



USER'S MANUAL

For Models

AP160N-6K-KS / AP160N-10K-KS



Uninterruptible Power System

Contents

1. Introduction	1
2. Safety Warnings	4
2.1 Installation	4
2.2 Operation	5
2.3 Maintenance, servicing and faults	5
2.4 Transport	6
2.5 Storage	6
2.6 Standards	6
3. Installation.....	8
3.1 Inspecting the Equipment	8
3.2 Unpacking the Cabinet.....	8
3.3 UPS Rear Panel.....	11
3.4 UPS Front Panel	12
3.5 Rackmount Setup	12
3.6 Tower Setup	15
3.7 Installation of UPS with AC inputs	15
4. Power cables connection & Start up.....	18
4.1 Access to terminal block	18
4.2 Common input sources connection	19
4.3 Separate input sources connection	20
4.4 Frequency converter connection	21
4.5 UPS Initial Start up	21
5. Operation	23
5.1 Display Panel	23
5.2 Display functions	24
6. Communication	28
6.1 RS-232 and USB Communication Ports.....	28
6.2 Network Management Card (Optional).....	29
6.3 UPS Management Software	30
7. UPS Maintenance	32
7.1 UPS Care	32
7.2 Transporting the UPS.....	32
7.3 Recycling the Used UPS.....	32
8. Specifications	33
9. Troubleshooting	35
9.1 Accessing Alarms and Conditions.....	35
9.2 Typical Alarms and Conditions.....	37

1. Introduction

This Online R/T Series is an uninterruptible power supply incorporating double-conversion technology. It provides perfect protection specifically for computer equipment, communication systems to computerized instruments. It protects your sensitive electronic equipment from basic power problems such as power failures, power sags, power surges, brownout, and line noise.

Power outages can occur when you least expect them and power quality can be erratic. These power problems have the potential to corrupt critical data, destroy unsaved work sessions, and damage hardware — causing hours of lost productivity and expensive repairs.

With the Online R/T UPS, you can safely eliminate the effects of power disturbances and guard the integrity of your equipment. The UPS's flexibility to handle an array of network devices makes it the perfect choice to protect your LANs, servers, workstations, and other electrical equipment.

Online R/T UPS as Rack installation:

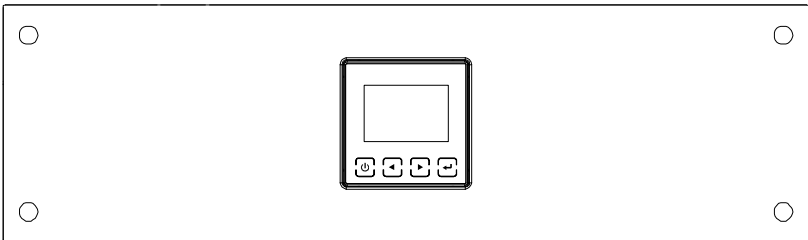


Figure 1-1: AP160N-6K-KS

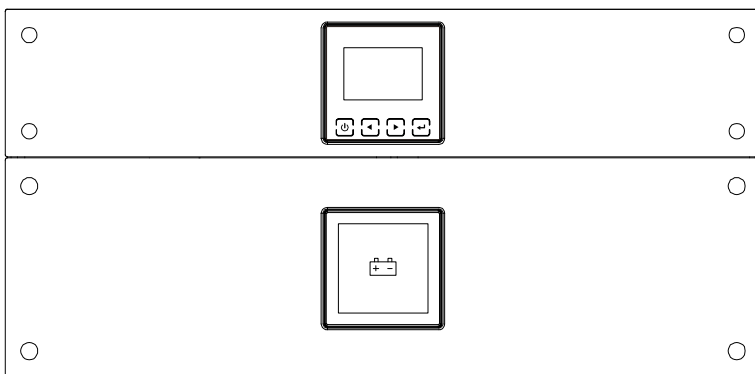


Figure 1-2: AP160N-10K-KS

Online R/T UPS as Tower installation.

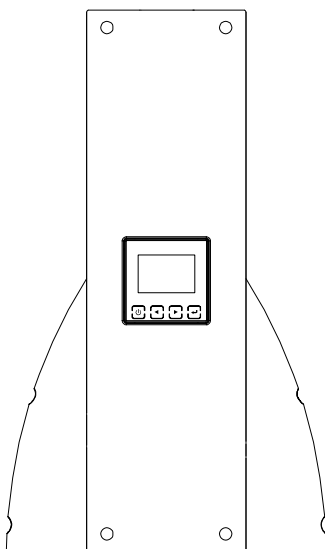


Figure 1-3: AP160N-6K-KS

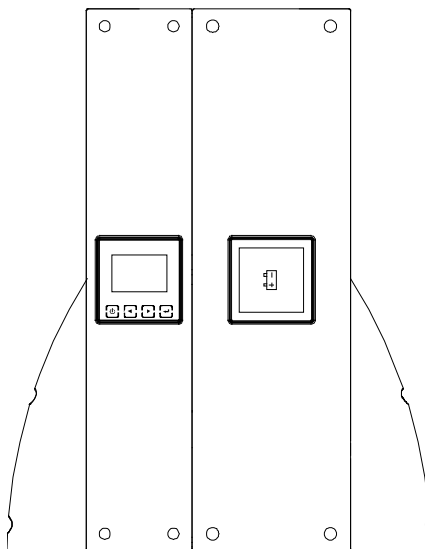


Figure 1-4: AP160N-10K-KS

Providing outstanding performance and reliability, the UPS's unique

benefits include:

- Online UPS design with pure sine wave output.
- True online double-conversion technology with high power density, utility frequency independence, and generator compatibility.
- Intelligent Battery Management technology that uses advanced battery management to increase battery service life, optimize recharge time.
- Selectable High Efficiency mode of operation.
- Start-on-battery capability for powering up the UPS even if utility power is not available.
- Standard communication options: one RS-232 communication port, one USB communication port.
- Optional connectivity cards with enhanced communication capabilities.
- Optional installation method — Rack & Tower.
- Firmware is easily upgraded without a service call.
- Remote shutdown control through the Remote Emergent Power-off (REPO) port.
- Optional Rack Slider.

2. Safety Warnings

CAUTION:

Before performing the procedures in this document, read and follow the safety instructions and important regulatory information in your Safety, Environmental, and Regulatory Information document.

IMPORTANT SAFETY INSTRUCTIONS FOR EACH STEP SAVE THESE INSTRUCTIONS.

2.1 Installation

- Condensation may occur if the UPS is moved directly from a cold to a warm environment. The UPS must be absolutely dry before being installed. Please allow an acclimatization time of at least two hours.
- Do not install the UPS near water or in damp environment.
- Do not install the UPS where it would be exposed to direct sunlight or near heat.
- Do not block ventilation openings in the UPS's housing.
- Place cables in such a way that no one can step on or trip over them.
- UPS has provided earthed terminal, in the final installed system configuration, equipotent earth bonding to the external UPS battery cabinets.
- An integral single emergency switching device which prevents further supply to the load by the UPS in any operation mode should be provided in the building wiring installation.
- An appropriate disconnect device as short-circuit backup protection should be provided in the building wiring installation.
- For three-phase equipment connection to an IT power system, a four-pole device which disconnect all phase conductors and

the neutral conductor should be provided in the building wiring installation.

- This is permanently connected equipment , it must be installed by qualified maintenance personnel.
- Earth connection is essential before connecting to the building wiring terminal.

2.2 Operation

- Do not disconnect the earth conductor cable from the UPS or the building wiring terminals in any time since this would cancel the protective earth of the UPS system and all connected loads.
- The UPS output terminal block may be electrically active even if the UPS system is not connected to the building wiring terminal.
- In order to completely disconnect the UPS, firstly press the OFF button, then disconnect the mains lead.
- Ensure that no liquid or other foreign objects can enter the UPS.
- The UPS can be operated by any individuals without previous experience.

2.3 Maintenance, servicing and faults

- The UPS operates with hazardous voltages. Maintenance should be carried out only by qualified maintenance personnel.
- Caution - risk of electric shock. Before carrying out any kind of service or maintenance, please disconnect the mains and batteries. And Verify that no current is present and no hazardous voltage exist in capacitor or BUS capacitor terminals.
- Caution - risk of electric shock. Before carrying out any kind of service or maintenance, please take all precautionary

measures specified below and any other measures necessary:

- remove all jewellery, wristwatches, rings and other metal objects.
- use only tools with insulated grips and handles.
- Please replace the fuse only with the same type and of the same amperage in order to avoid fire hazards.
- Do not dismantle the UPS, except the qualified maintenance personnel.

2.4 Transport

- Please transport the UPS only in the original packaging (to protect against shock and impact).

2.5 Storage

- The UPS must be stockpiled in the room where is ventilated and dry.

2.6 Standards

* Safety		
IEC/EN 62040-1		
* EMI		
Conducted Emission.....	IEC/EN 62040-2	Category C2
Radiated Emission.....	IEC/EN 62040-2	Category C2
*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 3

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.

3. Installation

This chapter explains:

- Equipment inspection
- Unpacking the cabinet
- Checking the Accessory
- UPS setup and installation
- Connecting the Batteries
- Installation requirements

3.1 Inspecting the Equipment

If any equipment has been damaged during shipment, keep the shipping cartons and packing materials for the carrier or place of purchase and file a claim for shipping damage. If you discover damage after acceptance, file a claim for concealed damage.

3.2 Unpacking the Cabinet

CAUTION: Unpacking the cabinet in a low-temperature environment may cause condensation to occur in and on the cabinet. Do not install the cabinet until the inside and outside of the cabinet are absolutely dry (hazard of electric shock).

CAUTION: The cabinet is heavy. Use caution to unpack and move the cabinet.

Be careful when moving and opening the carton. Leave the components packaged until ready to install. To unpack the system:

Step 1:

Open the outer carton and remove the accessories packaged with the cabinet (see Figure 5&6).

Online R/T 6KUPS:

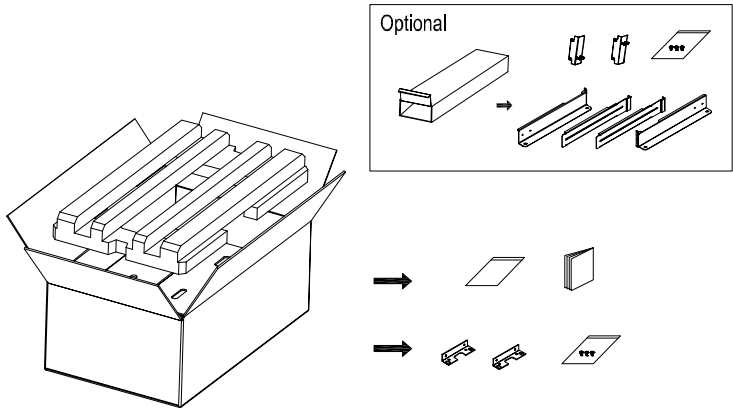


Figure 3-1: Unpacking the Cabinet of AP160N-6K-KS UPS

Online R/T 10K UPS

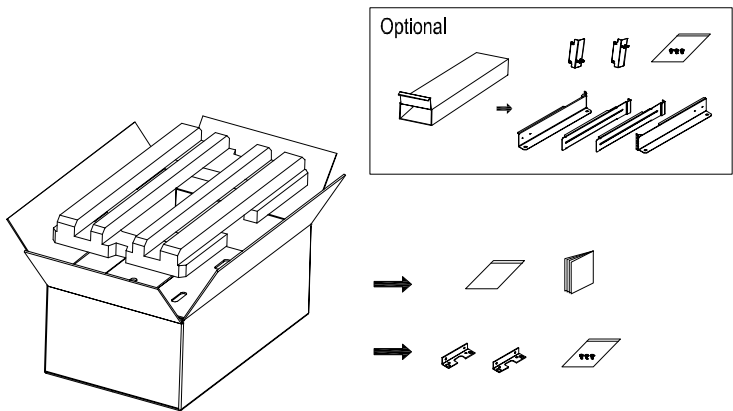


Figure 3-2: Unpacking the Cabinet of AP160N-10K-KS UPS

Step 2:

Please lift carefully the cabinet out of the outer carton and set it on a flat, stable surface (see Figure 7&8).

Place the cabinet in a protected area that has adequate airflow and is free of humidity, flammable gas, and corrosion.

Lifting the Cabinet:

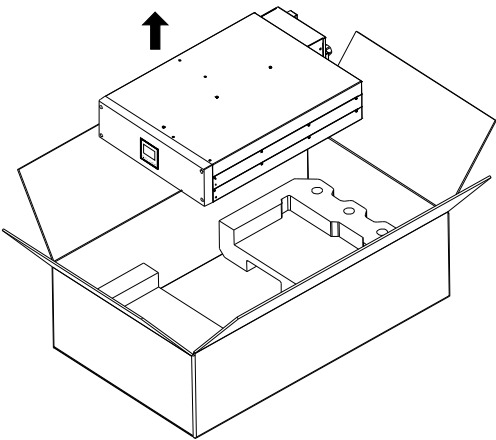


Figure 3-3: Lifting the Cabinet of AP160N-6K-KS UPS

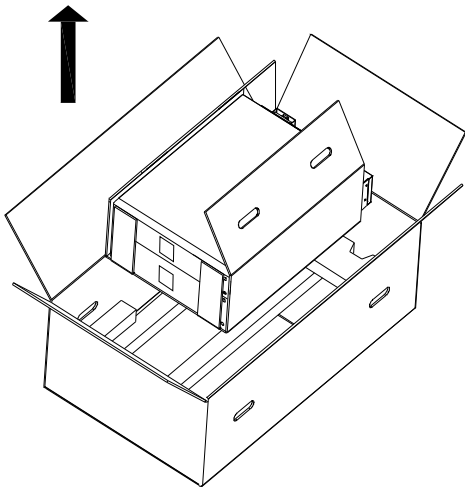


Figure 3-4: Lifting the Cabinet of AP160N-10K-KS UPS

Step 3:

Discard or recycle the packaging in a responsible manner, or store it for future use.

3.3 UPS Rear Panel

This section shows the rear panel of the Online R/T models.
6K model:

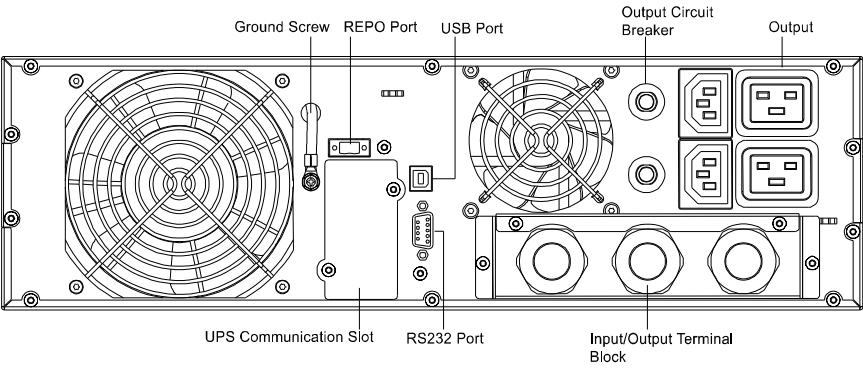


Figure 3-5: AP160N-6K-KS Rear Panel

10K model:

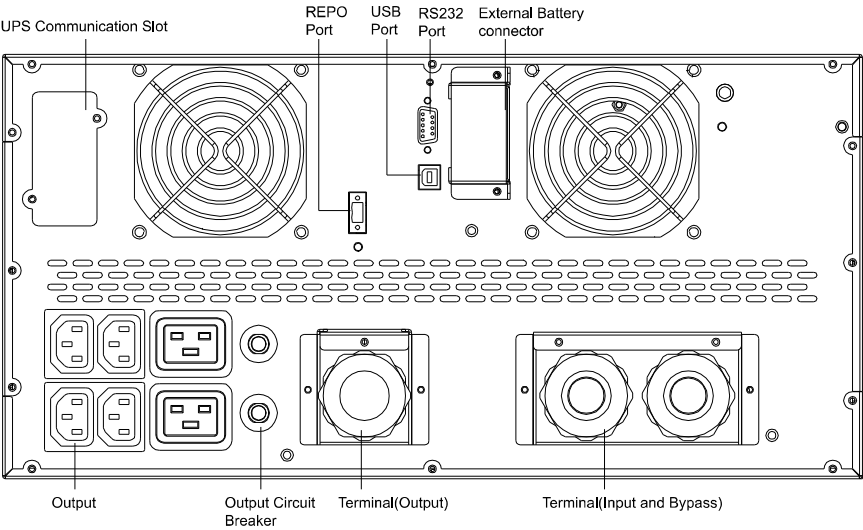


Figure 3-6: AP160N-10K-KS Rear Panel

3.4 UPS Front Panel

This section shows the front panel of the Online R/T UPS. The Online series have the same LCD panel and the same control button.

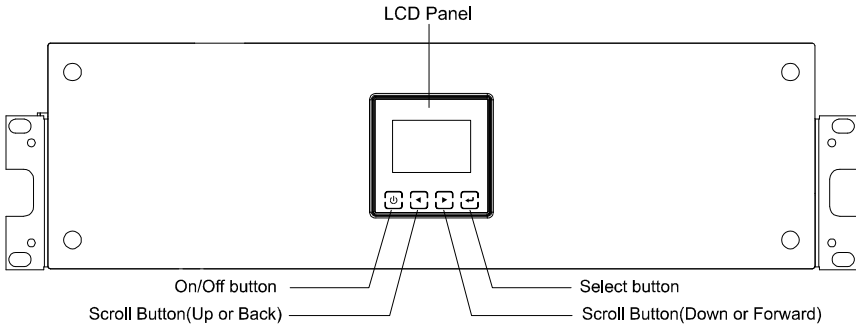


Figure 3-7: Front Panel

3.5 Rackmount Setup

3.5.1 To install the UPS

1. Select the proper holes in the rail for positioning the cabinet in the desired location in the rack. Locate the rails at the bottom of the 3U space for 6K and 5U space for 10K allocated for the UPS.
2. Slide the cabinet into the rack (see Figure 12).

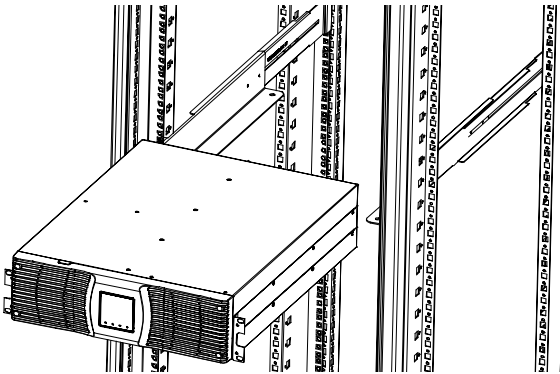


Figure 3-8. Installing the Cabinet

3. If installing additional UPSs, repeat Step 1 through Step 2 for each cabinet.

3.5.2 Connecting the Batteries



CAUTION:

This type of connection must be carried out by qualified electrical personnel.

Please connect an appropriate breaker between UPS and batteries.

Please use the 10AWG wire to connect UPS and batteries

AP160N-6K-KS

1. Open the front panel and put it on the UPS.

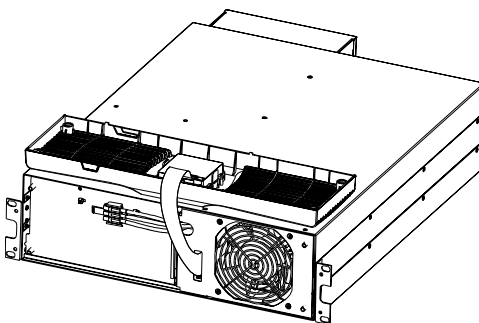


Fig 3-9: Open the front panel

2. Connect the batteries and UPS.

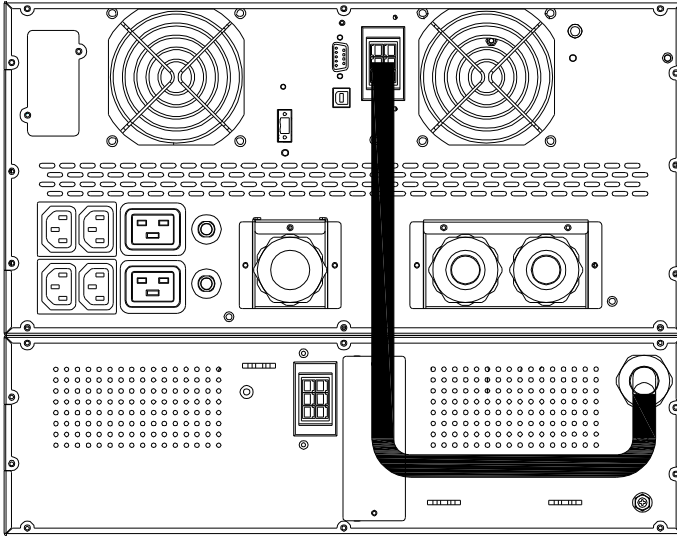


Fig 3-10: Connecting the UPS and batteries Breaker

3. Mount the front panel.

AP160N-6K-KS

1. Connect the 10 AWG between UPS and batteries breaker.

3.6 Tower Setup

Tower setup as below:

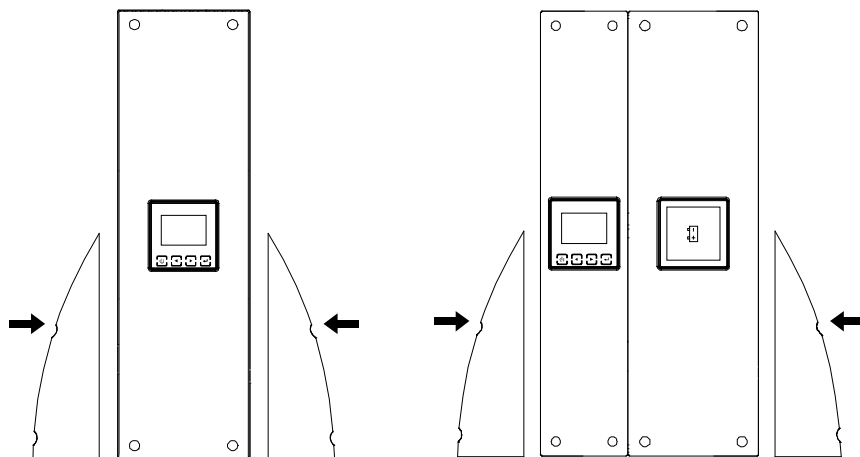
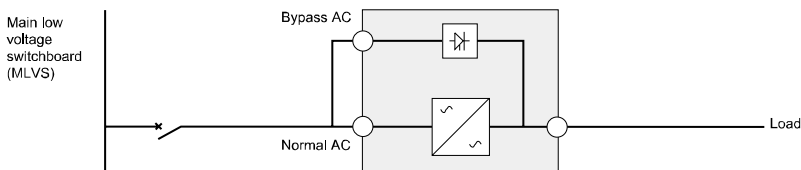


Figure 3-11. Tower setup

3.7 Installation of UPS with AC inputs

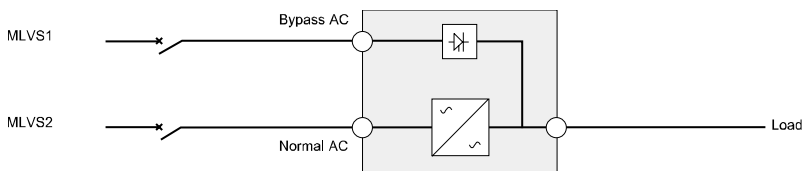
CAUTION: Online AP160N-6K-KS / AP160N-10K-KS series support that the UPS can have separate AC inputs. So before connecting wires of separate AC inputs, you should confirm that their earthing systems are identical. Otherwise, a transformer is necessary.

UPS with common Normal and Bypass AC inputs



UPS with separate Normal and Bypass AC inputs

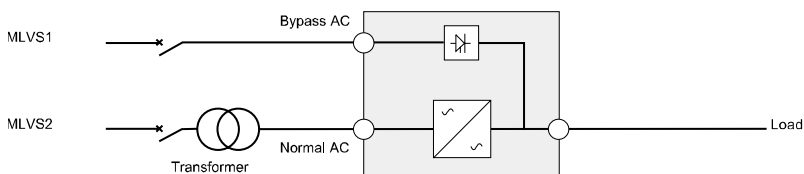
➤ Earthing systems are identical:



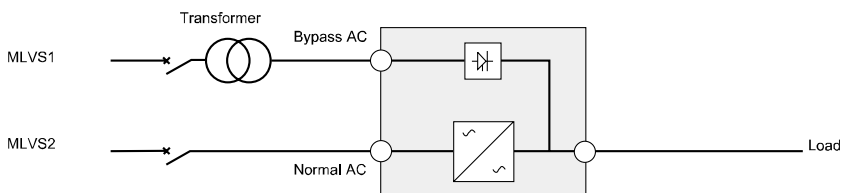
➤ Earthing systems are separate:

Three different installations can be chosen:

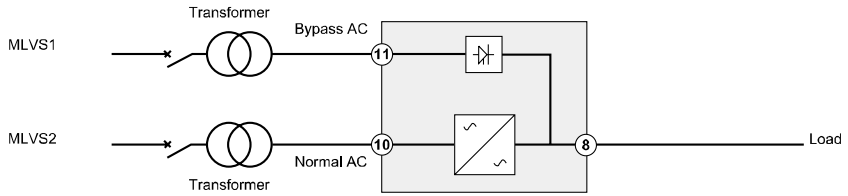
1) Transformer in the Normal AC input.



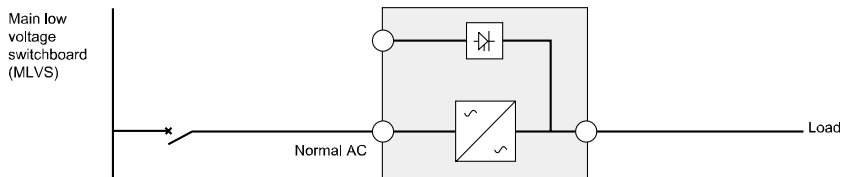
2) Transformer in the Bypass AC input.



3) Both of them have transformer



Frequency converter (without Bypass AC input)



4. Power cables connection & Start up

This section explains:

- Access to terminal block
- Common input sources connection
- Separate input sources connection
- Frequency converter connection
- UPS initial startup

4.1 Access to terminal block

Access to terminal block: remove the 2 screws of the terminal block cover

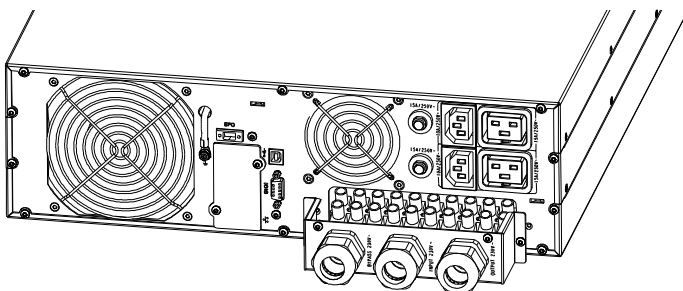


Fig 4-1: Remove the terminal block for AP160N-6K-KS

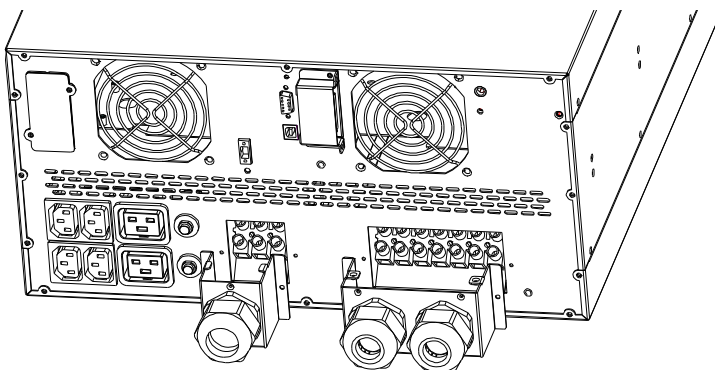


Fig 4-2: Remove the terminal block for AP160N-10K-KS

4.2 Common input sources connection



CAUTION:

This type of connection must be carried out by qualified electrical personnel!



CAUTION:

Always connect the earthing wire first!

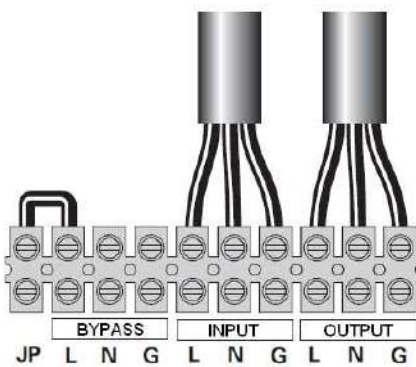


Figure 4-3: Common input sources connection for 6K Model

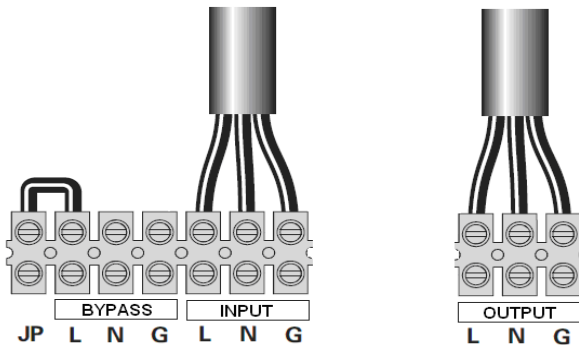


Figure 4-4: Common input sources connection for 10K Model

4.3 Separate input sources connection

 **CAUTION:**

This type of connection must be carried out by qualified electrical personnel!

 **CAUTION:**

Always connect the earthing wire first!

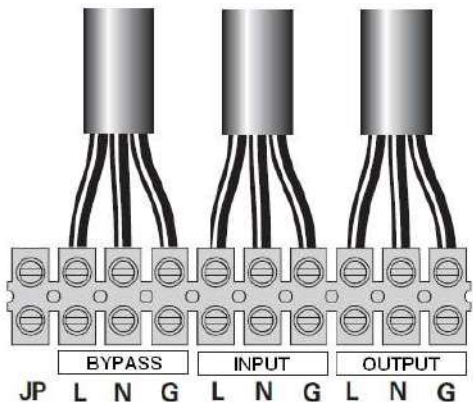


Figure 4-5. Separate input sources connection for AP160N-6K-KS

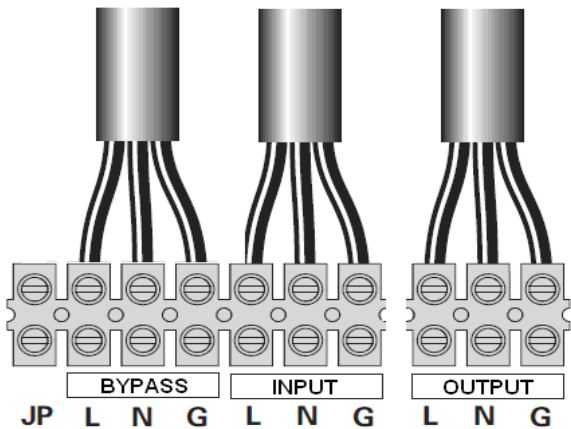


Figure 4-6. Separate input sources connection for AP160N-6K-KS

4.4 Frequency converter connection

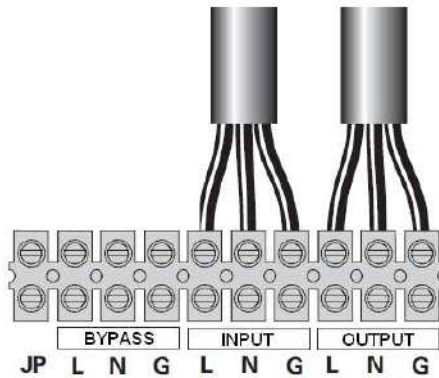


Figure 4-7. Frequency converter connection for AP160N-6K-KS

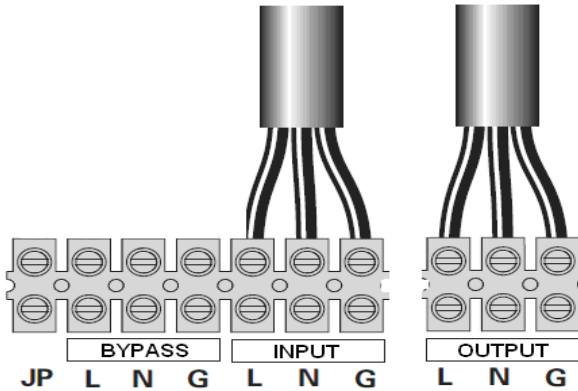


Figure 4-8. Frequency converter connection for AP160N-10K-KS

4.5 UPS Initial Start up

To start up the UPS:

Verify that the total equipment ratings do not exceed the UPS capacity to prevent an overload alarm.

1. Verify that the batteries are connected.
2. Set the upstream circuit breaker (not included) to the "I" position (ON).

The UPS display panel illuminates and shows a menu of “Welcome”

3. Verify that the UPS transfers to Bypass mode.
4. Press the  button on the UPS front panel for at least three seconds.
5. Check the UPS display for active alarms or notices. Resolve any active alarms before continuing. See “Troubleshooting”
6. Verify that the UPS is operating normally and any loads are powered.
7. To change any other factory-set defaults, see “Operation”

Online series recommends setting the date and time.

At initial startup, the UPS sets system frequency according to input line frequency (input frequency auto-sensing is enabled by default). After initial startup, auto-sensing is disabled until manually re-enabled by output frequency setting.

At initial startup, input voltage auto-sensing is disabled by default. When manually enabled by output voltage setting, at the next AC startup the UPS sets output voltage according to input line voltage. After the subsequent startup, auto-sensing is disabled until manually re-enabled by output voltage setting.

8. If you connect the REPO port, test the REPO function:
Activate the external REPO switch. Verify the status change on the UPS display.

5. Operation

5.1 Display Panel

The UPS has a four-button graphical LCD with dual color backlight. Standard back-light is used to light up the display with white text and a blue background. When the UPS has a critical alarm, the backlight changes the text to dark amber and the background to amber. See Figure below

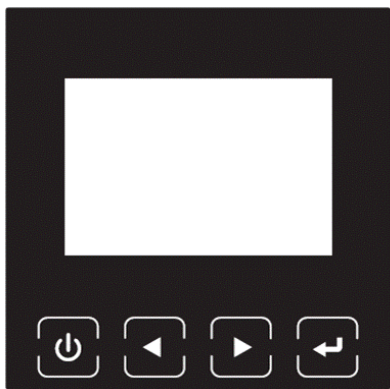


Figure 5-1: 6-10K Rack/Tower On-line UPS Control Panel

There are four buttons on the control panel:

-  On/Off
-  Scroll up or back
-  Scroll down or forward
-  Select

Table 1: Describes the functions of the LCD control buttons

Control Button	Sequence	Function
	Press for more than 3 seconds	ON/OFF UPS

	Press for less than one second	Scroll back or up to the previous menu
	Press for more than one second	Return/exit back one menu layer without initiating a command or changing a setting
	Press for more than one second	Scroll forward or down to the next menu option
	Press for less than one second	Select the setting being edited
	Press for longer than one second	Save the setting being edited

To select an option:

1. When scrolling through the settings, the present setting displays for each selection.
2. Press the  button to select the option.

The current setting for the option flashes when selected

3. Use the  or  buttons to toggle the available options.
4. Set the new option by pressing the  button again for longer than one second. The option stops flashing.

5.2 Display functions

The UPS provides useful information about UPS itself, load status, events, measurements, identification, and settings through the front panel display.

Startup Screen

During startup, the Welcome logo on startup screen displays for five seconds and then defaults to the UPS status summary screen.

The display automatically returns to the UPS status summary screen when no button has been pressed for 15minutes. When you return to the status summary screen, press the  button for longer than one second to exit back to the menu selections. Selecting UPS Status from the main menu list enables you to scroll through all of the UPS status menu screens, including the status summary screen.

UPS Status

A UPS status summary screen replaces the startup screen after the UPS is powered on. The UPS status summary screen displays until you press  to go to the first of the main menu selections.

The UPS status provides separate screens for the following information:

- Status summary, including mode and load
- Notice or alarm status, if any are present
- Battery status, including status and charge level

See Table 2 for examples of the UPS status summary screens. The status icon in the middle of each status summary screen conveys the UPS status or mode.

Basic operating modes include:

- Normal mode
- Battery mode
- Bypass mode
- Standby mode

Table2. Status Summary Screens

Status Summary Screen	Description
Input 220 v 60^{Hz}  200V 0% Out put 0 v 0^{Hz} 0 w	UPS Critical Failure: The UPS is in Fault mode, The status icon and background of the icon are flashing.
Input 0 v 0^{Hz}  200V 0% Out put 0 v 0^{Hz} 0 w	Standby Mode: When the UPS is turned off and remains connected to utility power, the UPS is in Standby mode and utility power supplies the connected equipment. The UPS is not supporting the load, but is ready to assume the load on command

Input 220 v 60 HZ  200V 100% Out put 220 v 60 HZ 6000 w	Normal Mode: The UPS is operating in Normal mode from utility power. The UPS monitors and charges the batteries as needed and provides filtered power protection to your equipment.
Input 0 v 0 HZ  200V 100% Out put 220 v 60 HZ 6000 w	Battery Mode: The status icon and background of the icon are flashing. An audible alarm (0.5 seconds on/4.5 seconds off) accompanies the switch to Battery mode.
Input 220 v 60 HZ  200V 100% Out put 220 v 60 HZ 6000 w	High Efficiency Mode: The status when UPS is operating in High Efficiency Mode.
Input 220 v 60 HZ  200V 100% Out put 220 v 60 HZ 6000 w	Loading Status: Status when UPS is feeding load through static bypass switch. Icon and background of icon is flashing by inverting colors every second
Input 220 v 60 HZ  200V 110% Out put 220 v 60 HZ 6600 w	UPS in Overload Condition: The status icon and background of the icon are flashing.
Input 220 v 60 HZ  200V 100% Out put 220 v 60 HZ 6000 w	Convert Mode: UPS is operating in Converter mode.

Input 220 v 60 HZ  200V 100% Out put 220 v 60 HZ 6000 w	Bad Battery Detected or Battery Disconnected: Icon and back ground of icon is flashing by inverting colors every second along with the outer shell of the battery icon at the middle.
Input 220 v 60 HZ  200V 100% Out put 220 v 60 HZ 6000 w	Alarm: UPS general alarm/notice active other than bad battery, battery disconnection or overload. Icon and background of icon is flashing by inverting color once per second.
Input 220 v 60 HZ  200V 100% Out put 220 v 60 HZ 6000 w	Battery Test: UPS is executing a Battery Test.

The notice and alarm screens are visible only when notices or alarms are active. There is a separate screen for each active notice or alarm. If there are no active notices or alarms, a “No Active Alarms” message appears in a single screen between the UPS status summary and the battery status screen. If there are multiple notices or alarms, scroll through each notice or alarm screen to reach the first battery status screen.

Note: Events are not shown in status summary screens. They appear only in the Event Log.

6. Communication

This chapter describes:

- Communication ports (RS-232 and USB)
- Network Management Card (Optional)
- UPS Management Software

6.1 RS-232 and USB Communication Ports

To establish communication between the UPS and a computer, connect your computer to one of the UPS communication ports using an appropriate communication cable.

When the communication cable is installed, power management software can exchange data with the UPS. The software polls the UPS for detailed information on the status of the power environment. If a power emergency occurs, the software initiates the saving of all data and an orderly shutdown of the equipment.

The cable pins for the RS-232 communication port are identified in figure 26, and the pin functions are described in Table 3.

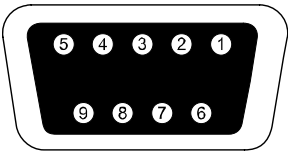


Figure 6-1. RS-232 Communication Port (DB-9 Connector)

Table 3 RS-232 Communication Port Pin Assignment

Pin Number	Signal Name	Function	Direction from the UPS
1	DCD	Battery Low signal	Out
2	RxD	Transmit to external device	Out
3	TxD	Receive from external device	In
4	DTR	PnP from external device	In
5	GND	Signal common	--

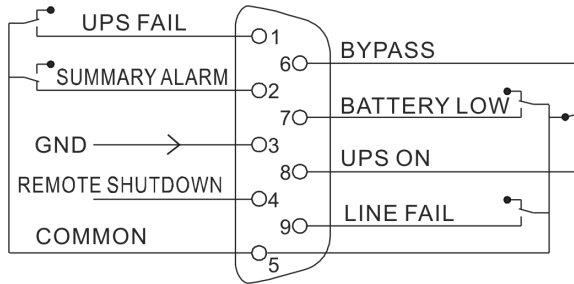
6	DSR	To external device	Out
7	RTS	No connection	In
8	CTS	On Battery signal	Out
9	RI	Vdc Power	Out

6.2 Network Management Card (Optional)

Network Management Card allows the UPS to communicate in a variety of networking environments and with different types of devices. The Online series has one available communication bay for the following connectivity cards:

- ◆ **Connect UPS- MS Web/SNMP Card** – has SNMP and HTTP capabilities as well as monitoring through a Web browser interface; connects to a twisted-pair Ethernet (10/100BaseT) network. In addition.
- ◆ This series UPS has AS400 card (an optional accessory) for AS400 communication protocol. Please contact your local distributor for details. The following is the pin assignment and description of DB-9 connector in AS400 card.

Pin #	Description	I/O	Pin #	Description	I/O
1	UPS Fail	Output	6	Bypass	Output
2	Summary Alarm	Output	7	Battery Low	Output
3	GND	Input	8	UPS ON	Output
4	Remote Shutdown	Input	9	Line Fail	Output
5	Common	Input			

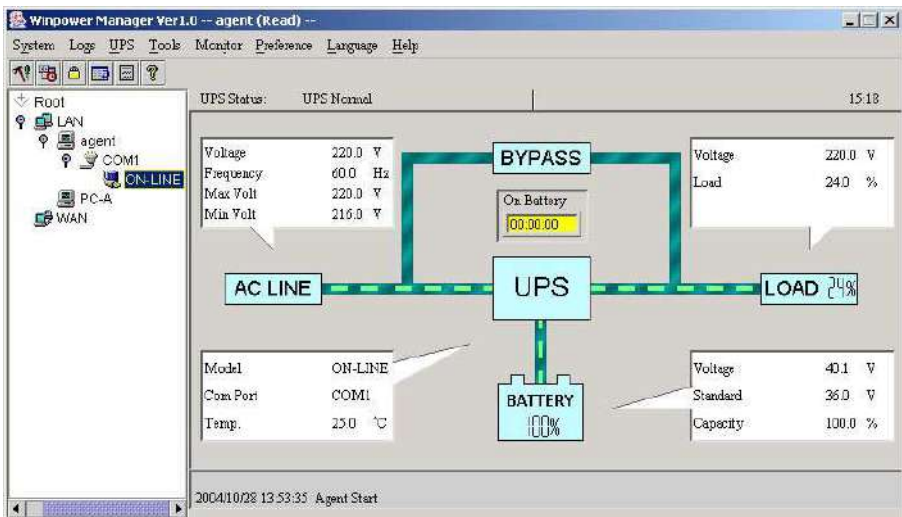


DB-9 Interface of AS400 communication protocol

6.3 UPS Management Software

Free Software Download – WinPower

WinPower is a brand new UPS monitoring software, which provides user-friendly interface to monitor and control your UPS. This unique software provides safely auto shutdown for multi-computer systems while power failure. With this software, users can monitor and control any UPS on the same LAN no matter how far from the UPSs.



Installation procedure:

1. Go to the website:

<http://www.ups-software-download.com/>

2. Choose the operation system you need and follow the instruction described on the website to download the software.
3. When downloading all required files from the internet, enter the serial No: **511C1-01220-0100-478DF2A** to install the software.

When your computer restarts, the WinPower software will appear as a green plug icon located in the system tray, near the clock.

7. UPS Maintenance

This chapter explains how to:

- Care for the UPS
- Transport the UPS
- Recycle the used UPS

7.1 UPS Care

For the best preventive maintenance, keep the area around the UPS clean and dust-free. If the atmosphere is very dusty, clean the outside of the system with a vacuum cleaner.

7.2 Transporting the UPS

CAUTION: The following procedure should be performed or supervised by personnel knowledgeable about batteries and the required precaution. Keep unauthorized personnel away from UPS.

1. Verify that the UPS is off and disconnected from utility power and batteries if the UPS requires any type of transportation.
2. Place the UPS on a flat, stable surface.

7.3 Recycling the Used UPS

Contact your local recycling or hazardous waste center for information on proper disposal of the used battery or UPS.

8. Specifications

This chapter provides the following specifications:

- Model list
- General Specification
- Electrical Performance
- Environmental and Safety

Table4. Model list

UPS Model	AP160N-6K-KS	AP160N-10K-KS
-----------	--------------	---------------

Table5. General specification

Model		AP160N-6K-KS	AP160N-10K-KS
Power Rating		6KVA/5.4KW	10KVA/9KW
Frequency (Hz)		50/60	50/60
Input	Voltage	(120-276)VAC	(120-276)VAC
	Current	32A max.	55A max.
Battery	Voltage	180VDC	240VDC
	Current	38A max	52A max
Voltage		208VAC/220VAC/ 230VAC/ 240VAC	208VAC/220VAC/ 230VAC/ 240VAC
Current		28A	46A
Dimension (W*D*H) mm		438*640(594)*129	438*640(594)*215.5
Net Weight (KG)		19.0	26.0
Gross Weight (KG)		22.8	30.8

Table6. Electrical performance

Input			
Model	Voltage	Frequency	Power Factor
6K/10K	Single-phase	50/60 Hz $\pm$ 10%	>0.99(@Full load)

Output					
Voltage Regulation	Power Factor	Frequency tolerance	Distortion	Overload capacity	Current crest ratio
±1%	0.9 lag	Synchronized 50/60Hz±10% in Line mode (AC mode) ±0.1% of normal frequency in Battery mode	THD<2% Full load (Linear Load)/ <5% for reference non-linear load	102%-130% load transfers to Bypass mode after 2 minutes >130% load transfers to Bypass mode after 30 second and shutdown the output after 1 minute	3:1 maximum

Table7. Environment and safety

Temperature	Humidity	Altitude	Storage temperature
0°C-40°C	<95%	<1000m	0°C-40°C

Note: if the UPS is installed or used in a place where the altitude is above than **1000m**, the output power must be derated in use, please refer to the following:

Altitude (M)	1000	1500	2000	2500	3000	3500	4000	4500	5000
Derating Power	100%	95%	91%	86%	82%	78%	74%	70%	67%

9. Troubleshooting

The online series UPS is designed for durable, automatic operation and issues alarms to alert you whenever potential operating problems occur. Usually the alarms shown by the control panel do not mean that the output power is affected. Instead, they are preventive alarms intended to alert the user. Active alarms and active notices are accompanied by an audible buzzer.

9.1 Accessing Alarms and Conditions

The control panel provides troubleshooting information from two main menus:

- **UPS status menu:** Access to all active alarms
- **Event Log menu:** Access to the most recent 128 events, which may include active and closed alarms

UPS Status Menu

From the UPS Status menu, you can access the following screens for troubleshooting information:

- **Status summary screen:** The status summary screen provides information on both mode and load. When there is a critical alarm, the status summary screen changes from its normal white text on a blue background to dark amber text on an amber background.
- **Notice or alarm screens:** A separate screen appears for each active notice or alarm. If there are no active alarms or notices, the display reads “No Active Alarms”.
- **Battery status screen:** The battery status screen indicates the battery charge mode, the percent the battery is charged, and the runtime with the present load level.

To access troubleshooting information using the UPS status menu screen:

- 1 Press the  button for one second or longer to go to the UPS status menu screen.
- 2 Press the  button to access the UPS Status Summary screen.
- 3 Press the  button to access the notice and alarm screens.
The UPS Status Summary screen provides load information. The status icon indicates the UPS operating mode
- 4 Use the  button to scroll through the notice and alarm screens.
- 5 After scrolling through all alarms, press the  button to access the battery status screen.

Event Log Menu

From the Event Log menu, you can access the last 128 events, which includes events, notices, and alarms, arranged from newest to oldest. Events, notices, and alarms are logged in the Event Log when they occur and, if applicable, when they were cleared as follows:

- Events are silent conditions that are recorded in the Event Log as status information. Events do not require a response.
- Notices, including active notice, are recorded in the Event Log. Active notices, such as “Bypass Abnormal,” are typically announced by an intermittent beep. Notices do not normally require a response.
- Alarms, including active alarms, are recorded in the Event Log. Active alarms are typically announced by either an intermittent beep or a continuous audible alarm. Examples are “Fan Locked” and “Heatsink temperature high.” Active alarms require a response.

The UPS Status menu displays by default. To access troubleshooting information using the Event Log menu:

- 1 Press the  button for one second to go to the main menu selection and scroll down to the Event Log menu using the  button.
- 2 Click the  button to enter the Event Log list.
- 3 Scroll through the listed events, notices, and alarms using the  or  button.

9.2 Typical Alarms and Conditions

Alarm or Condition	Possible cause	Action
ON Maintenance Bypass Alarm Code: 72	UPS was manually commanded to switch to bypass and will remain in bypass until commanded out of bypass	Check the maintain bypass switch status
In Battery Mode Alarm Code: 62	A utility failure has occurred and the UPS is in Battery mode.	The UPS is powering the equipment with battery power. Prepare your equipment for shutdown.
In Eco Mode Alarm Code: 63	The UPS is on bypass while operating on the High Efficiency setting.	The equipment transferred to bypass utility power as a normal function of High Efficiency operation. Battery mode is available and your equipment is protected.
Epo Active Alarm Code: 71	The external contacts in the rear of the UPS are configured for REPO operation and they have been activated.	Check the EPO connector status
Site Wiring Fault Alarm Code: 04	Site Fault detection is supported on all models anytime there is a Grounding Neutral connection. Alarm triggers when the difference between ground and neutral voltage is > 15v.	Site Fault detection should be enabled by default. It can still be enabled / disabled from the LCD settings menu. Reconnect all input wires

Utility Abnormal Alarm Code: 02	Utility is out of the tolerance of input	Check input mains condition
Back feed Alarm Code:93	UPS has a unexpected bypass current on battery mode	Transfer to maintenance bypass and call service.
Battery Disconnect Alarm Code:11	Battery voltage is lower than the batteries disconnected level defined for this UPS. This may be due to a blown fuse, intermittent battery connection or battery cable being disconnected.	Verify that all batteries are properly connected. If the condition persists, contact your service representative.
Battery low Alarm Code:12	The UPS is in Battery mode and the battery is running low	This warning is approximate, and the actual time to shutdown may vary significantly. Depending on the UPS load and number of Extended Battery Modules(EBMs), the "Battery Low" warning may occur before the batteries reach 25% capacity
Service Battery Alarm Code:13	A faulted battery string has been detected and as a result the battery charger has been disabled until it is replaced	Contact your service representative
Output Overload Alarm Code:41	Output is overload.	Remove some of the equipment from the UPS. The UPS continues to operate, but may switch to Bypass mode or shutdown if the load increases. The alarm resets when the condition becomes inactive.
Inv Overload Fault Alarm Code:42	UPS has transferred to bypass or fault mode because of overload in inverter mode	The UPS transfers to Battery mode if supporting the load. Remove some of the equipment from the UPS
Byb Overload Fault	UPS has cut off the output and transferred to fault	Remove some of the equipment from the UPS

Alarm Code:43	mode because of overload in bypass mode or HE mode.	
Output Short Circuit Alarm Code:31	Indicates that the UPS has detected abnormally low impedance placed on its output and considers it a short circuit	Remove all the loads. Turn off the UPS. Check if UPS output and loads is short circuit. Ensure short circuit is removed before turning on again.
Fan Failure Alarm Code:84	Indicates that the fan could not work normally.	Check fans of UPS
Heatsink Over Temperature Alarm Code: 81	Indicates that the temperature of heatsink is too high, UPS will get over temperature fault soon.	If the UPS transferred to Bypass mode, If the condition persists, shut down the UPS. Clear vents and remove any heat sources. Allow the UPS to cool. Ensure the airflow around the UPS is not restricted. Restart the UPS.
Ambient Over Temperature Alarm Code:82	Indicates that the ambient temperature is higher than the operation temperature on specification	
BUS Over Voltage Alarm Code:21	Indicates that the UPS get BUS over voltage fault because of BUS.	The UPS transfers to Bypass mode if supporting the load
BUS Under Voltage Alarm Code:22	Indicates that the UPS get BUS under voltage fault	The UPS transfers to Bypass mode if supporting the load
BUS Unbalance Alarm Code:23	Indicates that the positive BUS voltage and negative BUS voltage are too lopsided to fault	The UPS transfers to Bypass mode if supporting the load
BUS Short Alarm Code:24	Indicates that the BUS voltage decrease very fast	Contact your service representative
BUS Softstart Fail Alarm Code:25	Indicates that the BUS could not soft start successfully	Contact your service representative
Inv Over Voltage Alarm Code:32	Indicates that the UPS get invert over voltage fault	The UPS transfers to Bypass mode if supporting the load

Inv Under Voltage Alarm Code:33	Indicates that the UPS get inverter under voltage fault	The UPS transfers to Bypass mode if supporting the load
Inv Softstart Fail Alarm Code:34	Indicates that the inverter could not soft start successfully	Contact your service representative
Charger Fail Alarm Code:15	Indicates that the UPS has confirmed the charger has failed	The UPS turns off the charger until the next power recycle. Contact your service representative
Battery Over Voltage Alarm Code:16	Indicates that the battery voltage is too high	The UPS will turn off the charger until the battery voltage is normal
Fatal eeprom Fault Alarm Code:A3	Indicates that the UPS could not read eeprom successfully	Contact your service representative
Negative power Fault Alarm Code: E1	In parallel system , power of UPS is negative	Redundancy mode, the fault UPS turn to fault mode without output Increase mode, UPS1& UPS2 turn to fault mode
Parallel cable loss Alarm Code: E2	In parallel system , parallel cable disconnect	Disconnect parallel cable one turn to fault mode
Parallel system battery status Alarm Code: E6	UPS1 connect battery , UPS2 without battery	Check battery connect status
Line input different Alarm Code: E7	Parallel system , UPS1 line ok , UPS2 line loss	Check the line input
Bypass input different Alarm Code: E8	Parallel system , UPS1 bypass ok , UPS2 Bypass loss	Bypass different, not allow turn on UPS. Check bypass input
Power strategy different Alarm Code: E9	Parallel system , UPS OP mode (normal , converter , HE) different	Check UPS OP mode, Keep OP mode be the same
Rate power different Alarm Code: EA	Parallel system rate power different	Rate power different, not allow turn on UPS. Keep rate power be the same
HE in parallel Alarm Code: EB	Parallel system , OP mode set as HE	HE not allow in parallel system, change OP mode

Redundancy lost Alarm Code: ED	Parallel system , Redundancy lost alarm enable, system load is increase	“Redundancy lost” only notice client that system isn’t redundancy. Redundancy lost alarm disable can make this alarm disappear.
-----------------------------------	--	---

