User Manual

Online RTXE Series UPS

DC1500RTXE

DC2000RTXE

DC1500RTXE-HV

DC2000RTXE-HV

Uninterruptible Power Supply System

Version: 1.0

Table of Contents

1. Important Safety Warning

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.

1-1. Transportation

- Please transport the UPS system only in the original package to protect against shock and impact.

1-2. Preparation

- 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.
- Do not install the UPS system near water or in moist environments.
- Do not install the UPS system where it would be exposed to direct sunlight or near heater.
- Do not block ventilation holes in the UPS housing.

1-3. Installation

- Do not connect appliances or devices which would overload the UPS system (e.g. laser printers) to the UPS output sockets.
- Place cables in such a way that no one can step on or trip over them.
- Do not connect "inductive motor loads", devices with "high inrush current" or half wave load as hair dryers to UPS output sockets.
- The UPS can be operated by any individuals with no previous experience.
- Connect the UPS system only to an earthed shockproof outlet which must be easily accessible and close to the UPS system.
- Please use only VDE-tested, CE-marked (or UL-marked for 100/110/115/120/125 VAC models) mains cable (e.g. the mains cable of your computer) to connect the UPS system to the building wiring outlet (shockproof outlet).
- Please use only VDE-tested, CE-marked (or UL-marked for 100/110/115/120/125 VAC models) power cables to connect the loads to the UPS system.
- When installing the equipment, it should ensure that the sum of the leakage current of the UPS and the connected devices does not exceed 3.5mA.
- Temperature Rating - Units are considered acceptable for use in a maximum ambient of 40°C (104°F).
- For Pluggable Equipment - The socket-outlet shall be installed near the equipment and shall be easily accessible.
- RTXE Series has no internal batteries. Please see Orion LIO battery manual for installing external battery cabinets and configuring system.
- CAUTION: The battery is heavy. Lifting the unit requires a minimum of two people.
- Batteries with minimum case flame rating V-2 are intended for use in a computer room as defined in the Standard for the Protection of Information Technology Equipment, ANSI/NFAP 75. Batteries with case flame rating HB are not intended for use in a computer room. (US installations only.)

1-4. Operation

- Do not disconnect the mains cable on the UPS system or the building wiring outlet (shockproof socket outlet) during operations since this would cancel the protective earthing of the UPS system and of all connected loads.
- The UPS system features its own, internal current source (batteries). The UPS output sockets or output terminals block may be electrically live even if the UPS system is not connected to the building wiring outlet.
- In order to fully disconnect the UPS system, first press the OFF/Enter button to disconnect the mains.
- Prevent fluids and other foreign objects from getting inside the UPS system.
- The EPO and USB circuits are an IEC 60950-1 safety extra low voltage (SELV) circuit. This circuit must be separated from any hazardous voltage circuits by reinforced insulation.

1-5. Maintenance, service and faults

- The UPS system operates with hazardous voltages. Repairs may be carried out only by qualified maintenance personnel.
- **Caution -** risk of electric shock. Even after the unit is disconnected from the mains (building wiring outlet), components inside the UPS system are still connected to the battery and electrically live and dangerous.
- 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.
- To avoid electrical shock, turn off the unit and unplug it form the AC power source before servicing the battery.
- Only persons who 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.
- **Caution -** risk of electric shock. The battery circuit is not isolated from the input voltage. Hazardous voltages may occur between the battery terminals and the ground. Before touching, please verify that no voltage is present!
- **Caution -** Do not dispose of batteries in a fire. The batteries may explode.
- **Caution -** Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.
- Batteries may cause electric shock and have a high short-circuit current. Please take the precautionary measures specified below and any other measures necessary when working with batteries:
  a) Remove watches, rings, or other metal objects.
  b) Use tools with insulated handles.
  c) Wear rubber gloves and boots.
  d) Do not lay tools or metal parts on top of batteries.
  e) Disconnect charging source and load prior to installing or maintaining the battery.
  f) Remove battery grounds during installation and maintenance to reduce likelihood of shock. Remove the connection from ground if any part of the battery is determined to be grounded.

- When changing batteries, install the same number and same type of batteries.
- Please replace the fuse only with the same type and amperage in order to avoid fire hazards.
- Do not dismantle the UPS system or battery.
- **WARNING:** This is a category C2 UPS product. In a residential environment, this product may cause radio interference, in which case the user many be required to take additional measures. (only for CE model 200/208/220/230/240 VAC system)

Only for 100/110/115/120/125 VAC VAC system:

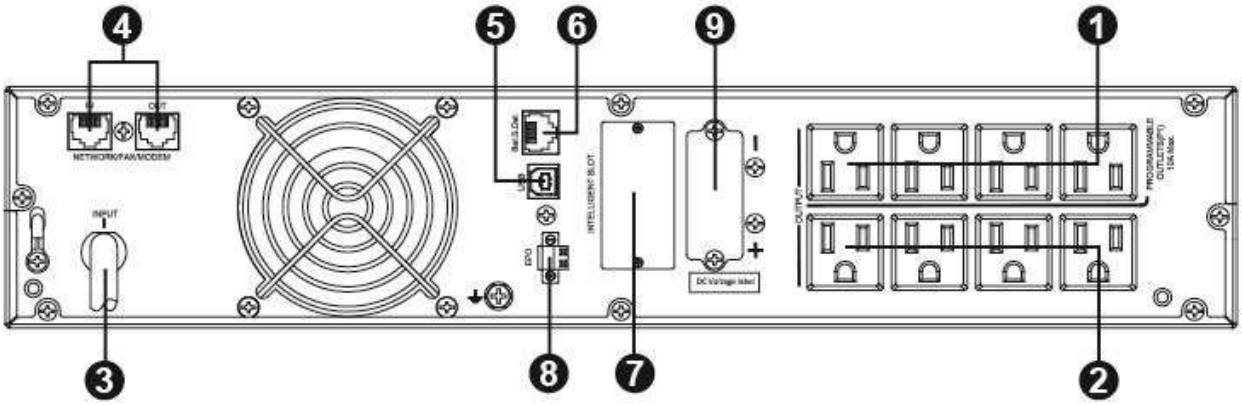
- **NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- **WARNING:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's warranty on the equipment.

2. Installation and setup

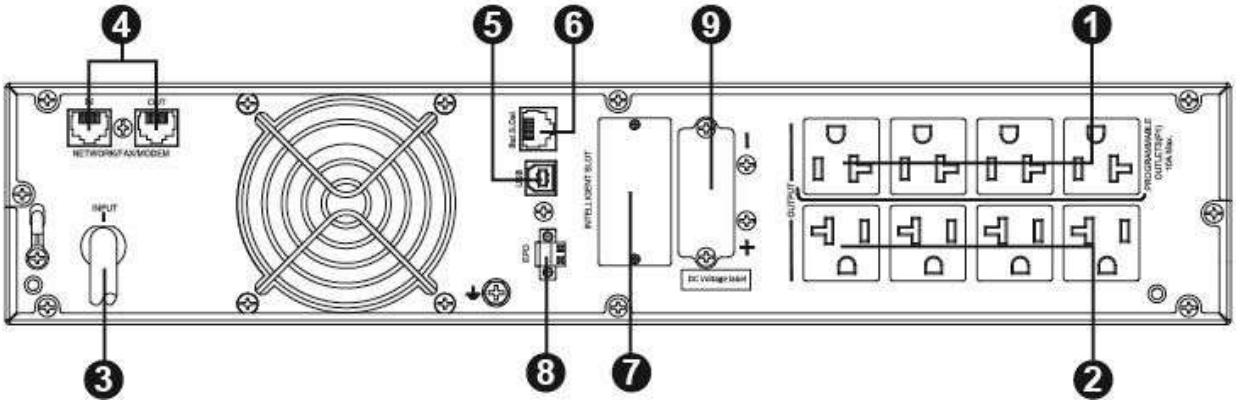
NOTE: Before installation, please inspect the unit. Be sure that nothing inside the package is damaged. Please keep the original package in a safe place for future use.

2-1. Rear panel view

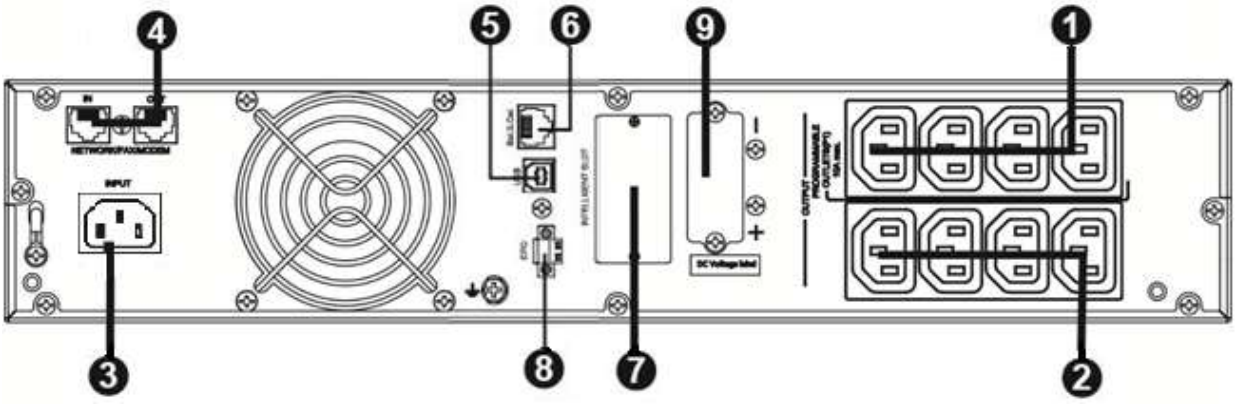
RTXE Models



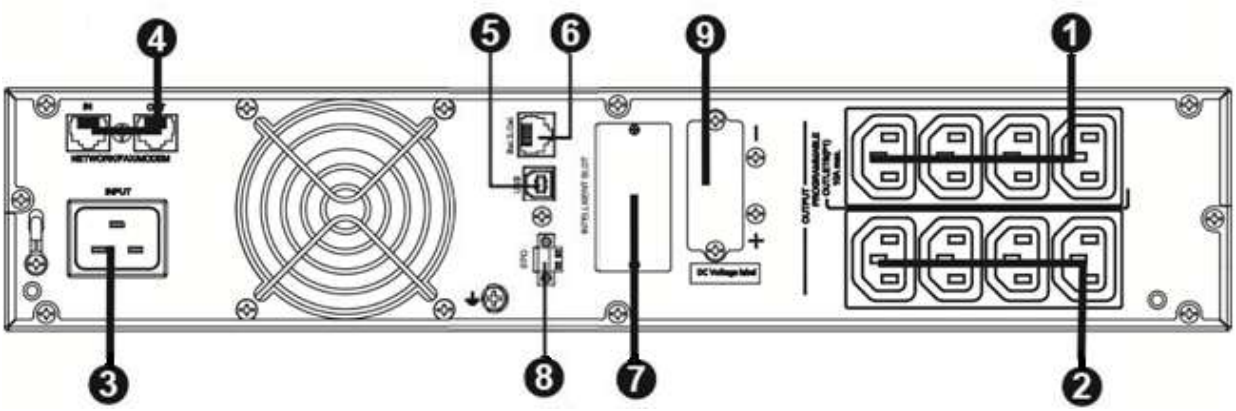
DC1500RTXE



DC2000RTXE



DC1500RTXE-HV

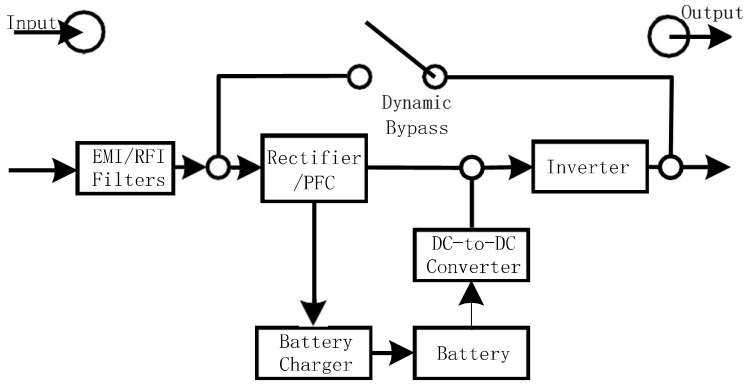


DC2000RTXE-HV

1. Programmable outlets: connect to non-critical loads
2. Output receptacles: connect to mission-critical loads
3. AC input
4. Network/Fax/Modem surge protection
5. USB communication port
6. External Lithium battery bank detection port
7. SNMP intelligent slot
8. Emergency power off function connector (EPO)
9. External battery connection

2-2. Operating principle

The operating principle of the UPS is shown as below



2-3. Setup the UPS

Before installing the UPS, please read below to select proper location to install UPS.

1. UPS should be placed on the flat and clean surface. Place it in an area away from vibration, dust, humidity, high temperature, flammable liquids, gases, corrosive and conductive contaminants. Install the UPS indoors in a clean environment, where it is away from window and door. Maintain minimum clearance of 100mm from the bottom of the UPS to avoid dust and high temperature.
2. It's required to maintain maximum altitude of 3000m to keep UPS normal operation at full load UPS.
3. UPS is equipped with fan. Therefore, place the UPS in a well-ventilated area. It's required to maintain minimum clearance of 100mm in the front of the UPS and 300mm in theback and two sides of the UPS for heat dissipation and easy-maintenance.

Step 1: UPS input connection

Plug the UPS into a two-pole, three-wire, grounded receptacle only. Avoid using extension cords.

- For 100/110/115/120/125/127VAC models: The power cord is attached to the UPS. The input plug is a NEMA 5-15P/5-20P for 1.5/2K model.
- To reduce the risk of fire, connect only to a circuit provided with (@) A maximum branch circuit overcurrent protection in accordance with the National Electrical Code, ANSI/NFPA 70 and the Canadian Electrical Code, Part I, C22.1".

Model	(@)
DC1500RTXE	20A
DC2000RTXE	20A

Note: Check if the site wiring fault indicator lights up in LCD panel. It will be illuminated when the UPS is plugged into an improperly wired utility power outlet (Refer to Troubleshooting section).

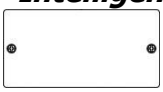
Step 2: UPS output connection

There two kinds of outputs: programmable outlets and general outlets. Please connect non-critical devices to the programmable outlets and critical devices to the general outlets. During power failure, you may extend the backup time to critical devices by setting shorter

backup time for non-critical devices.

Step 3: Communication connection
Communication port:

Intelligent slot



The UPS is equipped with intelligent slot for either SNMP or AS400/Dry Contact card. When installing either SNMP or AS400/Dry Contact card in the UPS, it will provide advanced communication andmonitoring options.

Step 4: Disable and enable EPO function

This UPS is equipped with EPO function. By default, the UPS is delivered from factory with Pin 1 and pin 2 closed (a metal plate is connected to Pin 1 and Pin2) for UPS normal operation. To activate EPO function, remove two screws on EPO port and metal plate will be removed.

Note: The EPO function logic can be set up via LCD setting. Please refer to program 16 in UPS setting for the details.

Step 5: Turn on the UPS

Press the ON/Mute button on the front panel for two seconds to power on the UPS.

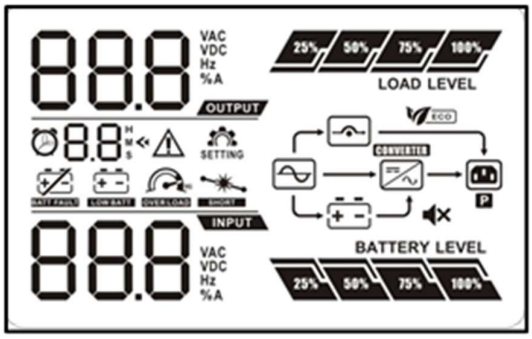
Note: The battery charges fully during the first five hours of normal operation. Do not expect full battery run capability during this initial charge period.

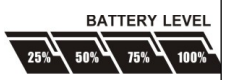
3. Operations

3-1. Button operation

Button	Function
ON/Mute Button	➢ Turn on the UPS: Press and hold ON/Mute button for at least 2 seconds to turn on the UPS. ➢ Mute the alarm: After the UPS is turned on in battery mode, press and hold this button for at least 3 seconds to disable or enable the alarm system. But it's not applied to the situations when warnings or errors occur. ➢ Up key: Press this button to display previous selection in UPS setting mode. ➢ Switch to UPS self-test mode: Press ON/Mute buttons for 3 seconds to enter UPS self-testing while in AC mode, ECO mode, or converter mode.
OFF/Enter Button	➢ Turn off the UPS: Press and hold this button at least 2 seconds to turn off the UPS. UPS will be in standby mode under power normal or transfer to Bypass mode if the Bypass enable setting by pressing this button. ➢ Confirm selection key: Press this button to confirm selection in UPS setting mode.
Select Button	➢ Switch LCD message: Press this button to change the LCD message for input voltage, input frequency, input current, battery voltage, battery current, battery capacity, ambient temperature, output voltage, output frequency, load current and load percent. ➢ Setting mode: Press and hold this button for 3 seconds to enter UPS setting mode when Standby and Bypass mode. ➢ Down key: Press this button to display next selection in UPS setting mode.
ON/Mute + Select Button	➢ Switch to bypass mode: When the main power is normal, press ON/Mute and Select buttons simultaneously for 3 seconds. Then UPS will enter to bypass mode. This action will be ineffective when the input voltage is out of acceptable range. ➢ Exit setting mode or return to the upper menu: When working in setting mode, press ON/Mute and Select buttons simultaneously for 0.2 seconds to return to the upper menu. If it's already in top menu, press these two buttons at the same time to exit the setting mode.

3-2. LCD Panel



Display	Function
Backup time information	
	Indicates the estimated backup time. H: hours, M: minute, S: second.
Configuration and fault information	
	Indicates the configuration items, and the configuration items are listed in details in section 3-5.
	Indicates the warning and fault codes, and the codes are listed in details in section 3-7 and 3-8.
Mute operation	
	Indicates that the UPS alarm is disabled.
Input, Battery, Temperature, Output & Load information	
	Indicates the input voltage, input frequency, input current, battery voltage, battery current, battery capacity, ambient temperature, output voltage, output frequency, load current and load percent. k: kilo, W: watt, V: voltage, A: ampere, %: percent, ℃: centigrade degree, Hz: frequency
Load information	
	Indicates the load level by 0-24%, 25-49%, 50-74% and 75-100%.
	Indicates overload.
	Indicates the load or the UPS output is short circuit.
Programmable outlets information	
	Indicates that programmable management outlets are working.
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 level by 0-24%, 25-49%, 50-74%, and 75-100%.
	Indicates the battery is fault.
	Indicates low battery.
Input & battery information	
	Indicate the input voltage, input frequency and battery voltage. Vac: AC voltage, Vdc: DC voltage, Hz: frequency

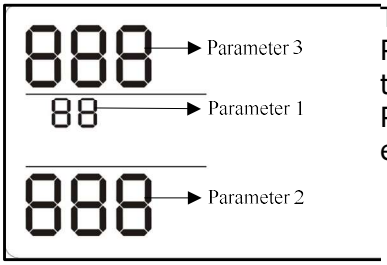
3-3. Audible Alarm

Battery Mode	Sounding every 5 seconds
Low Battery	Sounding every 2 seconds
Overload	Sounding every second
Fault	Continuously sounding
Bypass Mode	Sounding every 10 seconds

3-4. LCD display wordings index

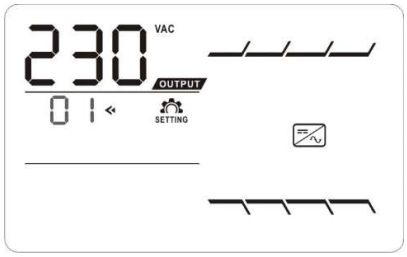
Abbreviation	Display content	Meaning
ENA		Enable
DIS		Disable
ESC		Escape
HLS		High loss
LLS		Low loss
AO		Active open
AC		Active close
EAT		Estimated autonomy time
RAT		Running autonomy time
SD		Shutdown
OK		OK
ON		ON
OI		Over input current
SF		Site wiring fault
EP		EPO
TP		Temperature
CH		Charger
FU		Bypass frequency unstable
BR		Battery Replace
EE		EEPROM error

3-5. UPS Setting

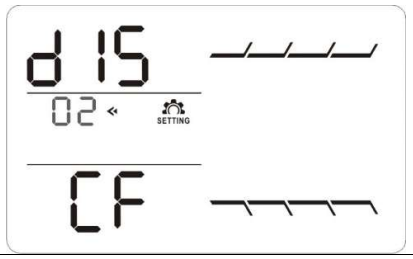


There are three parameters to set up the UPS.
Parameter 1: It's for program alternatives. Refer to below table.
Parameter 2 and 3 are the setting options or values for each program.

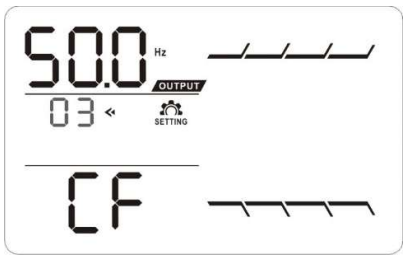
- **01: Output voltage setting**

Interface	Setting
	**Parameter 2: Output voltage** For 230 Models, You may choose the following output voltage: **200:** presents output voltage is 200Vac **208:** presents output voltage is 208Vac **220:** presents output voltage is 220Vac **230:** presents output voltage is 230Vac (Default) **240:** presents output voltage is 240Vac For 120 Models, You may choose the following output voltage: **100:** presents output voltage is 100Vac **110:** presents output voltage is 110Vac **115:** presents output voltage is 115Vac **120:** presents output voltage is 120Vac (Default) **125:** presents output voltage is 125Vac **127:** presents output voltage is 127Vac (127 is not applicable to U.S. voltage)

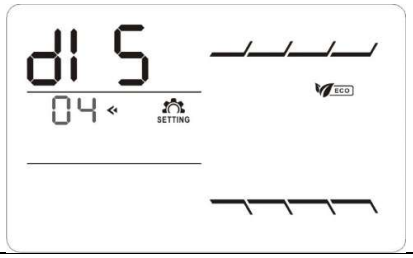
- **02: Frequency Converter enable/disable**

Interface	Setting
	**Parameter 2:** Enable or disable converter mode. You may choose the following two options: **CF ENA:** converter mode enable **CF DIS:** converter mode disable (Default)

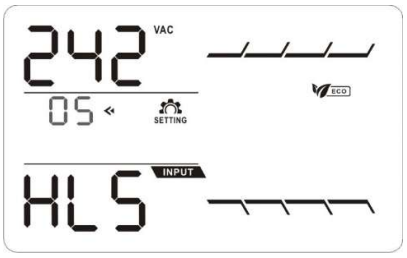
- **03: Output frequency setting**

Interface	Setting
	**Parameter 2: Output frequency setting.** You may set the initial frequency on battery mode: **BAT 50:** presents output frequency is 50Hz **BAT 60:** presents output frequency is 60Hz If converter mode is enabled, you may choose the following output frequency: **CF 50:** presents output frequency is 50Hz **CF 60:** presents output frequency is 60Hz

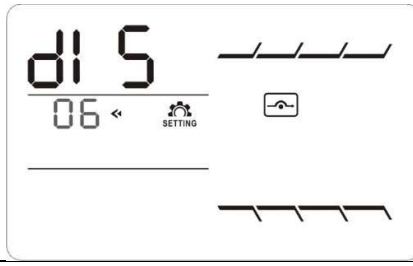
- **04: ECO enable/disable**

Interface	Setting
	**Parameter 2:** Enable or disable ECO function. You may choose the following two options: **ENA:** ECO mode enable **DIS:** ECO mode disable (Default)

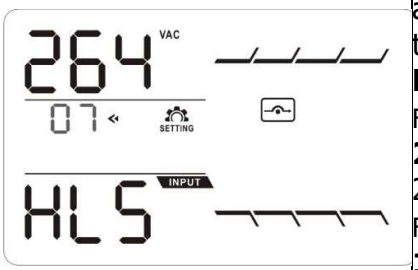
- **05: ECO voltage range setting**

Interface	Setting
	**Parameter 2:** Set the acceptable high voltage point and low voltage point for ECO mode by pressing Down key or Up key. **HLS:** High loss voltage in ECO mode in parameter 2. For 230 Models, the setting range in parameter 3 is from +7V to +24V of the nominal voltage. (Default: +12V) For 120 Models, the setting range in parameter 3 is from +3V to +12V of the nominal voltage. (Default: +6V) **LLS:** Low loss voltage in ECO mode in parameter 2. For 230 Models, the setting range in parameter 3 is from -7V to -24V of the nominal voltage. (Default: -12V) For 120 Models, the setting voltage in parameter 3 is from -3V to -12V of the nominal voltage. (Default: -6V)

- **06: Bypass enable/disable when UPS is off**

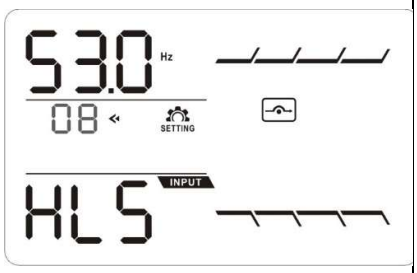
Interface	Setting
	**Parameter 2:** Enable or disable Bypass function. You may choose the following two options: **ENA:** Bypass enable **DIS:** Bypass disable (Default)

- **07: Bypass voltage range setting**

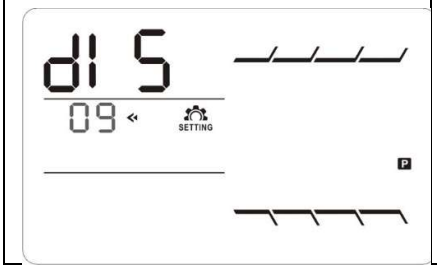
Interface	Setting
	**Parameter 2:** Set the acceptable high voltage point and acceptable low voltage point for Bypass mode by pressing the Down key or Up key. **HLS:** Bypass high voltage point For 230 Models: **230-264:** setting the high voltage point in parameter 3 from 230Vac to 264Vac. (Default: 264Vac) For 120 Models: **120-140:** setting the high voltage point in parameter 3 from 120Vac to 140Vac. (Default: 132Vac) **LLS:** Bypass low voltage point For 230 Models: **170-220:** setting the low voltage point in parameter 3 from

	170Vac to 220Vac. (Default: 170Vac) For 120 Models: **85-115:** setting the low voltage point in parameter 3 from 85Vac to 115Vac. (Default: 85Vac)

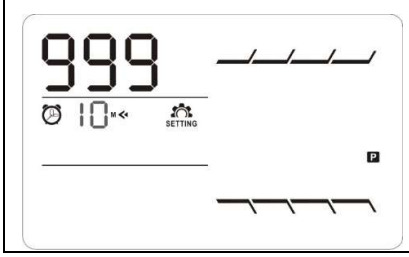
- **08: Bypass frequency range setting**

Interface	Setting
	**Parameter 2:** Set the acceptable high frequency point and acceptable low frequency point for Bypass mode by pressing the Down key or Up key. **HLS:** Bypass high frequency point For 50Hz output frequency models: **51-55Hz:** setting the frequency high loss point from 51Hz to 55HZ(Default: 53.0Hz) For 60Hz output frequency models: **61-65Hz:** setting the frequency high loss point from 61Hz to 65Hz(Default: 63.0Hz) **LLS:** Bypass low Frequency point For 50Hz output frequency models: **45-49Hz:** setting the frequency low loss point from 45Hz to 49HZ(Default: 47.0Hz) For 60Hz output frequency models: **55-59Hz:** setting the frequency low loss point from 55Hz to 59Hz(Default: 57.0Hz)

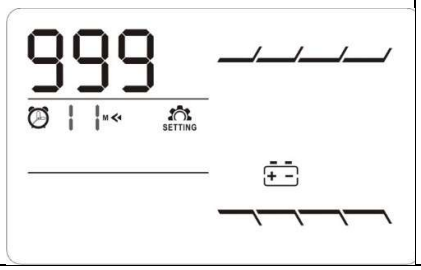
- **09: Programmable outlets enable/disable**

Interface	Setting
	**Parameter 2:** Enable or disable programmable outlets. **ENA:** Programmable outlets enable **DIS:** Programmable outlets disable (Default)

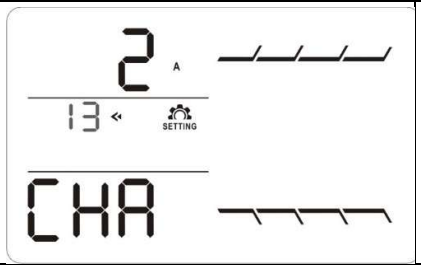
- **10: Programmable outlets setting**

Interface	Setting
	**Parameter 2:** Set up backup time limits for programmable outlets. **0-999:** setting the backup time limits in minutes from 0-999 for programmable outlets which connect to non-critical devices on battery mode. (Default: 999)

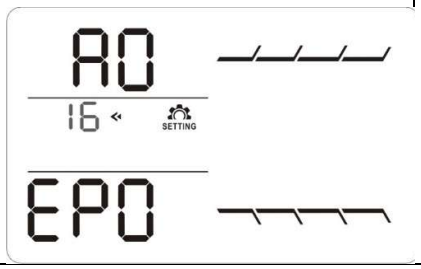
- **11: Autonomy limitation setting**

Interface	Setting
	**Parameter 2:** Set up backup time on battery mode for general outlets. **0-999:** setting the backup time in minutes from 0-999 for general outlets on battery mode. **DIS:** Disable the autonomy limitation and the backup time will depend on battery capacity. (Default) **Note:** When setting as "0", the backup time will be only 10 seconds.

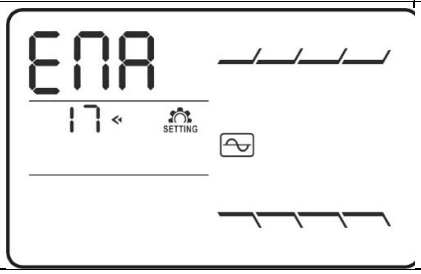
- **13: Maximum charger current setting**

Interface	Setting
	**Parameter 2:** Set up the charger maximum current. **1/2/4/6/8:** setting the charger maximum current 1/2/4/6/8 in Ampere. (Default: 4A)

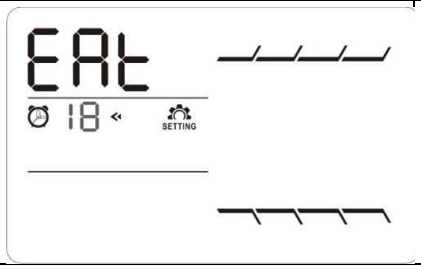
- **16: EPO logic setting**

Interface	Setting
	**Parameter 2:** Set up the EPO function control logic. **AO:** Active Open (Default). When AO is selected as EPO logic, it will activate EPO function with Pin 1 and Pin 2 in open status. **AC:** Active Close. When AC is selected as EPO logic, it will activate EPO function with Pin 1 and Pin 2 in close status.

- **17: Site fault detection enable/disable**

Interface	Setting
	**Parameter 2:** Enable or disable site fault detection. You may choose the following two options: **ENA:** Site fault detection enable(Default for 120 models) **DIS:** Site fault detection disable

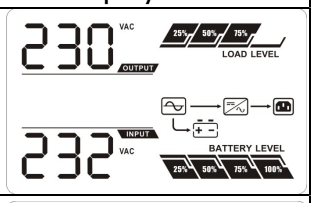
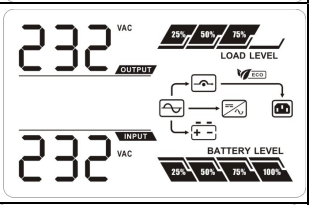
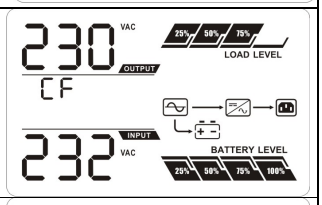
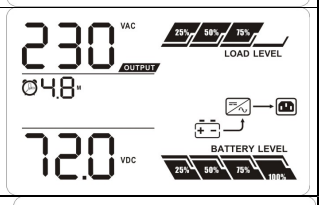
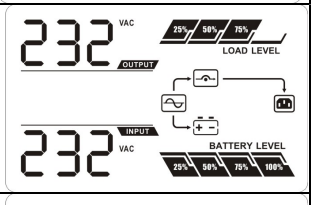
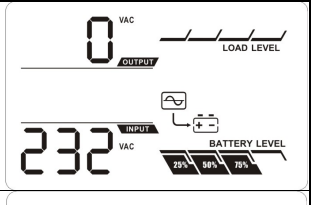
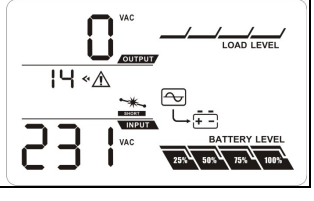
- **18: Display setting for autonomy time**

Interface	Setting
	**Parameter 2:** Set up the display setting for autonomy time **EAT:** If EAT is selected, it will display the remaining autonomy time. (Default) **RAT:** If RAT is selected, it will show accumulated autonomy time so far.

- **00: Exit setting**

Interface	Setting
	Exit the setting mode.

3-6. Operating Mode Description

Operating mode	Description	LCD display
Online mode	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 online mode.	
ECO mode	Energy saving mode: When the input voltage is within voltage regulation range, UPS will bypass voltage to output for energy saving. The UPS will also charge the battery at ECO mode.	
Frequency Converter mode	When input frequency is within 40 Hz to 70 Hz, the UPS can be set at a constant output frequency, 50 Hz or 60 Hz. The UPS will still charge battery under this mode.	
Battery mode	When the input voltage is beyond the acceptable range or power failure, the UPS will backup power from battery and alarm is sounding every 5 seconds.	
Bypass mode	When input voltage is within acceptable range but UPS is overload, UPS will enter bypass mode or bypass mode can be set by front panel. Alarm is sounding every 10 seconds.	
Standby mode	UPS is powered off and no output supply power, but still can charge batteries.	
Fault mode	When a fault has occurred, the ERROR icon and the fault code will be displayed.	

3-7. Faults Reference Code

Fault event	Fault code	Icon	Fault event	Fault code	Icon
Bus start fail	01	x	Battery voltage too high	27	x
Bus over	02	x	Battery voltage too low	28	x
Bus under	03	x	Charger output short	2A	x
Inverter soft start fail	11	x	Over temperature	41	x
Inverter voltage high	12	x	Overload	43	
Inverter voltage Low	13	x	Charger failure	45	x
Inverter output short	14	x	Over input current	49	x

3-8. Warning indicator

Warning	Icon (flashing)	Code	Alarm
Low Battery	⚠ LOW BATT		Sounding every 2 seconds
Overload	⚠ OVER LOAD		Sounding every second
Over input current	⚠	OI	Sounding 2 beep every 10 seconds
Battery is not connected	⚠		Sounding every 2 seconds
Over Charge	⚠ 25% 50% 75% 100%		Sounding every 2 seconds
Site wiring fault	⚠	SF	Sounding every 2 seconds
EPO enable	⚠	EP	Sounding every 2 seconds
Over temperature	⚠	tP	Sounding every 2 seconds
Charger failure	⚠	CH	Sounding every 2 seconds

Battery fault	⚠ BATT FAULT		Sounding every 2 seconds (At this time, UPS is off to remind users something wrong with battery)
Out of bypass voltage range	⚠		Sounding every 2 seconds
Bypass frequency unstable	⚠	FU	Sounding every 2 seconds
Battery replacement	⚠	bt	Sounding every 2 seconds
EEPROM error	⚠	EE	Sounding every 2 seconds

NOTE: "Site Wiring Fault" function can be enabled/disabled via software. Please check software manual for the details.

4. Troubleshooting

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 even though the mains is normal.	The AC input power is not connected well.	Check if input power cord firmly connected to the mains.
	The AC input is connected to the UPS output.	Plug AC input power cord to AC input correctly.
The icon ⚠ and the warning code EP flash on LCD display and alarm is sounding every 2 seconds.	EPO function is activated.	Set the circuit in closed position to disable EPO function.
The icons of ⚠ and ∿ flash on LCD display and alarm is sounding every 2 seconds.	Line and neutral conductors of UPS input are reversed.	Rotate mains power socket by 180° and then connect to UPS system.
The icons of ⚠ and + − flashes on LCD display and alarm is sounding every 2 seconds.	The external or internal battery is incorrectly connected.	Check if all batteries are connected well.
Fault code is shown as 27 and the icon BATT FAULT is lighting on LCD display. Alarm is continuously sounding.	Battery voltage is too high or the charger is fault.	Contact your dealer.
Fault code is shown as 28 and the icon BATT FAULT is lighting on LCD display. Alarm is continuously sounding.	Battery voltage is too low or the charger is fault.	Contact your dealer.
The icons of ⚠ and OVER LOAD flash on LCD display and alarm is sounding 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 49 on LCD display and alarm is continuously sounding.	UPS is over input current.	Remove excess loads from UPS output.
Fault code is shown as 43 and the icon OVER LOAD is lighting on LCD display. Alarm is continuously sounding.	The UPS shut down automatically because of overload at the UPS output.	Remove excess loads from UPS output and restart it.

Symptom	Possible cause	Remedy
Fault code is shown as 14 on LCD display and alarm is continuously sounding.	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, 11, 12, 13 and 41 on LCD display and alarm is continuously sounding.	A UPS internal fault has occurred. There are two possible results: 1. The load is still supplied, but directly from AC power via bypass. 2. The load is no longer supplied by power.	Contact your dealer
Battery backup time is shorter than nominal value.	Batteries are not fully charged	Charge the batteries for at least 5 hours and then check capacity. If the problem still persists, consult your dealer.
	Batteries defect	Contact your dealer to replace the battery.
Fault code is shown as 2A on LCD display and alarm is continuously sounding.	The short circuit occurs on the charger output.	Check if battery wiring of connected external pack is in short circuit status.
Fault code is shown as 45 on LCD display. At the same time, alarm is continuously sounding.	The charger does not have output and battery voltage is less than 10V/PC.	Contact your dealer.

5. Storage and Maintenance

Operation

The UPS system contains no user-serviceable parts. If the battery service life (3~5 years at 25°C ambient temperature) has been exceeded, the batteries must be replaced. In this case, please contact your dealer.

Storage

Store the UPS covered and upright in a cool, dry location.

6. Specifications

MODEL (RT UL model)		DC1500RTXE	DC2000RTXE
MODEL (RT CE model)		DC1500RTXE-HV	DC2000RTXE-HV
CAPACITY*		1500VA/1350W	2000VA/1800W
INPUT			
Voltage Range	Low Line Transfer	160VAC/140VAC/120VAC/110VAC ± 5 % or 80VAC/70VAC/60VAC/55VAC ± 5 % (based on load percentage 100% - 80 % / 80 % - 70 % / 70 - 60 % / 60 % - 0)	
	Low Line Comeback	175VAC/155VAC/135VAC/125VAC ± 5 % or 87VAC/77VAC/67VAC/62VAC ± 5 %	
	High Line Transfer	300 VAC ± 5 % or 150 VAC ± 5 %	
	High Line Comeback	290 VAC ± 5 % or 145 VAC ± 5 %	
Frequency Range		40Hz ~ 70 Hz	
Phase		Single phase with ground	
Power Factor		≧ 0.99 @ full load	
THDi		≦ 5% @ 160-265VAC or 80~140VAC THDU < 1.6% @ input and full linear load condition	
OUTPUT			
Output voltage		200/208/220/230/240VAC or 100/110/115/120/125/127 VAC**	
AC Voltage Regulation		± 1% (Batt. Mode)	
Frequency Range (Synchronized Range)		47 ~ 53 Hz or 57 ~ 63 Hz	
Frequency Range		50 Hz ± 0.1 Hz or 60Hz ± 0.1 Hz (Batt. Mode)	
Current Crest Ratio		3:1	
Harmonic Distortion		≦ 2 % THD (Linear Load) ; 4 % THD (Non-linear Load)	
Transfer Time	AC Mode to Batt. Mode	Zero	
	Inverter to Bypass	< 4 ms	
Waveform (Batt. Mode)		Pure Sinewave	
EFFICIENCY			
AC Mode @ full charged battery		≧90%	≧91%
ECO Mode@ full charged battery		≧96%	
Battery Mode		≧89%	
BATTERY			
Battery Type		LiFePO4	
Charging Current		1/2/4(Default)/6/8A	
Charging Voltage		52. 5 VDC ± 1%	
PHYSICAL (UPS)			
Dimension, D X W X H		410 x438 x 88 mm (16.14 x 17.24 x 3.46 in.)	
Net Weight		7.7kg (17lbs)	7.8kg (17.2lbs)
ENVIRONMENT			
Operation Humidity		20-95 % RH @ 0- 40°C (non-condensing)	
Noise Level		Less than 50dBA @ 1 Meter (With fan speed control)	
IP degree		IP20	
MANAGEMENT			
Smart RS-232 or USB		Supports Windows® 2000/2003/XP/Vista/2008/7/8/10, Linux, Unix and MAC	
Optional SNMP		Power management from SNMP manager and web browser	

* Derate capacity to 90% of capacity when the output voltage is adjusted to 100VAC.

**For 120VAC system, the output power ratings are different based on different input voltage. Please check output power rating table for the details. (127 is not applicable to U.S. voltage)

*** Product specifications are subject to change without further notice.

Output Power Rating Table (only for 100/110/115/120/125 VAC system)

Model name	Input rating	Output rating
DC1500RTXE	100-125Vac, 50/60Hz, 12A, 1Ø	100/110/115/120/125Vac, 50/60Hz, 1Ø 1500VA/1350W,12A (@125Vac input) ; 1500VA/1300W,12.5A (@120Vac input) ; 1500VA/1270W,13A (@115Vac input) ; 1500VA/1200W,13.6A (@110Vac input) ; 1350VA/1040W,13.5A (@100Vac input)
DC2000RTXE	100-125Vac, 50/60Hz, 16A, 1Ø	100/110/115/120/125Vac, 50/60Hz, 1Ø 2000VA/1800W,16A (@125Vac input) ; 2000VA/1800W,16.7A (@120Vac input) ; 2000VA/1740W,17.4A (@115Vac input) ; 2000VA/1640W,18.2A (@110Vac input) ; 1800VA/1500W,18A (@100Vac input)

Orion Power Systems Service and Technical Support
If you have any problems or questions with the UPS, call your local distributor or Orion Power Systems technical support at the following telephone number:
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 and return address

If repair is necessary, you will be given a Returned Material Authorization (RMA) number. The RMA number must appear on the outside of the box and on the Bill Of Lading. Original packaging should be used if available. Systems that get damaged in transit as a result of improper packaging are not covered under warranty. A replacement or repair unit will be shipped, freight prepaid for all units under warranty. NOTE: For critical applications, immediate replacement may be available.

Product Registration
Product Registration is required to activate the load protection guarantee 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