

User Manual



**Online SCR3 6K/10KVA
Rack/Tower Online UPS
with Isolation Transformer**

Uninterruptible Power Supply System

Version: 2



Please comply with all warnings and operating instructions in this manual strictly. Save this manual properly and read carefully the following instructions before installing the unit. Do not operate this unit before reading through all safety information and operating instructions carefully.

Veillez vous conformer à tous les avertissements et instructions d'utilisation de ce manuel. Conservez ce manuel correctement et lisez attentivement les instructions suivantes avant d'installer l'appareil. Ne pas utiliser cet appareil avant d'avoir lu attentivement toutes les informations de sécurité et les instructions d'utilisation.

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Orion Power Systems Service and Technical Support

OBTAINING WARRANTY SERVICE:

In the United States: 1-877-385-1654

Please have the following information ready when you call:

- Model number and Serial number
- Description of failure or problem
- Date of failure or problem
- Customer contact information

Product Registration

Product Registration is required to activate the warranty for your Orion Power UPS. Registering your product also allows Orion Power Systems to communicate product updates, features, and warranty issues.

Please register your product online at :

<http://www.orionpowersystems.com/product-registration.html>

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PHYSICAL		
Dimension, DXWXH(mm)	UPS Unit: 610 x 438 x 86.5 [2U] Battery Pack: 715 x 438 x 86.5 [2U] Battery Pack: 607x 438 x 131 [3U] (option) Transformer Box: 607X 438 X 131[3U]	UPS Unit: 610 x 438 x 86.5 [2U] Battery Pack: 715 x 438 x 86.5 [2U] Battery Pack: 607x 438 x 131 [3U] (option) Transformer Box: 687 X 438 X 131[3U]
Net Weight (kgs)	UPS Unit: 17 Battery Pack: 47 Battery Pack: 55 (option) Transformer Box: 62	UPS Unit: 20 Battery Pack: 53 Battery Pack: 63 (option) Transformer Box:92
ENVIRONMENT		
Operation Temperature	0 ~ 40°C (the battery life will down when > 25°C)	
Operation Humidity	<95 % and non-condensing	
Operation Altitude**	<1000m	
Acoustic Noise Level	Less than 55dB @ 1 Meter	Less than 58dB @ 1 Meter
MANAGEMENT		
Smart RS-232 or USB	Supports Windows® 2000/2003/XP/Vista/2008/7/8, Linux, Unix, and MAC	
Optional SNMP	Power management from SNMP manager and web browser	

* Derate capacity to 60% of capacity in CVCF mode and to 90% when the output voltage is adjusted to 208VAC or UPSs are operated in parallel.

**When using 16 pieces of batteries, the output power factor will be derated to PF0.8.

***If the UPS is installed or used in a place where the altitude is above than 1000m, the output power must be derated one percent per 100m.

Product specifications are subject to change without further notice.

6. Specifications

MODEL		SCR3-6000RT	SCR3-10000RT
CAPACITY*		6000 VA / 6000 W	10000 VA / 10000 W
INPUT			
Voltage Range	Line Loss	110 VAC(L-N) ± 3 % @ (0-60%) Load 176 VAC(L-N) ± 3 %@ (60-100%) Load	
	Low Line Comeback	Low Line Loss Voltage + 10V	
	High Line Loss	300 VAC(L-N) ± 3 %	
	High Line Comeback	High Line Loss Voltage - 10V	
Frequency Range		46Hz ~ 54 Hz @ 50Hz system 56Hz ~ 64 Hz @ 60Hz system	
Phase		Single phase with ground	
Power Factor		≥ 0.99 at 100% Load	
OUTPUT			
Output voltage		208/220/230/240VAC	
AC Voltage Regulation		± 2%	
Frequency Range (Synchronized Range)		46Hz ~ 54 Hz @ 50Hz system 56Hz ~ 64 Hz @ 60Hz system	
Frequency Range (Batt. Mode)		50 Hz ± 0.1 Hz or 60Hz ± 0.1 Hz	
Overload	AC mode	100%~110%: 10min ; 110%~130%: 1min ; >130% : 1sec	
	Battery mode	100%~110%: 30sec ; 110%~130%: 10sec ; >130% : 1sec	
Current Crest Ratio		3:1 max	
Harmonic Distortion		≤ 2 % @ 100% Linear Load; ≤ 6 % @ 100% Non-linear Load	
Transfer Time	Line↔Battery	0 ms	
	Inverter↔Bypass	0 ms	
	Inverter↔ECO	<10 ms(Typical)	
EFFICIENCY			
AC mode		> 90%	
Battery Mode		> 89%	
BATTERY			
Type	12 V / 7 Ah		12 V / 9 Ah
Numbers	16		16
Recharge Time	7 hours recover to 90% capacity		9 hours recover to 90% capacity
Charging Current	1 A ± 10% (max.)		1 A ± 10% (max.)
Charging Voltage	(Battery number*13.65 V) ± 1%		

1. Safety and EMC instructions - Consignes de sécurité et EMC

Please read carefully the following user manual and the safety instructions before installing the unit or using the unit! Veuillez lire attentivement le manuel d'utilisation suivant et les consignes de sécurité avant d'installer ou d'utiliser l'appareil!

1-1. Transportation and Storage - Transport et stockage



Please transport the UPS system only in the original package to protect against shock and impact. Veuillez transporter le système UPS uniquement dans son emballage d'origine pour le protéger contre les chocs et les impacts.



The UPS must be stored in the room where it is ventilated and dry. L'UPS doit être rangé dans la pièce où il est ventilé et sec.

1-2. Preparation - Préparation



Condensation may occur if the UPS system is moved directly from cold to warm environment. The UPS system must be absolutely dry before being installed. Please allow at least two hours for the UPS system to acclimate the environment. La condensation peut se produire si le système UPS est déplacé directement d'un environnement froid à un environnement chaud. Le système UPS doit être absolument sec avant d'être installé. Veuillez prévoir au moins deux heures pour que le système UPS s'adapte à l'environnement.



Do not install the UPS system near water or in moist environments. N'installez pas le système UPS près de l'eau ou dans des environnements humides.



Do not install the UPS system where it would be exposed to direct sunlight or nearby heater. N'installez pas le système UPS dans un endroit exposé aux rayons directs du soleil ou à un appareil de chauffage à proximité.



Do not block ventilation holes in the UPS housing. Ne bloquez pas les orifices de ventilation dans le boîtier de l'ASI.

1-3. Installation



Do not connect appliances or devices which would overload the UPS (e.g. big motor-type equipment)) to the UPS output sockets or terminal. Ne connectez pas d'appareils ou de dispositifs susceptibles de surcharger

l'onduleur (par exemple, un gros équipement de type moteur) aux prises de sortie ou au terminal de l'onduleur.



Place cables in such a way that no one can step on or trip over them. Placez les câbles de manière à ce que personne ne puisse marcher dessus ou trébucher dessus.



Do not block air vents in the housing of UPS. The UPS must be installed in a location with good ventilation. Ensure enough space on each side for ventilation.

Ne bloquez pas les bouches d'aération dans le boîtier de l'onduleur. L'onduleur doit être installé dans un endroit bien ventilé. Assurez-vous qu'il y a suffisamment d'espace de chaque côté pour la ventilation.



UPS has provided earthed terminal, in the final installed system configuration, equipotential earth bonding to the external UPS battery cabinets. L'UPS a fourni à la borne mise à la terre, dans la configuration finale du système installé, une liaison de terre équipotentielle aux armoires de batterie externes de l'ASI.



The UPS can be installed only by qualified maintenance personnel. L'onduleur ne peut être installé que par du personnel de maintenance qualifié.



An appropriate disconnect device as short-circuit backup protection should be provided in the building wiring installation. Un dispositif de déconnexion approprié comme protection de sauvegarde contre les courts-circuits doit être fourni dans l'installation de câblage du bâtiment.



An integral single emergency switching device which prevents further supply to the load by the UPS in any mode of operation should be provided in the building wiring installation. Un seul dispositif intégré de commutation d'urgence empêchant toute alimentation supplémentaire de la charge par l'onduleur, quel que soit le mode de fonctionnement, doit être fourni dans l'installation de câblage du bâtiment.



Connect the earth before connecting to the building wiring terminal. Connectez la terre avant de connecter à la borne de câblage du bâtiment.



Installation and Wiring must be performed in accordance with the local



When replace the batteries, install the same number and same type of batteries. Lorsque vous remplacez les piles, installez le même nombre et le même type de piles.



Do not attempt to dispose of batteries by burning them. This could cause battery explosion. The batteries must be rightly disposed according to local regulation. Ne tentez pas de vous débarrasser des piles en les brûlant. Cela pourrait provoquer une explosion de la batterie. Les piles doivent être correctement déposées conformément à la réglementation locale.



Do not open or destroy batteries. Escaping electrolyte can cause injury to the skin and eyes. It may be toxic. Ne pas ouvrir ni détruire les piles. Une fuite d'électrolyte peut causer des blessures à la peau et aux yeux. Cela peut être toxique.



Please replace the fuse only with the same type and amperage in order to avoid fire hazards. Veuillez remplacer le fusible uniquement avec le même type et la même intensité afin d'éviter tout risque d'incendie.



Do not disassemble the UPS system. Ne démontez pas le système UPS.



Even after the unit is disconnected from the mains, components inside the UPS system are still connected to the battery packs which are potentially dangerous. Même après la déconnexion de l'unité du secteur, des composants internes du système UPS sont toujours connectés aux batteries potentiellement dangereuses.



Before carrying out any kind of service and/or maintenance, disconnect the batteries and verify that no current is present and no hazardous voltage exists in the terminals of high capability capacitor such as BUS-capacitors. Avant d'effectuer tout type de service et / ou de maintenance, débranchez les batteries et vérifiez qu'il n'y a pas de courant ni de tension dangereuse aux bornes du condensateur à haute capacité, tel que le BUS.



Only persons are adequately familiar with batteries and with the required precautionary measures may replace batteries and supervise operations. Unauthorized persons must be kept well away from the batteries. Seules les personnes familiarisées avec les piles et connaissant les mesures de précaution requises peuvent remplacer les piles et superviser les opérations. Les personnes non autorisées doivent être éloignées des batteries.

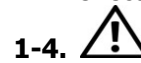


Verify that no voltage between the battery terminals and the ground is present before maintenance or repair. In this product, the battery circuit is not isolated from the input voltage. Hazardous voltages may occur between the battery terminals and the ground. Vérifiez qu'il n'y a pas de tension entre les bornes de la batterie et la terre avant tout entretien ou réparation. Dans ce produit, le circuit de la batterie n'est pas isolé de la tension d'entrée. Des tensions dangereuses peuvent apparaître entre les bornes de la batterie et la terre.



Batteries may cause electric shock and have a high short-circuit current. Please remove all wristwatches, rings and other metal personal objects before maintenance or repair, and only use tools with insulated grips and handles for maintaining or repairing. Les piles peuvent provoquer des décharges électriques et un courant de court-circuit élevé. Retirez toutes les montres-bracelets, bagues et autres objets personnels en métal avant tout entretien ou réparation. Utilisez uniquement des outils à poignée et poignées isolantes pour l'entretien ou la réparation.

electrical laws and regulations. L'installation et le câblage doivent être effectués conformément aux lois et réglementations électriques locales.



1-4. **Connection Warnings - Avertissements de connexion**

- This UPS should be connected with **TN** earthing system. Cet UPS doit être connecté au système de mise à la terre TN.
- The power supply for this unit must be single-phase rated in accordance with the equipment nameplate. It also must be suitably grounded. L'alimentation électrique de cette unité doit être monophasée conformément à la plaque signalétique de l'équipement. Il doit également être convenablement mis à la terre.

WARNING

HIGH LEAKAGE CURRENT

EARTH CONNECTION ESSENTIAL

BEFORE CONNECTING SUPPLY

ATTENTION

COURANT DE FUITE ÉLEVÉ

CONNEXION TERRE ESSENTIELLE

AVANT DE CONNECTER L'ALIMENTATION

- Use of this equipment in life support applications where failure of this equipment can reasonably be expected to cause the failure of the life support equipment or to significantly affect its safety or effectiveness is not recommended. Do not use this equipment in the presence of a flammable anesthetic mixture with air, oxygen or nitrous oxide. L'utilisation de cet équipement dans des applications d'assistance à la vie où une défaillance de cet équipement peut raisonnablement être la cause de la panne de l'équipement de survie ou affecter de manière significative sa sécurité ou son efficacité n'est pas recommandée. N'utilisez pas

cet équipement en présence d'un mélange anesthésique inflammable avec de l'air, de l'oxygène ou de l'oxyde nitreux.

- Connect your UPS power module's grounding terminal to a grounding electrode conductor. Connectez la borne de mise à la terre du module d'alimentation de l'onduleur à un conducteur d'électrode de mise à la terre.
- The UPS is connected to a DC energy source (battery). The output terminals may be live when the UPS is not connected to an AC supply. L'onduleur est connecté à une source d'énergie CC (batterie). Les bornes de sortie peuvent être sous tension lorsque l'onduleur n'est pas raccordé à une alimentation en CA.
- In accordance with safety standard EN-IEC 62040-1, installation has to be provided with a «Backfeed Protection» system, as for example a contactor, which will prevent the appearance of voltage or dangerous energy in the input mains during a mains fault. There is no standard backfeed protection inside of the UPS. Please isolate the UPS before working according to Diagram 1. The isolation device must be able to carry the UPS input current. SCR3-6000RTSW includes backfeed protection when used with SCR3-MBSM-6KSW. Conformément à la norme de sécurité EN-IEC 62040-1, l'installation doit être équipée d'un système «Protection contre le refoulement, comme par exemple un contacteur, qui empêche l'apparition de tension ou d'énergie dangereuse sur le secteur à l'entrée . Il n'y a pas de protection contre le retour d'alimentation standard dans l'onduleur. Veuillez isoler l'onduleur avant de travailler conformément au schéma 1. Le dispositif d'isolation doit pouvoir supporter le courant d'entrée de l'onduleur. Le SCR3-6000RTSW inclut une protection contre le retour d'alimentation lorsqu'il est utilisé avec SCR3-MBSM-6KSW.

	from AC power via bypass. 2. The load is no longer supplied by power.	
Battery backup time is shorter than nominal value	Batteries are not fully charged	Charge the batteries for at least 7 hours and then check capacity. If the problem still persists, consult your dealer.
	Batteries defect	Contact your dealer to replace the battery.
The icon  and  flash on LCD display and alarm beeps every second.	Fan is locked or not working; or the UPS temperature is too high.	Check fans and notify dealer.

5. Storage and Maintenance

5-1. Storage

Before storing, charge the UPS at least 7 hours. Store the UPS covered and upright in a cool, dry location. During storage, recharge the battery in accordance with the following table:

Storage Temperature	Recharge Frequency	Charging Duration
-25°C - 40°C	Every 3 months	1-2 hours
40°C - 45°C	Every 2 months	1-2 hours

5-2. Maintenance



The UPS system operates with hazardous voltages. Repairs may be carried out only by qualified maintenance personnel. Le système UPS fonctionne avec des tensions dangereuses. Les réparations ne peuvent être effectuées que par du personnel de maintenance qualifié.

4. Trouble Shooting

If the UPS system does not operate correctly, please solve the problem by using the table below.

Symptom	Possible cause	Remedy
No indication and alarm in the front display panel even though the mains is normal.	The AC input power is not connected well.	Check if input cable firmly connected to the mains.
The icon  and the warning code EP flash on LCD display and alarm beeps every second.	EPO function is enabled.	Set the circuit in closed position to disable EPO function.
The icon  and BATT. FAULT flash on LCD display and alarm beeps every second.	The external or internal battery is incorrectly connected.	Check if all batteries are connected well.
The icon  and OVER LOAD flash on LCD display and alarm beeps twice every second.	UPS is overload.	Remove excess loads from UPS output.
	UPS is overloaded. Devices connected to the UPS are fed directly by the electrical network via the Bypass.	Remove excess loads from UPS output.
	After repetitive overloads, the UPS is locked in the Bypass mode. Connected devices are fed directly by the mains.	Remove excess loads from UPS output first. Then shut down the UPS and restart it.
Fault code is shown as 43. The icon OVER LOAD lights on LCD display and alarm beeps continuously.	UPS is overload too long and becomes fault. Then UPS shut down automatically.	Remove excess loads from UPS output and restart it.
Fault code is shown as 14, the icon SHORT lights on LCD display, and alarm beeps continuously.	The UPS shut down automatically because short circuit occurs on the UPS output.	Check output wiring and if connected devices are in short circuit status.
Fault code is shown as 01, 02, 03, 04, 11, 12, 13, 14, 1A, 21, 24, 35, 36, 41, 42 or 43 on LCD display and alarm beeps continuously.	A UPS internal fault has occurred. There are two possible results: 1. The load is still supplied, but directly	Contact your dealer.

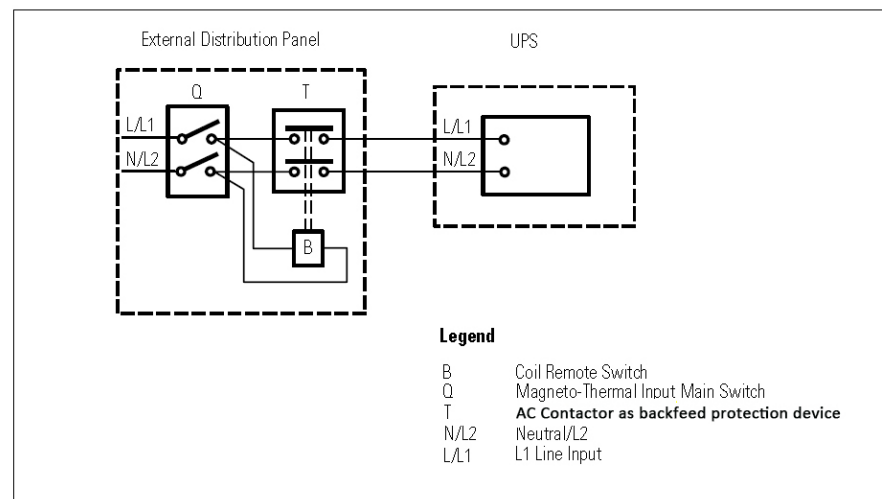


Diagram 1: External backfeed protection wiring



There can be no derivation in the line that goes from the «Backfeed Protection» to the UPS, as the standard safety would be infringed. Il ne peut y avoir de dérivation dans la ligne allant de la «Protection contre le retour» à l'ASI, car la sécurité standard serait violée

- Warning labels should be placed on all primary power switches installed in places away from the device to alert the electrical maintenance personnel of the presence of a UPS in the circuit. The label will bear the following or an equivalent text:
- Des étiquettes d'avertissement doivent être placées sur tous les commutateurs d'alimentation principaux installés à des endroits éloignés de l'appareil pour alerter le personnel de maintenance électrique de la présence d'un onduleur dans le circuit. L'étiquette portera le texte suivant ou un texte équivalent:

Before working on this circuit

- Isolate Uninterruptible Power Supply (UPS)
- Then check for Hazardous Voltage between all terminals including the protected earth



Risk of Voltage Backfeed

Avant de travailler sur ce circuit - Isoler l'alimentation sans coupure (UPS)

- Ensuite, vérifiez la tension dangereuse entre toutes les bornes, y compris la terre protégée

1-5. Operation - Opération



Do not disconnect the earth conductor cable on the UPS or the building wiring terminals in any time since this would cancel the protective earth of the UPS system and of all connected loads. Ne débranchez jamais le câble du conducteur de terre de l'onduleur ou des bornes de câblage du bâtiment, car cela annulerait la mise à la terre de protection du système d'ASI et de toutes les charges connectées.



The UPS system features its own, internal current source (batteries). The UPS output sockets or output terminal blocks may be electrically live even if the UPS system is not connected to the building wiring outlet. Le système UPS dispose de sa propre source de courant interne (batteries). Les prises de sortie de l'onduleur ou les borniers de sortie peuvent être sous tension même

Over charge		Beeping every second
EPO enable		Beeping every second
Fan failure/Over temperature		Beeping every second
Charger failure		Beeping every second
I/P fuse broken		Beeping every second
Overload 3 times in 30min		Beeping every second

3-11 Warning Code

Warning code	Warning event	Warning code	Warning event
01	Battery unconnected	10	L1 IP fuse broken
07	Over charge	21	Line situations are different in parallel system
08	Low battery	22	Bypass situations are different in parallel system
09	Overload	33	Locked in bypass after overload 3 times in 30min
0A	Fan failure	3A	Cover of maintain switch is open
0B	EPO enable	3D	Bypass unstable
0D	Over temperature	3E	Boot loader is missing
0E	Charger failure	42	Over-temperature on transformer
44	Failure on parallel redundancy	45	Overload on parallel redundancy

failure					
Bus over	02	None	Inverter relay short circuited	24	Non
Bus under	03	None	Charger short circuited	2a	Non
Bus unbalance	04	None	Can communication fault	31	Non
Inverter soft start failure	11	None	Parallel output current unbalance	36	Non
High Inverter voltage	12	None	Over temperature	41	Non
Low Inverter voltage	13	None	CPU communication failure	42	Non
Inverter output short circuited	14		Overload	43	
Negative power fault	1A	None	Battery turn-on failure	6A	Non
Inverter over current	60	None	PFC current failure in battery mode	6B	Non
Inverter waveform abnormal	63	None	Bus voltage changes too fast	6C	Non
Inverter current detection error	6D	None	SPS 12V abnormal	6E	Non
Transformer over temperature	77	None			

3-10. Warning Indicator

Warning	Icon (flashing)	Alarm
Battery low	 	Beeping every second
Overload	 	Beeping twice every second
Battery unconnected	 	Beeping every second

si le système d'onduleur n'est pas connecté à la sortie de câblage du bâtiment.



In order to fully disconnect the UPS system, first press the "OFF" button and then disconnect the mains. Pour déconnecter complètement le système UPS, appuyez d'abord sur le bouton «OFF», puis débranchez le secteur.



Ensure that no liquid or other foreign objects can enter into the UPS system. Assurez-vous qu'aucun liquide ou autre corps étranger ne puisse pénétrer dans le système UPS.



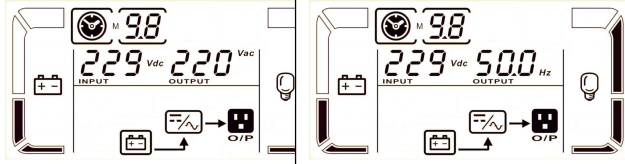
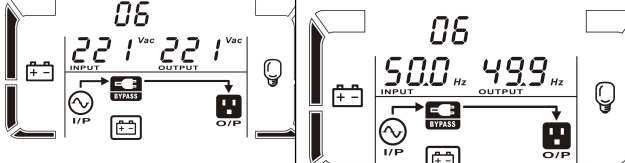
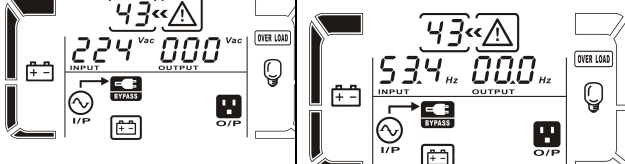
The UPS can be operated by any individuals with no previous experience. L'UPS peut être utilisé par des personnes sans expérience préalable.

1-6. Standards

* Safety	
Safety Conformance: IEC/EN 62040-1,UL1778 (5th Edition)	
Safety Markings : cTUVus, CE	
* EMI	
Conducted Emission.....:IEC/EN 62040-2,FCC PART15 CLASS A	
Radiated Emission.....:IEC/EN 62040-2,FCC PART15 CLASS A	
*EMS	
ESD.....:IEC/EN 61000-4-2	Level 4
RS.....:IEC/EN 61000-4-3	Level 3
EFT.....:IEC/EN 61000-4-4	Level 4
SURGE.....:IEC/EN 61000-4-5	Level 4
CS.....:IEC/EN 61000-4-6	Level 3
Power-frequency Magnetic field.....:IEC/EN 61000-4-8	Level 4
Low Frequency Signals.....:IEC/EN 61000-2-2	
Warning: This is a product for commercial and industrial application in the second environment-installation restrictions or additional measures may be needed to	

prevent disturbances.

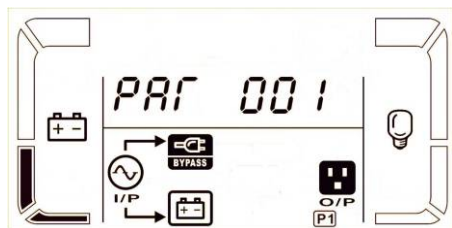
Avertissement: Ceci est un produit pour une application commerciale et industrielle dans le second environnement. Des restrictions d'installation ou des mesures supplémentaires peuvent être nécessaires pour éviter les perturbations.

		alarm will beep every 4 seconds.
	LCD display	
Bypass mode	Description	When input voltage is within acceptable range and bypass is enabled, turn off the UPS and it will enter Bypass mode. Alarm beeps every two minutes.
	LCD display	
Battery Test	Description	When UPS is in AC mode or CVCF mode, press "Test" button for more than 0.5s. Then the UPS will beep once and start "Battery Test". The line between I/P and inverter icons will blink to remind users. This operation is used to check the battery status.
	LCD display	
Fault status	Description	When UPS has fault happened, it will display fault messages in LCD panel.
	LCD display	

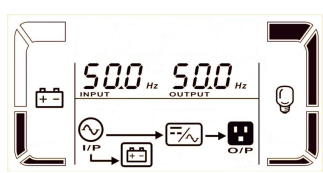
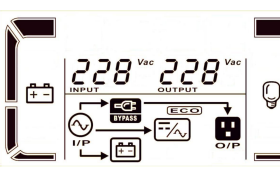
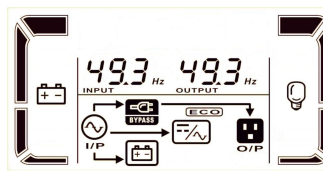
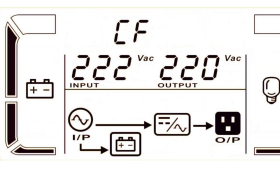
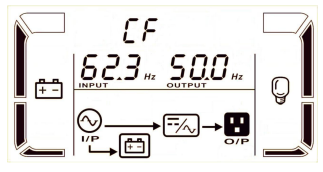
3-9. Fault Code

Fault event	Fault code	Icon	Fault event	Fault code	Icon
Bus start	01	None	Battery SCR short circuited	21	None

will be assigned as either "002" or "003". The assigned numbers may be changed dynamically in the operation.



Operating mode/status

AC mode	Description	When the input voltage is within acceptable range, UPS will provide pure and stable AC power to output. The UPS will also charge the battery at AC mode.	
	LCD display		
ECO mode	Description	When the input voltage is within voltage regulation range and ECO mode is enabled, UPS will bypass voltage to output for energy saving.	
	LCD display		
CVCF mode	Description	When input frequency is within 46 to 64Hz, the UPS can be set at a constant output frequency, 50 Hz or 60 Hz. The UPS will still charge battery under this mode.	
	LCD display		
Battery mode	Description	When the input voltage is beyond the acceptable range or power failure, UPS will backup power from battery and	

2. Installation and Operation

There are two different types of online UPS: standard and long-run models. Please refer to the following model table.

Model	Type	Model	Type
6000RT	Standard model	6000RT	Long-run model
10000RT		10000RT	

2-1. Unpacking and Inspection

Unpack the package and check the package contents. The shipping package contains:

- One UPS
- One user manual
- One monitoring software CD
- One RS-232 cable (option)
- One USB cable
- One parallel cable and one share current cable and one OP relay board and two parallel board (option)
- One battery cable (option)
- Two ears for each UPS、battery pack and transformer box
- Four feet for 2U
- Four feet and two long extensions and two metal plates for 4U
- Four feet and four long extensions and two short extension and four metal plate for 7U
- Four feet and two long extensions and two short extension and two metal plate for 5U
- Four feet and six long extensions and four metal plates for 4U

NOTE: Before installation, please inspect the unit. Be sure that nothing inside the package is damaged during transportation. Do not turn on the unit and notify the carrier and dealer immediately if there is any damage or lacking of some parts. Please keep the original package in a safe place for future use.

2-2. Rear Panel View

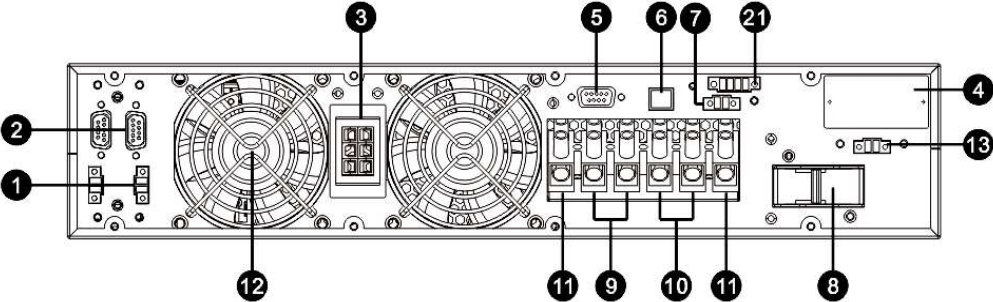


Diagram 1: UPS Rear Panel

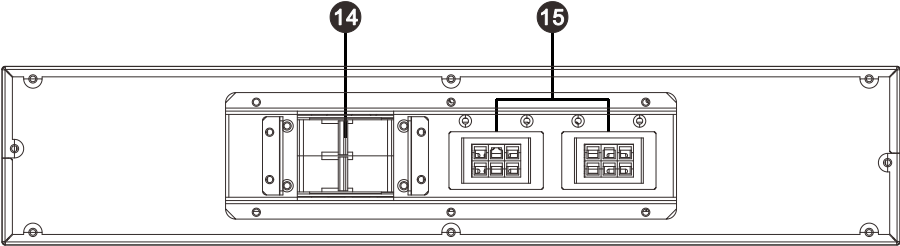


Diagram 2: 2U Battery Pack

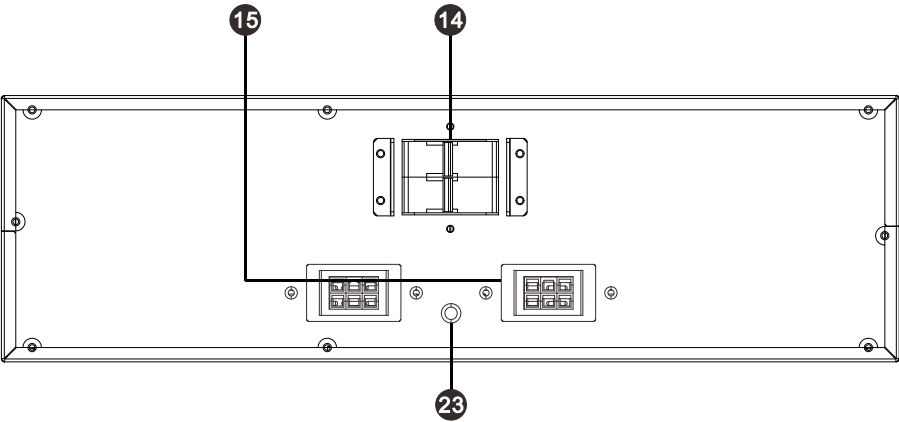


Diagram 3: 3U Battery Pack

● 15: Inverter voltage adjustment

Interface	Setting
	Parameter 2: you may choose Add or Sub to adjust inverter voltage Parameter 3: the voltage range is from 0V to 6.4V, the default value is 0V.

● 16: Output voltage adjustment

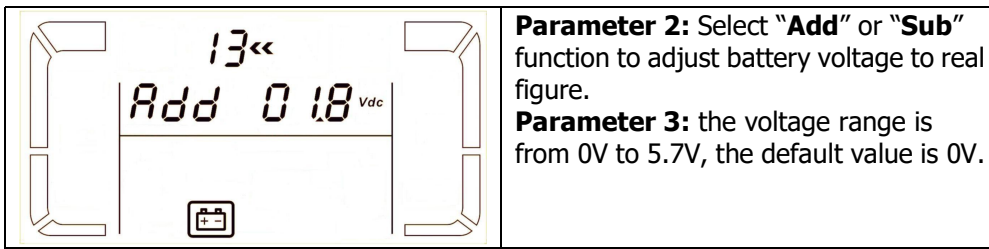
Interface	Setting
	Parameter 2: You may choose Add or Sub to adjust Output voltage. Parameter 3: The voltage range is from 0V to 6.4V and the default value is 0V.

● 17: Charging current setting

Interface	Setting
	Parameter 2: Set up charging current of the charger 001~004: Set the charging current of the charger from 1A to 4A. Parameter 3: Calibrate the charging current. ± 0~± 5: You may choose '+' as add or '-' as Sub to adjust charging current. This setting number is the first number after the decimal point. For example, if setting value is "+" and "3", it means the calibrated formula is to add 0.3A. The setting charging current on the left screen is 4.3A. (4A + 0.3A = 4.3A.)

3-8. Operating Mode/Status Description

If parallel UPS systems are successfully set up, it will show one more screen with "PAR" in parameter 2 and be assigned number in parameter 3 as below parallel screen diagram. The master UPS will be default assigned as "001" and slave UPSs



● 14: Charger voltage adjustment

Interface	Setting
	Parameter 2: you may choose Add or Sub to adjust charger voltage Parameter 3: the voltage range is from 0V to 9.9V, the default value is 0V. NOTE: *Before making voltage adjustment, be sure to disconnect all batteries first to get the accurate charger voltage. *We strongly suggest to use the default value (0). Any modification should be suitable to battery specifications.

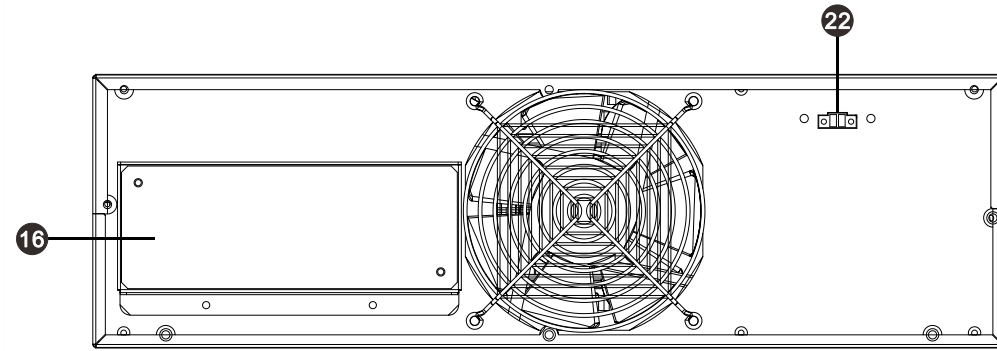


Diagram 4: Transformer Box Rear Panel Overlook

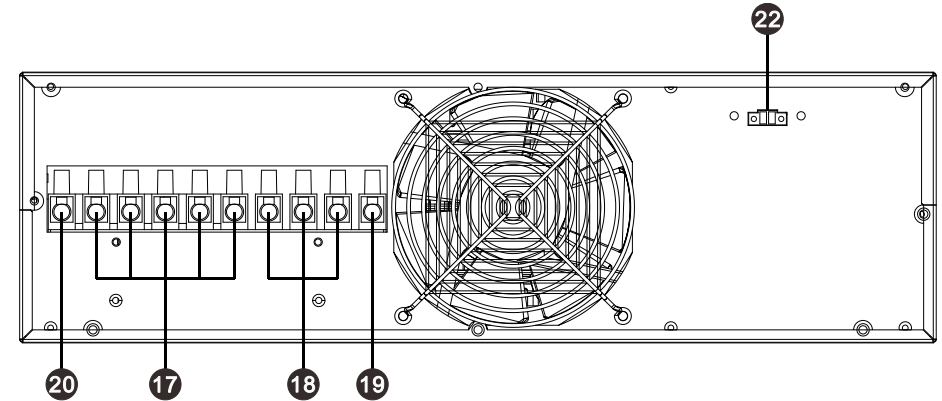


Diagram 5: Transformer Box Output Terminal

- <1>Share current port (only available for parallel model)
- <2>Parallel port (only available for parallel model)
- <3>External battery connector
- <4>Intelligent slot
- <5>RS-232 communication port
- <6>USB communication port
- <7>Emergency power off function connector (EPO connector)
- <8>Input circuit breaker
- <9>Output terminals
- <10>Input terminals

- <11>Ground
- <12>Cooling Fan
- <13>External maintenance bypass switch port
- <14>Battery pack output circuit breaker
- <15>External battery connector
- <16>Transformer box output terminal (Refer to Diagram 5 for the details)
- <17>Transformer box output
- <18>Transformer box input
- <19>Transformer box input ground
- <20>Transformer box output ground
- <21>Dry contact
- <22>Temperature signal port
- <23>Battery pack ground

● **10: Reserved**

Interface	Setting
	Reserved

● **11: Reserved**

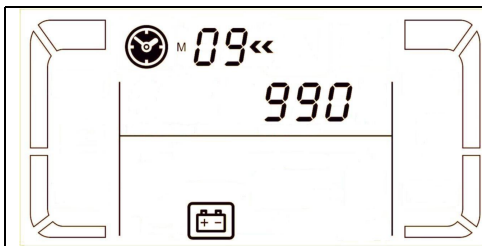
Interface	Setting
	Reserved

● **12: Hot standby function enable/disable**

Interface	Setting
	Parameter 2: HS.H Enable or disable Hot standby function. You may choose following two options in Parameter 3: YES: Hot standby function is enabled. It means that the current UPS is set to host of the hot standby function, and it will restart after AC recovery even without battery connected. NO: Hot standby function is disabled. The UPS is running at normal mode and can't restart without battery

● **13: Battery voltage adjustment**

Interface	Setting
-----------	---------



Parameter 3:

000~999: Set the maximum backup time from 0min to 999min. UPS will shut down to protect battery after backup time arrives. The default value is 990min.

DIS: Disable battery discharge protection and backup time will depend on battery capacity.

2-3. Rack/Tower Installation

2-3-1 Tower Installation

The UPS system is shipped with two sets of feet and 6 extensions (2 short extensions plus 4 long extensions) that can be used to tower install the UPS module in 2U or UPS module with one battery bank in 4U.

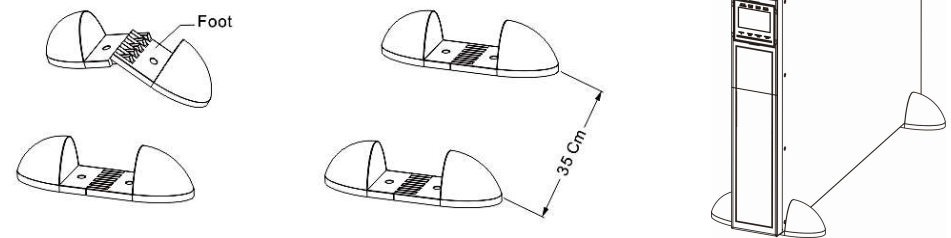
Install UPS module in 2U

Assemble four feet as one tower stand shown in step 1. Align the two stands approximately 35cm apart in step 2. Then, put UPS module in the stands as shown in step 3.

Step 2

Step 3

Step 1



Install UPS module and one battery pack in 4U

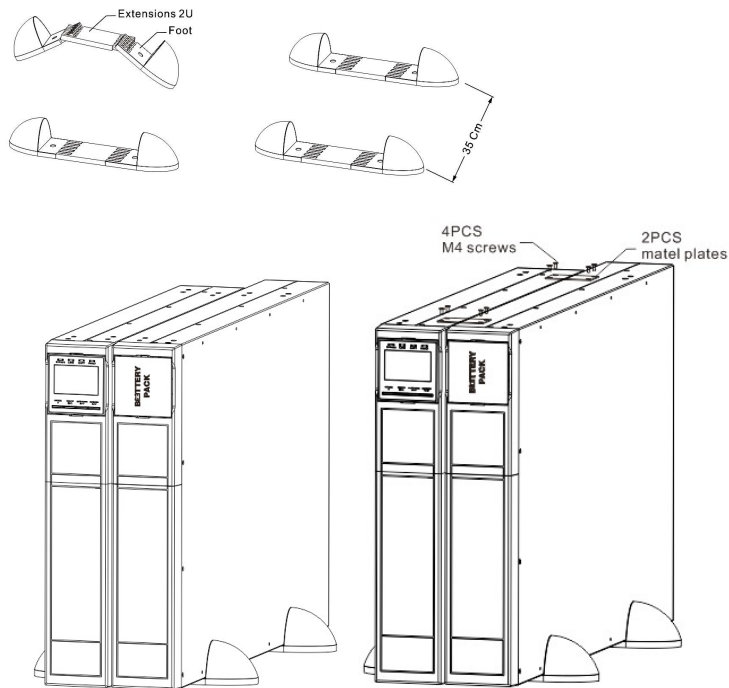
Assemble four feet and two long extensions as one tower stand shown in step 1. Align the two stands approximately 35cm apart in step 2. Then, put UPS module and battery bank(2U) in the stands as shown in step 3. And assemble these metal plates and M4 screws as shown in step 4.

Step 1

Step 2

Step 3

Step 4



Install UPS module and one battery pack and one transformer box in 7U

Assemble four feet and four long extensions and two short extensions as one tower stand shown in step 1. Align the two stands approximately 35cm apart in step 2. Then, put UPS module and battery pack(2U) and transformer box in the



Parameter 2: Set low frequency point for ECO mode.
50 Hz system: Setting range is from 46.0Hz to 48.0Hz.
60 Hz system: Setting range is from 56.0Hz to 58.0Hz.
The default value is 48.0Hz/58.0Hz.

Parameter 3: Set high frequency point for ECO mode.
50 Hz: Setting range is from 52.0Hz to 54.0 Hz.
60 Hz: Setting range is from 62.0Hz to 64.0Hz.
The default value is 52.0Hz/62.0Hz.

● 08: Bypass mode setting

Interface	Setting
	Parameter 2: OPN: Bypass allowed. When selected, UPS will run at Bypass mode depending on bypass enabled/disabled setting. FBD: Bypass not allowed. When selected, it's not allowed for running in Bypass mode under any situations. Parameter 3: ENA: Bypass enabled. When selected, Bypass mode is activated. DIS: Bypass disabled. When selected, automatic bypass is acceptable, but manual bypass is not allowed. Manual bypass means users manually operate UPS for Bypass mode. For example, pressing OFF button in AC mode to turn into Bypass mode.

● 09: Battery backup time setting

Interface	Setting
-----------	---------



Parameter 2: Set the acceptable low frequency for bypass.
 50 Hz system: Setting range is from 46.0Hz to 49.0Hz.
 60 Hz system: Setting range is from 56.0Hz to 59.0Hz.
 The default value is 46.0Hz/56.0Hz.

Parameter 3: Set the acceptable high frequency for bypass.
 50 Hz: Setting range is from 51.0Hz to 54.0 Hz.
 60 Hz: Setting range is from 61.0Hz to 64.0Hz.
 The default value is 54.0Hz/64.0Hz.

● 05: ECO mode enable/disable

Interface	Setting
	Parameter 3: Enable or disable ECO function. You may choose following two options: DIS: disable ECO function ENA: enable ECO function If ECO function is disabled, voltage range and frequency range for ECO mode still can be set, but it is meaningless unless the ECO function is enabled.

● 06: Voltage range for ECO mode

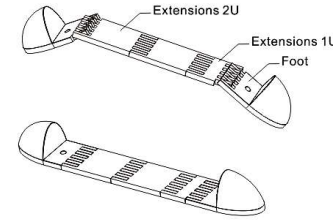
Interface	Setting
	Parameter 2: Low voltage point in ECO mode. The setting range is from 5% to 10% of the nominal voltage. Parameter 3: High voltage point in ECO mode. The setting range is from 5% to 10% of the nominal voltage.

● 07: Frequency range for ECO mode

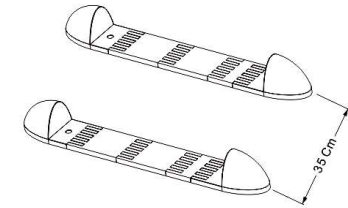
Interface	Setting
-----------	---------

stands as shown in step 3. And assemble these metal plates and M4 screws as shown in step 4.

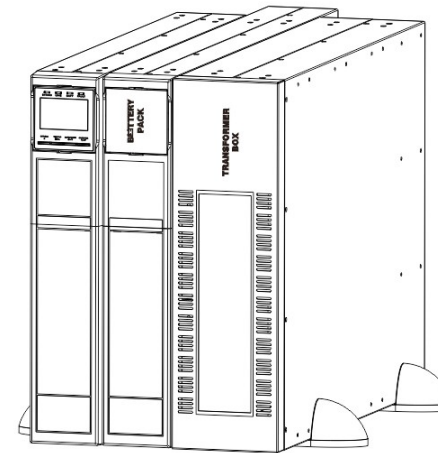
Step 1



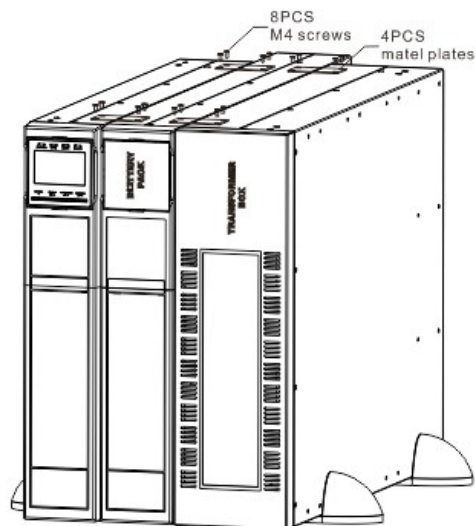
Step 2



Step 3



Step 4

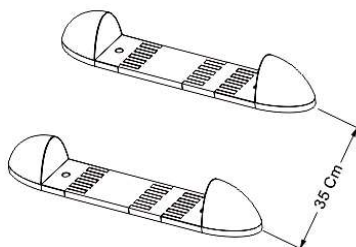
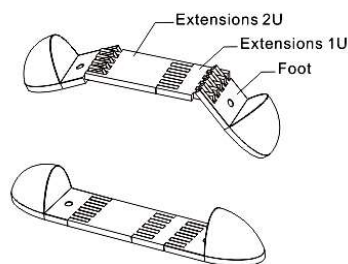


Install UPS module and one battery pack in 5U

Assemble four feet and two long extensions and two short extensions as one tower stand shown in step 1. Align the two stands approximately 35cm apart in step 2. Then, put UPS module and battery pack(3U) in the stands as shown in step 3. And assemble these metal plates and M4 screws as shown in step 4.

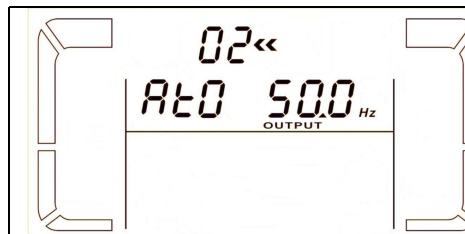
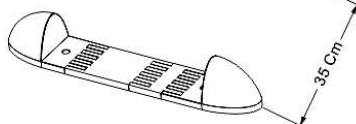
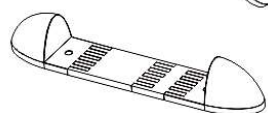
Step 1

Step 2



Step 3

Step 4



fixed at 50Hz or 60Hz according to setting in parameter 2. The input frequency could be from 46Hz to 64Hz. **NCF:** Setting UPS to normal mode (not CVCF mode). If selected, the output frequency will synchronize with the input frequency within 46~54 Hz at 50Hz or within 56~64 Hz at 60Hz according to setting in parameter 2. If 50 Hz selected in parameter 2, UPS will transfer to battery mode when input frequency is not within 46~54 Hz. If 60Hz selected in parameter 2, UPS will transfer to battery mode when input frequency is not within 56~64 Hz. *If Parameter 2 is ATO, the Parameter 3 will show the current frequency.

Note: If the UPS is set to CVCF mode, the bypass function will be disabled automatically.

But when a single UPS without parallel function is powered on with mains and before the UPS finished the startup, there will be a few seconds of voltage pulse (same as the input voltage) on the bypass output.

If you need to remove the pulse on this mode to protect your load better, you could contact the dealer for help.

For the UPS with parallel function, this pulse situation won't happen.

● 03: Voltage range for bypass

Interface	Setting
	Parameter 2: Set the acceptable low voltage for bypass. Setting range is from 110V to 209V and the default value is 110V.
	Parameter 3: Set the acceptable high voltage for bypass. Setting range is from 231V to 276V and the default value is 264V.

● 04: Frequency range for bypass

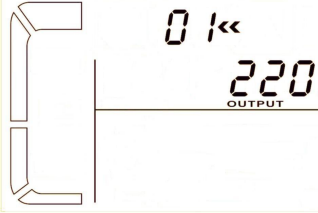
Interface	Setting
-----------	---------

Programs available list for parameter 1:

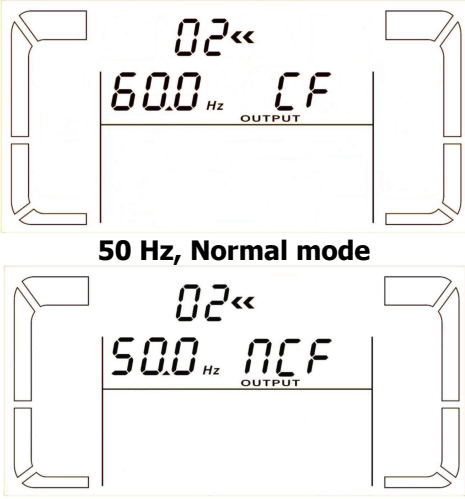
*Y means that this program can be set in this mode.

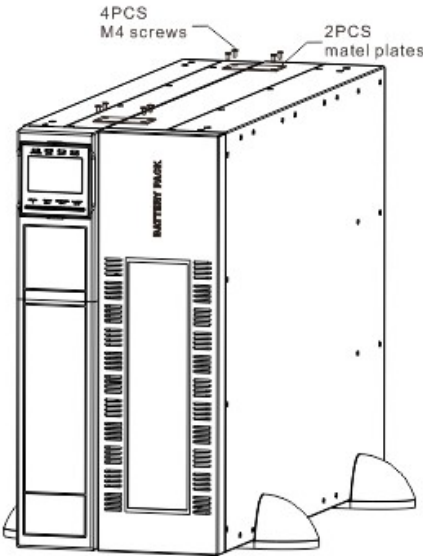
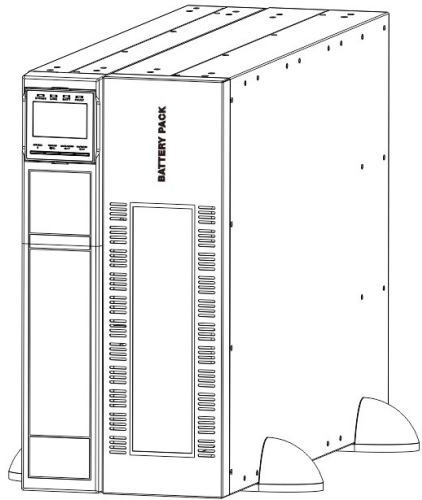
Note: All parameter settings will be saved only when UPS shuts down normally with internal or external battery connection. (Normal UPS shutdown means turning off input breaker in bypass/no output mode).

01: Output voltage

Interface	Setting
	Parameter 3: Output voltage You may choose the following output voltage in parameter 3: 208: Presents output voltage is 208Vac 220: Presents output voltage is 220Vac 230: Presents output voltage is 230Vac 240: Presents output voltage is 240Vac

02: Output frequency

Interface	Setting
	Parameter 2: Output Frequency Setting the output frequency. You may choose following three options in parameter 2: 50.0Hz: The output frequency is setting for 50.0Hz. 60.0Hz: The output frequency is setting for 60.0Hz. ATO: If selected, output frequency will be decided according to the latest normal utility frequency. If it is from 46Hz to 54Hz, the output frequency will be 50.0Hz. If it is from 56Hz to 64Hz, the output frequency will be 60.0Hz. ATO is default setting.
ATO	Parameter 3: Frequency mode Setting output frequency at CVCF mode or not CVCF mode. You may choose following two options in parameter 3: CF: Setting UPS to CVCF mode. If selected, the output frequency will be

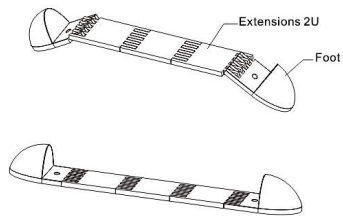


Install UPS module and one battery bank and one Transformer box in 8U

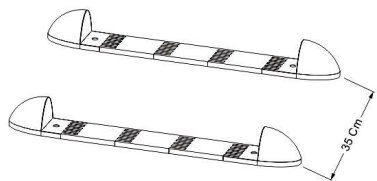
Assemble four feet and six long extensions as one tower stand shown in step 1. Align the two stands approximately 35cm apart in step 2. Then, put UPS module, battery pack (3U) and transformer box in the stands as shown in step 3. And assemble these metal plates and M4 screws as shown in step 4.

Step 1

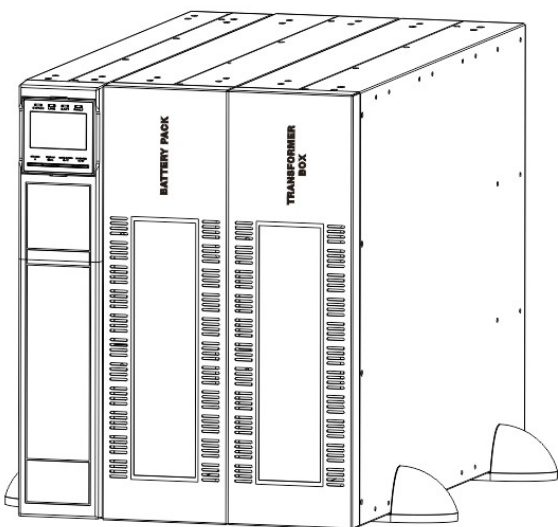
Step 2



Step 3



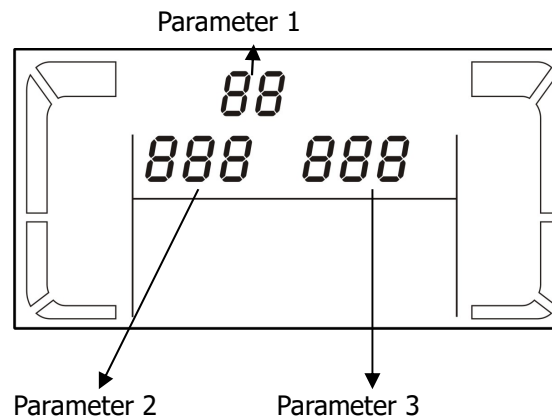
Step 4



16	Output voltage calibration		Y		Y	Y	
17	Charging current setting	Y	Y	Y	Y	Y	Y

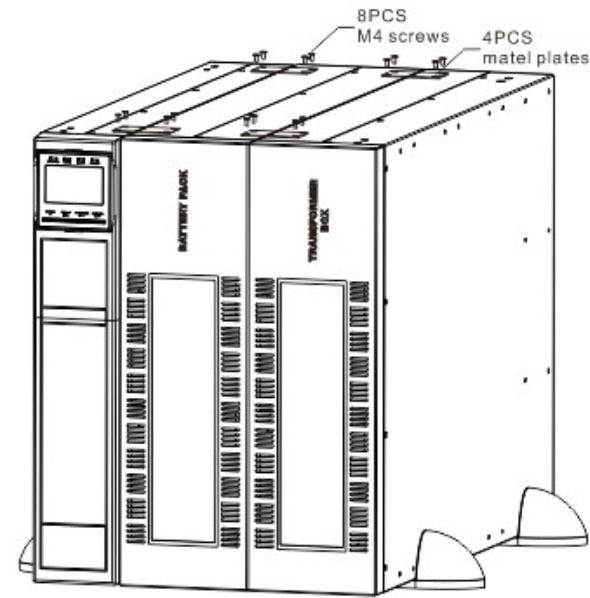
3-7. LCD Setting

There are three parameters to set up the UPS. Refer to following diagram.



Parameter 1: It's for program alternatives. Refer to below table for the detailed programs. Parameter 2 and parameter 3 are the setting options or values for each program.

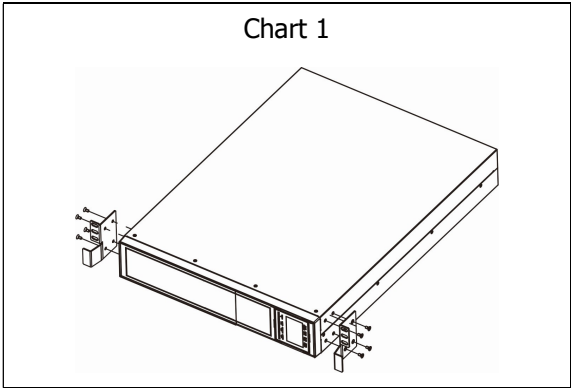
Code	Description	Bypass/ No output	AC	ECO	CVCF	Battery	Battery Test
01	Output voltage	Y					
02	Output frequency	Y					
03	Voltage range for bypass	Y					
04	Frequency range for bypass	Y					
05	ECO mode enable/disable	Y					
06	Voltage range for ECO mode	Y					
07	ECO mode frequency range setting	Y					
08	Bypass mode setting	Y	Y				
09	Battery backup time setting	Y	Y	Y	Y	Y	Y
10	Reserved	Reserved for future					
11	Reserved	Reserved for future					
12	Hot standby function enable/disable	Y	Y	Y	Y	Y	Y
13	Battery voltage adjustment	Y	Y	Y	Y	Y	Y
14	Charger voltage adjustment	Y	Y	Y	Y	Y	Y
15	Inverter voltage adjustment		Y		Y	Y	



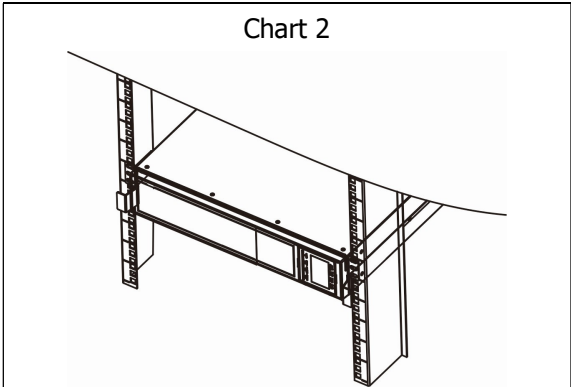
2-3-2 Rack Installation

Please follow below steps to mount UPS into 19" rack or rack enclosure.

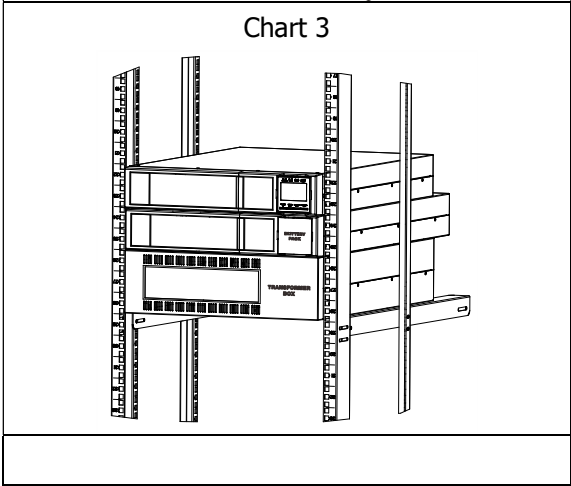
Step 1: Attach mounting ears to the side mounting holes of UPS using the screws provided and the ears should face forward. Please refer to chart 1.



Step 2: Lift the UPS module and slide it into rack enclosure. Attach the UPS module to the rack with screws, nuts and washers (user-provided) through its mounting ears and into the rack rails. Please refer to chart 2.



Step 3: Lift the UPS module, battery pack (2U) and transformer box and slide it into rack enclosure. Attach the UPS module to the rack with screws, nuts and washers (user-provided) through its mounting ears and into the rack rails. Please refer to chart 3.



Avertissement: (uniquement pour le système parallèle avec boîtier de dérivation de maintenance externe)

- Before turning on the parallel system to activate inverter, make sure that all unit's maintenance switch at the same position. Avant d'allumer le système en parallèle pour activer le variateur, assurez-vous que tous les techniciens de maintenance de l'unité commutent dans la même position.
- When parallel system is turned on to work through inverter, please do not operate the maintenance switch of any unit. Lorsque le système parallèle est activé pour fonctionner avec l'onduleur, veuillez ne pas actionner le commutateur de maintenance d'un appareil.

3-6. Abbreviation Meaning in LCD Display

Abbreviati	Display content	Meaning
ENA	ENA	Enable
DIS	DIS	Disable
ATO	ATO	Auto
BAT	BAT	Battery
NCF	NCF	Normal mode (not CVCF
CF	CF	CVCF mode
SUB	SUB	Subtract
ADD	ADD	Add
ON	ON	On
OFF	OFF	Off
FBD	Fbd	Not allowed
OPN	OPN	Allow
RES	RES	Reserved
OP.V	OPV	Output voltage
PAR	PAR	Parallel

to section 2-5.

- 3) Install the new parallel system refers to the previous section.

3. Remove one unit from the parallel system

There are two methods to remove one unit from the parallel system:

First method:

- 1) Press the "OFF" button twice and each time should last for more than 0.5s. Then, the UPS will enter into bypass mode without output.
- 2) Turn off the output breaker of this unit, and then turn off the input breaker of this unit.
- 3) After it shuts down, you can turn off the battery breaker (for long-run model) and remove the parallel cable and share current cable. Then, remove the unit from the parallel system.

NOTE: External maintenance bypass box is an optional accessory. If the UPS is not connected to external maintenance bypass box, please ignore second method.

Second method:

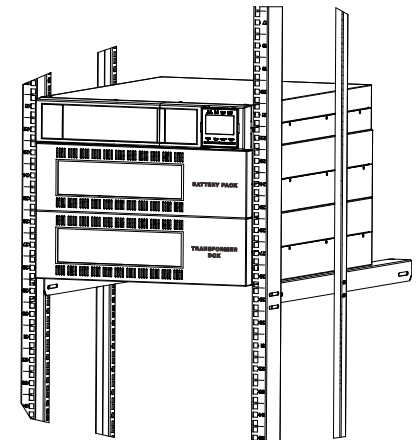
- 1) If the bypass is abnormal, you can not remove the UPS without interruption. You must cut off the load and shut down the system.
- 2) Make sure the bypass setting is enabled in each UPS and then turn off the running system. All UPSs will transfer to Bypass mode. Remove all the maintenance bypass covers and set the maintenance switches from "UPS" to "BPS". Turn off the input breakers and battery breakers.
- 3) Remove the UPS that you want.
- 4) Turn on the input breaker of the remaining UPSs and the system will transfer to Bypass mode.
- 5) Set the maintenance switches from "BPS" to "UPS" and put the maintenance bypass covers back. Turn on the remaining UPSs and finish the parallel system connection.



Warning: (Only for the parallel system with external maintenance bypass box)

Step 4: Lift the UPS module and battery pack (3U) and transformer box and slide it into rack enclosure. Attach the UPS module to the rack with screws, nuts and washers (user-provided) through its mounting ears and into the rack rails. Please refer to chart 4.

Chart 4



2-4. Single UPS Installation

Installation and wiring must be performed in accordance with the local electric laws/regulations and execute the following instructions by professional personnel.

- 1) Make sure the mains wire and breakers in the building are enough for the rated capacity of UPS to avoid the hazards of electric shock or fire.

NOTE: Do not use the wall receptacle as the input power source for the UPS, as its rated current is less than the UPS's maximum input current. Otherwise the receptacle may be burned and destroyed.

- 2) Switch off the mains switch in the building before installation.
- 3) Turn off all the connected devices before connecting to the UPS.
- 4) Prepare wires based on the following table:

Model	Wiring spec (AWG)		
	Input	Output	Ground
6KRT	6	6	6
6KRTL	6	6	6
10KRT	4	4	4
10KRTL	4	4	4

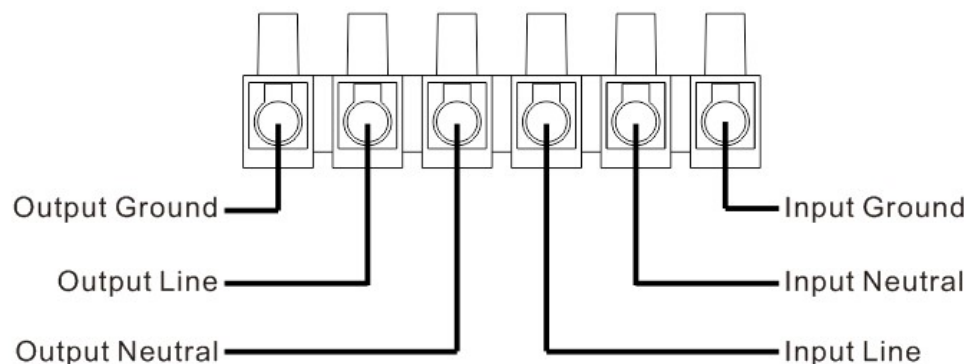
NOTE 1: The cable for 6KRT/6KRTL should be able to withstand over 40A current. It is recommended to use 6 AWG or thicker wire for safety and efficiency.

NOTE 2: The cable for 10KRT/10KRTL should be able to withstand over 63A current. It is recommended to use 4 AWG or thicker wire for safety and efficiency.

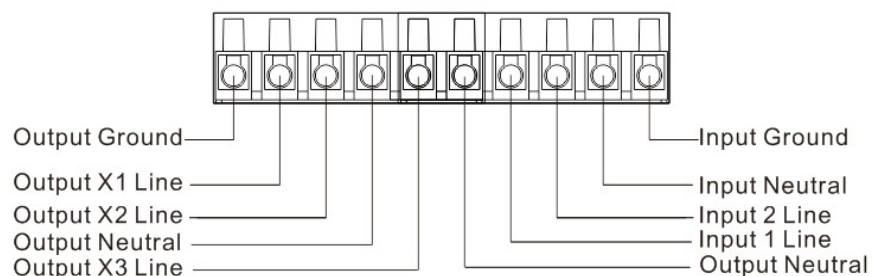
NOTE 3: The selections for color of wires should be followed by the local electrical laws and regulations.

5) Remove the terminal block cover on the rear panel of UPS, Then connect the other wires according to the following terminal block diagrams:

Connect the ground wire first when making wire connection. Disconnect the ground wire last when making wire disconnection!



Terminal Block wiring diagram



Terminal Block wiring diagram of 6KRTL/10KRTL transformer box

section 2-5.

- 2) Turn off the input and output breakers of each UPS, and turn off the battery breaker if the UPS is long-run model.
- 3) If all UPSs are connected to external maintenance bypass boxes, please remove all the covers first. Set the maintenance switches from "UPS" to "BPS" and turn on the input breaker of the each UPS. Then, set the maintenance switches from "BPS" to "UPS" and put the maintenance bypass covers back. Measure the L1-N1 and L2-N2 voltage difference between each UPS with a multimeter. If the voltage difference is less than 2V, it means all connections are correct. If the difference is larger than 2V, check if the wirings are connected correctly.

NOTE: External maintenance bypass box is an optional accessory. If the UPS is not connected to external maintenance bypass box, please skip the related step.

- 4) Turn on the input breakers of all UPSs in the parallel systems. Before turning on each UPS in turns, check if PAR001~PAR003 are displayed in each UPS sequentially. If no "PAR××" exists in any UPS, please check if the parallel cables are connected correctly.
- 5) Turn on each UPS in turns and make sure that AC mode LED or Battery mode LED displays in each UPS. Measure the output voltage of each UPS to check if the voltage difference is less than 2V (typical 1V) with multimeter. If the difference is more than 2V, please check that parallel cable or share current cable are connected well. If they are all connected well, maybe it's UPS internal issue. Please contact your local distributor or service center for help.
- 6) Turn off each UPS in turns and after all of them transfer to Bypass mode, turn on the output breaker of each unit.
- 7) Turn on the UPSs in the AC mode and then the parallel system connection is complete.

2. Add one new unit into the parallel system

- 1) You can not add one new unit into the parallel system when whole system is running. You must cut off the load and shutdown the system.
- 2) Make sure all of the UPS are the parallel models, and follow the wiring refer

turn on the UPS.

NOTE: External maintenance bypass box is an optional accessory. If the UPS is not connected to external maintenance bypass box, please skip the related step.

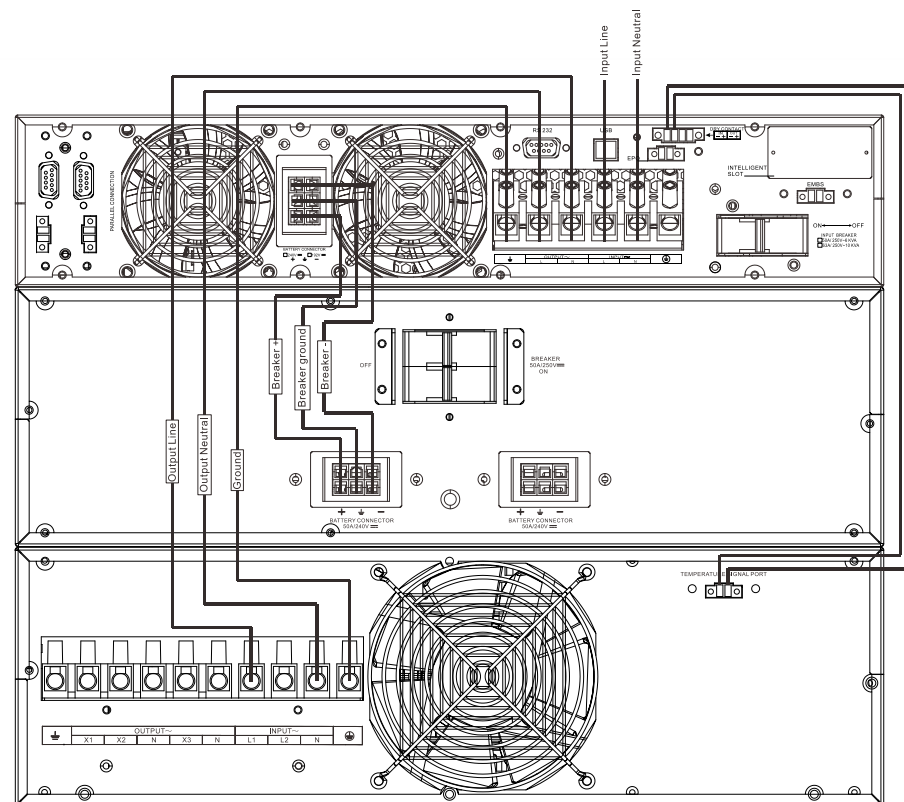
13. Operation of changing charging current:

- 1) In bypass mode, press "Test/UP" button and "Mute/Down" button simultaneous for more than 1s to enter the setting menu.
- 2) Press the "Mute/Down" button until it shows 17 in parameter 1 and press "Enter" button to adjust the charging current. (Check 3-7 LCD setting for the details.)
- 3) In the parameter 2, you can select the charging current from 1A to 4A by pressing "Test/UP" button or "Mute/Down" button. Please confirm the setting by pressing "ON/Enter" button.
- 4) In the parameter 3, it is to adjust the charging current according to the deviation between the actual charging current and the setting value of the current.

For example, you want to have charging current in 4A, but in fact, the charging current is measured only 3.6A. Then, you need to select "+" and change the number to 4 in parameter 3. It means the setting charging current will be added 0.4A as output charging current. Then, confirm this modification by pressing "ON/Enter" button. Now, you may press "Test/UP" and "Mute/Down" buttons at the same time to exit the setting mode.

NOTE 1: Be careful that the maximum charging current should not exceed the battery accepted charging current.

NOTE 2: All parameter settings will be saved only when UPS shuts down normally with internal or external battery connection. (Normal UPS shutdown means turning off input breaker in bypass/no output mode).

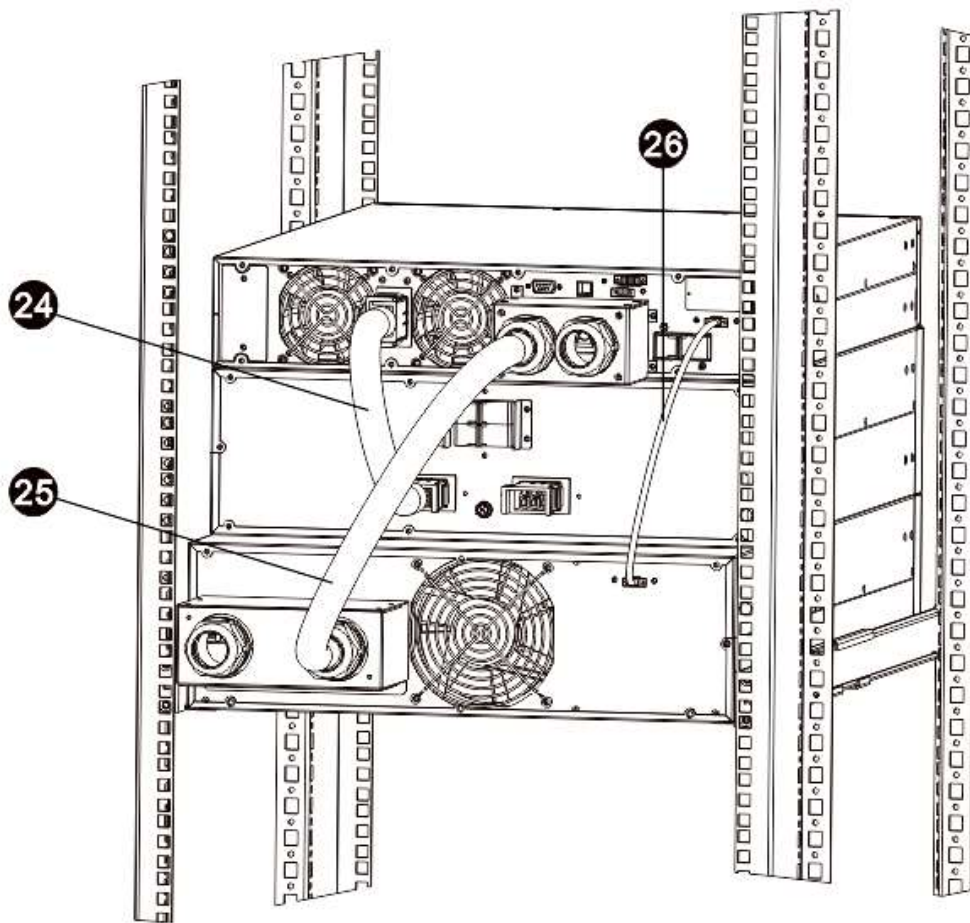


System Connection wiring diagram

3-5. Parallel Operation

1. Parallel system connection

- 1) Make sure all of the UPSs are parallel models, and follow the wiring refer to



UPS with Battery Pack and Transformer box in Rack version

<24>Battery cable

<25>UPS to transformer box output cable

<26>Temperature signal cable

NOTE 1: Make sure that the wires are connected tightly with the terminals.

NOTE 2: Please install the output breaker between the output terminal and the load, and the breaker should be qualified with leakage current protective function if necessary.

6) Put the terminal block cover back to the rear panel of the UPS.

problems. If the problems can't be fixed, please contact the distributor or service people immediately.

- 3) For emergency case, please cut off the connection from utility, external battery, and output immediately to avoid more risk or danger.

12. Operation of changing battery numbers

- 1) This operation is only available for professional or qualified technicians.
- 2) Turn off the UPS. If the load couldn't be cut off, please be sure this UPS is connected to an external maintenance bypass box from maintenance bypass switch port. Then, please simply remove the cover of maintenance bypass switch on the maintenance bypass box and turn the maintenance switch to "BPS" position first.
- 3) Switch off the input breaker, and switch off the battery breaker (only available for long-run model).
- 4) Remove the cabinet cover and disconnect battery wire for standard model. Then, modify the jumper on the control board to set the battery numbers as below table.

Battery Number in series	JP1				
	pin1 & pin2	pin3 & pin4	Pin5 & pin6	pin7 & pin8	Pin9 & pin10
16	X	X	1	0	0
17	X	X	0	1	1
18	X	X	0	1	0
19	X	X	0	0	1
20	X	X	0	0	0

Note: 0 = no jumper; 1 = connect with jumper; x = the pins are for other functions.

- 5) Modify the battery pack to meet the setting number in control board carefully.
- 6) Put the cabinet cover back to original position. Switch on the battery breaker for long-run model and switch on the input breaker. Then, the UPS will enter Bypass mode. If the UPS is connected to external maintenance bypass box and is operated in maintenance bypass mode, turn the maintenance bypass switch to "UPS" and put the cover back. And then,

have turned off the UPS (inverter).

NOTE 2: After turning off the UPS, please be aware that the UPS is working at Bypass mode and there is risk of power loss for connected devices.

- 2) In Bypass mode, output voltage of the UPS is still present. In order to cut off the output, switch off the input breaker. A few seconds later, there is no display shown on the display panel and UPS is complete off.

8. Turn off the UPS without utility power supply in Battery mode

- 1) Turn off the UPS by pressing "OFF" button for at least 0.5s, and then the buzzer will beep once.
- 2) Then UPS will cut off power to output and there is no display shown on the display panel.

9. Mute the buzzer

- 1) To mute the buzzer, please press the "Mute" button for at least 0.5s. If you press it again after the buzzer is muted, the buzzer will beep again.
- 2) Some warning alarms can't be muted unless the error is fixed. Please refer to section 3-3 for the details.

10. Operation in warning status

- 1) When Fault LED flashes and the buzzer beeps once every second, it means that there are some problems for UPS operation. Users can get the fault code from LCD panel. Please check the trouble shooting table in chapter 4 for details.
- 2) Some warning alarms can't be muted unless the error is fixed. Please refer to section 3-3 for the details.

11. Operation in Fault mode

- 1) When Fault LED illuminates and the buzzer beeps continuously, it means that there is a fatal error in the UPS. Users can get the fault code from display panel. Please check the trouble shooting table in chapter 4 for details.
- 2) Please check the loads, wiring, ventilation, utility, battery and so on after the fault occurs. Don't try to turn on the UPS again before solving the



Warning:

- For standard battery pack, there are one DC breaker to disconnect the battery pack and the UPS. But for other external battery pack, make sure a DC breaker or other protection device between UPS and external battery pack is installed. If not, please install it carefully. Switch off the battery breaker before installation. Pour la batterie standard, un disjoncteur CC permet de déconnecter la batterie et l'onduleur. Mais pour les autres batteries externes, assurez-vous qu'un disjoncteur CC ou un autre dispositif de protection entre l'onduleur et la batterie externe est installé. Sinon, installez-le avec soin. Eteignez le disjoncteur de batterie avant l'installation.

NOTE: Set the battery pack breaker in "OFF" position and then install the battery pack.

Placez le disjoncteur de la batterie en position «OFF», puis installez la batterie.

- Pay high attention to the rated battery voltage marked on the rear panel. If you want to change the numbers of the battery pack, please make sure you modify the setting simultaneously. The connection with wrong battery voltage may cause permanent damage of the UPS. Make sure the voltage of the battery pack is correct. Faites très attention à la tension nominale de la batterie indiquée sur le panneau arrière. Si vous souhaitez modifier les numéros de la batterie, assurez-vous de modifier le réglage simultanément. La connexion avec une tension de batterie incorrecte peut causer des dommages permanents à l'onduleur. Assurez-vous que la tension de la batterie est correcte.
- Pay highly attention to the polarity marking on external battery terminal block, and make sure the correct battery polarity is connected. Wrong connection may cause permanent damage of the UPS. Faites très attention au marquage de polarité sur le bornier de batterie externe et assurez-vous que la polarité de batterie correcte est connectée. Une mauvaise connexion peut causer des dommages permanents à l'onduleur.
- Make sure the protective earth ground wiring is correct. The wire current spec, color, position, connection and conductance reliability should be checked carefully. Assurez-vous que le câblage de terre de protection est correct. Les spécifications de courant de fil, la couleur, la position, la connexion et la fiabilité

de la conductance doivent être vérifiées avec soin.

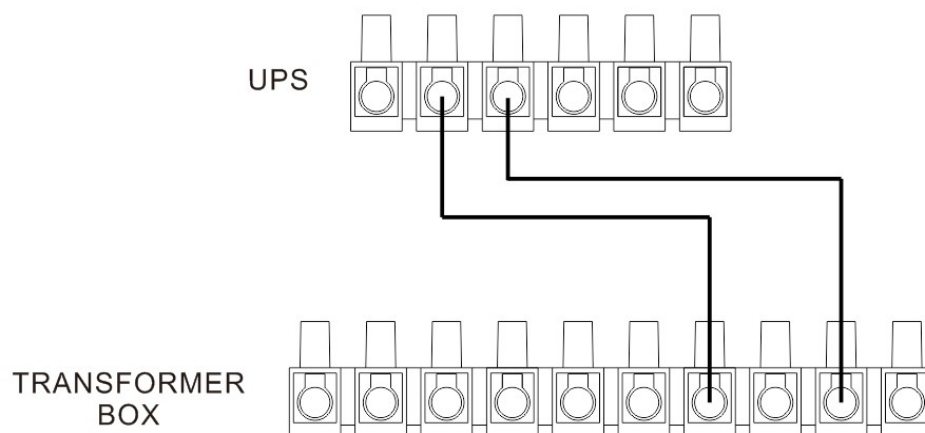
- Make sure the utility input & output wiring is correct. The wire current spec, color, position, connection and conductance reliability should be checked carefully. Make sure the L/N site is correct, not reverse and short-circuited. Assurez-vous que le câblage d'entrée et de sortie est correct. Les spécifications de courant de fil, la couleur, la position, la connexion et la fiabilité de la conductance doivent être vérifiées avec soin. Assurez-vous que le site L / N est correct, et non inversé et court-circuité.

2-5. Output Configuration

UPS output should be connected to the input of Transformer box and the output of Transformer box is the final output of system.

Follow below diagram to connect UPS output to input of Transformer box.

240V Input



208V Input

that the battery is at low level and the UPS will shut down automatically soon. Users could switch off some non-critical loads to disable the shutdown alarm and prolong the backup time (the UPS would cut off the programmable output terminal automatically when the programmable timer function is enabled). If there is no more load to be switched off at that time, you have to shut down all loads as soon as possible to protect the devices or save data. Otherwise, there is a risk of data loss or load failure.

- 2) In Battery mode, if buzzer sound annoys, users can press the Mute button to disable the buzzer.
- 3) The backup time of the long-run model depends on the external battery capacity.
- 4) The backup time may vary from different environment temperature and load type.
- 5) When setting backup time for 16.5 hours (default value from LCD panel), after discharging 16.5 hours, UPS will shut down automatically to protect the battery. This battery discharge protection can be enabled or disabled through LCD panel control. (Refer to 3-7 LCD setting section)

6. Test the batteries

- 1) If you need to check the battery status when the UPS is running in AC mode/CVCF mode/ECO mode, you could press the "Test" button to let the UPS do battery self-test.
- 2) To keep the system reliable, the UPS will perform the battery self-test automatically periodically. The default setting period is once per week.
- 3) Users also can set battery self-test through monitoring software.
- 4) If the UPS is at battery self-test, the LCD display and buzzer indication will be the same as at Battery mode except that the battery LED is flashing.

7. Turn off the UPS with utility power supply in AC mode

- 1) Turn off the inverter of the UPS by pressing "OFF" button for at least 0.5s, and then the buzzer will beep once. The UPS will turn into Bypass mode.

NOTE 1: If the UPS has been set to enable the bypass output, it will bypass voltage from utility power to output sockets and terminal even though you

- 3) A few seconds later, the UPS will be turned on and enter to Battery mode.

3. Connect devices to UPS

After the UPS is turned on, you can connect devices to the UPS.

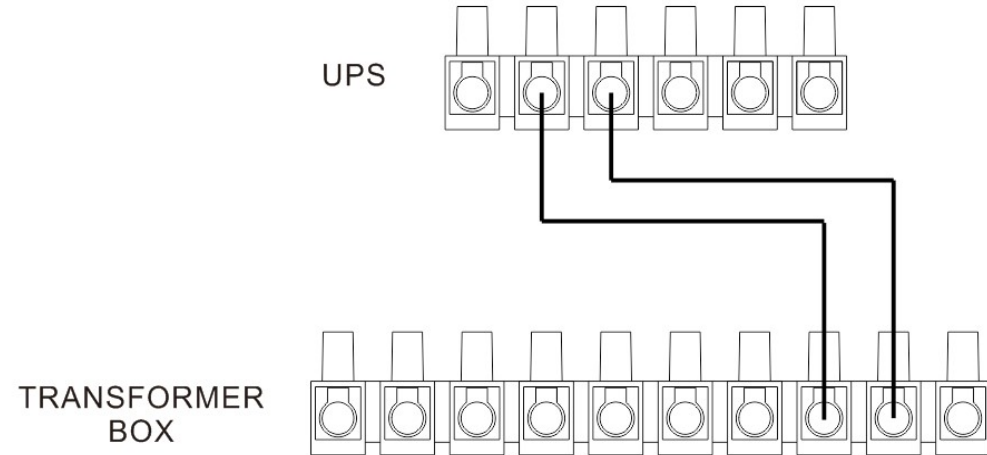
- 1) Turn on the UPS first and then switch on the devices one by one, the LCD panel will display total load level.
- 2) If it is necessary to connect the inductive loads such as a printer, the in-rush current should be calculated carefully to see if it meets the capacity of the UPS, because the power consumption of this kind of loads is too big.
- 3) If the UPS is overload, the buzzer will beep twice every second.
- 4) When the UPS is overload, please remove some loads immediately. It is recommended to have the total loads connected to the UPS less than 80% of its nominal power capacity to prevent overload for system safety.
- 5) If the overload time is over acceptable time listed in spec at AC mode, the UPS will automatically transfer to Bypass mode. After the overload is removed, it will return to AC mode. If the overload time is over acceptable time listed in spec at Battery mode, the UPS will become fault status. At this time, if bypass is enabled, the UPS will power to the load via bypass. If bypass function is disabled or the input power is not within bypass acceptable range, it will cut off output directly.

4. Charge the batteries

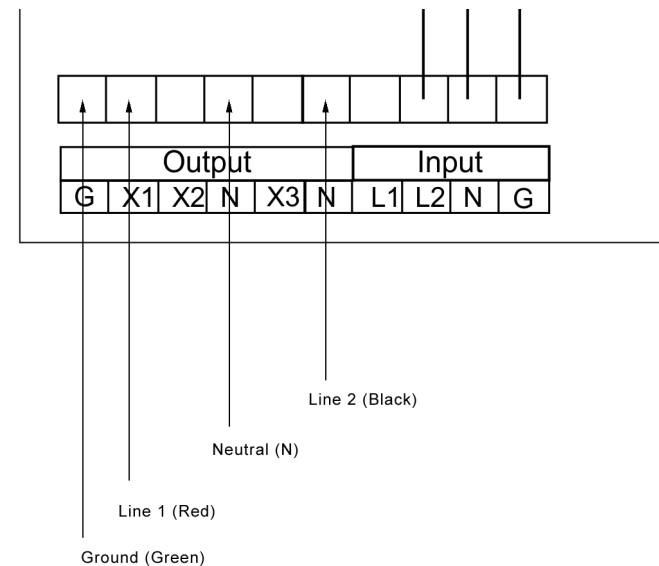
- 1) After the UPS is connected to the utility power, the charger will charge the batteries automatically except in Battery mode or during battery self-test.
- 2) Suggest to charge batteries at least 10 hours before use. Otherwise, the backup time may be shorter than expected time.
- 3) Make sure the battery numbers setting on the control board (Please refer to the section 3-4-12 for detailed setting) is consistent to real connection.

5. Battery mode operation

- 1) When the UPS is in Battery mode, the buzzer will beep according to different battery capacity. If the battery capacity is more than 25%, the buzzer will beep once every 4 seconds; If the battery voltage drops to the alarm level, the buzzer will beep quickly (once every sec) to remind users



The 6kVA and 10kVA transformer modules output 120/208-240V single phase. Below is the hardwired output connections to the transformer box.



With this configuration, you should measure 120VAC Line 1 to N, 120VAC N to Line 2, and 208-240VAC Line 1 to Line 2.

2-5.1 SCR3-6000RTSW Plugs and Receptacles Installation

The SCR-6000RTSW is designed to be flexible and easy to install. There is no wiring necessary, just connect the color coded and alpha labeled connectors.

Overload	Beeping twice every second	Yes
Others	Beeping once every second	
Fault		
All	Beeping continuously	Yes

3-4. Single UPS Operation

1. Turn on the UPS with utility power supply (in AC mode)

- 1) After power supply is connected correctly, set the breaker of the battery pack at "ON" position (the step only available for long-run model). Then set the input breaker at "ON" position. At this time the fan is running and the UPS supplies power to the loads via the bypass. The UPS is operating in Bypass mode.

NOTE: When UPS is in Bypass mode, the output voltage will directly power from utility after you switch on the input breaker. In Bypass mode, the load is not protected by UPS. To protect your critical devices, you should turn on the UPS. Refer to next step.

- 2) Press and hold the "ON" button for 0.5s to turn on the UPS and the buzzer will beep once.
- 3) A few seconds later, the UPS will enter to AC mode. If the utility power is abnormal, the UPS will operate in Battery mode without interruption.

NOTE: When the UPS is running out battery, it will shut down automatically at Battery mode. When the utility power is restored, the UPS will auto restart.

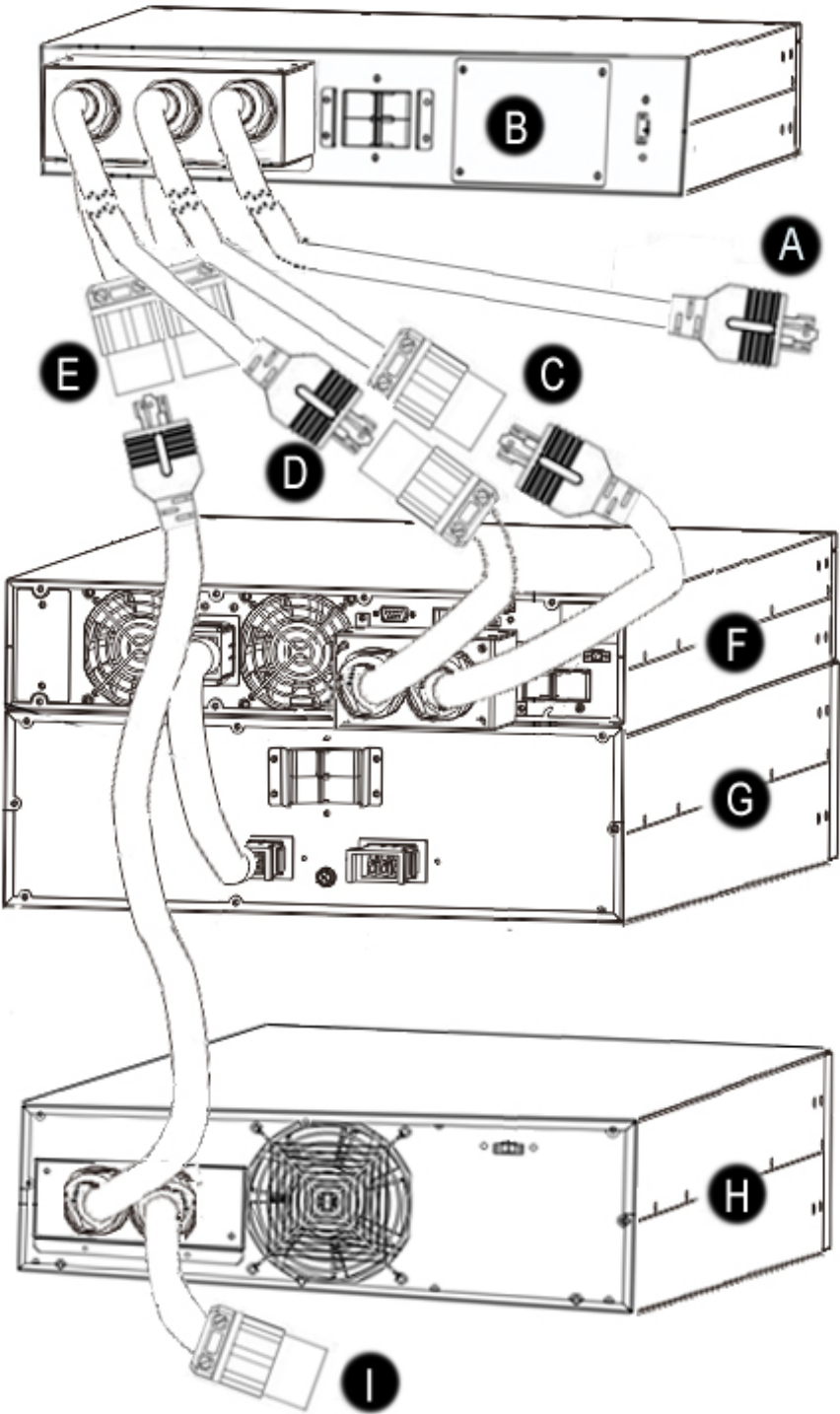
2. Turn on the UPS without utility power supply (in Battery mode)

- 1) Make sure that the breaker of the battery pack is at "ON" position (only for long-run model).
- 2) Press and hold the "ON" button for 0.5s to turn on the UPS, and the buzzer will beep once.

Mode operation information	
	Indicates the UPS connects to the mains.
	Indicates the battery is working.
	Indicates the bypass circuit is working.
	Indicates the ECO mode is enabled.
	Indicates the Inverter circuit is working.
	Indicates the output is working.
Battery information	
	Indicates the Battery capacity by 0-25%, 26-50%, 51-75%, and 76-100%.
	Indicates the battery is not connected.
	Indicates low battery level and low battery voltage.
Input & Battery voltage information	
	Indicates the input voltage or frequency or battery voltage. Vac: Input voltage, Vdc: battery voltage, Hz: input frequency

3-3. Audible Alarm

Description	Buzzer status	Muted
UPS status		
Bypass mode	Beeping once every 2 minutes	Yes
Battery mode	Beeping once every 4 seconds	
Fault mode	Beeping continuously	
Warning		



Legend:

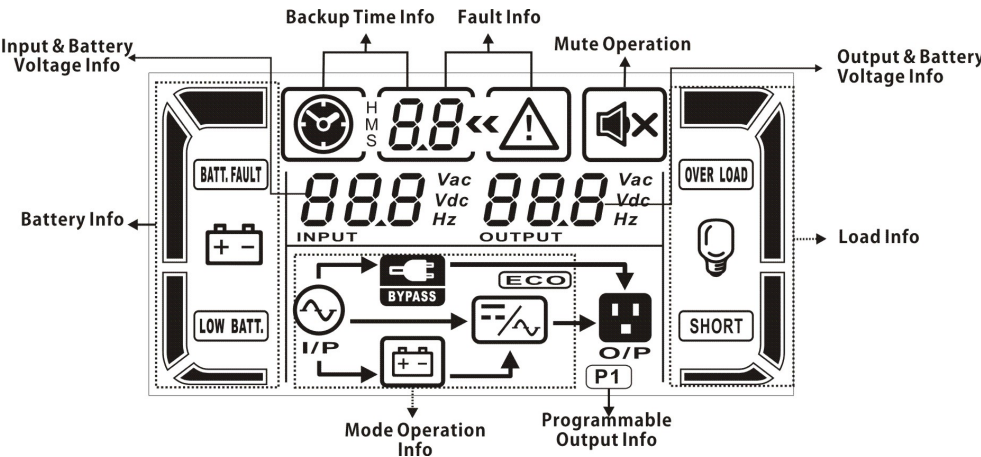
- <A>Input Line Cord to Utility power (L6-30P)
- Maintenance Bypass Service Module – Part # SCR3-MBSM-6KSW
- <C>UPS Module Input (L6-30P to L6-30R)
- <D>UPS Output Module (L6-30P to L6-30R)
- <E>Output from Maintenance Bypass Service Module (2) L6-30R
- <F> UPS Module - Part # SCR3-6000RTSW
- <G>Battery Module - Part # SCR3-240EBM6K or SCR3-192EBM6K
- <H>Transformer Module – Part # SCR3-6000RTXFRSW
- <I>Transformer Module Output L14-30R

2-6. UPS Installation for Parallel System

If the UPS is only available for single operation, you may skip this section to the next.

- 1) Install and wires the UPSs according to the section 2-3.
- 2) Connect the output wires of each UPS to an output breaker.
- 3) Connect all output breakers to a major output breaker. Then this major output breaker will directly connect to the loads.
- 4) Each UPS is connected to an independent battery pack.
- 5) Remove the cover of parallel share current cable port on the UPS, connect each UPS one by one with the parallel cable and share current cable, and then screw the cover back again.

LCD Panel:



Display	Function
Backup time information	
 H M S 8.8	Indicates battery discharge time in numbers. H: hours, M: minutes, S: seconds
Fault information	
	Indicates that the warning and fault occurs.
8.8	Indicates the fault codes, and the codes are listed in details in section 3-9.
Mute operation	
	Indicates that the UPS alarm is disabled.
Output & Battery voltage information	
8.8.8 Vac Vdc Hz OUTPUT	Indicates the output voltage, frequency or battery voltage. Vac: output voltage, Vdc: battery voltage, Hz: frequency
Load information	
	Indicates the load level by 0-25%, 26-50%, 51-75%, and 76-100%.
OVER LOAD	Indicates overload.
SHORT	Indicates the load or the output is short.

Fault	○	○	○	●
-------	---	---	---	---

Note: ● means LED is lighting, and ○ means LED is faded.

NOTE: The parallel system can not use one battery pack. Otherwise, it will cause system permanent failure.

6) Refer to the following wiring diagram:

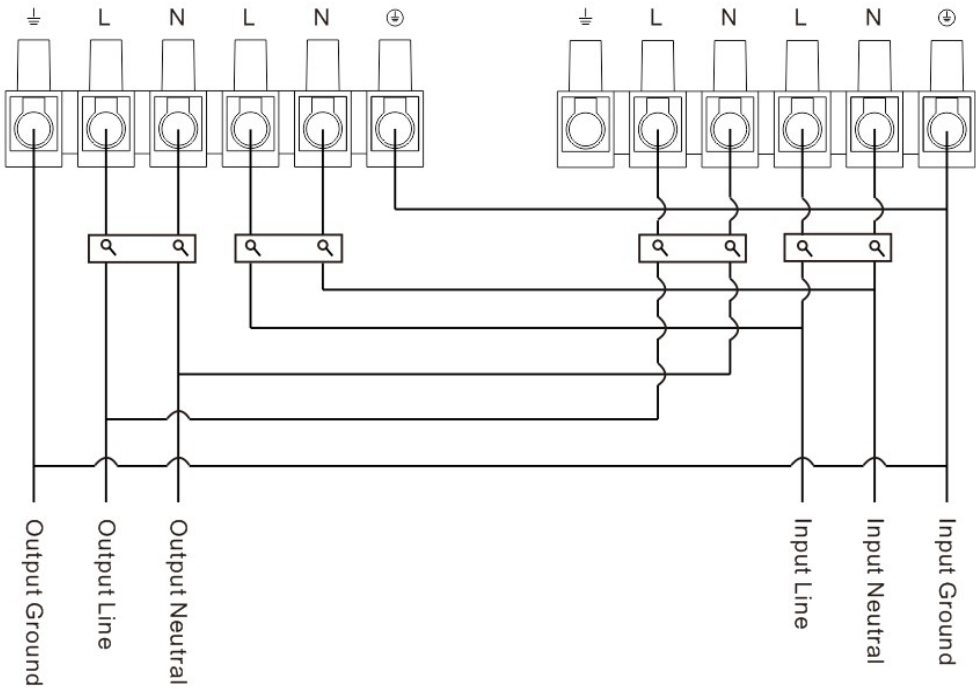


Diagram 1: Power cable connection

Parallel communication port connection

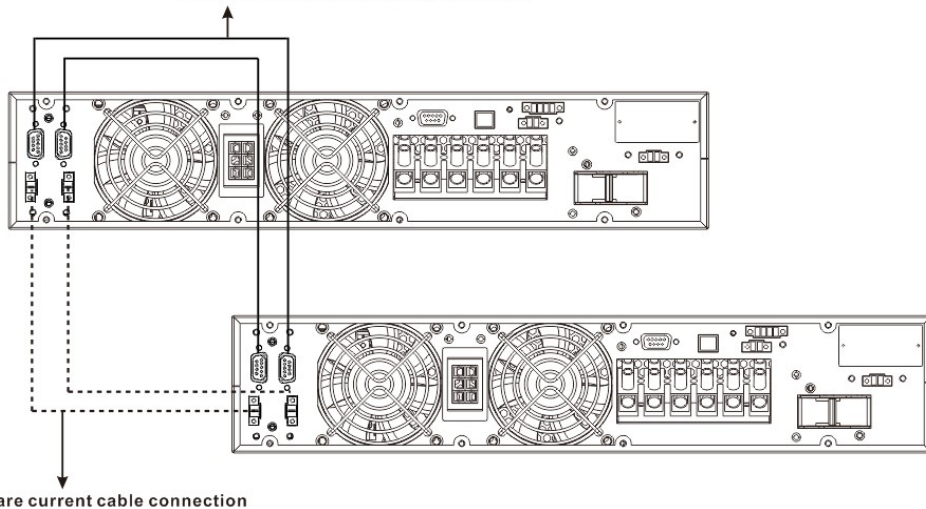


Diagram2: Wiring diagram of parallel system

2-7. Software Installation

For optimal computer system protection, install UPS monitoring software to fully configure UPS shutdown.

3. Operations

3-1. Button Operation

Button	Function
ON/Enter Button	➤ Turn on the UPS: Press and hold the button more than 0.5s to turn on the UPS. ➤ Enter Key: Press this button to confirm the selection in setting menu.
OFF/ESC Button	➤ Turn off the UPS: Press and hold the button more than 0.5s to turn off the UPS. ➤ Esc key: Press this button to return to last menu in setting menu.
Test/Up Button	➤ Battery test: Press and hold the button more than 0.5s to test the battery while in AC mode, or CVCF mode. ➤ UP key: Press this button to display next selection in setting

menu.

Mute/Down Button

- Mute the alarm: Press and hold the button more than 0.5s to mute the buzzer. Please refer to section 3-4-9 for details.
- Down key: Press this button to display previous selection in setting menu.

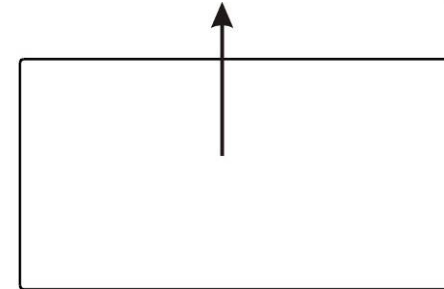
Test/Up + Mute/Down Button

- Press and hold the two buttons simultaneous more than 1s to enter/escape the setting menu.

* CVCF mode means converter mode.

3-2. LED Indicators and LCD Panel

LCD panel



LED Indicators:

There are 4 LEDs on front panel to show the UPS working status:

Mode \ LED	Bypass	Line	Battery	Fault
UPS Startup	●	●	●	●
Bypass mode	●	○	○	○
AC mode	○	●	○	○
Battery mode	○	○	●	○
CVCF mode	○	●	○	○
Battery Test	●	●	●	○
ECO mode	●	●	○	○