### **HD Series Specification**

Capacity	1000VA	1500VA	2000VA	3000VA	4000VA	5000VA	
Power Watt	800W	1200W	1600W	2400W	3200W	4000W	
Nork Mode	Low Frequency Line Interactive						
oltage Regulation Function	Adopt Relay smart multi-gear adjusting voltage						
Output Voltage Regulation Precision	±5%						
NPUT							
Phase			Single Phas	e (P+N+PE)			
nput Rated Voltage	100/110/120VAC Or 220/230/240VAC ( According to Users' Voltage Standard )						
nput Voltage Range			±2	25%			
nput Rated Frequency			50/60Hz ( Se	elf-adaptive)			
nput Frequency Range	±5%						
BATTERY							
Voltage	241	'DC		48\	/DC		
Charging Mode		Three-stage Intelligent Battery Charging					
loat Charging Voltage			27V	DC			
Equalized Charging Voltage	28.2VDC 56.4VDC						
Temperature Compensated Voltage	3mV/ ℃/cell						
Charging Power		Rated Capacity* 20%					
DUTPUT							
Phase	Single Phase (P+N+PE)						
lominal Voltage			Equal to Inpu	t Rated Voltage			
nverter Output Voltage	100/110/115/127V ; 220/230/240V ( According to users' Voltage standard )						
nverter Output Degree of Stability	±1%( steady load ), ±3% (fluctuation of load )						
nverter Frequency Degree of Stability	50Hz,60Hz←±0.5%						
Crest Factor	<b>→</b> 3:1						
nverter Output THD	Pure sine wave, Linear load←3%, non-linear load←5%						
Transfer time			←51	ms			
PROTECTION							
	Overload Level		Utility Powe	er Mode	Battery	Mode	
Overload protection	105~125%		→10m	nins	→1m	ins	
over todu protection	125~1	50%	→1m	ins	Immediate	Protection	
	→150%		Immediate Protection				
nput Protection		V	oltage, Frequency	Ultralimit Prote	ction		
Output Protection	Over Current, Short Circuit Protection						
Battery Protection	Overcharging, Short Circuit Protection						
Temperature Protection	Over-temperature Protection						
Hardware Fault Protection	Fuse over current Protection, Surge Voltage Protection						
Alarm Function			Audi	o Alarm			
System Parameters							
Vork Temperature	Temperature: 0 ~ 40 , Relative humidity: 30% ~ 90% , Altitude < 2000m ( power reduce 1% every 100M raised, 4000M utmost)						
Cooling Method	Forced ventilation						
Communication interface	RS232 ( Optional USB, SNMP card)						
Protection Level	IP30						
Safety Performance	I/O on ground resistance (3000VAC), stray current less than 3.5mA, insulation resistance exceeding 2MΩ(500VDC)						
Tower Type Dimension (W*H*D)mm	145*225* 360		195*345*460		195*445*500		
Rack-mounted Type Dimension ( W*H*D ) mm	482*88*300		482*133*400		482*2	22*450	

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## **HW Series** (Online Outdoor UPS)













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### **HW Series Brief**

HW series online outdoor base station special UPS, is the global newest period control component and more advanced software perfect combine full intelligent digital product. That series product uses the six generator low-loss large power IGBT and static switch to be power component, it fully adopt digital control technique with available online programmable high speed microprocessor(MCU), and it is the perfect performance in digital electric technique. HW series UPS capacity range from 1KVA-3KVA, can extend to 20KVA, with 100% suitable grid environment, widely used in communication industry, outdoor communicate station.



- Advanced digital electric system super stable operation.
- Battery intelligent management, durable and free from worry, extend usage of battery over 55%.
- Intelligent detection system whole protection
- Intelligent communicate tool remote control: RS232 and RS485, optional SNMP card or dry contacts.
- Adopt high precision SMD technique, whole machine highly precision.
- Basic with life period evaluate precise research, more save energy.
- Basic on six generation IGBT and high speed static switch transform technique, high reliability.
- Super LED & LCD screen information processing technology, no restrict between user and UPS.



- Super adapt to the reliability of the environment: characteristic under a harsh environment, stronger waterproof, dustproof, antifreeze, heat insulation and function makes it more reliable safety.
- Super load characteristics: suitable from 0%-100% load jumping, and no need to changed to bypass, and protect output
- Perfect protection function.
- Optional battery circuit module.
- Optional input harmonic filter.
- Personalized Settings: can choose UPS working patterns, ECO energy conservation work patterns, EPS work patterns.



MODEL		HW-1K HW-2K		HW-3K	
Capacity		1kVA 2kVA		3kVA	
Power Watt		0.8kW	1.6kW	2.4kW	
Working Principle		Low Freugency Transformer Based True On Line-Double Conversion			
RECTIFIER (INPUT)	Phase	Single Phase			
	Input Voltage Range	220VAC [230VAC or 240VAC]±25%, 1P+N+PE			
	Input Frequency Range	50Hz±10% / 60Hz±10% (Selectable)			
	Output Ripple	←2%			
	Soft Start	0~100% 5sec			

	Charging Mode	Constant current, then constant voltage, and charge with temperature compensation				
CHARGING	Float Charging Voltage	55VDC				
	Equalized Charging Voltage	56.8VDC				
	Temp. Compensated Voltage	-3mV/ °C/cell				
	Charging Current	5-10A				
BATTERY	Туре	VRLA/AGM/Gel, optional Lithium Battery				
	Battery Capacity	7 ~ 200AH settable ( Configurate Battery Capacity according to Back-up Time )				
	Quantity	4units 12V or 24units 2V batteries (Battery Voltage 48VDC)				
	Temperature	20°C~25°C (For Maximum Efficiency)				
	Phase	Single Phase				
	Nominal Voltage	220VAC (230VAC or 240VAC), 1P + N				
INVERTER (OUTPUT)	Output Voltage Regulated Accuracy	±1 %( Stable load), ±3%( fluctuant load)				
	Output Frequency Range	50Hz 60Hz←±0.5% ( Asynchronous )				
	Crest Factor	→ 3:1				
	Output Total Harmonic Distortion (THD)	Pure Sine Wave, Linear Load ← 3%, Non-Linear Load ← 5%				
	Dynamic Characteristics	Instant voltage←±5% ( from 0 to100% ), Instant recover time←10ms				
	Overload Capacity	At 115% load, normal work, At 125% load 10 min, At 150% load 1 min				
	Inverter Efficiency	→93% ( full load )				
	Phase	Single Phase ( P+N )				
BYPASS	Nominal Voltage	220VAC (230VAC or 240VAC)				
	Transfer Time	Oms( adopt static switch )				
	Input Protection	Input voltage, frequency over limited protection				
	Output Protection	Over current, short circuit, over voltage, low voltage				
PROTECTION FUNCTION	Battery Protection					
	Temperature Protection	Environment over temperature protection, inverter over temperature protection				
	Hardware Fault Protection	Assistant power abnormal, breaker cut off, breaker overload, power devices over current/over voltage etc. protection				
GENERAL SYSTEM	Working Environment	Temp: -25 ~ 55°C, relative humidity: 30% ~ 90%, Altitude ←2000m (1% decrease against 100 meters' rise, Max. altitude 4000m)				
	Cooling Method	COMPULSIVE VENTILATION				
	Communitation Interface	RS232/ RS485, optional dry contact, SNMP card ( for remote control via internet )				
	Auti-surge Capacity	10/700 S,5KV; 8/20 S,20KA				
	Protection Level	IP43				
PARAMETERS	Safety Performance					
	Noise (dB)	45~50				
	Dimension (W*D*H) mm	890*640*1250 (Max. built-in 8PCS12V100Ah Batteries				
	Weight (Kg)	105 115 135				

**※100V-110V-120V Version is available** 

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### **HW-L Series**

(Line Interactive Outdoor UPS)













### **HW-L Series Brief**

HW series online outdoor base station special UPS, is the global newest period control component and more advanced software perfect combine full intelligent digital product. That series product uses the six generator low-loss large power IGBT and static switch to be power component, it fully adopt digital control technique with available online programmable high speed microprocessor(MCU),

and it is the perfect performance in digital electric technique. HW series UPS capacity range from 1KVA-3KVA, can extend to 20KVA, with 100% suitable grid environment, widely used in  $communication\ industry, outdoor\ communicate\ station.$ 



#### Main Features

- Advanced digital electric system super stable operation.
- Battery intelligent management, durable and free from worry, extend usage of battery over 55%.
- Intelligent detection system whole protection.
- Intelligent communicate tool remote control: RS232 and RS485, optional SNMP card or dry contacts.
- Adopt high precision SMD technique, whole machine highly precision.
- Basic with life period evaluate precise research, more save energy.
- Basic on six generation IGBT and high speed static switch transform technique, high reliability.
- Super LED & LCD screen information processing technology, no restrict between user and UPS.
- Super adapt to the reliability of the environment: characteristic under a harsh environment, stronger waterproof, dustproof, antifreeze, heat insulation and function makes it more reliable
- Super load characteristics: suitable from 0%-100% load jumping, and no need to changed to bypass, and protect output stable.
- Perfect protection function.
- Optional battery circuit module.
- Optional input harmonic filter.
- Personalized Settings: can choose UPS working patterns, ECO energy conservation work patterns, EPS work patterns.





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### **HW-L Series Specification**

Capacity	1000VA	1500VA	2000VA	3000VA	4000VA	5000VA
Power Watt	800W	1200W	1600W	2400W	3200W	4000W
Work Mode			Low Frequen	cy Line Interactive		
Voltage Regulation Function			Adopt Relay smart r	nulti-gear adjusting	voltage	
Output Voltage Regulation Precision				±5%		
INPUT						
Phase			Single Ph	ase ( P+N+PE )		
Input Rated Voltage		100/110/12	0VAC 0r 220/230/240	VAC ( According to Us	ers' Voltage Standar	d )
Input Voltage Range	±25%					
Input Rated Frequency	50/60Hz ( Self-adaptive )					
Input Frequency Range		±5%				
BATTERY						
Voltage	24\	/DC		4	8VDC	
Charging Mode			Three-stage Inte	lligent Battery Charg	jing	
Float Charging Voltage			2	7VDC		
Equalized Charging Voltage	28.2	.VDC		5	6.4VDC	
Temperature Compensated Voltage	3mV/ ℃/cell					
Charging Power	Rated Capacity* 20%					
ОИТРИТ						
Phase	Single Phase ( P+N+PE )					
Nominal Voltage	Equal to Input Rated Voltage					
Inverter Output Voltage	100/110/115/127V ; 220/230/240V ( According to users' Voltage standard )					
Inverter Output Degree of Stability	±1% ( steady load ), ±3% [fluctuation of load )					
Inverter Frequency Degree of Stability	50Hz, 60Hz←±0.5%					
Crest Factor	→3:1					
Inverter Output THD	Pure sine wave, Linear load ← 3%, non-linear load ← 5%					
Transfertime	—————————————————————————————————————					
PROTECTION						
	Overlo	ad Level	Utility P	ower Mode	Bat	tery Mode
Overload protection	105~	125%	→1	Omins	-	→1mins
Overtoad protection	125~	150%	→1	mins	Immed	iate Protection
	→1	50%	Immediat	e Protection		
Input Protection	Voltage, Frequency Ultralimit Protection					
Output Protection	Over Current, Short Circuit Protection					
Battery Protection	Overcharging, Short Circuit Protection					
Temperature Protection	Over-temperature Protection					
Hardware Fault Protection	Fuse over current Protection, Surge Voltage Protection					
Alarm Function	Audio Alarm					
System Parameters						
Work Temperature	$Temperature: 0 \sim 40  \text{, Relative humidity: } 30\% \sim 90\% \text{, Altitude < 2000m (power reduce 1\% every 100M raised, } 4000M \text{ utmost)}$					
Cooling Method	Forced ventilation					
Communication interface	RS232 (Optional USB, SNMP card)					
Protection Level	IP30					
Safety Performance	I/O on ground resistance (3000VAC), stray current less than 3.5mA, insulation resistance exceeding 2MΩ(500VDC)					

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# **NS Series**

(Sine Wave Combined Inverter & Charger)













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