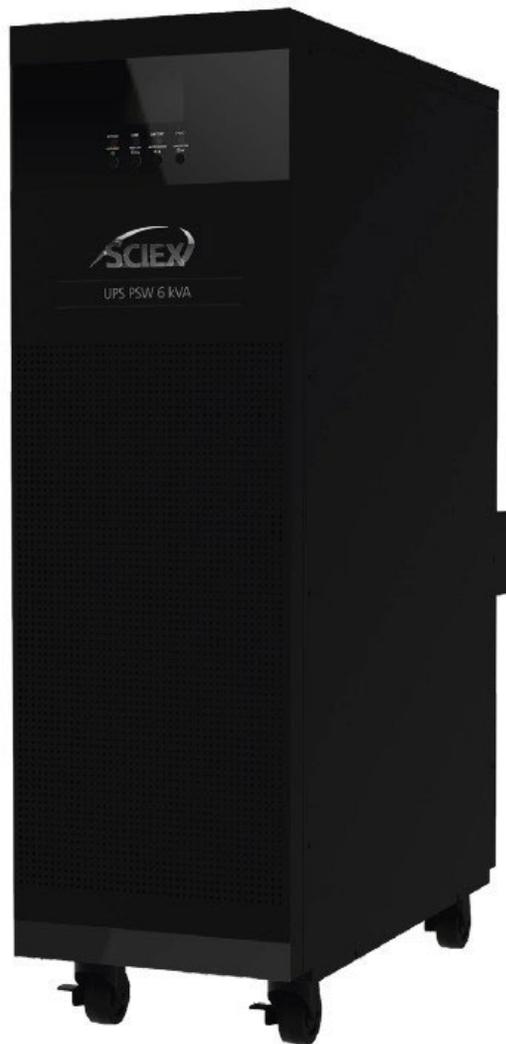

SCIEX UPS PSW 6 kVA - NA

Operator Guide



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1 Safety and EMC Instructions

Safety Instructions

Please read carefully this operator guide and the safety instructions before installing, operating or performing maintenance. Please comply with all warnings and operating instructions in this manual. 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

- Before performing installation the UPS requires a period of no less than 2 hours to acclimate to the laboratory environment. Failing to do this can result in condensation and moisture in the UPS, which can cause internal system damage.
- Do not install the UPS system near water or in moist environments.
- This UPS is intended only for indoor use. Do not install the UPS system where it would be exposed to outdoor elements.

1.3 Installation

- The UPS must be installed by qualified maintenance personnel.
- Do not connect appliances or devices other than the SCIEX equipment to the UPS.
- 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. Install the UPS system in a location with good ventilation. Make sure that there is at least 12 inches (30 cm) of free space at the front, back, and sides of the UPS.
- In the building wiring installation, supply an appropriate disconnect device for short-circuit backup protection, upstream of the UPS.
- In the building wiring installation, supply an integral single emergency switching device to prevent further supply to the load by the UPS in any mode of operation.
- Connect the protective earth (ground) before connecting the UPS to the building wiring terminal.
- Do all installation and wiring in accordance with the local electrical laws and regulations.
- Make sure that the mains supply outlet is installed NEAR the UPS and EASILY ACCESSIBLE

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.
- The power supply must also be suitably connected to protective earth.
- There can be no derivation in the line that goes from the Backfeed Protection to the UPS, as the standard safety would be infringed.



WARNING
HIGH LEAKAGE CURRENT
EARTH CONNECTION ESSENTIAL
BEFORE CONNECTING SUPPLY

- 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 equivalent text:

**Before working on this circuit
Isolate Uninterruptible Power Supply (UPS)
Then check for Hazardous Voltage between
all terminals including the protective earth.**



Risk of Voltage Backfeed



**WARNING: CANCER AND
REPRODUCTIVE HARM.
AVERTISSEMENT: RISQUES DE
CANCER ET DE
MALFORMATIONS
CONGÉNITALES.
www.P65Warnings.ca.gov**

1.5 Maintenance

NOTE: Battery replacement service is available through your SCIEX Service Representative.

- Even after the UPS is disconnected from the mains supply, 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 capacitors such as BUS-capacitors.
- Verify that there is no conductivity between the battery terminals and the ground 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.
- The following precautions should be observed when working on batteries:
 - Disconnect the charging source before connecting or disconnecting battery terminals.
 - Do not wear any metal objects including watches and rings.
 - Do not put tools or metal parts on top of batteries,
- Do not attempt to dispose of batteries by burning them. This could cause battery explosion. The batteries must be correctly disposed of according to local regulations. Do not open or destroy batteries. Escaping electrolyte can cause injury to the skin and eyes. It may be toxic.
- When replacing the batteries, install the same number and same type of batteries.
- When replacing batteries, it is necessary to replace ALL batteries with the same quantity, type & capacity.
- If required, replace the fuse only with the same type and amperage in order to avoid fire hazards.
- Do not disassemble the UPS system.
- Do not plug or unplug the battery connector if the UPS is working in battery mode.
- This unit is not designed for outdoor use.

1.6 Operation

- Do not disconnect the earth (ground) protective conductor on the UPS or the building wiring terminals

at any time since this would cancel the protective earthing (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 protective earth (ground) 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.
- Failed batteries can reach temperatures that exceed the burn thresholds for touchable surfaces.

1.7 Recycling the Used Battery

- Do not dispose of the battery in a fire. The battery may explode. Proper disposal of the 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: UL 1778 (5th edition), CSA C22.2 No. 107.3-14
Safety Markings: cTUVus
* EMI
Conducted Emission: FCC PART15 CLASS A, CAN ICES-003 (A)
Radiated Emission: FCC PART15 CLASS A, CAN ICES-003 (A)
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 Rear Panel View

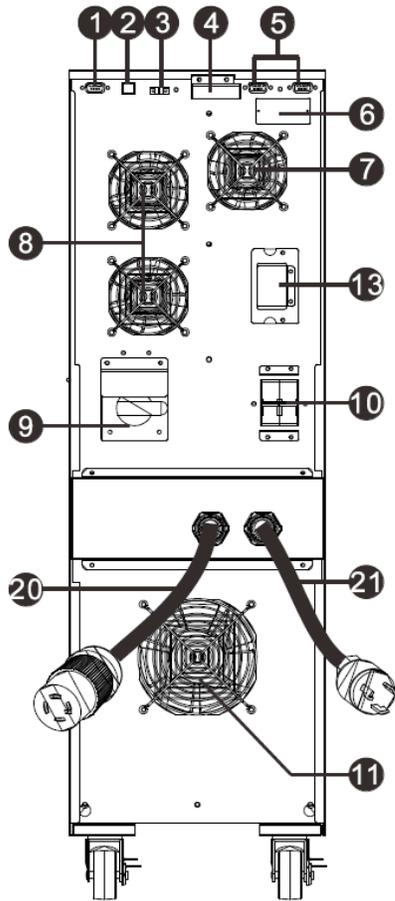


Diagram 1: Rear Panel

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
13. External battery connector
20. UPS output
21. UPS input

2.2 UPS Electrical Connections/Installation

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

1. Make sure the mains wire and breakers in the building are sized for the rated capacity of the 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
SCIEX UPS PSW 6 kVA - NA	6	6	6	6

Model	Recommended Input Overcurrent Protection
SCIEX UPS PSW 6 kVA - NA	40A

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

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

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

5. 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: The 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.

2.3 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 SCIEX Service Representative.



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 the included Viewpower CD.

3 Operations

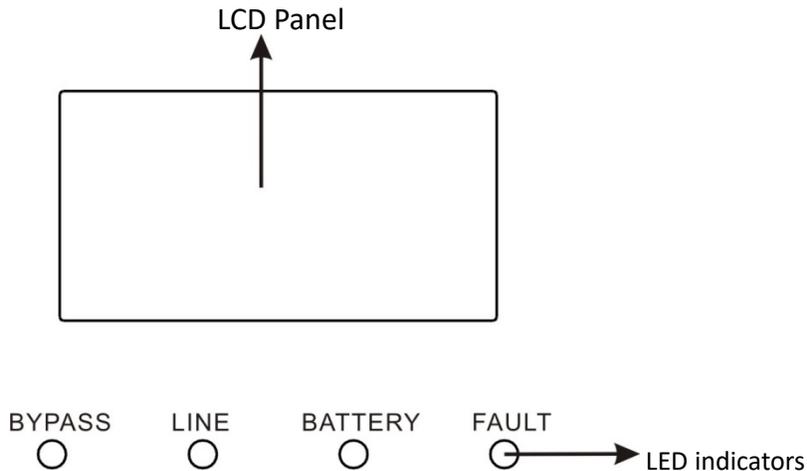
3.1 User Interface

3.1.1 Button Operation

Button	Function
ON/Enter Button	Turn on the UPS: Press and hold the button more than 0.5 s to turn on the UPS. Enter Key: Press this button to confirm the selection in the Setting menu.
OFF/ESC Button	Turn off the UPS: Press and hold the button more than 0.5 s to turn off the UPS. Esc key: Press this button to return to last item in the Setting menu.
Test/Up Button	Battery test: Press and hold the button more than 0.5 s to test the battery while the UPS is in AC or CVCF mode. UP key: Press this button to display the next selection in the Setting menu.
Mute/Down Button	Mute the alarm: Press and hold the button more than 0.5 s to mute the buzzer. Please refer to section 3-4-9 for details. Down key: Press this button to display the previous selection in the Setting menu.
Test/Up + Mute/ Down Button	Press and hold the two buttons simultaneously for more than 1 s to enter/escape the Setting menu.

* CVCF mode means converter mode.

3.1.2 LED Indicators



LED Indicators:

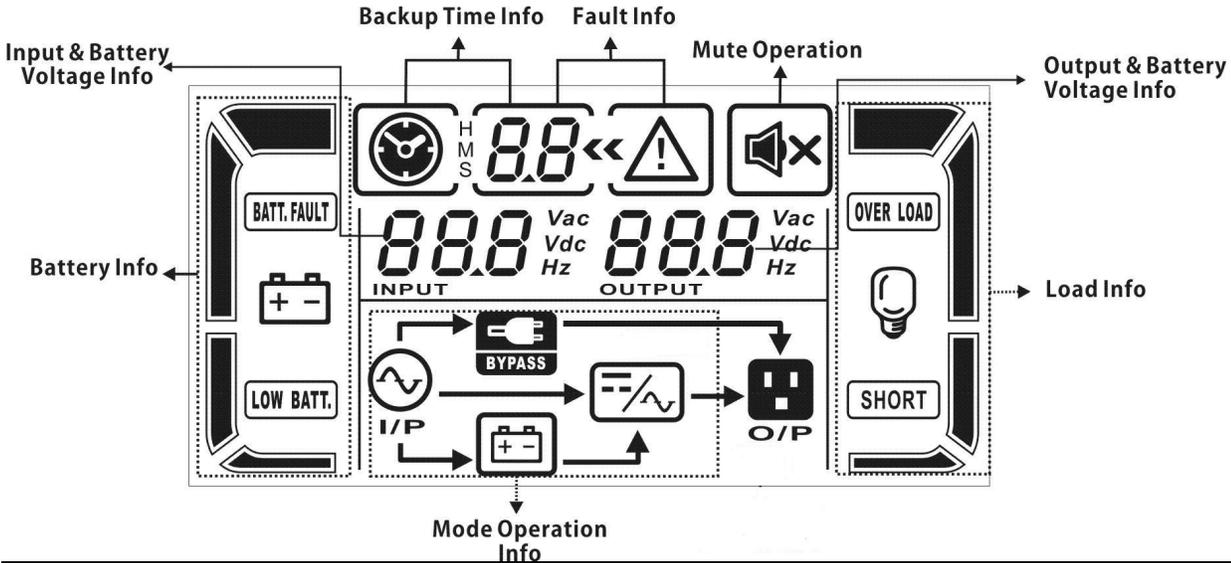
There are 4 LEDs on front panel to show the UPS working status:

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 the LED is illuminated, and ○ means the LED is off.

3.1.3 LCD Panel



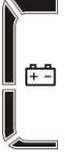
Display	Function
Backup time information	
	Indicates the battery discharge time in numbers. H: hours, M: minutes, S: seconds
Fault information	
	Indicates a warning or fault has occurred.
	Indicates the fault codes. The codes are listed in detail in section 3-9.
Mute operation	
	Indicates the UPS alarm is disabled.
Output & Battery voltage information	
	Indicates the output voltage, frequency or battery voltage. Vac: output voltage, Vdc: battery voltage, Hz: frequency
Load information	
	Indicates the load level as 0-25%, 26-50%, 51-75%, and 76-100%.
	Indicates an overload.

SHORT	Indicates the load or that the output is shorted.
--------------	---

Mode operation information

	Indicates the UPS is connected to the mains.
	Indicates the battery is working.
	Indicates the bypass circuit is working.
ECO	Indicates the ECO mode is enabled.
	Indicates the Inverter circuit is working.
	Indicates the output is working.

Battery information

	Indicates the Battery capacity as 0-25%, 26-50%, 51-75%, and 76-100%.
BATT. FAULT	Indicates the battery is not connected.
LOW BATT.	Indicates a low battery level and low battery voltage.

Input & Battery voltage information

	Indicates the input voltage or frequency or battery voltage. Vac: Input voltage, Vdc: battery voltage, Hz: input frequency
---	---

3.1.4 Operating Mode/Descriptions

Operating mode/status		
AC mode	Description	When the input voltage is within the acceptable range, the UPS will provide pure and stable AC power to output. The UPS will also charge the battery in AC mode.
	LCD display	
ECO mode	Description	When the input voltage is within the voltage regulation range and ECO mode is enabled, the UPS will bypass the voltage to output to save energy.
	LCD display	
CVCF mode	Description	When the input frequency is within 46 to 64 Hz, the UPS can be set at a constant output frequency, 50 Hz or 60 Hz. The UPS will still charge the battery in this mode.
	LCD display	
Battery mode	Description	When the input voltage is outside the acceptable range or there is an input power failure, the UPS will back up power from the battery and an alarm will beep every 4 seconds.
	LCD display	

Operating mode/status		
Bypass mode	Description	When the input voltage is within the acceptable range and bypass is enabled, turn off the UPS and it will enter Bypass mode. An alarm beeps every two minutes.
	LCD display	
Battery Test	Description	When the UPS is in AC or CVCF mode, press the “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, the UPS shows fault messages on the LCD panel.
	LCD display	

3.2 UPS Operation

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

1) After the power supply is connected correctly, set the input breaker to the “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 the UPS is in Bypass mode, the output voltage will get power directly from the utility after you switch on the input breaker. In Bypass mode, the load is not protected by the UPS. To protect your precious devices, you should turn on the UPS. Refer to next step.

2) Press and hold the “ON” button for 0.5 s to turn on the UPS. The buzzer will beep once. 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 on battery, it will shut down automatically in 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 in the “ON” position.

2. Press and hold the “ON” button for 0.5 s to turn on the UPS. The buzzer will beep once. A few seconds later, the UPS will be turned on and enter Battery mode.

Connect devices to UPS

1. Turn on the UPS first and then turn on the devices one by one. The LCD panel will display the 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 it meets the capacity of the UPS, because the power consumption of this kind of load is too big.

3. If the UPS is overloaded, the buzzer will beep twice every second. When the UPS is overloaded, please remove some loads immediately. It is recommended that the total loads connected to the UPS be less than 80% of its nominal power capacity to prevent overload for system safety.

4. If the overload time in AC mode is more than the acceptable time listed in the spec, 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 the acceptable time listed in the spec for Battery mode, the UPS will go into fault status. At this time, if Bypass mode is enabled, the UPS will power the load via bypass. If the Bypass mode is disabled or the input power is not within the 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 the 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 capacities. If the battery capacity is more than 25%, the buzzer will beep once every 4 seconds; if the battery capacity drops to the alarm level, the buzzer will beep quickly (once every sec) to remind users that the battery capacity is at a 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.
 - In Battery mode, if buzzer sound annoys, users can press the “Mute” button to disable the buzzer.
 - The backup time may vary depending on environment temperature and load type.
 - The backup time depends on the quantity of external batteries.
 - When the backup time is set to 16.5 hours (the default value) on the LCD panel, after discharging for 16.5 hours, the UPS will shut down automatically to protect the battery. This battery discharge protection can be enabled or disabled on the LCD panel. (Refer to 3.3 LCD Settings section)

Test the batteries

- If you need to check the battery status when the UPS is running in AC mode/CVCF mode/ECO mode, press the “Test” button to let the UPS do battery self-test.
- To keep the system reliable, the UPS will perform the battery self-test automatically periodically. The default setting period is once per week.
- Users also can set a battery self-test through monitoring software.
- If the UPS is doing a 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

- Turn off the inverter of the UPS by pressing the “OFF” button for at least 0.5 s, 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 the 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 in Bypass mode and there is risk of power loss for connected devices.
- In Bypass mode, the 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

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

Mute the buzzer

- To mute the buzzer, please press the “Mute” button for at least 0.5 s. If you press it again after the buzzer is muted, the buzzer will beep again.
- Some warning alarms can't be muted unless the error is corrected.

Operation in warning status

- When the 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

- When the 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.
- 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 SCIEX customer care immediately.
- In an emergency, please cut off the connection from utility, external battery, and output immediately to avoid more risk or danger.

Adjusting charging current:

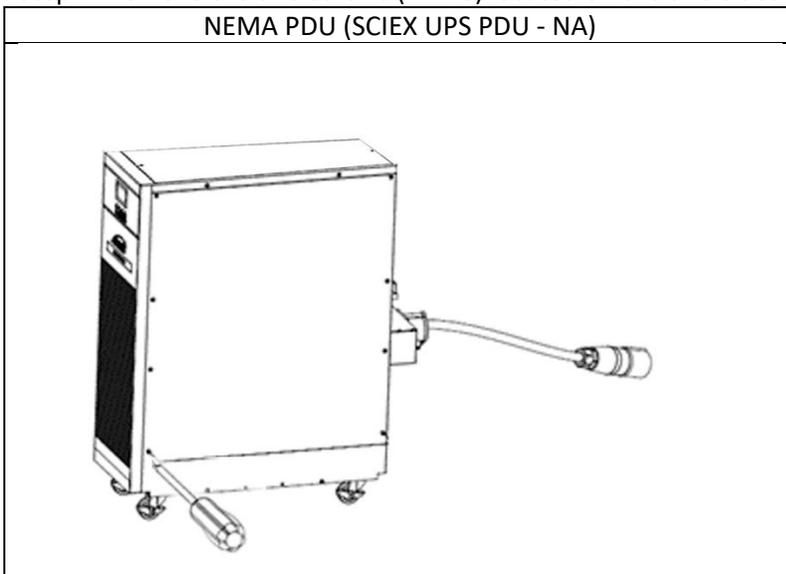
1. In bypass mode, press the “Test/UP” button and the “Mute/Down” button simultaneously for more than 1 s to enter the Setting menu.
2. Press the “Mute/Down” button until it shows 17 in parameter 1 and press the “Enter” button to adjust the charging current. (Check 3-7 LCD setting for the details.)
3. In parameter 2, you can select the charging current from 1A to 4A by pressing the “Test/UP” button or the “Mute/Down” button. Select the charging current based on the number of battery strings. For one string, select 1A, for two strings, select 2A, for three strings, select 3A, and for four or more strings, select 4A.
4. Confirm the setting by pressing the “ON/Enter” button.
5. Use parameter 3 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 the “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.

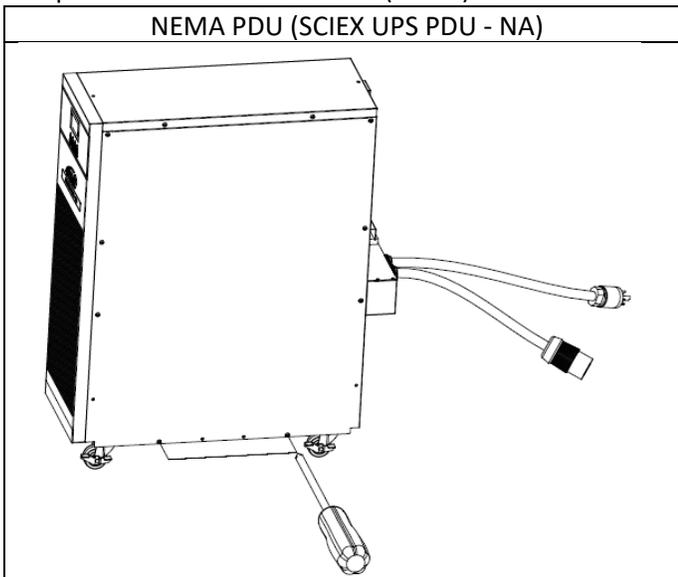
NOTE 2: All parameter settings will be saved only when UPS shuts down normally with an internal or external battery connection. (Normal UPS shutdown means turning off input breaker in bypass/no output mode).

3.3 External PDU Installation

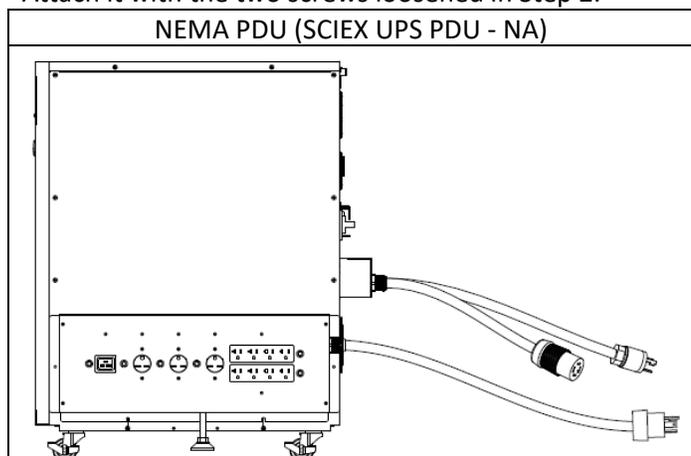
Step 1: Remove the two screws (M4*8) located on the two sides of case panel as shown below.



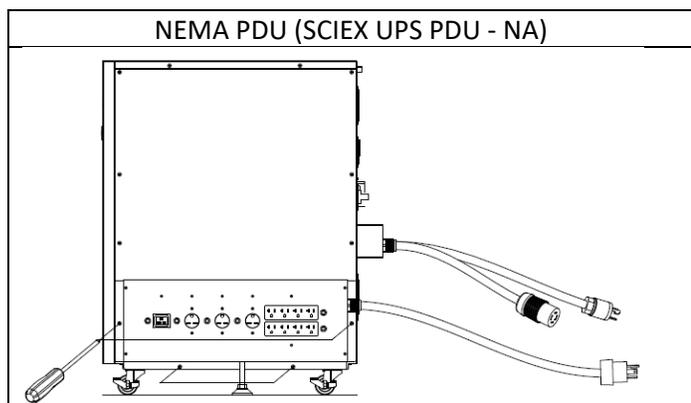
Step 2: Loosen the two screws (M4*8) located on the bottom of case panel as shown below.



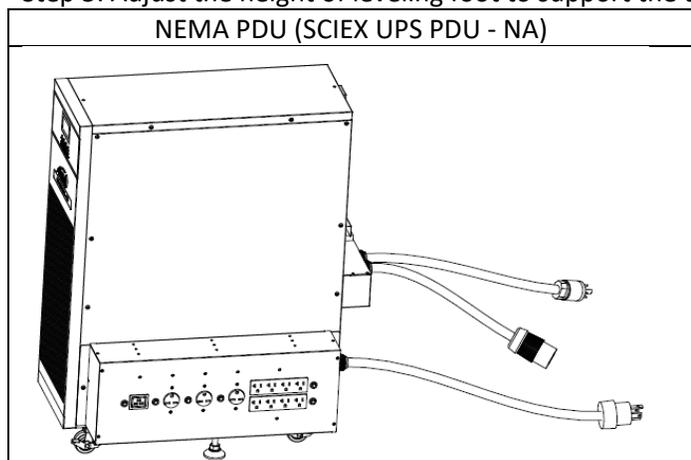
Step 3: Take PDU-IEC unit and align the PDU with the four holes from the screws removed in Step 1 and Step 2. Attach it with the two screws loosened in Step 2.



Step 4: Install two more screws (removed in Step 1) on the sides of the PDU.

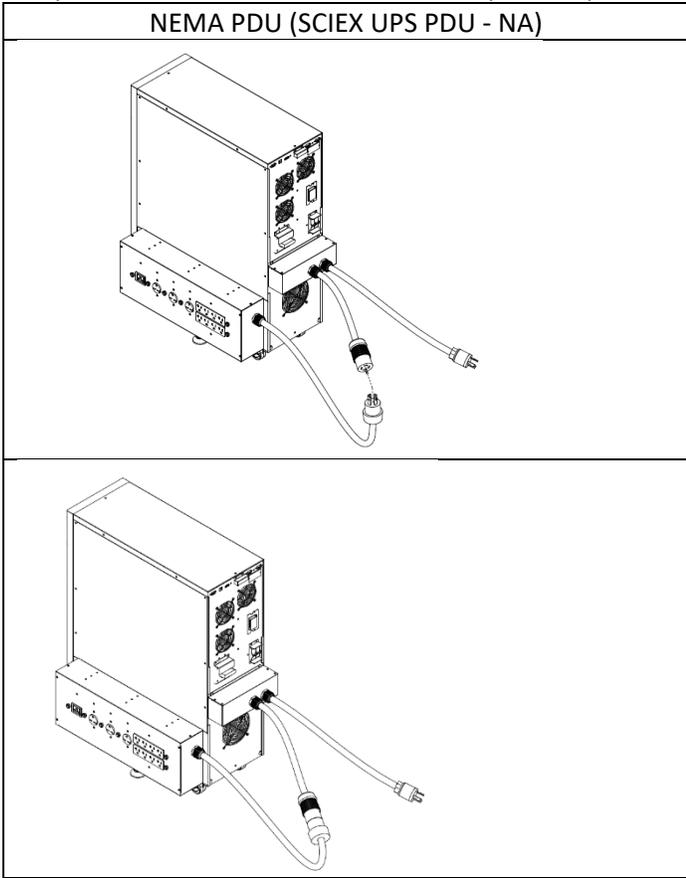


Step 5: Adjust the height of leveling foot to support the unit well.



Step 6: Connect the PDU to the UPS output receptacle

NEMA PDU (SCIEX UPS PDU - NA)

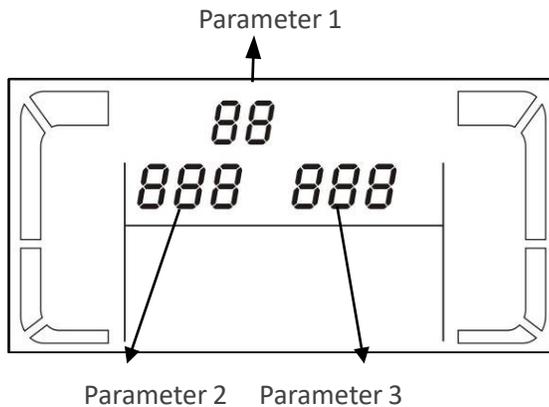


LCD Display Abbreviations

Abréviation	Contenu de l'écran	Meaning
ENA	<i>ENa</i>	Enable
DIS	<i>dI S</i>	Disable
ATO	<i>AtO</i>	Auto
BAT	<i>bAt</i>	Battery
NCF	<i>nCF</i>	Normal mode (not CVCF mode)
CF	<i>CF</i>	CVCF mode
SUB	<i>SUB</i>	Subtract
ADD	<i>Add</i>	Add
ON	<i>ON</i>	On
OFF	<i>OFF</i>	Off
FBD	<i>Fbd</i>	Not allowed
OPN	<i>OPN</i>	Allowed
RES	<i>RES</i>	Reserved
OP.V	<i>OPU</i>	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

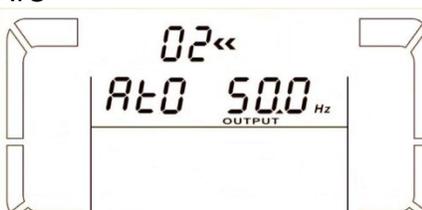
*Y means that this program can be set in this mode.

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

01: Output voltage

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

02: Output frequency

Interface	Setting
<p>60 Hz, CVCF mode</p> 	<p>Parameter 2: Output Frequency Setting the output frequency. You may choose following three options in parameter 2: 50.0Hz: The output frequency is set for 50.0 Hz. 60.0Hz: The output frequency is set for 60.0 Hz. ATO: If selected, the output frequency will be decided according to the latest normal utility frequency. If it is from 46Hz to 54Hz, the output frequency will be 50.0 Hz. If it is from 56Hz to 64Hz, the output frequency will be 60.0 Hz. ATO is the default setting.</p>
<p>50 Hz, Normal mode</p> 	<p>Parameter 3: Frequency mode Setting the output frequency to CVCF mode or not CVCF mode. You may choose the following two options in parameter 3: CF: Set the UPS to CVCF mode. If selected, the output frequency will be fixed at 50 Hz or 60 Hz according to setting in parameter 2. The input frequency could be from 46 Hz to 64 Hz.</p>
<p>ATO</p> 	<p>NCF: Set the UPS to normal mode (not CVCF mode). If selected, the output frequency will synchronize with the input frequency within 46~54 Hz at 50 Hz or within 56~64 Hz at 60 Hz according to setting in parameter 2. If 50Hz is 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, the UPS will transfer to battery mode when input frequency is not within 56~64 Hz.</p>

*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 SCIEX customer care for help.

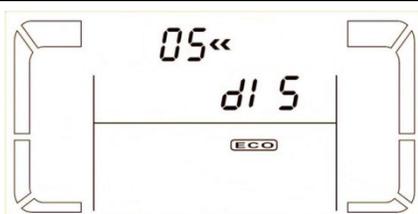
03: Voltage range for bypass

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

04: Frequency range for bypass

Interface	Setting
	<p>Parameter 2: Set the acceptable low frequency for bypass. 50 Hz system: The setting range is from 46.0Hz to 49.0Hz. 60 Hz system: The setting range is from 56.0Hz to 59.0Hz. The default value is 46.0Hz/56.0Hz.</p> <p>Parameter 3: Set the acceptable high frequency for bypass. 50 Hz: The setting range is from 51.0Hz to 54.0 Hz. 60 Hz: The setting range is from 61.0Hz to 64.0Hz. The default value is 54.0Hz/64.0Hz.</p>

05: ECO mode enable/disable

Interface	Setting
	<p>Parameter 3: Enable or disable the ECO function. You may choose following two option: DIS: Disable the ECO function. ENA: Enable the ECO function.</p> <p>If the ECO function is disabled, the voltage range and frequency range for ECO mode still can be set.</p>

06: Voltage range for ECO mode

Interface	Setting
	<p>Parameter 2: The low voltage point in ECO mode. The setting range is from 5% to 10% of the nominal voltage.</p> <p>Parameter 3: The high voltage point in ECO mode. The setting range is from 5% to 10% of the nominal voltage.</p>

07: Frequency range for ECO mode

Interface	Setting
	<p>Parameter 2: Set the low frequency point for ECO mode. 50 Hz system: The setting range is from 46.0Hz to 48.0Hz. 60 Hz system: The setting range is from 56.0Hz to 58.0Hz. The default value is 48.0Hz/58.0Hz.</p> <p>Parameter 3: Set the high frequency point for ECO mode. 50 Hz: The setting range is from 52.0Hz to 54.0 Hz. 60 Hz: The setting range is from 62.0Hz to 64.0Hz. The default value is 52.0Hz/62.0Hz.</p>

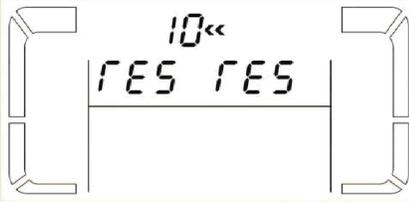
08: Bypass mode setting

Interface	Setting
	<p>Parameter 2: OPN: Bypass is allowed. When selected, the UPS will run in Bypass mode depending on the bypass enabled/disabled setting. FBD: Bypass is not allowed. When selected, running in Bypass mode is not allowed in any situation.</p> <p>Parameter 3: ENA: Bypass is enabled. When selected, Bypass mode is activated. DIS: Bypass is disabled. When selected, automatic bypass is acceptable, but manual bypass is not allowed. Manual bypass means users manually puts the UPS in Bypass mode. For example, pressing the “OFF” button in AC mode to go into Bypass mode.</p>

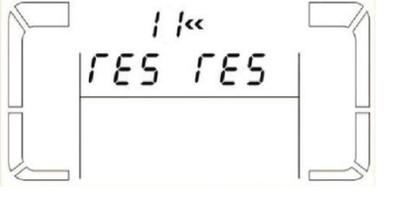
09: Battery backup time setting

Interface	Setting
	<p>Parameter 3: 000~999: Set the maximum backup time from 0min to 999min. The UPS will shut down to protect the battery after the backup time arrives. The default value is 990min. DIS: Disable the battery discharge protection and backup time will depend on battery capacity. The default value is DIS.</p>

10: Reserved

Interface	Setting
	<p>Reserved</p>

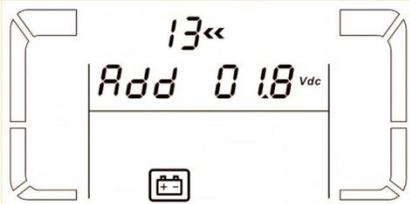
11: Reserved

Interface	Setting
	<p>Reserved</p>

12: Hot standby function enable/disable

Interface	Setting
	<p>Parameter 2: HS.H Enable or disable Hot standby function. You may choose following two options in Parameter 3: YES: The 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</p>

13: Battery voltage adjustment

Interface	Setting
	<p>Parameter 2: Select the "Add" or "Sub" function to adjust battery voltage to a real figure. Parameter 3: The voltage range is from 0V to 5.7V, the default value is 0V.</p>

14: Charger voltage adjustment

Interface	Setting
	<p>Parameter 2: You may choose "Add" or "Sub" to adjust the 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.</p>

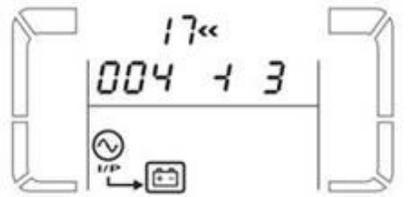
15: Inverter voltage adjustment

Interface	Setting
	<p>Parameter 2: You may choose "Add" or "Sub" to adjust the inverter voltage. Parameter 3: The voltage range is from 0V to 6.4V, the default value is 0V.</p>

16: Output voltage calibration

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

17: Charging current setting

Interface	Setting
	<p>Parameter 2: Set the charging current of the charger from 1A to 4A (001 ~ 004).</p> <p>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.</p> <p>± 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.</p> <p>The calibrated formula is listed as below: Setting charging current = “real measured current” + or – “value setting in parameter 3”</p> <p>For example, if the setting charging current is 4A, but the 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</p>

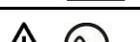
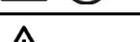
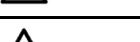
4 Troubleshooting

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		Beeping every second
Overload		Beeping twice every second
Battery unconnected		Beeping every second
Over charge		Beeping every second
EPO enable		Beeping every second
Fan failure/Over temperature		Beeping every second
Charger failure		Beeping every second
I/P fuse broken		Beeping every second
Overload 3 times in 30 min		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 main 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	Fault 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	
Inverter output short circuited	14		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 the LCD display and the alarm beeps every second.	The EPO function is enabled.	Set the circuit in closed position to disable EPO function.
The icon  and BATT. FAULT flash on the LCD display and the 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 the LCD display and the alarm beeps twice every second.	The UPS is overloaded.	Remove excess loads from the UPS output.
	The UPS is overloaded. Devices connected to the UPS are fed directly by the electrical network via the Bypass.	Remove excess loads from the UPS output.
	After repetitive overloads, the UPS is locked in Bypass mode. Connected devices are fed directly by the mains.	Remove excess loads from the UPS output first. Then shut down the UPS and restart it.
The Fault code is shown as 43. The icon OVER LOAD lights on the LCD display and the alarm beeps continuously.	The UPS is overloaded too long and goes into fault state. Then the UPS shuts down automatically.	Remove excess loads from the UPS output and restart it.
The Fault code is shown as 14, the icon SHORT lights on the LCD display, and the 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.
The Fault code is shown as 01, 02, 03, 04, 11, 12, 13, 14,1A, 21, 24, 35, 36, 41, 42 or 43 on the LCD display and the 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 SCIEX customer care.
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 SCIEX customer care.
	Batteries defect	Contact your SCIEX Service Representative to replace the battery.
The icon  and  flash on the LCD display and the alarm beeps every second.	The fan is locked or not working; or the UPS temperature is too high.	Check the fans and notify dealer.

5 Specifications

5.1 PSW 6kVA Specifications

MODEL NUMBER		SCIEX UPS PSW 6 kVA - NA
CAPACITY	Power rating	6 kVA (6 kW)
INPUT	Voltage (nominal)	208 VAC (220 VAC, 230 VAC, 240 VAC optional)
	Voltage range	110-300 VAC
	Frequency	46–64 Hz auto-sensing
OUTPUT	Voltage	240/120 VAC or 230/115 VAC
	Voltage regulation	± 1%
	Frequency	50/60 Hz ± 0.1 Hz
	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) 12 V 9 AH / (20) 12 V 580 W
	Charger voltage/current	273 VDC / 1 A-4 A (selectable)
PHYSICAL	Input/output	L6-30P PLUG/ OPTIONAL PDU
	Dimensions (W x D x H)	9.9 x 24.7 x 32.6 in
	Weight	275.58 lb
PDU	Input connection	L14-30P
	120V receptacle	6–15/20R/ 5-20R
	230V receptacle	C19
ENVIRONMENT	Temperature	32–104°F (0–40°C)
	Audible noise	< 50 dBA
	Altitude	11,500 ft above sea level
APPROVALS		Refer to section 1.8: Standards
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

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

6 Contact Us

To find hardware product documentation, refer to the Customer Reference DVD that comes with the system or component.

The latest versions of the documentation are available on the SCIEX website, at sciex.com/customer-documents.

Note: To request a free, printed version of this document, contact sciex.com/contact-us.

For warranty information visit sciex.com/warranty.

SCIEX Support

SCIEX and its representatives maintain a staff of fully-trained service and technical specialists located throughout the world. They can answer questions about the system or any technical issues that might arise. For more information visit the SCIEX website at sciex.com or contact us in one of the following ways:

- sciex.com/contact-us
- sciex.com/request-support