Power Conversion®

TX91 & TX91L
Isolated Online UPS

3.8kVA, 5kVA, 6kVA, 10kVA Models

User & Installation Manual

Table of Contents

1 Safety and EMC Instructions

Safety Instructions

Please read carefully the following user manual and the safety instructions before installing the UPS or using the UPS! Please comply with all warnings and operating instructions in this manual. Save this manual 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 and Storage

- Please transport the UPS system only in the original packaging to protect against shock and impact.
- The UPS must be stored in a room where it is ventilated and dry.

1.2 Preparation

- Condensation may occur if the UPS system is moved directly from cold to warm environments. The UPS system must be absolutely dry before being installed. Please allow at least two hours for the UPS system to acclimate to 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

1.3 Installation

- Do not connect appliances or devices which would overload the UPS (e.g. motor-type equipment) to the UPS output receptacles or terminal.
- Place cables in such a way that no one can step on or trip over them.
- Do not block air vents in the housing of the system components. The UPS system must be installed in a location with good ventilation. Ensure enough space on each side for ventilation.
- UPS has provided a ground terminal for equipotential earth bonding to the external UPS battery cabinets in the final installed system configuration.
- The UPS can be installed only by qualified maintenance personnel.
- An appropriate disconnect device for short-circuit backup protection should be provided in the building wiring installation, upstream of the UPS.
- 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.
- Connect the ground before connecting to the building wiring terminal.
- Installation and wiring must be performed in accordance with the local electrical laws and regulations.

1.4 Connection

- This UPS must be installed and grounded in accordance with local and national electrical code.
- The power supply for this unit must be single-phase rated in accordance with the equipment nameplate. It also must be suitably grounded.
- There can be no derivation in the line that goes from the Backfeed Protection to the UPS, as the standard safety would be infringed.
- The power supply for this unit must be single-phase rated in accordance with the equipment nameplate.

WARNING
HIGH LEAKAGE CURRENT
EARTH CONNECTION ESSENTIAL
BEFORE CONNECTING SUPPLY

- 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.

• Connect your UPS power module's grounding terminal to a grounding electrode conductor.
• 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.
• 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:

Before working on this circuit
Isolate Uninterruptible Power Supply (UPS)
Then check for Hazardous Voltage between
all terminals including the protected ground
Risk of Voltage Backfeed

1.5 Maintenance

• Even after the UPS is disconnected from the mains, the components inside are still connected to the battery packs which may be potentially dangerous.
• Before carrying out any kind of service 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.
• Verify that no 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.
• 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.
• When replacing the batteries, install the same number and same type of batteries.
• Do not attempt to dispose of batteries by burning them. This could cause battery explosion. The batteries must be rightly deposed according to local regulation.
• Do not open or destroy batteries. Escaping electrolyte can cause injury to the skin and eyes. It may be toxic.
• Please replace the fuse only with the same type and amperage in order to avoid fire hazards.
• Do not disassemble the UPS system.
TX91 3.8 -10kVA & TX91L 3.8 10kVA User's Manual Uninterruptible Power Supply
Xtreme Power Conversion Corporation Page 3
• When replacing batteries, it is necessary to replace ALL batteries with the same quantity, type & capacity.
• Do not plug or unplug the battery connector if UPS is working in battery mode.
• This unit is not designed for outdoor use.

1.6 Operation

• Do not disconnect the ground conductor cable on the UPS or the building wiring terminals in any time since this would cancel the protective ground of the UPS system and of all connected loads.
• The UPS system features its own, internal current source (batteries). The UPS output receptacles or output terminal blocks may be electrically live even if the UPS system is not connected to the building wiring system.
• In order to fully disconnect the UPS system, first press the "OFF" button and then disconnect the mains.
• Ensure that no liquid or other foreign objects can enter into the UPS system.
• The UPS can be operated by any individuals with no previous experience.

• 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.
• Connect your UPS power module's grounding terminal to a grounding electrode conductor.
• 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.

1.7 Recycling the Used Battery

• Do not dispose of the battery in a fire. Battery may explode. Proper disposal of battery is required. Refer to your local codes for disposal requirements. For more information, contact your local recycling/reuse or hazardous waste center.
• Do not open or mutilate the battery. Released electrolyte is harmful to the skin and eyes. It may be toxic.

1.8 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.	

2 Installation

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 share current cable (only available for parallel model)

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.

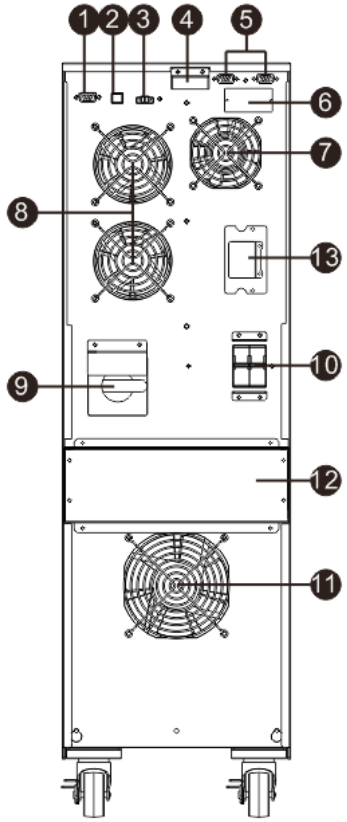
Unpack the External Battery Pack (if supplied)

NOTE: Battery is very heavy so be cautious when unpacking and lifting the unit to avoid injury

- External Battery Pack
- Quick Guide
- Battery connection cable x 1

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

2.2 Rear Panel View



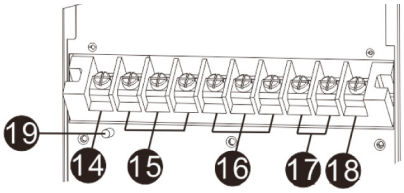
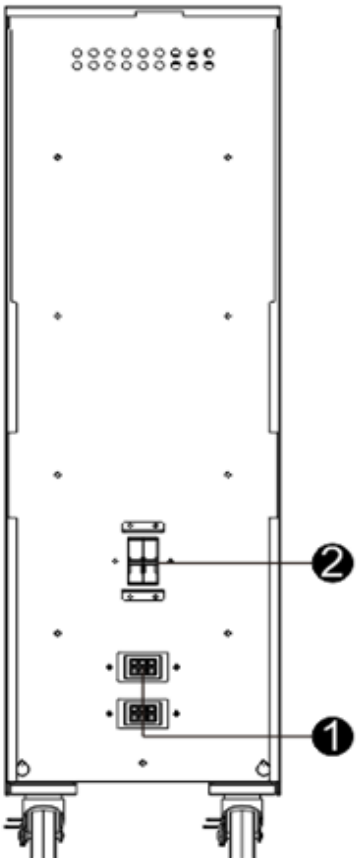


Diagram 1: Rear Panel Overlook Diagram 2: Input/Output Terminal

1. RS-232 communication port
2. USB communication port
3. Emergency power off function connector (EPO connector)
4. Share current port (only available for parallel model)
5. Parallel port (only available for parallel model)
6. Intelligent slot
7. Charger fan
8. Power stage fan
9. Maintenance bypass switch
10. Input circuit breaker
11. Isolation transformer fan
12. Input/Output terminal (Refer to Diagram 2 for the details)
13. External battery connector
14. Non-isolated neutral
15. ISO TAP selections
16. Output
17. Input
18. Input ground
19. Output ground

2.3 Battery Pack Rear Panel View



TX91-BP20/BP40/BP60 battery pack
Figure 2-4

1. DC connector: connects to either UPS or 2nd battery pack.
2. DC breaker: Battery over-current protection breaker.

2.4 UPS Electrical Connections/Installation

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

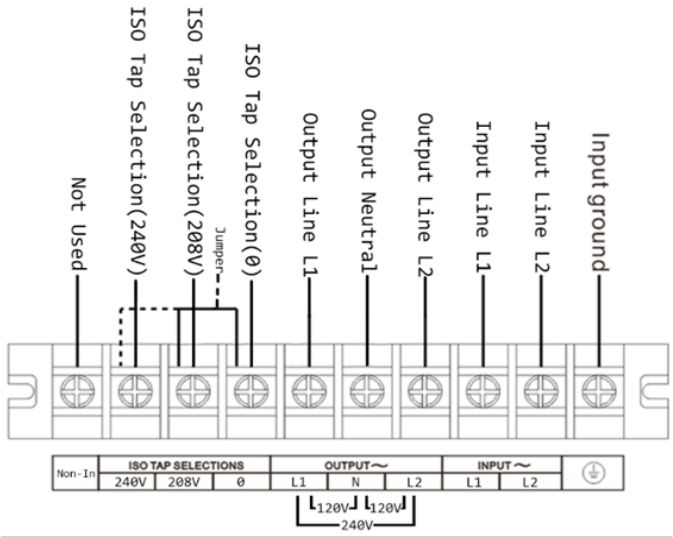
1. Make sure the mains wire and breakers in the building are sized for the rated capacity of UPS to avoid the hazards of electric shock or fire.
2. Switch off the mains switch in the building before installation.
3. Turn off all the connected devices before connecting to the UPS.
4. Prepare wiring based on the following table:

Model	Wiring spec (AWG)			
	Input	Output	Non-isolated Neutral	Ground
3.8K	8	8	8	8
5K	8	8	8	8
6K	6	6	6	6
10K	4	4	4	4

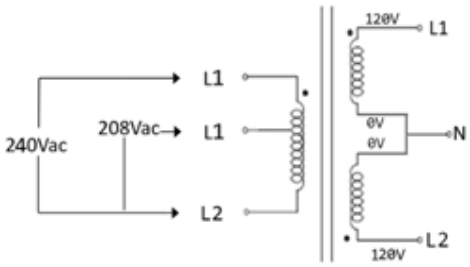
Model	Recommended Input Overcurrent Protection
3.8K	30A
5K	30A
6K	40A
10K	70A

NOTE: The selections for size and color of wires should follow the local electrical laws and regulations.

5.Remove the terminal block cover on the rear panel of UPS



UPS Terminal Block Wiring Diagram
Figure 2-3



UPS Transformer Diagram
Figure 2-4

1. Connect input L1 wire to UPS input L1 terminal.

2. Connect input L2 wire to UPS input L2 terminal.
3. Connect input GND wire to input GND terminal.
4. Connect output L1 wire to UPS output L1 terminal.
5. Connect output L2 wire to UPS output L2 terminal.
6. Connect output N wire to UPS N terminal.
7. Ensure ISO TAP Jumper is in correct position (208V for 208V input or 240V for any other input voltages).
8. Ensure Output voltage parameter is set to match the site input voltage. Refer to section 3.3

NOTE 1: The ISO Tap Selector Jumper is electrically located between the output of the inverter and the transformer primary. In the 208V position it steps up the voltage by 11%. In the 240v position there is no voltage change. 208V is default Position. Refer to figure 2-4.

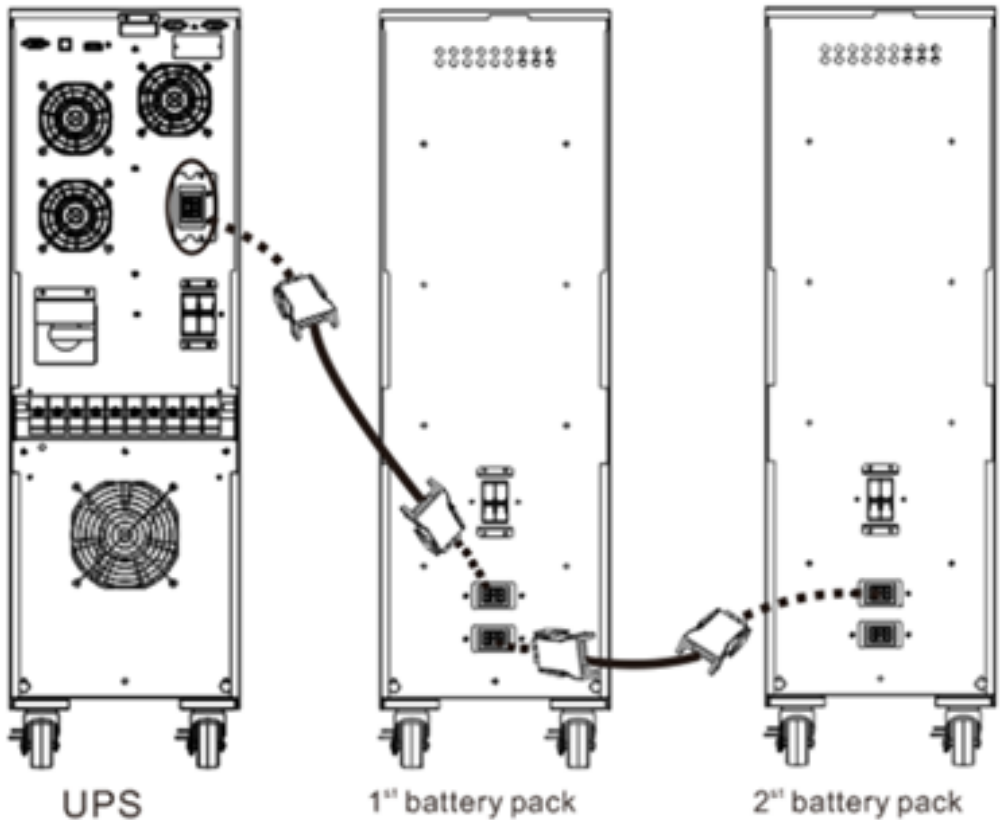
Voltage Configuration Chart		
Standard Settings		
Input Voltage	Iso Tap Position	Voltage Out
208	208	230/115 (Default)
240	240	240/120
Additional Settings		
Input Voltage	Iso Tap Position	Voltage Out
200	208 240	222/111 200/100
208	240	208/104
220	208 240	244/122 220/110
230	208 240	256/128 230/115
240	208	266/133

NOTE 1: If other than default setting is desired, configuration can be done at the factory for an additional voltage configuration fee.

6. After connecting the wires, replace the terminal block cover on the rear panel of the UPS.
NOTE 1: Install the output breaker between the output terminal and the Load. I.A.W NEC code.
NOTE 2: UPS Cabinet contains an Isolation Transformer with N-G bond. This system qualifies as a separately derived source.

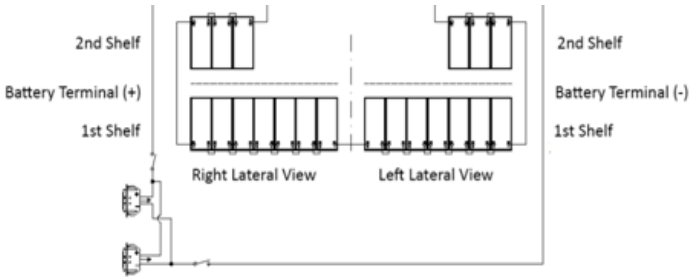
Warning:
Make sure the UPS is turned off before installation.
The UPS should not be turned on during wiring connection.

2.5 Connecting UPS with Battery Packs

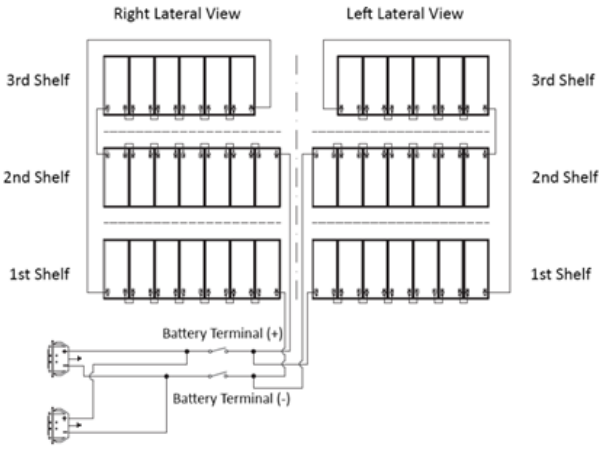


1. Connect one end of battery connection cable to Battery DC connector.
2. Connect other end of battery connection cable to UPS external battery connector.
3. If there is another external battery connect one end of Battery connection cable to first battery pack DC connector. Then connect other end to second battery pack DC connector.

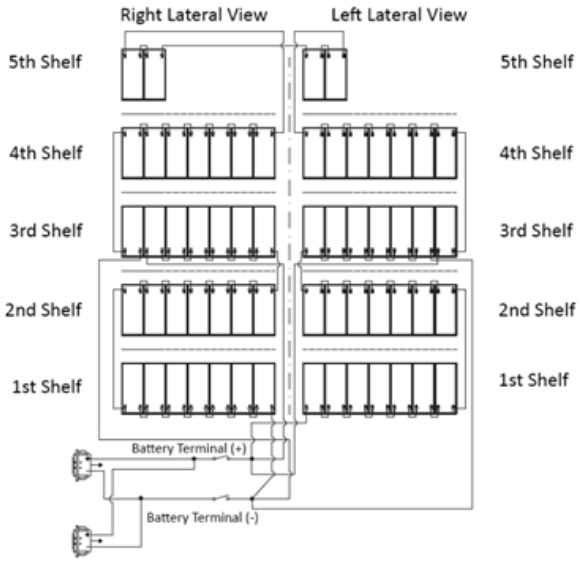
2.6 Battery Wiring Diagram



TX91-BP20 Battery Wiring Diagram
Figure 2-18



TX91-BP40 Battery Wiring Diagram
Figure 2-19



TX91-BP60 Battery Wiring Diagram
Figure 2-19

Type of Battery Required

- TX91 - (20) 12V 9AH batteries.
- TX91L - external batteries only.
- External battery pack – (20), (40), or (60) pieces of 12V 9AH batteries.

2.7 Storage & Maintenance

The unit 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.

Be sure to deliver the spent battery to a recycling facility or ship it to your dealer in the replacement battery packing material.

Before storing, charge the unit 7 hours. Store the unit 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

Software Installation

For optimal computer system protection, install UPS monitoring software to fully configure UPS shutdown. Refer to included Viewpower CD.

3 Operations

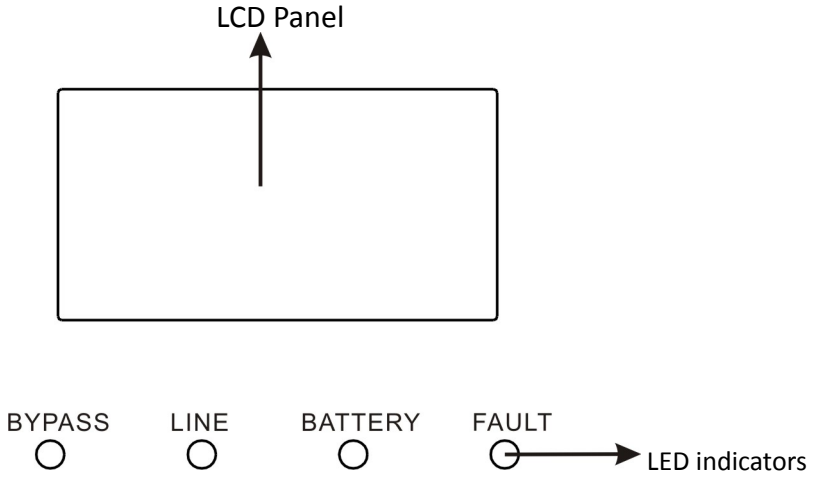
3.1 User Interface

3.1.1 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.

3.1.2 LED Indicators



LED Indicators:

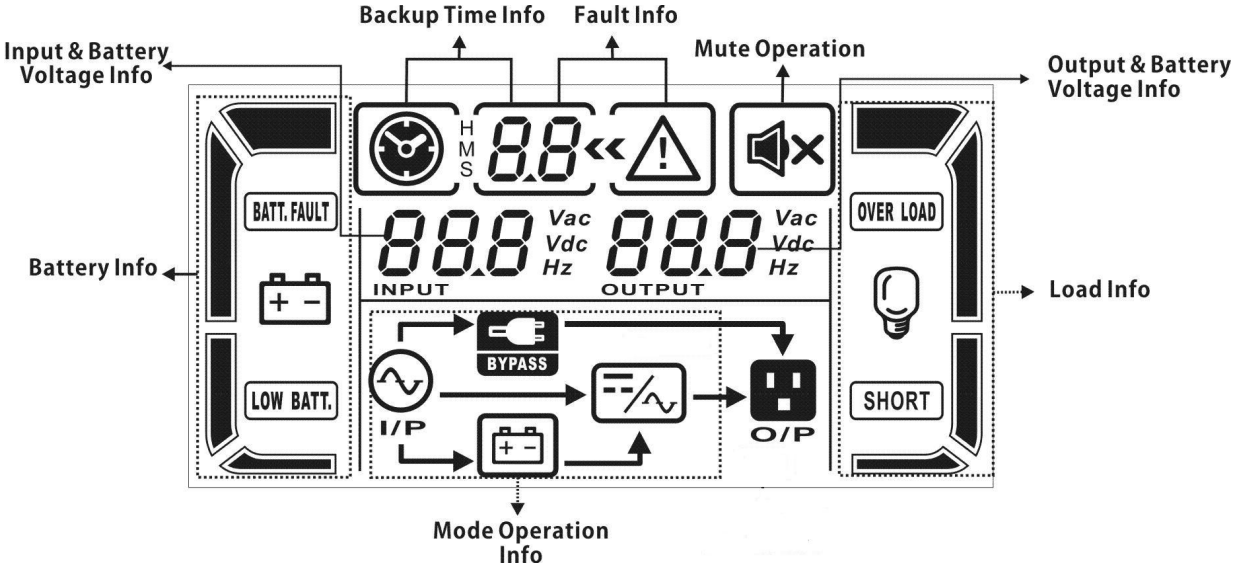
There are 4 LEDs on front panel to show the UPS working status:

Mode LED	Bypass	Line	Battery	Fault
UPS Startup	●	●	●	●
No Output mode	○	○	○	○
Bypass mode	●	○	○	○
AC mode	○	●	○	○
Battery mode	○	○	●	○

CVCF mode	○	●	○	○
Battery Test	●	●	●	○
ECO mode	●	●	○	○
Fault	○	○	○	●

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

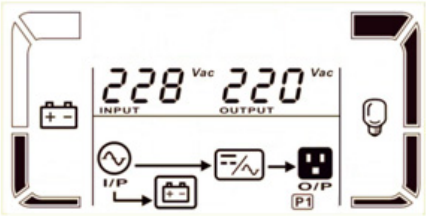
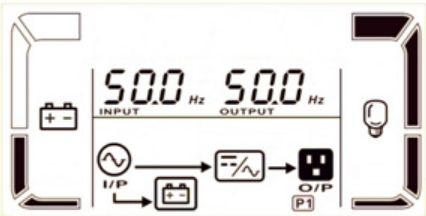
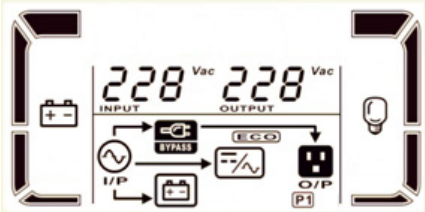
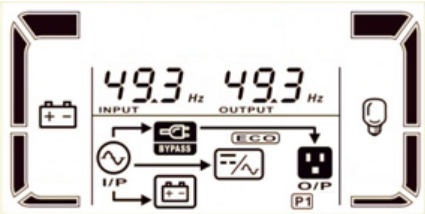
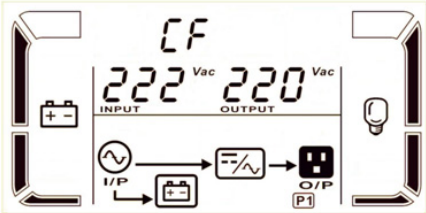
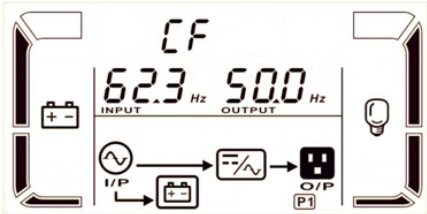
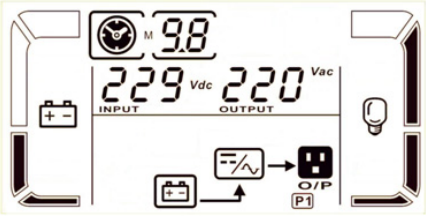
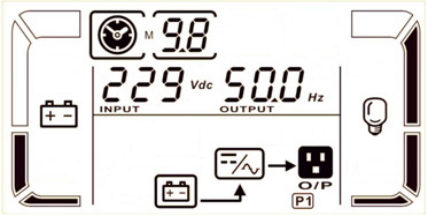
3.1.3 LCD Panel

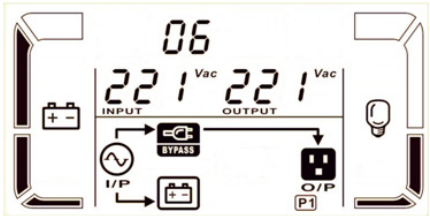
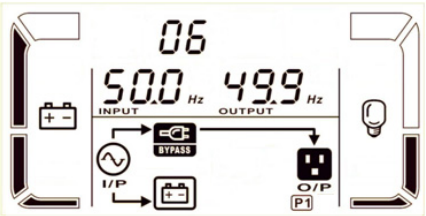
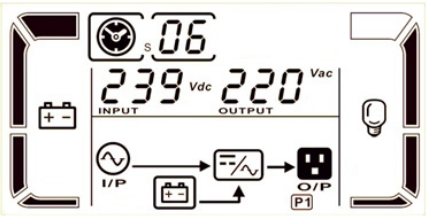
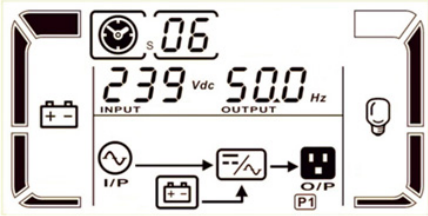
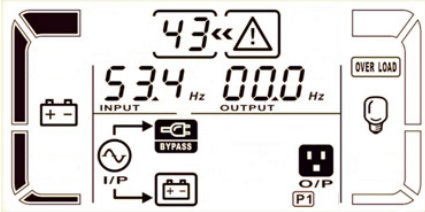


Display	Function
Backup time information	
H M S 8.8	Indicates battery discharge time in numbers. H: hours, M: minutes, S: seconds
Fault information	
« ⚠	Indicates that the warning and fault occurs.
8.8	Indicates the fault codes, and the codes are listed in details in section 3-9.
Mute operation	
🔇	Indicates that the UPS alarm is disabled.
Output & Battery voltage information	
888 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 shorted.

Mode operation information	
I/P	Indicates the UPS connects to the mains.
	Indicates the battery is working.
BYPASS	Indicates the bypass circuit is working.
ECO	Indicates the ECO mode is enabled.
	Indicates the Inverter circuit is working.
O/P	Indicates the output is working.
Battery information	
	Indicates the Battery capacity by 0-25%, 26-50%, 51-75%, and 76-100%.
BATT. FAULT	Indicates the battery is not connected.
LOW BATT.	Indicates low battery level and low battery voltage.
Input & Battery voltage information	
88.8 Vac Vdc Hz INPUT 12	Indicates the input voltage or frequency or battery voltage. Vac: Input voltage, Vdc: battery voltage, Hz: input frequency

3.1.5 Operating Mode/Descriptions

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 there is input power failure, UPS will backup power from battery and alarm will beep every 4 seconds.
	LCD display	 

Operating mode/status		
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" key 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 a UPS fault has happened, it will display fault messages in LCD panel.
	LCD display	 

3.2 UPS Operation

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

1) After power supply is connected correctly, 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 get power from utility after you switch on the input breaker. In Bypass mode, the load is not protected by UPS. To protect your precious 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 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.

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.
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 be turned on and enter to Battery mode.

Connect devices to 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 inductive loads such as a printer, the in-rush current should be calculated carefully to ensure 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 overloaded, the buzzer will beep twice every second.
4. When the UPS is overloaded, 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 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.

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. It is suggested to charge batteries at least 10 hours before use. Otherwise, the backup time may be shorter than expected.

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 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 may very from different environment temperature and load type.
4. The backup time depends on the quantity external batteries.
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 3.3 LCD Settings section)

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.

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 terminal even though you 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 completely off.

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.

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.

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 section 4 for details.

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 section 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 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.

Adjusting 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 parameter 2, you can select the charging current from 1A to 4A by pressing "Test/UP" button or "Mute/ Down" button. Select the charging current based on the number of battery strings. One string equals 1A, if the number of battery strings is 2 then set it to 2A, if the battery strings is 3A set it to 3A, anything 4 strings or more set it to 4A.
4. Confirm the setting by pressing the "ON/Enter" button.
5. In 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 the 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 does not exceed the battery accepted charging current.

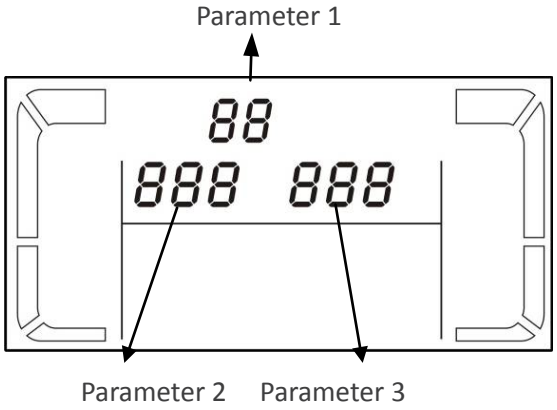
NOTE 2: All parameter settings will be saved only when UPS shuts down normally with internal or external battery connection. (Normal UPS shutdown means turning off input breaker in bypass/no output mode).

LCD Display Abbreviations

Abbreviation	Display content	Meaning
ENA	ENA	Enable
DIS	dIS	Disable
ATO	AtO	Auto
BAT	bAt	Battery
NCF	nCF	Normal mode (not CVCF mode)
CF	CF	CVCF mode
SUB	SUb	Subtract
ADD	Add	Add
ON	On	On
OFF	OFF	Off
FBD	Fbd	Not allowed
OPN	OPn	Allowed
RES	rES	Reserved
OP.V	OP.U	Output voltage

LCD Setting

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



Parameter 1: It's for program alternatives. There are 15 programs to set up. Refer to below table.
Parameter 2 and parameter 3 are the setting options or values for each program.

15 programs available list for parameter 1:

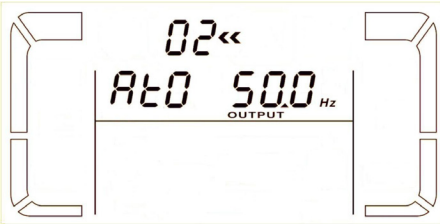
Code	Description	Bypass	AC	ECO	CVCF	Battery	Battery Test
01	Output voltage	Y					
02	Output frequency	Y					
03	Voltage range for bypass	Y					
04	Frequency range for bypass	Y					
05	ECO mode enable/disable	Y					
06	Voltage range for ECO mode	Y					
07	ECO mode frequency range setting	Y					
08	Bypass mode setting	Y					
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	
16	Output voltage calibration		Y		Y	Y	
17	Charging current setting	Y	Y	Y	Y	Y	Y

*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
60 Hz, CVCF mode  50 Hz, Normal mode  ATO  	**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. **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 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 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.

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
	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 option: 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.

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
	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 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. The default value is DIS.

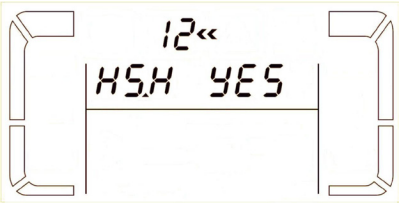
10: Reserved

Interface	Setting
	Reserved

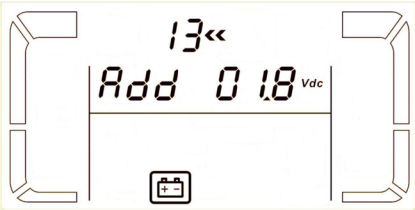
11: Reserved

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 2: Select "Add" or "Sub" function to adjust battery voltage to real figure. Parameter 3: the voltage range is from 0V to 5.7V, the default value is 0V.

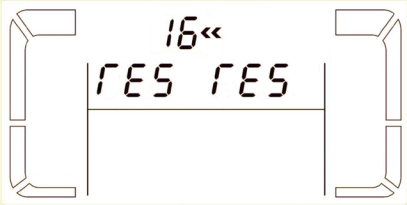
14: Charger voltage adjustment

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 using the default value (0). Any modification should be suitable to battery specifications.

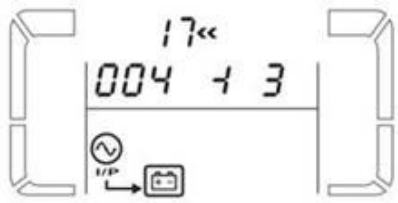
15: Inverter voltage adjustment

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 calibration

Interface	Setting
	When the output voltage can not be detected(less than 50VAC), " " will be displayed in parameter 2 and parameter 3.
	Parameter 2: it always shows OP.V as output voltage. Parameter 3: it shows the internal measurement value of the output voltage, and you can calibrate it by pressing Up or Down according to the measurement from an external voltage meter. The calibration result will be effective by pressing Enter. The calibration range is limited within +/-9V.

17: Charging current setting

Interface	Setting
	Parameter 2: Set the charging current of the charger from 1A to 4A (001 ~ 004). Parameter 3: Calibrate the charging current. If there is deviation between setting current and real measured current, please use this parameter to 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. The calibrated formula is listed as below: Setting charging current = "real measured current" + or – "value setting in parameter 3" For example, if setting charging current is 4A, but real current is detected as 3.6A, please set up calibrated current as + 3. Setting charging current 4A = real measured current 3.6A + 0.3A

4 Troubleshooting

If the UPS system is not functioning correctly, please reference the tables below to isolate the issue.

4.1 Audible Alarm

Description	Buzzer status	Can be Muted?
UPS status		
Bypass mode	Beeping once every 2 minutes	Yes
Battery mode	Beeping once every 4 seconds	
Fault mode	Beeping continuously	
Warning		
Overload	Beeping twice every second	Yes
Others	Beeping once every second	
Fault		
All	Beeping continuously	Yes

4.2 Warning Indicator

Warning	Icon (flashing)	Alarm
Battery low	LOW BATT.	Beeping every second
Overload	OVER LOAD	Beeping twice every second
Battery unconnected	BATT. FAULT	Beeping every second
Over charge		Beeping every second
EPO enable	EP	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

4.3 Warning Code Descriptions

Warning code	Warning event	Warning code	Warning event
01	Battery unconnected	10	L1 IP fuse broken
07	Over charge		
08	Low battery		
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

Fault Code

Fault event	F a u l t code	Icon	Fault event	Fault code	Icon
Bus start failure	01	⚠	Battery SCR short circuited	21	⚠
Bus over	02	⚠	Inverter relay short circuited	24	⚠
Bus under	03	⚠	Charger short circuited	2a	⚠
Bus unbalance	04	⚠	Can communication fault	31	⚠
Inverter soft start failure	11	⚠	Over temperature	41	⚠
High Inverter voltage	12	⚠	CPU communication failure	42	⚠
Low Inverter voltage	13	⚠	Overload	43	OVER LOAD
Inverter output short circuited	14	SHORT	Battery turn-on failure	6A	⚠
Negative power fault	1A	⚠	PFC current failure in battery mode	6B	⚠
Inverter over current	60	⚠	Bus voltage changes too fast	6C	⚠
Inverter waveform abnormal	63	⚠	SPS 12V abnormal	6E	⚠
Inverter current detection error	6D	⚠			
Transformer over temperature	77	⚠			

4.4 Troubleshooting Chart

Symptom	Possible cause	Remedy
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 overloaded.	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 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 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 Specifications

5.1 TX91 Specifications

MODEL NUMBER		TX91-3.8K	TX91-5K	TX91-6K	TX91-10K
CAPACITY	Power rating	3.8kVA (3.8kW)	5kVA (5kW)	6kVA (6kW)	10kVA (10kW)
INPUT	Voltage (nominal)	208VAC (200VAC, 220VAC, 230VAC, 240VAC optional)			
	Voltage range	110-300VAC			
	Frequency	46–64Hz auto-sensing			
OUTPUT	Voltage	240/120VAC or 230/115VAC			
	Voltage regulation	± 1%			
	Frequency	50/60Hz ± 0.1Hz			
	Overload capacity	110% 10 min; 130% 1 min; >130% 1 sec			
	Efficiency	Up to 97% ECO mode, 91% online mode			
BATTERY/CHARGER	Battery type	Sealed, maintenance-free lead acid			
	Battery quantity and size (standard / XR models)	(20) 12V 9AH / (20) 12V 580W			
	Charger voltage/current	273VDC / 1A-4A (selectable)			
PHYSICAL	Input/output	Terminal blocks or optional PDU			
	Dimensions (W x D x H)	9.9 x 23.3 x 32.4 in			
	Weight	272 lbs	275 lbs	278 lbs	307 lbs
OPTIONAL BATTERY PACKS	Battery quantity and size	BP20-(20) 12V 9AH; BP40-(40) 12V 9AH; BP60-(60) 12V 9AH			
	Dimensions (W x D x H)	9.9 x 23.3 x 32.4 in			
	Weight	BP20 - 190lbs; BP40 - 320 lbs; BP60 - 450 lbs			
OPTIONAL PDU	Input connection	Terminal blocks or 6 ft, L6–30P*			Terminal blocks
	120V receptacle options	5–15/20R			
	240V receptacle options	L6–30R, L6–20R, 6–15/20R, C19			
ENVIRONMENT	Temperature	32–104°F (0–40°C)			
	Audible noise	< 50dBA			
	Altitude	11,500 ft above sea level			
APPROVALS		UL1778, cUL, FCC Class A, RoHS			
WARRANTY		3 years electronics, 3 years battery warranty (USA and Canada)			
COMMUNICATIONS INTERFACE		RS-232, EPO, intelligent slot for optional cards (Web/SNMP, Relay/dry contact, Modbus)			
INCLUDED IN BOX		User manual, RS-232 communication cable, ViewPower Software CD			
AVAILABLE OPTIONS		5 year extended warranty, output PDU, input L6–30P cord (for 3.8kVA, 5kVA & 6kVA)			

**6kVA system capacity will be reduced by 30A input circut*

5.2 TX91L Specifications

MODEL NUMBER		TX91L-3.8K	TX91L-5K	TX91L-6K	TX91L-10K
CAPACITY	Power rating	3.8kVA (3.8kW)	5kVA (5kW)	6kVA (6kW)	10kVA (10kW)
INPUT	Voltage (nominal)	208VAC (200VAC, 220VAC, 230VAC, 240VAC optional)			
	Voltage range	110-300VAC			
	Frequency	46–64Hz auto-sensing			
OUTPUT	Voltage	240/120VAC or 230/115VAC			
	Voltage regulation	± 1%			
	Frequency	50/60Hz ± 0.1Hz			
	Overload capacity	200% for 1 min	150% for 1 min	130% for 1 min	
	Efficiency	Up to 97% ECO mode, 91% online mode			
BATTERY/CHARGER	Charger amps	1A-4A (max) programmable from LCD			
	Charger voltage	273VDC			
PHYSICAL	Input/output	Terminal blocks or optional PDU			
	Dimensions (W x D x H)	9.9 x 23.3 x 22.7 in			9.9 x 23.3 x 32.4 in
	Weight	152 lbs	155 lbs	158 lbs	187 lbs
OPTIONAL PDU	Input connection	Terminal blocks or 6 ft, L6–30P*			Terminal blocks
	120V receptacle options	5–15/20R			
	240V receptacle options	L6–30R, L6–20R, 6–15/20R, C19			
ENVIRONMENT	Temperature	32–104°F (0–40°C)			
	Audible noise	< 50dBA			
	Altitude	11,500 ft above sea level			
APPROVALS		UL1778, cUL, FCC Class A, RoHS			
WARRANTY		3 year electronics (USA and Canada)			
COMMUNICATIONS INTERFACE		RS-232, EPO, intelligent slot for optional cards (Web/SNMP, Relay/dry contact, Modbus)			
INCLUDED IN BOX		User manual, RS-232 communication cable, ViewPower Software CD			
AVAILABLE OPTIONS		5 year extended warranty, output PDU, input L6–30P cord (for 3.8kVA, 5kVA & 6kVA)			

**6kVA system capacity will be reduced by 30A input circut*

6 Obtaining Service

If the UPS requires Service:

1. Use the TROUBLESHOOTING section in this manual to eliminate obvious causes.
2. Verify there are no circuit breakers tripped.
3. Call your dealer for assistance. If you cannot reach your dealer, or if they cannot resolve the problem, call Xtreme Power Conversion Corp Technical Support at 800.582.4524. Technical support inquiries can also be made at support@xpcc.com. Please have the following information available BEFORE calling the Technical Support Department:
   - Your name and address.
   - The serial number of the unit.
   - Where and when the unit was purchased.
   - All of the model information about your UPS.
   - Any information on the failure, including LED's that may or may not be illuminated.
   - A description of the protected equipment, including model numbers if possible.
   - A technician will ask you for the above information and, if possible, help solve your problem over the phone. In the event that the unit requires factory service, the technician will issue you a Return Material Authorization number (RMA).

If you are returning the UPS to Xtreme Power for service, please follow these procedures:

1. Pack the UPS in its original packaging. If the original packaging is no longer available, ask the Technical Support Technician about obtaining a replacement set of packaging material. It is important to pack the UPS properly in order to avoid damage in transit. Never use Styrofoam beads for a packing material.
2. Include a letter with your name, address, daytime phone number, RMA number, a copy of your original sales receipt, and a brief description of the problem.
3. Mark the RMA number on the outside of all packages. Xtreme Power cannot accept any package without the RMA number marked on the outside of the boxes.
4. Return the UPS by insured, prepaid carrier to the address provided by the Technician.
5. Refer to the Warranty statements in this manual for additional details on what is covered.

7 Xtreme Power Conversion Limited Warranty

Xtreme Power Conversion (XPC) Corporation warrants Xtreme Power Conversion equipment, when properly applied and operated within specified conditions, against faulty materials or workmanship for a period of **three years for TX91/TX91L-Series products** from the date of purchase. XPC Corporation warrants **internal batteries for a period of three years** from the date of purchase. For equipment sites within the United States and Canada, this warranty covers repair or replacement, at the sole discretion of XPC Corporation. The customer is responsible for the costs of shipping the defective product to XPC Corporation. XPC Corporation will pay for ground shipment of the repaired or replacement product. This warranty applies only to the original purchaser.

If equipment provided by XPC Corporation is found to be **Dead-on-Arrival (DOA)**, XPC Corporation will be responsible for the costs of shipping product to and returning equipment from the customer in a timely manner as agreed to with the customer, once the customer has requested and received a **Return Material Authorization (RMA)** number. DOA equipment is defined as equipment that does not properly function according to user documentation when initially received and connected in conjunction with proper procedures as shown in the user documentation or via support provided by XPC Corporation personnel or authorized agents.

This warranty shall be void if (a) the equipment is repaired or modified by anyone other than XPC Corporation or a XPC Corporation approved third party; (b) the equipment is damaged by the customer, is improperly used or stored, is subjected to an adverse operating environment, or is operated outside the limits of its electrical specifications; or (c) the equipment has been used or stored in a manner contrary to the equipment's operating manual, intended use or other written instructions. Any technical advice furnished by XPC Corporation or a XPC Corporation authorized representative before or after delivery with regard to the use or application of Xtreme Power Conversion equipment is furnished on the basis that it represents XPC Corporations best judgment under the situation and circumstances, but it is used at the recipient's sole risk.

EXCEPT AS STATED ABOVE, XPC Corporation DISCLAIMS ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

EXCEPT AS STATED ABOVE, IN NO EVENT WILL XPC Corporation BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF Xtreme Power Conversion EQUIPMENT, including but not limited to, any costs, lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, cost of substitutes, or claims by third parties. Purchaser's sole and exclusive remedy for breach of any warranty, expressed or implied, concerning Xtreme Power Conversion equipment, and the only obligation of XPC Corporation under this warranty, shall be the repair or replacement of defective equipment, components, or parts; or, at XPC Corporations sole discretion, refund of the purchase price or substitution of an equivalent replacement product.

8 Xtreme Power Conversion Load Protection Policy

THIS POLICY IS NOT A WARRANTY. REFER TO **THE XPC CORPORATION, INC. LIMITED WARRANTY** FOR INFORMATION CONCERNING THE WARRANTY FOR YOUR XPC PRODUCT. THE LIMITATIONS AND CONDITIONS CONTAINED IN THIS POLICY DO NOT AFFECT **THE TERMS OF THE XPC LIMITED WARRANTY.**

Definitions:

1. "Product" means a Standard 120, 208, or 240 Volt power protection device that is used in the United States and Canada. This policy does not include custom manufactured products.
2. "Power Disturbance" means an AC power line transient (telephone line or Local Area Network, if applicable), spike or surge.
3. "Connected Equipment" properly connected electronic equipment
4. "Fair Market Value" of damaged Connected Equipment as determined by XPC shall be the lower of (a) the average price the same or similar items are being sold for on eBay, (b) the price list of Orion Blue Book (or if such price list is no longer published, a published or announced price list reasonably selected by XPC), (c) the lowest price the same or similar items can be purchased for in the United States or (d) the total amount of all payment(s) you have or are entitled to receive from insurance, other warranties, extended warranties, a legal liability claim or from other sources or persons for the damaged Connected Equipment.
5. "Purchaser" means the person or entity that originally purchased the Product from an authorized reseller or distributor of XPC Products.

The Purchaser of this Product is protected, for the term of the XPC Limited Warranty, against certain losses caused by a Power Disturbance for properly connected electronic equipment (referred to as the "Connected Equipment") subject to certain terms and conditions provided below.

This policy applies only to the original purchaser of the Product. If the Product is transferred or sold to another person or entity, this policy is void.

Load Protection Policy Dollar and Period Limits

For purchasers that meet the qualifications and conditions set forth in this policy, XPC will provide reimbursement (cost of repair or fair market value as determined by XPC) during the period limits and up to the dollar limits stated as follows:

PRODUCT	DOLLAR LIMIT	PERIOD OF COVERAGE
XVT, XST, S70	25,000	Term of XPC Limited Warranty
V80, P80, P80g, P90, P90L, P90g, P90Lg, P91, T91, TX90, TX90i, TX91, XPRT, TXVR	50,000	Term of XPC Limited Warranty

This Load Protection Policy is not deemed "first dollar" coverage. XPC's obligation is reduced by any amounts that the Purchaser is entitled to recover, from other sources regarding the Connected Equipment, including, but not limited to, insurance, other warranty, extended warranty, or legal liability, regardless of whether or not the Purchaser makes a claim for recovery.

Eligibility for Coverage Under the Load Protection Policy

1. The Product must be registered on the XPC website, www.xpcc.com, within 10 days of purchase. All required information must be provided, and Purchaser should retain a copy for Purchaser's records. When registering on the website, Purchaser must list all connected equipment that is directly connected to the product. Only those devices registered in that manner will be covered.
2. All Connected Equipment must be UL or CSA approved.
3. The Product must be plugged into a properly wired and grounded outlet. Use of input surge devices, extension cords, adapters, ground wires, or electrical connections not manufactured by XPC voids the XPC Load Protection Policy. No other surge protection device may be connected to the output sockets of the Product. The installation must comply with all applicable electrical and safety codes set forth pursuant to

the NEC.

4. The Product must have undeniable physical evidence of a Power Disturbance that directly and proximately caused the damage;
5. The Connected Equipment must have been damaged by a Power Disturbance on a properly installed, grounded, and National Electric Code, ("NEC"), code-compliant 120, 208, 240 Volt AC power line in the United States or Canada, by a Power Disturbance on standard telephone land line or PBX telephone equipment line that is properly installed and connected to an RJ11 port on the Product; or by a Power Disturbance on a standard Local Area Network connection that is properly installed and connected to an RJ45 port on the Product and (d) is directly plugged into, and properly connected to, the Product in its original condition which was properly operated when a Power Disturbance passed through the Product and (i) exhausts the protection capacity of the Product or (ii) damages the Product.
6. The Load Protection Policy does not apply if the Product has been operated in a failure mode or not in compliance with XPC operating instructions in the Product user's manual, or if the Connected Equipment has not been operated in compliance with the instructions and manuals of its manufacturer/vendor.
7. This policy is null and void if, XPC determines, in its sole discretion, that the Product has been tampered with or altered in any way.

What is Not Covered Under the Load Protection Policy:

The following damage is not covered by this Policy:

1. Restoration of lost data and reinstallation of software.
2. Damage from a cause other than AC power-line transients, except for damage due to telephone line, Local Area Network, or CATV transients, which is covered only if the Product offers such protection.
3. DAMAGE CAUSED BY FAILURE TO PROVIDE A SUITABLE INSTALLATION ENVIRONMENT FOR THE PRODUCT (INCLUDING, BUT NOT LIMITED TO, LACK OF A PROPER SAFETY GROUND).
4. Damage caused by the use of the Product for purposes other than those for which it was designed.
5. Damage caused by accidents, or natural disasters, including but not limited to, fire, flood, and wind.
6. Damage caused by abuse, misuse, alteration, modification, or negligence.
7. Any labor costs or travel, room and board expenses associated with the repair and/or restoration of lost or damaged hardware, software or data.

EXCEPT AS EXPRESSLY PROVIDED IN THIS POLICY, XPC SHALL NOT BE LIABLE FOR ANY DAMAGES WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, DIRECT, INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR MULTIPLE DAMAGES ARISING OUT OF THE USE OF THE PRODUCT OR DAMAGE TO THE CONNECTED EQUIPMENT, REGARDLESS OF THE LEGAL THEORY ON WHICH SUCH CLAIM IS BASED, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. SUCH DAMAGES INCLUDE, BUT ARE NOT LIMITED TO, LOSS OF PROFITS, LOSS OF SAVINGS OR REVENUE, LOSS OF USE OF THE PRODUCT OR THE CONNECTED EQUIPMENT OR ANY ASSOCIATED EQUIPMENT, LOSS OF SOFTWARE, COST OF CAPITAL, COST OF ANY SUBSTITUTE EQUIPMENT, FACILITIES OR SERVICES, DOWNTIME, THE CLAIMS OF THIRD PARTIES, INCLUDING CUSTOMERS, AND INJURY TO PROPERTY.

Submitting a Load Protection Policy Claim:

1. Any claim under the Load Protection Policy must be made within 10 days of the date of alleged damage to the Connected Equipment.
2. Call the XPC technical support department at 1-800- 582-4524 and obtain a Load Protection Policy Returned Material Authorization (RMA) number. Have information on all applicable insurance or other resources of recovery/payment that is available to the Purchaser and the name of the power utility supplier for the location of the Connected Equipment. XPC will forward to the Purchaser a Load Protection Policy claims form, which must be completed and filed with XPC within 30 days.
    - Mark the Load Protection Policy RMA number on the Product the Purchaser is returning.
    - Pack the Product in its original packaging or similar packing materials if the original packaging has been discarded. Enclose the completed Load Protection Policy claim form and a copy of the Purchaser's original sales receipt for the Product in the box.
    - Mark the RMA number clearly on the outside of the box.

- Ship the Product (one-way shipping charges paid by the Purchaser) to:

XPC Corporation
230 Yuma Street
Denver, CO 80223
Attn: LPP RMA#

3. XPC will evaluate the Product to determine its level of functionality, and will examine the Product for evidence of damage from a Power Disturbance.
    - If XPCs' evaluation provides no evidence of damage from a Power Disturbance, XPC will send to the Purchaser (i) a report summarizing the tests performed and (ii) a rejection of claim notice.
    - If the Product shows evidence of damage from a Power Disturbance, XPC will request that all Connected Equipment for which a Load Protection Policy claim has been submitted, be sent for evaluation to either XPC or an authorized service center. If it is determined that the Connected Equipment has been damaged by a Power Disturbance, XPC will, in its sole discretion, issue payment to the Purchaser for either the cost of repair of the Connected Equipment or the Fair Market Value of the damaged Connected Equipment, up to the dollar limits stated above. XPC reserves the right to require the Purchaser to transfer title and deliver the Connected Equipment to XPC if it chooses to reimburse the Purchaser for the fair market value of the Connected Equipment. XPCs' maximum liability shall be reduced to reflect all such other payments or sources of recovery, whether applied for or not.
4. If XPC issues payment to the Purchaser to have the Connected Equipment repaired, the repair must be performed at a service center that is authorized by the manufacturer of the Connected Equipment. XPC reserves the right to contact the authorized service center directly to discuss repair costs and damage to the Connected Equipment to determine if it was caused by a Power Disturbance and the right to request that the service center forward the Connected Equipment or components of the Connected Equipment to XPC for inspection
5. Unless modified in writing signed by an officer of XPC and the Purchaser, the terms of this policy are the complete and exclusive agreement between the parties, superseding all prior agreements, oral or written, and all other communications between the parties relating to the subject matter of this agreement. No employee of XPC or any other party is authorized to make any representations beyond those made in this agreement concerning the Load Protection Policy.

XPC Corporation
230 Yuma Street
Denver, CO 80223
1.800.582.4524