

BH Series HF Online UPS (1-10KVA 1/1 Phase)

Output power factor=1.0, overall efficiency > 95%, 3-level-Inverter technology, compact size, smart design, high reliability

1. System Introduction

The BH Series is a full DSP controlled, Adopt 3-level-Inverter technology, online double conversion, 1/1 Phase pure sine wave UPS, with multi-functional and high available design, system overall efficiency above 96%. The 6-10KVA models are available in standard and high-config editions.

2. System Features

2.1 High Performance Index

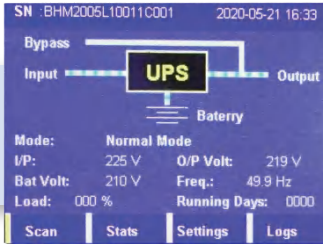
- ◆ Battery Self-testing can be done on the LCD directly. Battery Capacity, UPS working mode (Online or ECO first) can be set on the screen. All history faults and statistics can be seen on the screen to help user analyze the working summary of the UPS.
- ◆ Multi-page history record can be tracked on LCD highly improved the efficiency for site engineers to check the UPS and lithium-ion battery running days and cumulative running status of UPS.
- ◆ Intelligent Ventilation design greatly reduces noise.
- ◆ Standard 19" Rack-mount design, compared to traditional VRLA battery pack, BH UPS system can be compatible with standard communication cabinet and greatly save spaces.
- ◆ Highly integrated PCBA board and wiring design makes the system convenient in maintenance and greatly saves service time.

2.2 Safe and Reliable

- ◆ Adopt DSP technology to control UPS all processes to lower the total distortion and increase system reliability
- ◆ Sensitive peak current protection circuit to protect the system from damages due to non-linear load, short-circuit, cold load impacts.
- ◆ Three-level technology design, it can cope with the sudden changes of complex & Static loads.
- ◆ 6-10KVA equipped the battery reverse connection protection and fault alarm to reduce the installation accidents. This can highly protection the safety of installation personnel and extend battery life; 1-3KVA is designed with battery not connected alarm function to avoid the situation of battery switch not opened or battery switch falling off;
- ◆ 1-10KVA adopts intelligent fan redundancy, wind speed control and fan fault alarm. When the fan fails, a group of fans will naturally increase the wind speed to deal with the temperature rise caused by the fault, and effectively continue to operate before replacing the faulty fan.
- ◆ Alarm when the power supply is not grounded or the neutral and live lines are reversed, and the input indicator light flashes.
- ◆ Latest HF Rectifier and PFC Technology. Input Power Factor 0.99, THDI \leq 3%, compatible with 208/220/230/240Vac, 50/60Hz Grid supply system.

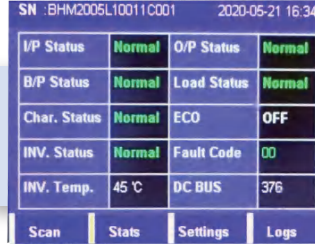


Premium version color screen display resolution



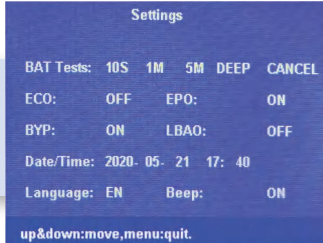
01 Main page

1. UPS Working Diagram;
2. Work Mode: Standby, Online, BAT, Bypass, EC
3. Input Voltage;
4. Output voltage
5. BAT Voltage;
6. Output Frequency
7. Load %;
8. Working (Days)
9. Serial Number;
10. Calendar, time



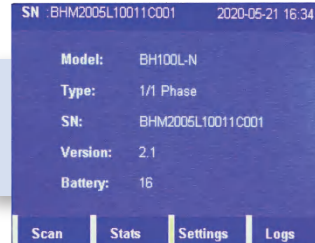
02 Working Screen

1. I/P Status: Normal/ Alarm
2. O/P Status: Normal/ Alarm
3. B/P Status: Normal/ Alarm
4. Load Status: Normal/ Alarm
5. CHAR Status: Normal/ Alarm
6. ECO Mode: Off/On
7. INV. Status: Normal/ Alarm
8. Fault code: 00
9. INV Temp: °C
10. Bus voltage: 375
11. Working (Days)
12. Serial Number;



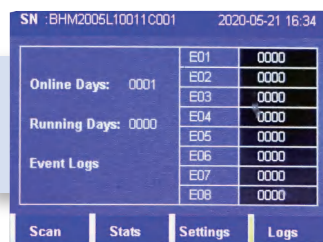
03 Setting Screen

1. BAT Test: User can test Battery status with selected Time period in 10s, 1 min, 5 minutes or deep cycle test, and cancel test
2. ECO: ON/OFF
3. EPO: ON/OFF
4. Date/ Time;
5. Language: CHN/EN
6. Beep: ON / OFF



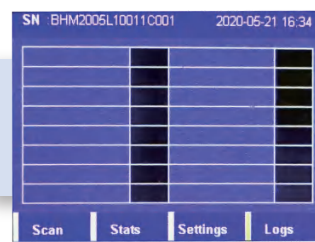
05 UPS Information Screen

1. Product Model
2. Product Structure: 1/1 Phase Input/ Output, 3/1 Phase Input/ Output
3. Serial Number
4. Version
5. Battery quantity.



04 Log Screen

1. Online Days: It means the time from UPS 1st Starts up till it completely shutdown
2. Running Days: It means the time from the 1st time installation till now;
3. Event Logs: It calculates the accumulated total time for code E01 - E08 faults or abnormal



06 Log Screen

1. It can show the history abnormal or fault information in total 32 logs, including the event date, time, fault code (from the fault Code users could judge the abnormal details and do the warranty claim)
2. Serial number can also be found on the top of the screen
3. Time and date will also be shown

6. Specification

Model	BH10S/BH10L	BH20S/BH20L	BH30S/BH30L	BH60S/BH60L	BH100S/BH100L
	BH10S/L-RM	BH20S/L-RM	BH30S/L-RM	BH60L-RM	BH100L-RM
Capacity	1KVA/1KW	2KVA/2KW	3KVA/3KW	6KVA/6KW	10KVA/10KW
Host Machine Specification					
UPS Structure	Online Double Conversion				
Appearance	Tower or Rack mount structure design				
Overall Efficiency	> 95% (98.5% under ECO mode)				
Noise (In 2 meters)	< 50dB				
Working Temp	-10-40°C, with higher temperature ,UPS actual capacity will be reduced				
Storage Temp	-15-60°C (without batteries)				
Humidity	< 20-95% Non-Condensing				
Safety Standard	GB/T 7260, GB/T 4943, YD/T1095, TLC				
EMS Standards	EN/IEC 61000, EN/IEC 62040,				
Maintenance bypass	/			optional	
Protection	Overload, Short-Circuit, Over Temp., Utility Power Voltage High/low, BAT Voltage High/low				
Alarm	Mains abnormal or Fault, BAT Voltage High/low, overload, UPS fault, shot circuit etc				
ECO mode	available				
EPO mode	available				
DC start	available				
Generator Compatibility	available				
Display	Std: LCD Display: Multi-Language with all kinds of messages. Input/ Output /bypass Status, ECO Mode , charging status, load status, Rectifier status, INV. Temp; LED Indicators: UPS States Indicator				
	LCD Display: Multi-Language with all kinds of messages. Input/ Output /bypass Status, ECO Mode , charging status, load status, Rectifier status, INV. Temp, Working (days); SN; Calendar, time; UPS model & structure; Version No.; history log records; history fault records; language set; ECO set; time & calendar set; battery test & so on.				
	LED Indicators: UPS States Indicator				
Mute	Automatic				
Cabinet Standard	IP20				
Cooling System	Intelligent Speed Control Cooling Fan				
Altitude	≤11000M, Without derated, 1000m < altitude < 4500m, refer to IEC62040				

Rectifier Specification						
Input Voltage	220Vac (208/220/230/240Vac available)					
Input Voltage Range	110~300Vac ,110~176V ac/280~300V ac					
Input Frequency Range	44~56Hz or 54Hz~66Hz ±10Hz (adjustable)					
Input PF	0.99					
THDI	≤ 3% linear load, ≤ 5% Non-linear load (PF =0.8)			≤ 4% linear load, ≤ 6% Non-linear load		
Output Specification						
Output Voltage	220Vac (208/220/230/240Vac available)					
Output PF	1.0 (0.9 default type)					
Output Voltage Regulation	220Vac±1% (Static Load) ; 220Vac±2% (50-0% Sudden Change); 220Vac±5% (100-0% Sudden Change)					
Output Freq (utility)	46Hz≤input Freq.≤54Hz, output Freq.=input Freq.; When Input Freq.<46Hz or >54Hz, Locked at 50Hz					
Output Freq (Battery)	50Hz±0.1% (Battery mode)					
Wave Form	Pure sine wave					
Distortion	< 1% (Linear Full Load) , < 3% (100% Non-Linear Full Load)			< 2% (Linear Full Load) , < 5% (100% Non-Linear Full Load)		
Overload	<p>♦Utility mode: 102%~105% load, more than 30mins, 105%~125% load, more than 10mins ,125%~150% load, 30s, >150% load, 500ms</p> <p>♦Battery mode: 102%~105% load, more than 10mins, 105%~125% load, more than 1mins, 125%~150% load, 10s, >150% load, 500ms</p>					
Crest Ratio	3 : 1					
Inverter Efficiency	> 95%					
Short Circuit	Circuit Auto Protection, Output Voltage/Current 0					
Output Abnormal	INV. Output Auto-Locked Protection					
Noise Suppression	EMI/RFI Wave Filter					
Battery Voltage low	Shut down protection					
Dynamic Response	3% at full load, recovering in 20ms					
Auto restart Function	available					
Software Set on/off	available					
Bypass Specification						
Static Bypass Transfer Time	0ms (the Static breaker phase lock control technology)					
Static Bypass Range	80Vac±5%~ 285Vac±5%					
Bypass -> INV Transfer Time	< 4ms			< 2ms		
Battery Specification						
Type	Sealed Lead Acid Maintenance Free					
Model Rated Volts/Units	12V/7Ah*2 pcs	2V/7Ah*4 pcs	12V/7Ah*6 pcs	12V/7Ah*16 pcs		
Std. Built-in BAT Type Backup Time	5-15mims	5-15mims	5-15mims	5-15mims	5-15mims	
Ext. Model Rated Voltage	36Vdc	72Vdc	96Vdc	192 Vdc default /240Vdc (optional)		
Charging Current	Std.Built-in model 1A, Ext. model 6-12A					
Communication Specification						
Communication Port	Std.RS232/EPO; SNMP/485/dry contact (optional)					
Remote Software	Multi-functional Monitoring System, Online and BAT Mode Status, utility fault, BAT Fault, Remote Control					
Physical Parameters						
Size m (W×D×H)	Std. type	145×292×224	145×400×224	190×390×330	190×390×700	
	Ext. type			145×400×224	190×390×330	
	Std.RM type	440×400×88/2U	440×400×88/2U	440×540×88/2U	440×450×88/2U Battery pack: 440×715×87/2U	
	Ext. RM type	440×400×88/2U	440×400×88/2U	440×400×88/2U	440×450×88/2U	
Weight Kg	Std.	8.8	14.4	26	51	61.5
	Ext.	4	5.8	6	10.2	10.5
	Std.RM type	10	15.5	21.4	52.6	54
	Ext. RM type	6.7	7.4	7.6	9.5	10.9

Note: In the model name "S" represent standard type with battery built-in, "L"represent" long run battery external type. Specification are subject to change without further notice.

- ♦ Wide Input Range from 110-300Vac in 100% load (When Load is below 50%, Input Lower Limit can lower than 110Vac) which can reduce the battery usage and maximize battery life-time.
- ♦ Latest 3-Level-Inverter technology to meet the critical loads. Output PF=1, Overall efficiency up to 95% (98.5% under ECO mode)
- ♦ Powerful overload ability with output short circuit protection:
1-3 KVA: 120% overloads for 1 minute.150% for 60ms transfer to bypass and alarm.
6-10KVA: Online mode: 102-110%:30 minutes; 110-130% :10 minutes; 130-150 %:30s; ≥150%:500ms
6-10KVA: Battery mode: 102-110% :10 minutes, 110-130% :1 minute; 130-150 %: 10s; ≥150% 500ms
- ♦The system demonstrates exceptional overload tolerance and transient response resilience, maintaining precise inverter output stability during high-power nonlinear load transients.
- ♦ Can be connected with all kinds of generators to save customers costs.
- ♦ Intelligent charger system, charging current from 1-12A adjustable, adopting constant charging, float charging and equalized charging methods, which could meet various requirements from different Lithium-ion battery pack and greatly expand batteries' life-time
- ♦ Powerful battery anti-reverse connected alarm and protection. When battery is unconnected, UPS will alarm with DC unconnected. When the DC polarities reversely connected, UPS will not be turned on and shows DC failure, only when correcting polarities then UPS will be back to work normally.
- ♦ Battery configuration: for 6-10kva, battery quantity could be transfer into 16/18/20pcs without changing any spares;
- ♦ Powerful battery test function, users can do or cancel the battery test on LCD screen directly.
- ♦ Intelligent Short Circuit Protection. When short circuit lasts less than 3s, UPS will restart to inverter mode automatically after short-circuit removal. If the short circuit lasts over 3s, UPS will lock the inverter for protection.
- ♦ Remote EPO mode available.
- ♦ 2.4-inch Large Color Dot-matrix LCD+LED Screen with multi-functional keyboard to check UPS and lithium-ion system parameters, such as work status, temperature control and fault histories, self-diagnosis periodically discharge settings, etc.

3.Rich Optional Accessories

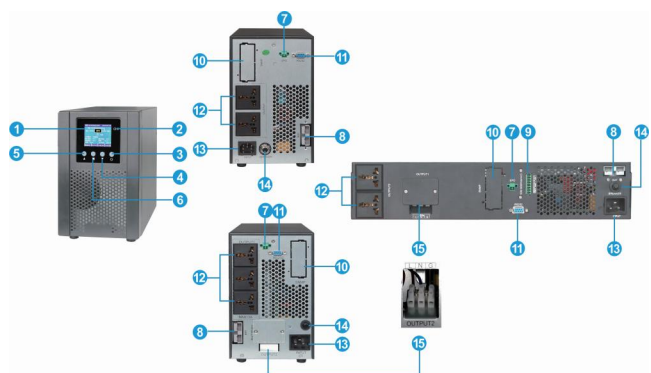
BH Series can use SNMP Network Adapter, RS485/Dry Contact, CAN, maintenance bypass switch (above 6kva) and EPO function to build up a remote control and monitoring system.

4. Compatible applications/loads

The product series is designed for small critical equipment systems, such as small financial network equipment, small data processing centers, critical medical equipment and telecommunications equipment industries.

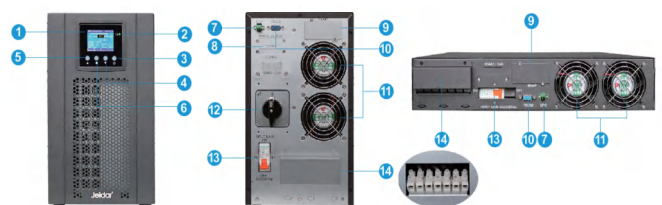
5. System Details

5.1 1-3KVA (Premium Model)



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|-----------------------------|-------------------------------------------|
| ① Color 2.4 inch LCD screen | ⑨ CAN/485 interface (for lithium battery) |
| ② LED Indicators | ⑩ SNMP slot |
| ③ Inverter on/off | ⑪ RS232port |
| ④ Down button | ⑫ Universal Output Socket |
| ⑤ Up button | ⑬ AC power input socket interface |
| ⑥ Confirm button | ⑭ Input overcurrent protector |
| ⑦ EPO | ⑮ 2/3KV A input and output interface |
| ⑧ Anti-reverse battery Port | |

5.2 6-10KVA (Premium Model)



- | | |
|-----------------------------|------------------------------------------|
| ① Color 2.4 inch LCD screen | ⑧ Parallel Redundancy Port (Optional) |
| ② LED Indicators | ⑨ SNMP slot |
| ③ Inverter on/off | ⑩ RS232 port |
| ④ Down button | ⑪ DC low noise cooling fan |
| ⑤ Up button | ⑫ Maintenance bypass switch (optional) |
| ⑥ Confirm button | ⑬ Input Breaker |
| ⑦ EPO | ⑭ Input, output, battery terminal blocks |

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