

NEOLINE PRO RT

User Manual

Uninterruptible Power Supply System



1 phase In / 1 phase Out

1-3 kVA

ONLINE UPS







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1 Safety Information

1.1 UPS safety information

- Read all safety information and operating instructions carefully before attempting to install, service or maintain the UPS. Save this manual properly for reuse.
- This UPS is intended for indoor use only.
- Do not operate this UPS in direct sunlight, in contact with fluids, or where there is excessive dust or humidity.
- Be sure the air vents on the UPS are not blocked. Allow adequate space against the wall for proper ventilation.
- Do not open the UPS case as you will, there is a high risk of electric shocks inside.
 All connection/wiring/servicing must be performed by a qualified electrician.
- Do not connect to the equipment like hair dryer or electric heater.
- Do not use liquid extinguisher if there is a fire, a dry powder extinguisher is recommended

△ CAUTION

UPS has high voltage inside, do not repair it by yourself. If any questions, please contact local service center or dealer

1.2 Battery safety information

- Environmental factors impact battery life. Elevated ambient temperatures, poor quality utility power, and frequent short duration discharges will shorten battery life.
 Replacing battery periodically can help to keep UPS in normal state and assure backup time required.
- Battery installing or replacing should be performed by a qualified electrician. If you
 want to replace the battery cable, please purchase it from our local service center
 or distributors to avoid fever and lighter which can cause fire by inadequate power
 capacity.
- Batteries may cause electric shocks and have a high short circuit current, follow below requirements before installing or replacing the batteries.
 - A. Remove wristwatches, rings, jewelry and other conductive materials.
 - B. Only use tools with insulated grips and handles.
 - C. Wear insulated shoes and gloves.
 - D. Do not put the metal tools or parts on the batteries.
 - E. Before disconnecting the terminals from the batteries, cut off all the loads to the batteries first.



- Do not dispose of the batteries with fire. The batteries may explode.
- Do not open or mutilate batteries. Released electrolyte inside is harmful to the skin and eyes, and maybe toxic.
- Do not connect the positive pole and negative pole directly, otherwise it will cause electric shocks or will be on fire.
- The battery circuit is not isolated from the input voltage, high voltage may occur between the battery terminals and ground, check if there is no voltage there before touching.

Note: Symbol instructions:

Symbol	Significations	Symbol	Significations
\triangle	Caution	(+)	Protective earth
A	Danger! High Voltage!		Disable/mute audible alarm
ON	Turn on	8	Overload
OFF	Turn off	+	Battery inspection
ψ	Standby or Shutdown	G	Repeat
\	AC		Display screen repeat key
	DC	+-	Battery

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2 Product Overview

2.1 Specifications

Model		1KVA S(RT)	1KVA XL(RT)	2KVA S(RT)	2KVA XL(RT)	3KVA S(RT)	3KVA XL(RT)		
Rated Cap	acity	1 kVA/	900 W	2 kVA/	1800 W	3 kVA	/ 2700 W		
Input									
Rated inpu	ut voltage	208 Vac / 220 Vac / 230 Vac / 240 Vac							
Rated inpu	ut frequency			50 Hz / 60 Hz	z (auto-sense))			
Input volta	ao rango	110 ~ 17	'6Vac (power	derating line	arly between	50% and 100	0% load);		
Input volta	ige range	176 ~ 280Vac (no derating); 280 ~ 300Vac (power derating 50%)							
Input frequ	uency range			40~7	70 Hz				
PFC				≥ ().99				
THDI				≤ (6%				
Bypass vo	ltage range			-25% ~ +15	6% (settable)				
Output									
Output vol	tage	208 Vac / 220 Vac / 230 Vac / 240 Vac (settable)							
Voltage ac	ccuracy	±1%							
Output PF		0.9							
Inverter ov	rorload	105% ~ 125% load: transfer to bypass in 1 min;							
capability	renoau	125% ~ 150% load: transfer to bypass in 30 s;							
Capability		>150% load: transfer to bypass in 300 ms;							
Load crest	t	3:1							
From mair	ns mode to	0ms (transfer time)							
BAT mode)								
From mair	ns mode to	4 ms (typical)							
bypass									
	Line mode	90	1%	9	1%	Ç	92%		
Efficiency	BAT mode	85	5%	8	6%	8	37%		
	ECO mode	95	i%	9	6%	ę	97%		
Output	Line mode	Same as input frequency							
frequency	frequency BAT mode (50 / 60 ± 0.1) Hz								
Total volta	ge harmonic		≤ 2% (I	inear load); ≤	5% (non-line	ar load)			



Batteries									
Battery type		Sealed lead acid maintenance free battery							
DC voltage	24 V	36 V	36 V	48 V	72 V	72 V	72 V	96 V	96 V
	12 V / 9	12 V / 7	1	12 V / 9	12 V / 7	1	12 V /	12 V / 7	/
Inbuilt battery	Ah	Ah		Ah	Ah		9 Ah	Ah	
Quantity	2	3	3	4	6	6	6	8	8
	27.1	40.7	40.7	54.2	81.3	81.3	81.3	108.4	108.4
Charger output voltage	± 0.4	± 0.6	± 0.6	± 0.8	± 1.2	± 1.2	± 1.2	± 1.6	± 1.6
Recharging time		Reco	over 90%	capacity	in 3 hou	rs for star	ndard mo	dels	
Charging current				Stand	ard mode	el: 1 A			
(Max.)				Long tim	e model:	6 A /12A			
System Control and C	ommuni	cations							
Protections	Over-temp protection; Fan testing protection; Overload protection; Output								
Fiolections	short circuit protection; Battery discharge protection								
Communication port		Standa	rd: RS23	2; Option	s: USB, S	SNMP ca	rd, dry co	ontacts	
Display					LCD				
Environmental									
Operating humidity			0 ~ 90 %	6 RH @ 0	~ 40°C (non-cond	lensing)		
Storage temperature		-25°C ~ 55°C(exclude batteries)							
Operating altitude	≤ 1000m, above 1000m, derate 1% for each rising 100m								
Protection class	IP20								
Noise level	≤50dB (at 1m)								
Others									
Dimensions (mm)						440×	440×		
$W \times D \times H$	44	10× 468×	38	440× 6	58× 88	468×88	658×88	440× 4	68× 88
Weight (kg)	12.26	13.78	7.58	22.73	25.86	9.66	29.26	9.45	10.04

 $^{^{\}star}$ Derate capacity to 70% in CUCF mode and to 90% when the output voltage is adjusted to 208Vac.

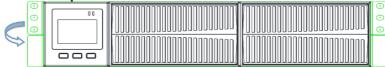
Note:

Model	Туре	Model	Туре
1kVA S(RT)	1 kVA Standard model	1kVA XL(RT)	1 kVA Long backup model
2kVA S(RT)	2 kVA Standard model	2kVA XL(RT)	2 kVA Long backup model
3kVA S(RT)	3 kVA Standard model	3kVA XL(RT)	3 kVA Long backup model

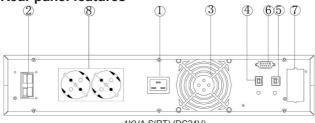
a.



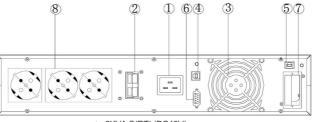




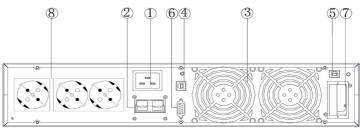
2.3 Rear panel features



1KVA S(RT) (DC24V)



b. 2KVA S(RT) (DC48V)



c. 3KVA S(RT) (DC72V)

① AC input socket	©EPO (Emergency Power Off) рогт
②Battery connector	⑥RS232 port
③ Fan	⑦Intelligent slot
④ USB port	®Output sockets

The figure is for reference only. Due to the technology upgrading and development, the real unit might be different from the figure.



3 Installation

3.1 Unpacking inspection

- Open the UPS package and inspect the contents upon receipt. The accessories attached to the UPS contain a power cord, a user manual, communication cable, CD-ROM. The long backup model also includes the cable for connection to battery bank.
- Check if the unit is damaged during transport. Do not power on and notify the carrier and dealer if find damaged or parts missing.
- Verify this unit is the model you want to buy. Check the model name showed both on the front panel and rear panel.

Note:

Keep the packaging box and packaging materials for future transport use. The equipment is heavy. Always handleit with care.

3.2 Installation information

- The UPS installation environment must be in good ventilation, away from water, flammable gases and corrosive entities.
- Do not lie down the UPS against the wall so that front and side panel air intake hole, rear panel air outtake hole will be unobstructed.
- The ambient temperature around the UPS should be within 0°C~40°C (noncondensing)
- If dismantling the machine at low temperatures, there may be condensation droplets, users can not install or operate it before UPS completely got dry both inside and outside, otherwise there will be danger of electric shocks.
- Place the UPS near the mains source so that can cut off utility power without any delay in case of emergency.
- Make sure the load connected to the UPS is off when users connect it to UPS, and then turn on the load one by one later.
- Connect the UPS with the power outlet which is over-current protected. Do not connect the UPS with power outlets whose rated current is less than the maximum input current of this UPS.
- All power outlets should be configured with earthing device for safety.
- UPS could be electrified or powered no matter the input power cord is tied or not, even when the UPS is off. The only way to cut off the output is switching off the UPS and disconnecting the mains power supply.

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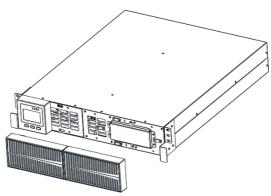
- For all standard model UPS, it is advised to charge the batteries over 8 hours before
 using. Once the AC mains power energizes the UPS, it will automatically charge the
 batteries. Without prior charging, UPS output remains as usual but with shorter
 back-up time than normal.
- When connected to motor, display equipment, laser printer etc., UPS power selection should be based on the startup power of the load which is usually twice as rated power.
- Wiring by a qualified electrician is required. Ensure input cables and output cables are connected correctly and firmly.
- If install a leakage current protective switch, please install it on output cable.

3.3 Installation and output connection

Normally, output connection of 1~3kVA series is configured with power outlets or terminal blocks, users can plug the load cable into the UPS power outlets to energize the load. Make sure the mains cable and breakers in the building are enough for the rated capacity of UPS to avoid the hazards of electric shock or fire.

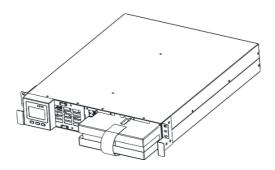
3.4 Standard Model Built-in Battery Pack Installation Guide

Step 1 Make sure the UPS is in mains mode, remove the two plastic panels on the front.



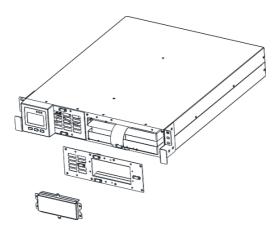


Step 2 Remove the two baffles in the picture below with a screwdriver.



Step 3 Separate the battery terminals, pull the plastic handle of the battery pack, and drag the battery pack out.

Note: The battery pack is heavy. Please pay attention to safety when taking the battery pack to prevent foot injury.



Step 4 After replacing the battery, put the battery pack back into the UPS. After connecting the battery terminals, lock the two baffles and cover the plastic panel.



4 Network Functions

4.1 Communication port

Users could monitor the UPS system through the communication port such as standard RS232 port and USB port with computer. Connecting this UPS with computer by communication cable could achieve UPS management easily.

>RS232 port:

Pins	1	2	3	4	5	6	7	8	9
Indication	empty	send	receive	empty	ground	empty	empty	empty	empty

Note:

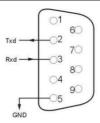
RS232 interface is set as below:

• Bit rate: 2400 bps

• Byte: 8bit

Completion code: 1 bit

. Bit pattern: None



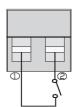
>USB port:

Pins	1	2	3	4
Indication	+5V	date+	date-	GND



4.2 EPO port (optional)

EPO is the short for Emergency Power Off. EPO port is on the rear panel of the UPS. It's green. Users can cut off the output of UPS immediately by operating EPO port in case of emergency.



Normally, pin1 and pin2 are connected so that the machine can be working normally. When some emergencies happen, and when users have to cut off the output, just need to disconnect the connection between pin1 and pin2, or just pulling it out.



4.3 Intelligent card (optional)

There is an intelligent slot on the rear panel of the UPS, it's for SNMP card and dry contacts. Users can insert any type intelligent card from those three into it to monitor and manage the UPS. And users don't have to turn off the UPS when install the intelligent card. Follow below process:

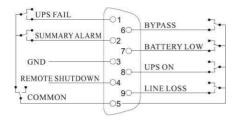
- First of all, remove the intelligent slot cover;
- Then insert the intelligent card (SNMP card and dry contacts);
- · Finally, screw the intelligent card back.

> SNMP card (optional)

SNMP card on UPS is compatible with the most software, hardware and network operating system, it is a network management of UPS, with this function, UPS can login on internet, which can supply information of UPS status and input power, and even possible to control UPS via net management system.

> Dry contacts card (optional)

Insert the dry contacts card into the intelligent slot. It's another type function of intelligent monitoring.



Position	Definition
PIN1	ON: UPS is malfunctioning
PIN2	ON: Alarm (system failure)
PIN3	Ground
PIN4	Remote shutdown
PIN5	Common
PIN6	ON: Bypass mode
PIN7	ON: Battery low
DINIO	ON: Inverter mode;
PIN8	OFF: Bypass mode
PIN9	ON: No AC power in



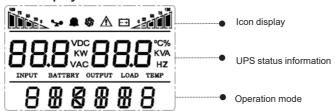
5 Operation

5.1 Button operation

Button	Function
"ON" key (Press the two keys for more than half a second to turn on the UPS.
"OFF" key (◀ + ▶)	Press the two keys for more than half a second to turn off the UPS.
TEST/MUTE key	Press the two keys for more than 1 second in Line mode or ECO mode or CUCF mode: UPS runs the self-test function. Press the two keys for more than 1 second in battery mode: UPS runs the mute function.
INQUIRING key	Not in setting mode: • Press or for more than half a second (less than 2 seconds): display the items orderly. • Press for more than 2 seconds: Circularly and orderly display the items every 2 seconds, when press the key for some time again, it will turn to output status. In setting mode: • Press or for more than half a second (less than 2 seconds): Select the setting option.
FUNCTION SETTINGSkey	Not in setting mode: Press the key for more than 2 seconds: Function settings interface. In setting mode: Press the key for more than half a second (less than 2 seconds): go to the function setting options. Press the key for more than 2 seconds: exit from this function settings interface.



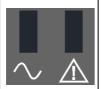
5.2 Display interface



Display	Function
Icon display	
100 75 50 25 0	Load icon:The approximate load capacity percentage (0-25%, 26-50%, 51-75% and 76-100%) is indicated by the number of load bar sections illuminated.When UPS is overloaded, the load iconwill flash.
	Mute icon: Indicates the audible alarm is disabled / mute. Press the mute key in the battery mode, themute icon flash.
5	Fan icon:Indicates fan working status. When the fan normally runs, the icon displays rotation; if the fan is not connected or faulty, the icon will flash.
Λ	Fault icon:Indicates UPS is in fault mode.
23 59 75 100 	Battery status icon: Indicates the battery capacity of 0-25%, 26-50%, 51-75%, and 76-100%. When the capacity of battery get low or battery disconnected, the batterystatus iconwill flash.
UPS status information	
88.8 VDC KW KW VAC	In non-setting mode, it displays UPS output information when UPS normally runs; Fault code will be told in fault mode. In setting mode, users could adjust different output voltage, activate ECO mode, activate CUCF mode, select an ID number and so on by operating
88.8 KVA HZ	function setting keys and inquiring key.
Operation mode	
888888	Indicates the power capacity of UPS within 20 secondsafter starting up. IndicatesUPS operation mode in 20 seconds, such as STDBY (standby mode), BYPASS (Bypass mode), LINE (AC mode), BAT (Battery mode), BATT (Battery Self Test mode), ECO (Economic mode), SHUTDN (Shutdownmode), CUCF (Constant Voltage and Constant Frequency mode).



LED indicator light functions



They are respectively inverter light and fault light from left to right.

The inverter light (green LED indicator light) illuminates continuously: it indicates that UPS is in mains mode or ECO mode or power supply status in battery mode.

The fault light (red LED indicator light) illuminates continuously: it indicates that UPS is in fault status.

Note: For LED indication in different modes, please refer to LED/display panel and alarm list.

5.3 UPS On/Off operation

Operation	Description
	> Turn on the UPS with mains power
Turn on the UPS	With mains power connected, UPS works in bypass mode, its output is same
Turrior the Gr G	as the input voltage within the input range. If there is no need of output voltage
	when mains power connected, you can set up bPS to 'OFF'. Default bPS is
	ON, it means there is bypass output when power on.
	Press the ON key for more than half a second to start the UPS, then it will start
	the inverter.
	Once started, the UPS will perform a self-test function. When the self-test
	finishes, it will turn to online mode.
	> Turn on the UPS by battery without mains power
	When main power is disconnected, press the ON key for more than half a
	second to start UPS.
	The operation of UPS startup process is almost same as above process with
	mains power. After the self-test finishes, UPS will work in battery mode.
	> Turn off the UPS in Line mode
	 Press the OFF key for more than half a second to turn off the UPS.
	After UPS shutdown, there is no output. If output is needed, you can set BPS
Turn off the UPS	'ON' on LCD setting menu.
	> Turn off the UPS in battery mode without mains power
	Press the OFF key for more than half a second to turn off the UPS.
	When UPS shutdown, it will do self-test first, until there is no display on the
	panel.
	When UPS is in LINE Mode, press the self-test/mute key for more than 1
UPS self-	second. UPS gets to self-test mode and tests its status. It will exit automatically
test/mute test	after finishing test.
	When UPS is in BAT Mode, press the self-test/mute key for more than 1
operation	second, the buzzer stops beeping. If you press the self-test/mute key for one
	more second, it will restart to beep again.



UPS Setting	 Enter Setup interface. Press and hold the function setting key for more than 2 seconds, then come to Setup interface, press and hold the inquiring key (,) for more than half a second(less than 2 seconds), select the function setting, choose the setup interface, at the moment, the letters flash. Enter thesetup interface. Press and hold the function setting key for more than half a second(less than 2 seconds), then come to the setup interface, at this time, the letters doesn'tflash any more,the numerical value flash. Press and hold the inquiring key (,) for more than half a second (less than 2 seconds), select the numerical value in accordance with the function. Confirm the setup interface. After selecting numerical value, press and hold the function setting for more than half a second (less than 2 seconds). Now, the setting function is completed and the numerical value illuminates without flashing. Exit from the setup interface. Press and hold function setting key for more than half a second (less than 2 seconds), exit from the setup interface and return to the main interface. Note: UPS could not be set until it is connected to the battery and it is turned off and switched to Stdby mode (standby mode).
	 Disconnect mains power after setting. The LCD display screen will automatically extinguish in about 1 min, and the setting will be configured normally.

5.4 UPS Settings

Output voltage setting

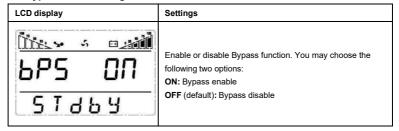
LCD display	Settings
<u>11682 ≈ =300</u> OPU 220 v	For 208/220/230/240 VAC models, you may choose the following output voltage: 208: output voltage is 208Vac 220: output voltage is 220Vac 230 (default): output voltage is 230Vac 240: output voltage is 240Vac



Low voltage of battery setting

LCD display	Settings
STdby	The battery voltage selecting interface. You may choose the following output voltage: 9.8: Low voltage of battery is 9.8Vdc 9.9: Low voltage of battery is 9.9Vdc 10: Low voltage of battery is 10Vdc 10.2: Low voltage of battery is 10.2Vdc 10.5: Low voltage of battery is 10.5Vdc dEF(default):EOD voltage automatically varies with loads, including 20 hours discharge protection

Bypass mode setting



AUO setting

LCD display	Setting
<u>liis≥> > □≥iiii</u> RUO ON	AUO setting only can be set in Stdby mode or Bypass mode. You may choose the following two options: ON: UPS will start up automatically and works in Line mode when connect mains. OFF (Default): UPS won't start up automatically when
51987	connect mains except EOD,it will work in standby or bypass mode.



5.5 Parameters inquiring operation

Press the inquiring key \blacktriangleleft or \blacktriangleright for more than half a second (less than 2 seconds) to inquire about items. The inquired items include Input, Battery, Output, Load and Temperature. The displayed items on LCD screen are shown as following:

LCD display	Description
220 _{VAC} SO.D HZ	Output: Display the output voltage and output frequency of the UPS. As the following graphic shows, the output voltage is 220V, the output frequency is 50Hz.
800 v LOM LINE	Load: Display the numerical value of the active power (WATT) and apparent power (VA) of the load. For example, as the following graphics shows, the WATT of the load is 800W, VA is 1.0kVA (when disconnect loads, it is a normal phenomenon to show a small numerical value of WATT and VA).
Disco o desid DIT HO° LI∏E	Version and Temperature: Indicate firmware version of UPS and display the highest temperature of UPS components; As the following graphics shows, the firmware version is v1.7, the maximum temperature is 40°C.
220 _{VAC} \$ 0.0 Hz	Input: Display the voltage and frequency of the input. As the following graphics shows, the input voltage is 220V, input frequency is 50Hz.
240° 100 %	Battery: Display the voltage and capacity of the battery. As the following graphics shows, the battery voltage is 24V, the capacity of battery is 100% (the capacity of battery is approximately reckoned according to the battery voltage).





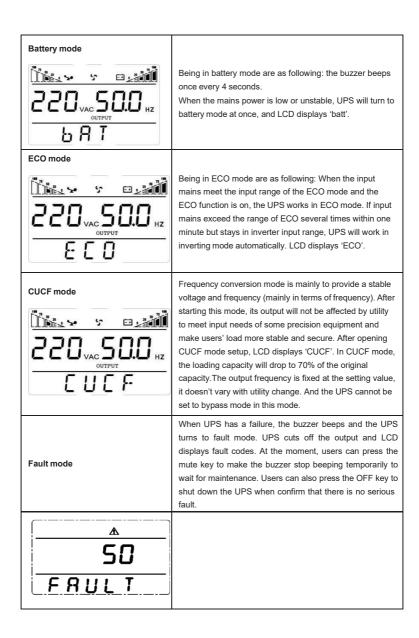
Warning: Display the warning code.

5.6 Operation mode

USER MANUAL

Operation mode and LCD display	Description
Bypass mode Sypass mode S	Turn to bypass mode under the following three conditions: Connect mains power and the bypass setup is ON. Turn off the UPS in line mode and the bypass setup is ON. Overload in line mode. Note: When UPS is working in bypass mode, it has no back up function.
Line mode Course	Being in line mode are as following: When input mains corresponding to the working conditions, UPS will work in line mode, LCD displays 'Line'.
Stdby mode Stdby mode Stdb	UPS is powered off and no output supply power, but still can charge batteries.





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6 Fault Messages

Table 1: Fault code messages

Fault code	Fault type	Bypass output	Note
0、1、2、3、4	Bus high	yes	
5、6、7、8、9	Bus low	yes	
10、11、12、13、14	Bus unbalance	yes	
15、16、17、18、19	Bus soft start fail	yes	
20、21、22、23、24	Inverter soft start fail	yes	
25、26、27、28、29	Inverter high	yes	
30、31、32、33、34	Inverter low	yes	
35、36、37、38、39	Bus discharge fail	yes	
40、41、42、43、44	Over heat	yes	
45、46、47、48、49	Output short	no	
50、51、52、53、54	Overload	yes	
55、56、57、58、59	Bus short	yes	
60、61、62、63、64	Shutdown fault	yes	
70、71、72、73、74	Overload 5 times	yes	

Table 2: Working status messages

S/		LCD display	Alarm	LCD	LED f	lashes
N	Working status	LCD display messages	beep	flashes	Invert er	Fault
1	Inverter mode (mains	s power)				
	Mains power voltage	Working mode displays Line	No beep	No flash	Flash always	/
	Mains power high/low voltage protection, switch to battery mode	Working mode displays bAT	One beep /4 sec	One flash / 4 sec	One flash / sec	/
2	Battery mode					
	Battery voltage - normal	Working mode displays bAT	One beep / 4 sec	One flash /4 sec	One flash / sec	1
	Warning for abnormal voltage of battery	Working mode displays bAT, Bat flash	One beep / sec	One flash /sec	One flash / sec	1
3	Bypass mode	<u> </u>				



	,		1	•		
	Mains power -	Working mode displays	One beep		One	
	normal (under	byPASS	/ 2 min	No flash	flash /2	/
	Bypass)	-	, =		sec	
4	Warning for battery di					
		Working mode displays	One	One	One	
	Bypass mode	byPASS, bat display is	beep / 4	flash	flash /2	/
		0, and flash all the time	sec	/ 4 sec	sec	
		Working mode displays	One	One	Flash	
	Inverter mode	Line, bat display is 0,	beep / 4	flash	always	/
		and flash all the time	sec	/ 4 sec	aiways	
		LCD illuminates when			l	
		power on, and display			Flash	Flash
	Power on / Switch	the capacity of the UPS,		Flash	always	always
	on	later working mode	6 beeps	always		
	OII	displays Line or		aiways	,	,
		byPASS, bat icon flash			/	/
		all the time				
5	Output overload prote	ection				
	Warning for mains	Working mode	2 beeps /	2	Flash	
	power overload	displays Line, load	sec	flashes	always	1
	power overload	icon flash	Sec	/sec	aiways	
	Protect operation for	Working mode				
	mains power mode	displays FAULT and	Long	Flash	,	Flash
	overload	the corresponding	beep	always	,	always
	ovenoau	codes				
	Warning for battery	Working mode	2 beeps /	2	One	
	overload	displays bAT, load	sec	flashes	flash /	1
	ovenoau	iconflash	Sec	/sec	sec	
	Protect operation for	Working mode				
	battery mode	displays FAULT and	Long	Flash	,	Flash
	overload	the corresponding	beep	always	,	always
	Overload	codes				
6	Warning for bypass	Working mode	One	One	One	1
	mode overload	displays byPASS, load	beep / 2	flash	flash /2	
		iconflash all the time	sec	/ 2 sec	sec	
		Fan icon flash, working	One]	
7	Fans fault(fanicon	mode displays	-	No flash	,	,
')	depending on current	beep / 2 sec	เพอ แลรก	′	,
		mode	Sec			
		Working mode]	
		displays FAULT,				
8	Faults mode	numerical value area	Long	Flash	,	Flash
0	i aults illoue	displays the	beep	always	′	always
		corresponding error				
		code				



Note:

- End user need to provide below information when require to maintain the UPS.
- UPS Model No. & Serial No.
- Date of fault occurrence.
- Fault details (LCD status, noise, AC power situation, load capacity, battery capacity configuration ect.)

Table 3: Alarm code display

The alarm code will be displayed in four digital tubes on the right of the numerical part of the LCD screen(red mark), as shown below:



The alarm truth table during operations is shown as below:

• signifies the alarm occurs, blank signifies no alarm appears

	Display value	Bypass lost	Remote Shutdown	Overload	Battery disconnected
	0				
	1	•			
	2		•		
	3	•	•		
	4			•	
	5	•		•	
The first digital	6		•	•	
tube from right	7	•	•	•	
to left	8				•
	9	•			•
	Α		•		•
	В	•	•		•
	С			•	•
	D	•		•	•
	Е		•	•	•
	F	•	•	•	•



	I		I	1	
	Display	Overcharging	Mains	Start-up	Charger fault
	value	warnings	reverse	abnormal	- Criargor raun
	0				
	1	•			
	2		•		
	3	•	•		
	4			•	
The second	5	•		•	
digital tube	6		•	•	
from right to	7	•	•	•	
left	8				•
	9	•			•
	Α		•		•
	В	•	•		•
	С			•	•
	D	•		•	•
	Е		•	•	•
	F	•	•	•	•
	Display	EEPROM	Fan		
	value	abnormal	abnormal	Low battery	Median abnormal
	0				
	1	•			
	2		•		
	3	•	•		
	4			•	
The third	5	•		•	
digital tube	6		•	•	
from right to	7	•	•	•	
left	8				•
.010	9	•			•
1	9				
	A		•		•
		•	•		•
	Α	•		•	
	A B	•		•	•
	A B C				•
	A B C D		•	•	•



The founds	Display value	Over load fault	Mains lost	Bypass abnormal	
The fourth digital tube from right to left	0				
right to left	1	•			
	2		•		
	3	•	•		
	4			•	
	5	•		•	
	6		•	•	
	7	•	•	•	



7 Troubleshooting

When the system works in fault mode, the LCD displays as below:



Problem	Possible Cause	Solution
Fault icon display, audible buzzer alarm continually, the fault code is 00-14	Bus voltage fault	Test the bus bar voltage or contact the supplier.
Fault icon display, audible buzzer alarm continually, the fault code is15-24	Soft start fault	Check the soft start circuit, especially the input fuse or contact the supplier directly.
Fault icon display, audible buzzer alarm continually, the fault code is 25-39	Inverter voltage fault	Contact the supplier.
Fault icon display, audible buzzer alarm continually, the fault code is 40-44	Over heat	Be sure that the UPS arenot overloaded, and the fan vent is not obstructed, as well as the indoor temperature is not high. Leave alone the UPS 10 minutes for cooling, and restart it. If the problempersists, contact the supplier.
Fault icon display, audible buzzer alarm continually, the fault code is 45-49	Output short	Turn off the UPS and disconnect all the loads.Be sure there is no any fault or internal short circuit of the loads. And then restart the UPS. If the problempersists, contact the supplier.

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Fault icon display, audible buzzer alarm continually, the fault code is 50-54	Overload	Check the load level and disconnect the non-critical equipment, recount the total capacity of your load and reduce the load to the UPS. Check whether the load equipments has fault or not.
Fault icon display, audible buzzer alarm continually, the fault code is 55-59	Bus short	Contact the supplier.
Fault icon display, audible buzzer alarm continually, the fault code is 60-64	Shutdown fault	Check the first button of the LCD panel is pressed and cannot be bounced
Fault icon display, audible buzzer alarm continually, fan	Fan fault	Check whether the fans are connected and fixed well or not, and if fansare not
icon in the LCD flickers		broken. If all seems fine, contact the supplier.
UPS fail to start when operate 'On' key	Pressing time too short	Press the power key more than 2 seconds to start the UPS.
	The input connection is not ready or UPS internal battery disconnect	Connect the input well, if the battery voltage is too low, disconnect the input and start the UPS with no-load.
	UPS internal system fault	Contact the supplier.
Back up time become short	Battery undercharge	Keep the UPS battery recharging more than 3 hours
	UPS overload	Check the load level and disconnect the non-critical equipments,
	Battery maturing, capacity descend	Replace with new batteries, contact the supplier to get the new batteries and spare parts.
UPS doesn't have any power going through even mains power on	UPS input breaker disconnected	Reset the circuit breaker by manual.

△Note:

When the output is short-circuited, the action of UPS protection will show up. Before turning off the UPS, make sure to disconnect the entire loads and cut off the mains power supply, otherwise it will make the AC input short circuit.







