter		
<b>Physical</b>						
Dimension, W*D*H (mm)	1100*800*1800			1600*800*1800		
Net Weight (kg)	780	910	1180	1340	2200	2550
Colour	RAL7035 light grey ultra-violet resistance, or RAL7032					
<b>Partial Standard</b>						
Safety Standard (CE Standard)	EN50091-1					
Electromagnetic Compatibility	EN50091-2					
Emanation & Safety Standard	FCC Class A CE					
EMC/EMI	Conduction	EN50091-2				
	Eradiation	EN50091-2, Class A				
	Harmonics	IEC1000-3-4				
	Interference	EN61000-4-2.3.4.6.8.9.11 Level III, EN61000-4-5 Level IV				
Protection	Short circuit, lightning, EMC filter, isolation					
Communication Interface	Dry contact, RS232, RS485 (MODBUS)					

Capacity (kVA)	300	320	400	500	600	800
Rectifier	IGBT rectifier with power factor correction (6-pulse or 12-pulse, phase controlled rectifier)					
Inverter	3-Phase independent full bridge IGBT inverter					
<b>Input</b>						
Voltage	380/400/415/480 VAC 3P3W or 3P4W Other specification required are available					
Voltage Range	± 25%					
Frequency	50/60 Hz, ± 10%					
Power Factor	>0.80					
<b>Output</b>						
Voltage	AC 110/220/230/240/277V, 1P2W AC 380/400/415/480V, 3P3W or 3P4W Other specification required are available					
Voltage Regulation	± 1%					
THD	2% @ Linear load, 5% @ Non-linear load					
Frequency	50/60 Hz, ± 0.1%					
Phase Shift	<0.5°					
Power Factor	0.8					
Overload Capacity	<110%for 60 min,125%for 10 min 150%for 1 min, 200%for 10 sec					
Crest Ratio	3 : 01					
Efficiency (100%)	≥93%					
<b>Battery</b>						
Input Voltage	DC 110/125/220/384V Other specification required are available					
Battery Cold Start	Yes					
<b>Environment</b>						
Ambient Temperature	40°C continuous, 50°C less than 8 hours					
Relative Humidity	< 90% non-condensing Altitude					
Altitude	<1000m above sea level					
Shell Protection Level	IP 20, other IP protection levels required are available					
Audible Noise	<65dB@1 meter					
<b>Physical</b>						
Dimension, W*D*H (mm)	1600*800*1800	2200*800*1800		3300*800*1800		4400*800*1800
Net Weight (kg)	2860	2950	3300	4200	4750	5950
Colour	RAL7035 light grey ultra-violet resistance, or RAL7032					
<b>Partial Standard</b>						
Safety Standard (CE Standard)	EN50091-1					
Electromagnetic Compatibility	EN50091-2					
Emanation & Safety Standard	FCC Class A CE					
EMC/EMI	Conduction	EN50091-2				
	Eradiation	EN50091-2, Class A				
	Harmonics	IEC1000-3-4				
	Interference	EN61000-4-2.3.4.6.8.9.11 Level III, EN61000-4-5 Level IV				
Protection	Short circuit, lightning, EMC filter, isolation					
Communication Interface	Dry contact, RS232, RS485 (MODBUS)					