NFLUX

Online UPS X9 Series

1000VA | 2000VA | 3000VA

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User Manual Online UPS:

1000VA | 2000VA | 3000VA

This manual contains important instructions. Please read and follow all instructions carefully during installation and operation of the unit. Read this manual thoroughly before attempting to unpack, install, or operate the UPS.

⚠ **CAUTION!** The UPS must be connected to a grounded AC power outlet with fuse or circuit breaker protection. DO NOT plug the UPS into an outlet that is not grounded. If you need to power-drain this equipment, turn off and unplug the unit.

⚠ **CAUTION!** The battery can power hazardous components inside the unit, even when the AC input power is disconnected.

⚠ **CAUTION!** The UPS should be placed near the connected equipment and easily accessible.

⚠ **CAUTION!** To prevent the risk of fire or electric shock, install in a temperature and humidity controlled indoor area, free of conductive contaminants. (Please see specifications for acceptable temperature and humidity range).

⚠ **CAUTION! (No User Serviceable Parts):** Risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

⚠ **CAUTION! (Non-Isolated Battery Supply):** Risk of electric shock, battery circuit is not isolated from AC power source; hazardous voltage may exist between battery terminals and ground. Test before touching.

⚠ **CAUTION!** To reduce the risk of fire, connect the UPS to a branch circuit with 10 amperes (1000 / 1500 / 2000) / 16 amperes (3000) maximum over-current protection in accordance to with local electrical guidelines.

⚠ **CAUTION!** The AC outlet where the UPS is connected should be close to the unit and easily accessible.

⚠ **CAUTION!** Please use only VDE-tested, CE-marked mains cable, (e.g. the mains cable of your equipment), to connect the UPS to the AC outlet.

⚠ **CAUTION!** Please use only VDE-tested, CE-marked power cables to connect any equipment to the UPS.

⚠ **CAUTION!** When installing the equipment, ensure that the sum of the leakage current of the UPS and the connected equipment does not exceed 3.5mA.

⚠ **CAUTION!** Only qualified maintenance personnel may carry out installation of battery modules.

⚠ **CAUTION!** Avoid unplugging the unit from AC power during operation as this will remove the earthing protection.

⚠ **CAUTION!** To avoid electric shock, turn off and unplug the unit before installing the input/output power cord with a ground wire. Connect the ground wire prior to connecting the line wires!

⚠ **CAUTION!** Do not use an improper size power cord as it may cause damage to your equipment and cause fire hazards.

⚠ **CAUTION!** Wiring must be done by qualified personnel.

⚠ **CAUTION! DO NOT USE FOR MEDICAL OR LIFE SUPPORT EQUIPMENT!** Under no circumstances this unit should be used for medical applications involving life support equipment and/or patient care.

⚠ **CAUTION! DO NOT USE WITH OR NEAR AQUARIUMS!** To reduce the risk of fire, do not use with or near aquariums. Condensation from the aquarium can come in contact with metal electrical contacts and cause the machine to short out.

⚠ **CAUTION!** Do not dispose of batteries in fire as the battery may explode.

⚠ **CAUTION!** Do not open or mutilate the battery, released electrolyte is harmful to the skin and eyes.

⚠ **CAUTION!** A battery can present a risk of electric shock and high short circuit current. The following precaution should be observed when working on batteries
1. Remove watches, rings or other metal objects.
2. Use tools with insulated handles.

⚠ **CAUTION!** The unit can output dangerous voltages. When the UPS indicators are on, the unit may continue to supply power via the outlets even when unplugged from mains power.

⚠ **CAUTION!** Make sure everything is turned off and disconnected completely before conducting any maintenance, repairs or shipment.

⚠ **CAUTION!** Connect the Protection Earth (PE) safety conductor before any other cables are connected.

⚠ **WARNING! (Fuses):** To reduce the risk of fire, replace only with the same type and rating of fuse.

DO NOT INSTALL THE UPS WHERE IT WOULD BE EXPOSED TO DIRECT SUNLIGHT OR NEAR A STRONG HEAT SOURCE!
DO NOT BLOCK OFF VENTILATION OPENINGS AROUND THE HOUSING!
DO NOT CONNECT DOMESTIC APPLIANCES SUCH AS HAIR DRYERS TO UPS OUTPUT SOCKETS!
SERVICING OF BATTERIES SHOULD BE PERFORMED OR SUPERVISED BY QUALFIED PERSONNEL WITH AN UNDERSTANDING OF BATTERIES AND TAKING APPROPRIATE PRECAUTIONS.
KEEP UNAUTHORIZED PERSONNEL AWAY FROM BATTERIES!

PACKAGE CONTENTS
(1) UPSx1; (2) User's manual x1; (3) Input power cord x1; (4) Rackmount ears(Stands) x2; (5) Flat head screws: M4x8Lx8; (6) Screw hole dust covers x8; (7) Pan head screws:M5x12Lx4; (8) Plastic washers x8

POWER MODULE FRONT/REAR PANEL DESCRIPTION

1. **Power On/Off Button**
   Master ON/OFF for the UPS.

2. **Power Switch**
   Scroll up, scroll down, select and cancel LCD menu.

3. **Multifunction LCD Readout**
   Indicates status information, settings and events.

4. **AC Input Inlet**
   Connect the AC Power cord to a properly wired and grounded outlet.

5. **Input Circuit Breaker**
   Provides input overload and fault protection.

6. **EPO (Emergency Power Off) Connector**
   Enables Power-Off in an emergency from a remote location.

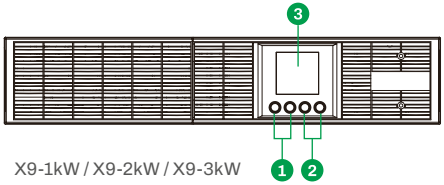
7. **USB port**
   This is a connectivity port which allows communication and control between the UPS and a connected computer.

8. **Serial Port**
   The serial port provides communication between the UPS and a computer. The UPS can command the computer to shutdown during a power outage. It also allows the computer to monitor the UPS and modify settings.

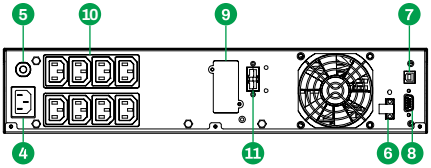
9. **SNMP/HTTP Network slot**
   Slot to install the optional SNMP card for remote network control and monitoring.

10. **Battery Backup & Surge Protected Outlets**
    Dedicated battery backup and surge protected outlets. They ensure power is provided to connected equipment during a power failure.

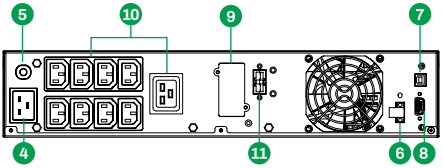
11. **Extended Runtime Battery Module Connector**
    Connection point for external battery modules.



X9-1kW / X9-2kW / X9-3kW



X9-1kW / X9-2kW



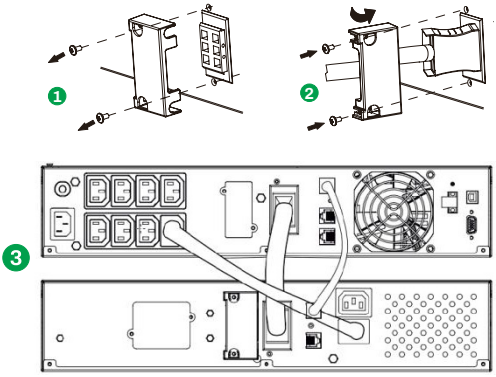
X9-3kW

BATTERY MODULE FRONT/REAR PANEL DESCRIPTION

CONNECTION: POWER MODULE (UPS) WITH BATTERY MODULE

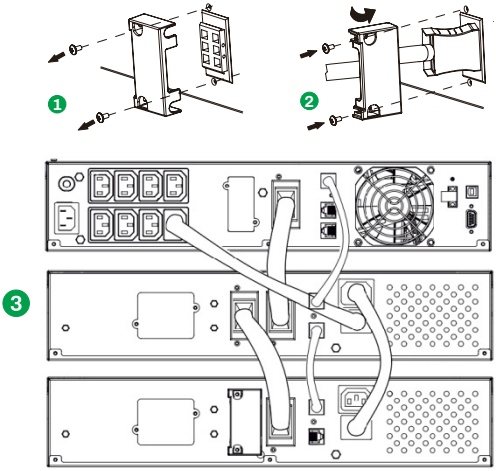
CONNECTION #1: POWER MODULE (UPS) WITH ONE BATTERY MODULE

1. Step 1: Loosen the two screws to remove the battery cable retention bracket of the power module and battery module.
2. Use the battery cable to connect the batteries module to the power module.
3. Rotate the battery cable retention bracket and tighten the two screws to fix battery cable on the power module and battery module.



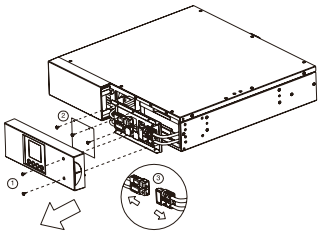
CONNECTION #2: POWER MODULE (UPS) WITH MULTIPLE BATTERY MODULES

1. Connect the 1st battery module to the Power module using battery cable. (Refer to above steps of connection #1).
2. Loosen the two screws to remove the battery cable retention bracket of the 1st battery module and 2nd battery module.
3. Use the battery cable to connect the 2nd battery module to the 1st battery module.
4. Rotate the battery cable retention bracket and tighten the two screws to fix battery cable on 1st batteries module and 2nd battery module.

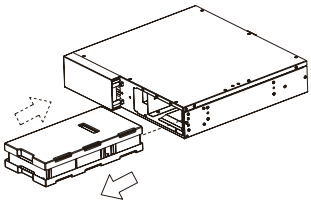


Battery Installation and replacement

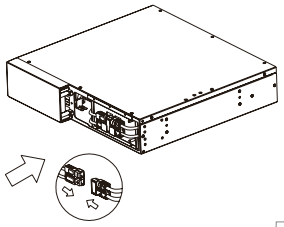
Step 1: Remove the front panel. Remove the retaining screws from the battery bracket and then remove the cover itself. Disconnect the connectors.



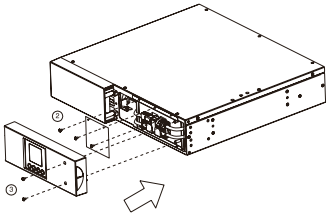
Step 2: Pull the battery tray out slowly. Replace with the new or refurbished battery tray.



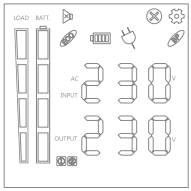
Step 3: Fasten the battery bracket and then reconnect the connectors. Place the connector assembly in the supporting bracket.



Step 4: Tighten the screws of the battery bracket and front panel.

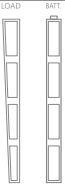


LCD PANEL

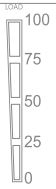


ICON DEFINITION

	MUTE: This icon appears whenever the UPS is in silent mode. The alarm will not beep again during silent mode until the battery reaches low capacity.
	SCHEDULE: Users can schedule the UPS to turn on or shut down the connected load through the UPS software. The LCD display will show how much time is remaining left before the scheduled events are to occur.
	FAULT: This icon appears if there is a problem with the UPS. Contact NFlux for support.
	SETTING MODE: Indicates the the UPS is currently in the UPS settings menu.
ECO	**ECO MODE:** Indicates the UPS is currently operating in Eco Mode.*
	BATTERY MODE: Indicates the UPS is running on battery. Note when this icon is blinking, the batteries need to be replaced. Contact NFlux for support.
	SOLID ICON: Indicates the UPS is operating in Line Mode (normal operation). **BLINKING ICON:** Indicates the UPS is operating Frequency Converter Mode.†
BP	**BYPASS MODE:** Indicates the UPS is operating in Bypass Mode.



LOAD CAPACITY:
Indicates how much load the UPS is supporting. Each bar represents an approximate 25% load increment out of a possible 100%.



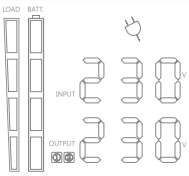
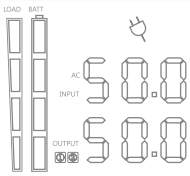
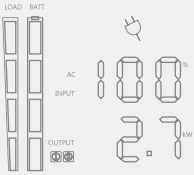
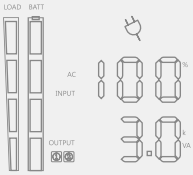
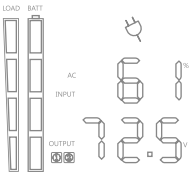
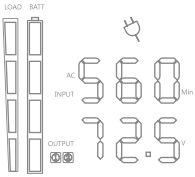
BATTERY CAPACITY:
The 'Batt' LCD indicator represents different information depending on the UPS operating mode. When operating in BATTERY MODE the LCD represents the remaining battery capacity in %. In LINE MODE the load segments cycling indicates the batteries are charging. When all the battery segments are lit the batteries are fully charged.

①	**OUTPUT PROGRAM 1:** Indicates the configured status of Non Critical Load (NCL) outlets. If NCL outlets are enabled this icon will remain lit. If NCL outlets are disabled, this icon will not be visible.
②	**OUTPUT PROGRAM 2:** Indicates the configured status of Critical Load (CL) outlets. If critical load outlets are enabled this icon will remain lit. If CL outlets are disabled, this icon will not be visible.

* *When operating in ECO Mode the UPS efficiency is higher than in Line Mode or normal mode. However the transfer time from mains power to battery will be greater than 0ms.*

† *When operating in Frequency Converter Mode, the output frequency of the UPS will be always 50Hz or 60Hz, however the UPS load capacity will be derated by 40%.*

LCD DISPLAYS

Page	Description	LCD display	
1-2	INPUT Voltage (V) OUTPUT Voltage (V) INPUT Frequency (Hz) OUTPUT Frequency (Hz)		
3-4	UPS LOAD in WATTS (%) UPS LOAD (kW) UPS Load in VA (%) UPS LOAD (VA)		
5-6	Battery capacity (%) Battery Voltage (V) Battery Backup Runtime (Minutes) Battery Voltage (V)		

BUTTON OPERATION

Button	Operation Description
ON	Press and hold this button to turn the UPS on. In Line Mode, ECO mode, or Converter mode, press and hold the “ON” button for 5 seconds to activate the battery self test function.
OFF	Press this button to turn off UPS.
ENTER	Press this button for 5 seconds to enter the setting menu. This can only be done while in bypass mode or standby mode. In the settings menu press this button to cycle through the available options. Press this button continuously to exit the setting menu and save changes. In normal operation press this button to scroll up through the LCD menu.
ESC	In the settings menu, press this button to change a setting. Press this button continuously to exit the settings menu without saving changes. When not in the settings menu, press and hold this button for approximately 5 seconds to disable or enable the alarm buzzer. In normal operation press this button to scroll down through the LCD menu.
ENTER + ESC	Enable bypass mode. When the mains power is normal, press these two buttons simultaneously for 5 seconds to change the UPS to operate in bypass mode.
ON + ENTER	Rotate the LCD display. To rotate the display 90 degrees press and hold these two buttons simultaneously for 5 seconds.

LCD SETTINGS CONFIGURATION

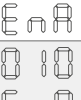
There are 9 UPS settings that can be configured by the user

1. Press and hold the “**ENTER**” button for 5 seconds to enter the setting mode. The first setting option will be displayed on the LCD screen. Note: You can only enter the settings menu while the UPS is in Bypass mode or Standby mode.

2. Press the "**ENTER**" button to cycle through the settings menu.

3. Press and hold the "**ESC**" button for 5 seconds to exit the settings menu without saving. Press the "**ENTER**" button for 5 seconds to save changes and exit the menu.

4. When not in the settings menu, press and hold the "**ESC**" button for 5 seconds to disable or enable the buzzer alarm.

Setting item	Sub Menu	Available Settings	Default Setting	LCD Display
001	Output Voltage	=[208V] [220V][230V] [240V]	230V	
002	Output Frequency	= [50Hz][60Hz]	50Hz	
003	ECO Mode	[0%] (Disable) [10%][15%] (Enable)*	0%	
004	Bypass Mode	[DIS] (Disable) [ENA] (Enable)	Enable	
005	Converter Mode	[DIS] (Disable) [ENA] (Enable)†	Disable	
006	EPO /ROO‡	[EPo] /[Roo]	EPO	
007	EBM Number††	[0bP]/[1bP]/[2bP]/[3bP]/[4bP] /[5bP]/[6bP]/[7bP]/[8bP]/[9bP]	0	
008	Bypass when UPS is Off	[DIS] (Disable) [ENA] (Enable)	Disable	
009	Buzzer	[DIS] (Disable) [ENA] (Enable)	Enable	
010	NCL Output	[DIS] (Disable) [ENA] (Enable)	Enable	

** This function would be set as 0% when Converter Mode is enabled.*

† UPS has no bypass when Converter Mode is enabled.

‡ ROO (Remote On/Off): If ROO is enabled, UPS can be turned on/off by the ROO port. If the ROO port is disconnected, the UPS will be turned off. If the ROO port is connected, UPS will be turned on when the utility is normal.

†† The UPS cannot automatically detect the numbers of connected external battery modules (EBM), so a manual configuration from a user is necessary.

EVENT ID DESCRIPTIONS

Use the following table to translate the error code displayed on the UPS LCD. Contact NFlux for support if you are unable to resolve the issue.

Event ID	Description of Event
E01	**Bus Start Fail:** DC-DC converter or bus sensing circuit failed.
E02	**Bus Volt High:** DC-DC converter failed.
E03	**Bus Volt Low:** DC-DC converter failed.
E04	**Bus Unbalanced:** DC-DC converter failed.
E06	**INV Start Fail:** Inverter circuit failed.
E07	**INV Volt High:** Inverter circuit or the output voltage sensing circuit has failed.
E08	**INV Volt Low:** The load may be too heavy or the inverter circuit has failed.
E09	**INV Short:** The inverter circuit has failed.
E11	**Bat Volt High:** The external battery module connection is wrong, or the charger has failed.
E12	**Bat Volt Low:** Batteries have failed.
E14	**Over Load:** UPS is overloaded.
E18	**Fan Fail:** The ventilation hole has been covered, or the fans are unable to operate.
E19	**Over Temperature:** High ambient temperature, or the ventilation hole has been covered.
A56	**Bat Volt Low: Battery voltage is low.**
A57	**Bat Cap Low:** Battery capacity is low.
A59	**Bat disconnect:** Battery is disconnected.
A60	**Overcharge:** Charger voltage is too high.
A61	**Charger fail:** Charger has failed.
A62	**Bat Bad:** Battery has failed.
A64	**Over Load warning:** UPS is overloaded.
A66	**EPO Off:** The EPO connector is disconnected.
A68	**High Temperature:** High ambient temperature, or the ventilation hole has been covered. This alarm is possible only on UPS startup.
A69	**Fan Lock:** Fans are locked and cannot operate.

TECHNICAL SPECIFICATIONS

Model	X9-1kW	X9-2kW	X9-3kW
Capacity (VA/W)	1000VA/1000W	2000VA/2000W	3000VA/3000W
Configuration			
Form Factor	Rack / Tower		
Energy-saving Technology	Yes, ECO Mode Efficiency ≧95%		
Input			
Voltage Range	80~300Vac±5% for 1000/2000/3000VA model		@0~30%Load±5%
	120~300Vac±5% for 1000/2000VA model 140~300Vac±5% for 3000VA only		@30~60%Load±5%
	140~300Vac±5% for 1000/2000VA model 160~300Vac±5% for 3000VA only		@60~80%Load±5%
	160~300Vac±5% for 1000/2000VA model 190~300Vac±5% for 3000VA only		@80~100%Load±5%
Frequency Range	40~70Hz		
Power Factor	0.99		
Cold Start	Yes		

Output				
Output Voltage		208/220/230/240Vac±1%		
Output Waveform		Pure Sine Wave		
Output Frequency		50 / 60Hz (Auto-Sensing or Configurable) ±0. 5Hz*		
Transfer Time (Typically)		0ms		
Rated Power Factor		1.0		
Harmonic Distortion		THD < 3% at Linear Load, < 5% at Non-linear Load @ Nominal Input		
Crest Factor		3 : 1		
ECO Mode Voltage Regulation		±10%, ±15% (Configurable)		
Overload Protection	Line Mode	100~110% Warning, transfer to bypass after 2min 110~130% Warning, transfer to bypass after 1min >130%Transfer to bypass after 3s		
	Battery Mode	100~130% Warning, shutdown after 1min >130% Shutdown after 3s		
Short Circuit Protection		UPS Output Cut off Immediately or Input Fuse / Circuit Breaker Protection		
Surge Protection		IEC 61000-4-5 Level 4		
Battery				
Model Name		X9-1kW	X9-2kW	X9-3kW
Battery Voltage		36V	72V	72V
Battery Type		12V/9AH	12V/9AH	12V/9AH
Recharge Time (Typically)		4 Hours (internal batteries)		
Sealed, Maintenance Free		Yes		
Status Indicators				
LCD Screen		Graphic LCD		
Audible Alarms		Battery Mode, Battery Low, Overload, UPS Fault, Replace Battery, Bypass Mode Charger Failure /Over Charged, Fan failure, EPO active		
Environment				
Operating Temperature		32°F to 104°F (0°C to 40°C)		
Operating Relative Humidity		20 to 90% Non-Condensing		
Management				
On-Device Features		Self Test, Auto-Charge, Auto-Restart, Auto-Overload Recovery		
Connectivity Ports		(1) Serial Port (RS232), (1) USB Port		
SNMP/HTTP Capable		(1) Expansion Port (With optional card)		
Physical				
Dimensions (H x W x D)		**X9-1kW** 3.46 x 17.24 x 16.93 in. 88 x 438 x 430 mm	**X9-2kW & X9-3kW** 3.46 x 17.24 x 24.02 in 88 x 438 x 610 mm	
Net Weight(Kg)		15.02	26.93	27.34

** Within 50/60Hz±8% by default, the output frequency is synchronised with the mains input. The user can adjust the acceptable range for output frequency (±1, 2, 3, 4, 5, 6, 7, 8, 9, 10%). When input frequency is out of the synchronisation window but within 40-70Hz, UPS can stay in line mode and output frequency is regulated at 50/60Hz+0.5% with the load derated by 40%.*

TROUBLESHOOTING

Problem	Possible Cause	Solution
Warning		
O/P Overload	Your equipment requires more power than the UPS can provide. If the UPS is in Line Mode then it will transfer to Bypass Mode; if the UPS is in Battery Mode it will shut down.	Shut off non-essential equipment. If this solves the overload problem, the UPS will transfer to normal operation.
Battery Low	UPS is operating on battery power and will be shutting down soon due to extremely low battery voltage.	UPS will restart automatically when acceptable utility power returns.
BAT Disconnected/ Battery Replace	Missing battery power	Check battery connector when use battery packages.
	UPS has failed in Battery Test.	Contact NFLUX support to replace the battery
Charger Failure	Charger has failed.	1. Shut down UPS and turn off AC input. 2. Contact NFLUX for repair.
EPO OFF	Missing the EPO connection.	Check the EPO connection.
Fault		
Over Temperature	High ambient temperature.	1. Shut down UPS. Restart UPS to Check the fan for operation and if the ventilation hole has been covered 2. Contact NFLUX for repair.
Output Short	Output short circuit.	1. Shut down UPS 2. Your attached equipment may have an electrical problem, please disconnect all devices from the UPS, and reconnect them one by one to confirm.
High or low O/P V	Output voltage is too high or too low.	Shut down UPS and contact NFLUX for repair.
Bus Fault	Internal DC bus voltage is too high or too low.	

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