



Liebert®

GXT4™ UPS

Installer/User Guide

208 V, 5000 VA – 10,000 VA, 6000RTL630

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Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures. Visit <https://www.VertivCo.com/en-us/support/> for additional assistance.

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1 IMPORTANT SAFETY PRECAUTIONS

SAVE THESE INSTRUCTIONS

This manual contains important safety instructions that must be followed during the installation and maintenance of the UPS and batteries. Read this manual thoroughly before attempting to install or operate this UPS. Adhere to all warnings on the unit and in this manual. Follow all operating and user instructions. This equipment can be operated by individuals without previous training.

UPS Safety Notes

This UPS contains no user-serviceable parts except the internal battery pack. The Off/Bypass push button does not electrically isolate internal parts. Under no circumstances attempt to gain internal access other than to replace the batteries due to risk of electric shock or burn. Do not continue to use the UPS if the front panel indications are not in accordance with these operating instructions or if the UPS performance alters in use. Refer all faults to your local dealer, Vertiv representative or Vertiv Channel Support.

This UPS has an internal battery, and the output receptacles of the UPS may carry live voltage even if the UPS is not connected to utility input power.

Before moving or rewiring this UPS, disconnect utility input power and the battery and make sure that the UPS is completely shut down. Otherwise, the output terminal may carry live voltage, presenting an electric shock hazard.

To ensure human safety and normal UPS operation, the UPS must be properly grounded before use.

When the UPS is connected to an IT power distribution system, a short-circuit protection device must be installed on the neutral line.

Install and use the Liebert® GXT4 in the following environments:

- Temperature: 32°F - 104°F (0°C - 40°C), relative humidity: 0% to 95% non-condensing
- Out of direct sunlight
- Away from heat sources
- Stable surface, not subject to vibrations or shocks
- Away from dust and other particulates
- Away from corrosive substances, salts and flammable gases

Keep the air inlet and outlet of this UPS unobstructed. Poor ventilation will increase the internal temperature of the UPS and can adversely affect the UPS and its batteries.

Keep liquid and foreign objects away from the UPS. Turn Off and isolate the UPS before cleaning it. Use only a soft cloth, never liquid or aerosol cleaners.

In case of fire, use a dry chemical fire extinguisher to put out the fire. Using a fluid fire extinguisher may cause electric shock.

DO NOT CONNECT equipment that could overload the UPS or demand DC current from the UPS, for example: electric drills, vacuum cleaners, laser printers, hair dryers or any appliance using half-wave rectification.

Storing magnetic media on top of the UPS may result in data loss or corruption.

This product is designed for commercial/industrial use only. This UPS is not intended for use with life support and other designated critical devices. Maximum load must not exceed that shown on the UPS rating label. This UPS is designed for data processing equipment. If uncertain, consult your local dealer or Vertiv representative.

This UPS is not for use in a computer room as defined in the standard for the Protection of Electronic Computer/Data Processing Equipment, ANSI/NFPA 75.

This UPS is designed for use on a properly grounded (earthed), 100/200, 110/220, 115/230, 120/208, 120/240 or 127/220VAC, 50 or 60Hz supply. The factory default setting is 120/208VAC, 60Hz. Installation instructions and warning notices are in this manual.

The Liebert® GXT4 208VAC 5000 - 10000 is designed for use with a 4-wire input (L1, L2, N, G).

The Liebert® GXT4-6000RTL630 is designed be used with a 3-wire, 2-phase utility source (L1, L2, G).

Battery Safety



WARNING! Risk of electric shock and explosion. Can cause equipment damage, injury and death. Do not dispose of the battery in a fire. The battery may explode. Do not open or damage the battery. Released electrolyte is toxic and is harmful to skin and eyes. If electrolyte comes into contact with the skin, wash the affected area immediately with plenty of clean water and get medical attention.



WARNING! Risk of electric shock. Can cause equipment damage, injury and death. A battery can present a risk of electrical shock and high short-circuit current.

The following precautions should be observed when working on batteries:

- Remove watches, rings and other metal objects.
- Use tools with insulated handles.
- Wear rubber gloves and boots.
- Do not lay tools or metal parts on top of batteries.
- Disconnect charging source prior to connecting or disconnecting battery terminals.
- If the battery kit is damaged in any way or shows signs of leakage, contact your local Vertiv representative immediately.
- Handle, transport and recycle batteries in accordance with local regulations.
- Determine if the battery is inadvertently grounded. If it is inadvertently grounded, remove the source of the ground. Contact with any part of a grounded battery can result in electrical shock. The likelihood of such shock will be reduced if grounds are removed during installation and maintenance (applicable to a UPS and a remote battery supply not having a grounded supply circuit).

ELECTROMAGNETIC COMPATIBILITY

The Liebert® GXT4 series complies with the requirements of EMC Directive 2004/108/EC and the published technical standards. Continued compliance requires installation in accordance with these instructions and use of accessories approved by Vertiv.

Notice

This is a product for restricted sales distribution to informed partners. Installation restrictions or additional measures may be needed to prevent radio interference.

Information for the Protection of the Environment

UPS Servicing: UPS makes use of components dangerous for the environment (electronic cards, electronic components). The components removed must be taken to specialized collection and disposal centers.

NOTICE TO EUROPEAN UNION CUSTOMERS: DISPOSAL OF OLD APPLIANCES—This product has been supplied from an environmentally aware manufacturer that complies with the Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/CE.

The “crossed-out wheelee bin” symbol at right is placed on this product to encourage you to recycle wherever possible. Please be environmentally responsible and recycle this product through your recycling facility at its end of life. Do not dispose of this product as unsorted municipal waste. Follow local municipal waste ordinances for proper disposal provisions to reduce the environmental impact of waste electrical and electronic equipment (WEEE). C

For information regarding the scrapping of this equipment, please browse <https://www.vertivco.com/en-emea/> or call our worldwide technical support.

- Toll Free: 00 80011554499
- Toll Number Based in Italy: +39 0298250222

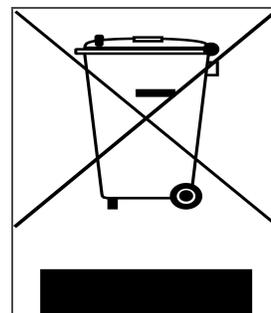


Table 1.1 Glossary of Symbols

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	Risk of electrical shock		Recycle
	Indicates caution followed by important instructions		DC voltage
	AC input		Equipment grounding conductor
	AC output		Bonded to ground
	Requests the user to consult the manual		AC voltage
	Indicates the unit contains a valve-regulated lead acid battery		

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2 GXT4 DESCRIPTION

The Liebert® GXT4 is a compact, online uninterruptible power system (UPS) that continuously conditions and regulates its output voltage. The Liebert® GXT4 supplies microcomputers and other sensitive equipment with clean sine-wave input power.

Upon generation, AC power is clean and stable. However, during transmission and distribution it is subject to voltage sags, spikes, and complete failure that may interrupt computer operations, cause data loss, and damage equipment.

The Liebert® GXT4 protects equipment from these disturbances. The Liebert® GXT4 continuously charges its batteries from the mains, enabling it to supply power to connected loads, even when the mains fail.

2.1 Features

- Intelligent battery management to extend the battery life
- LCD for user-friendly operation and local monitoring and configuration of operational parameters
- Fan fault self-inspection and automated diagnostic function
- Intelligent fan operation, automatically changing rotation speed depending on system requirements, to decrease power consumption and noise
- Input circuit breaker to ease recovery from overloads
- Safety approval from UL and cUL
- Communication options: USB port, Liebert® IntelliSlot™ port and terminal-block communication
- Dry contacts for remote monitoring
- Input power factor greater than 0.99
- Output voltage selection function

2.2 Available Models

Available models of the UPS are listed in the following table.

Table 2.1 UPS models, power ratings

MODEL NUMBER	NOMINAL POWER RATING
GXT4-5000RT208	5000VA / 4000W
GXT4-6000RT208	6000VA / 4800W
GXT4-6000RTL630	6000VA / 4200W
GXT4-8000RT208	8000VA / 7200W
GXT4-10000RT208	10000VA / 9000W

2.3 Front Panel and Controls

The Liebert GXT4 rack/tower models in various power ratings have the same general appearance, controls and features as shown in the following figure. The various rack/tower models differ largely in the type of receptacles each has.

Figure 2.1 Front view



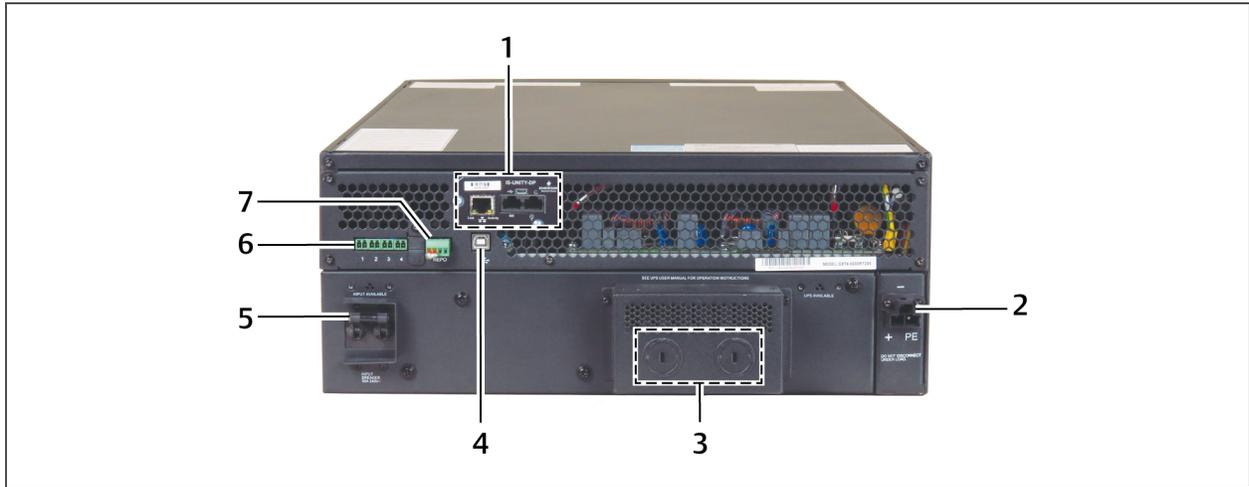
NO.	DESCRIPTION
1	Upper bezel
2	Operation and display panel
3	Lower bezel and battery-access door

2.4 Rear Panel Features

The rear panel of the Liebert® GXT4 has these features:

- Liebert® IntelliSlot™ Port
- USB port
- Input Circuit Breaker
- Maintenance Bypass Circuit Breaker (not present on all optional PODs)
- REPO connection
- Input Receptacle
- General Output Receptacles (on optional PODs)
- External Battery Connector
- Cooling Fan
- Terminal Block Communication
- Output Circuit Breakers (only on optional PODs)

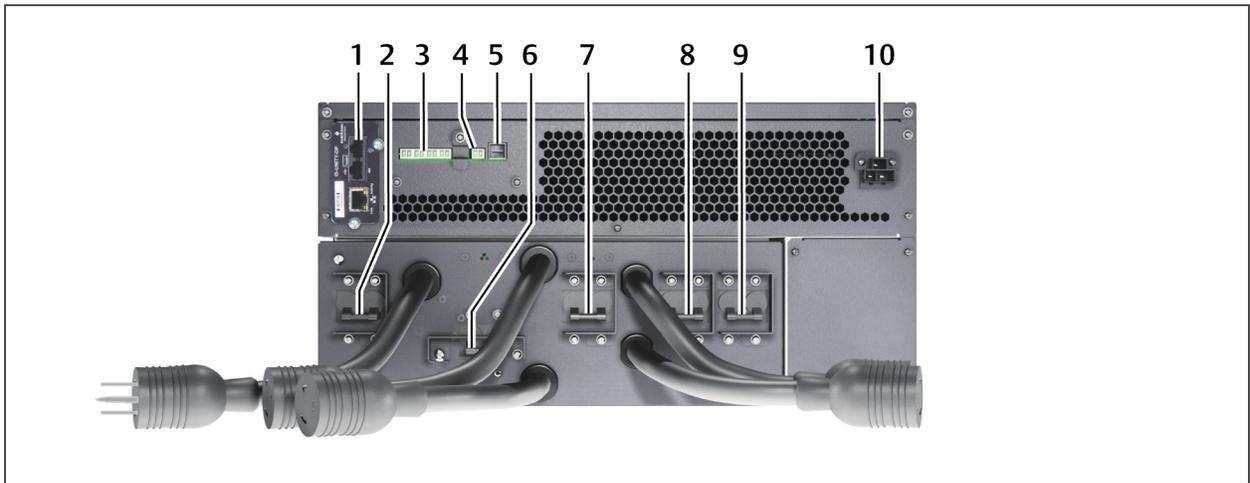
Figure 2.2 Rear panel—5000VA and 6000VA with input power hard-wired box



NO.	DESCRIPTION	NO.	DESCRIPTION
1	Liebert® IntelliSlot Unity-DP card	5	Input breaker
2	External battery connector	6	Terminal block communication
3	Knockouts for hard-wired power input and output	7	REPO
4	USB port		

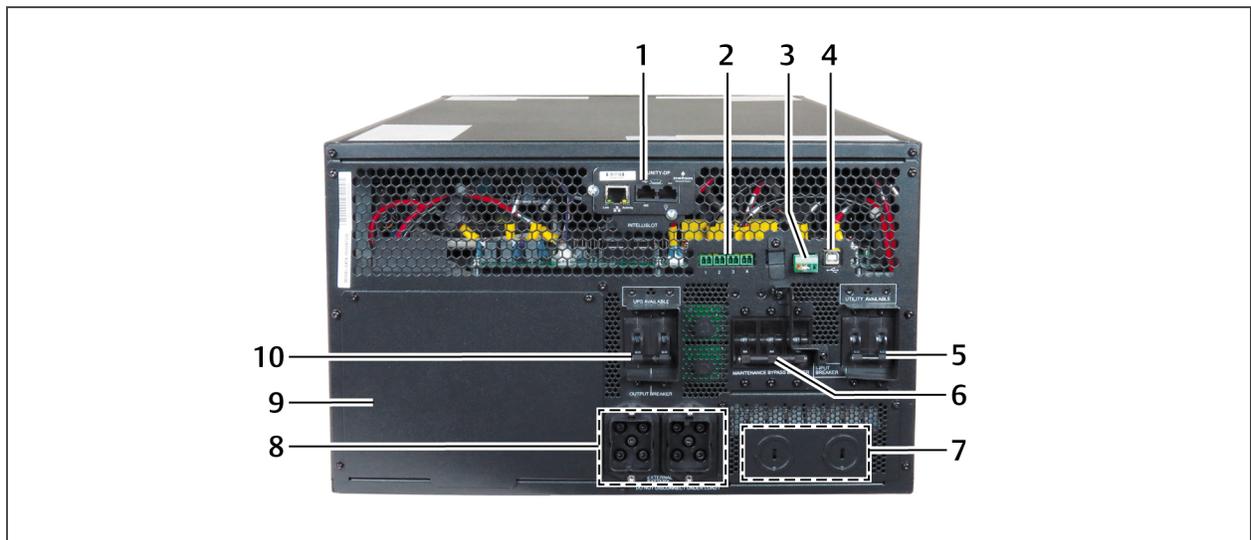
NOTE: Hard-wired and hard-wired/receptacle boxes that include a manual bypass switch permit AC power to continue to flow from the utility input to the load while the box is removed from the UPS. For details, refer to [Connecting Input/Output Power](#) on page 30.

Figure 2.3 Rear panel—GXT4-6000RTL630



NO.	DESCRIPTION	NO.	DESCRIPTION
1	Liebert® IntelliSlot Unity-DP card	6	Maintenance bypass breaker
2	Input breaker for L6-30P #1	7	Output breaker for L6-20R #2 and #3
3	Terminal block communication	8	Output breaker for L6-30R #4
4	REPO connection block	9	Output breaker for L6-30R #5
5	USB port	10	External battery connector

Figure 2.4 Rear panel—8000VA and 10,000VA



NO.	DESCRIPTION	NO.	DESCRIPTION
1	Liebert® IntelliSlot Unity-DP card	6	Maintenance bypass switch
2	Terminal block communication	7	Knockouts for hard-wired power input
3	REPO connection block	8	External battery connectors
4	USB port	9	Cover for power-distribution box connections
5	Input breaker switch	10	Output breaker switch

2.5 Removable Power Distribution Box

The 5000- and 6000-VA RT208 UPS ships with a power-distribution pack installed. This box contains the UPS input circuit breaker.

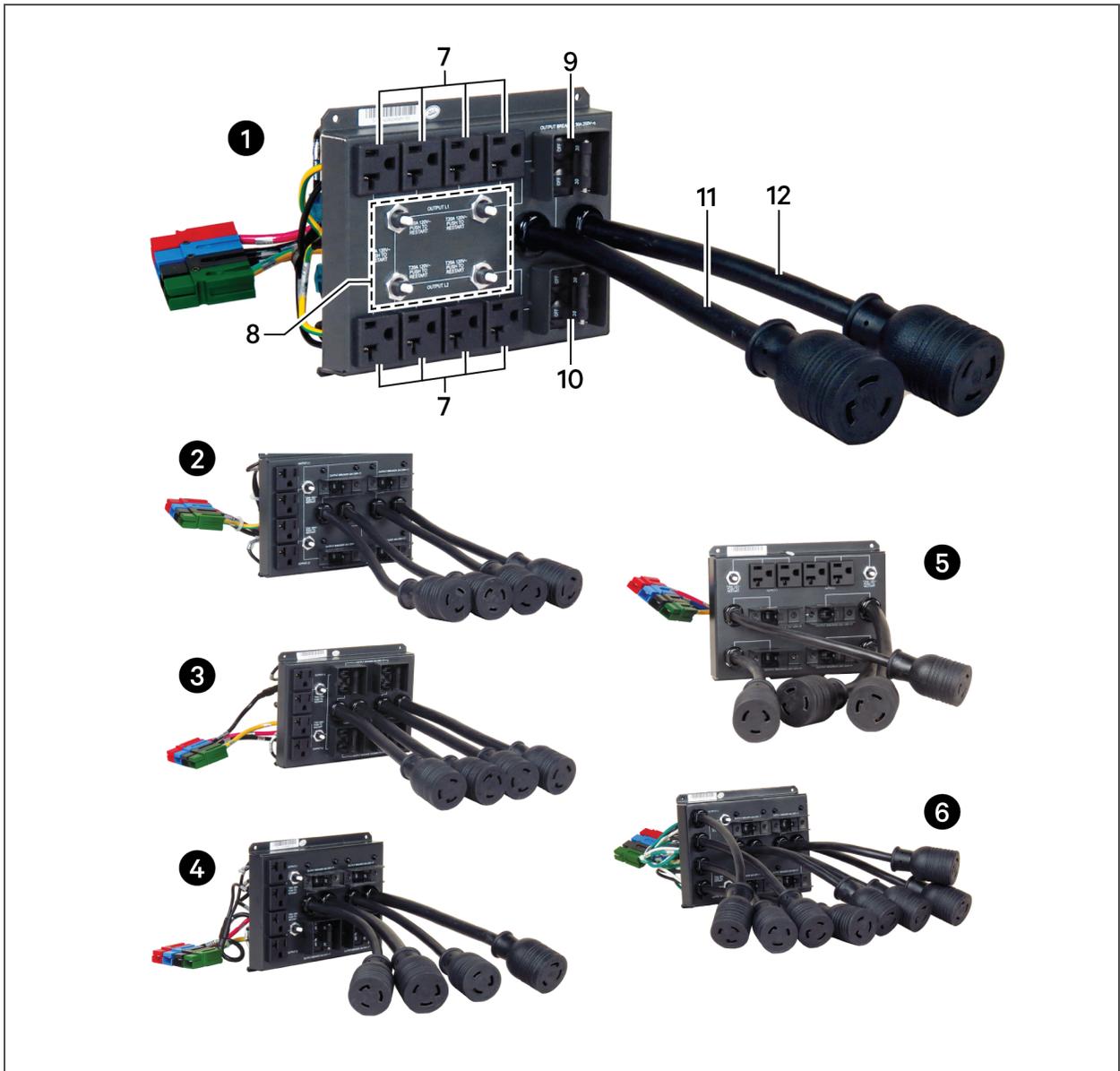
Figure 2.5 Power distribution models for 5000 VA and 6000 VA models



NO.	DESCRIPTION	NO.	DESCRIPTION
1	Input breaker switch	8	PD2-002 Receptacles: two 5-15/20R, two L6-20R
2	Output-power breakers for pigtails	9	PD2-003 Receptacles: four 5-15/20R, two L6-30R
3	L14-30 input-power connector	10	PD2-004 Receptacles: four L5-20R, two L5-30R
4	Push-button output-power breakers for L5-20R receptacles	11	PD2-005 Receptacles: four L5-20R, two L6-30R
5	PD2-001 Receptacles: four 5-15/20R, one L14-30, one L6-30R	12	PD2-006 Receptacles: four L6-20R
6	L14-30 output-power connectors	13	PD2-007 Receptacles: two L5-20R, two L6-20R
7	Maintenance bypass breaker		

NOTE: PD2-001 is shown with labeled examples. Other boxes are arranged differently.

Figure 2.6 Power distribution models for 8000 VA and 10,000 VA models

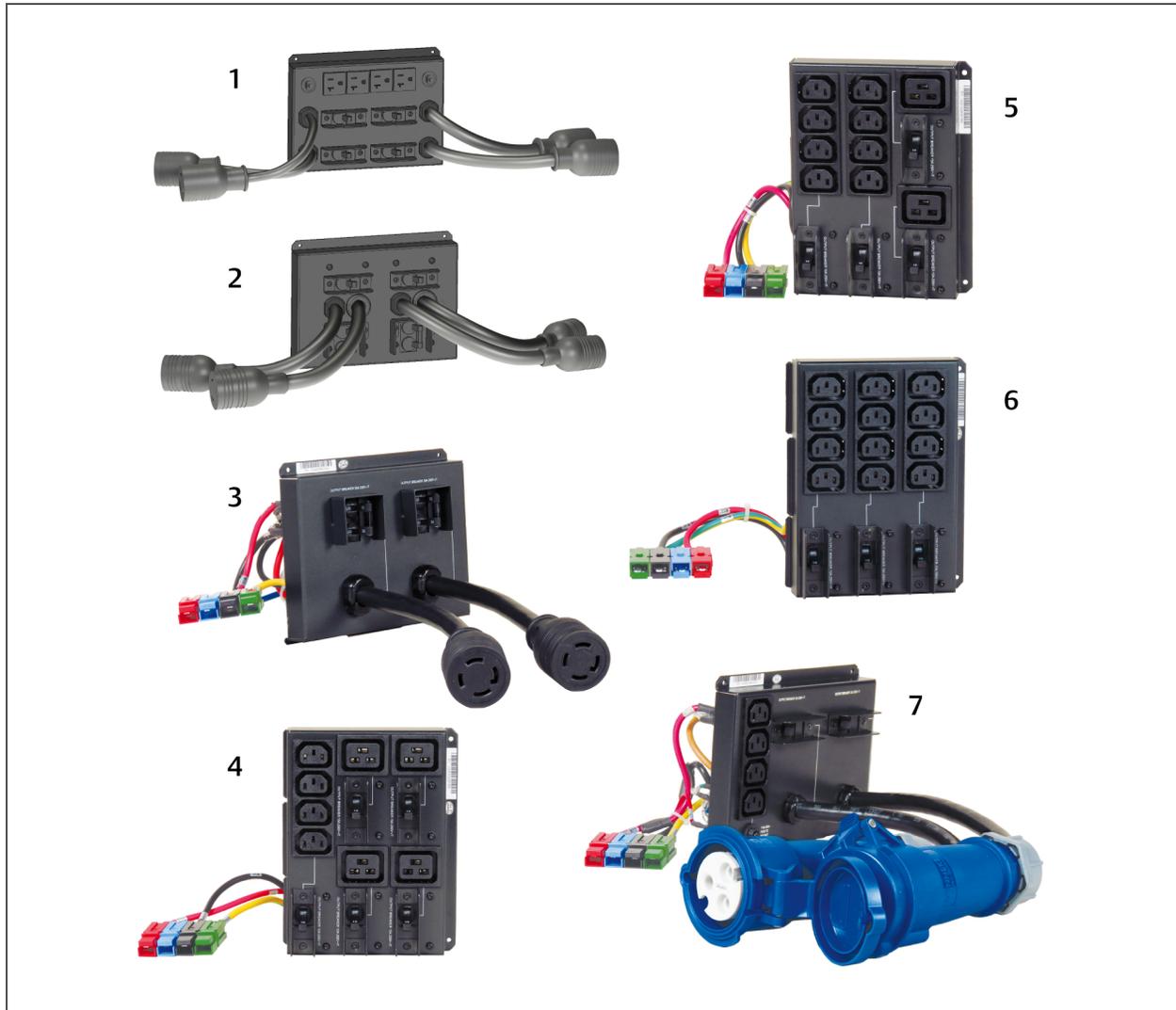


NO.	DESCRIPTION	NO.	DESCRIPTION
1	5-15/20R output receptacles	7	PD2-102 Receptacles: four L6-20R, four 5-15/20R
2	Output circuit-breaker switch for L6-30R pigtail #1	8	PD2-103 Receptacles: four L6-30R, four 5-15/20R
3	L6-30R output receptacle	9	PD2-104 Receptacles: four 5-15/20R, two L6-30R, two L6-20R

NO.	DESCRIPTION	NO.	DESCRIPTION
4	L6-30R output receptacle	10	PD2-105 Receptacles: four 5-15/20R, two L5-30R, two L5-20R
5	Output circuit-breaker switch for L6-30R pigtail #2	11	PD2-106 Receptacles: four L6-20R, four L5-20R
6	Push-button circuit breakers for 5-15/20R receptacles		

NOTE: PD2-101 is shown with labeled examples. Other boxes are arranged differently.

Figure 2.7 Power distribution models for 8000 VA and 10,000 VA models (continued)



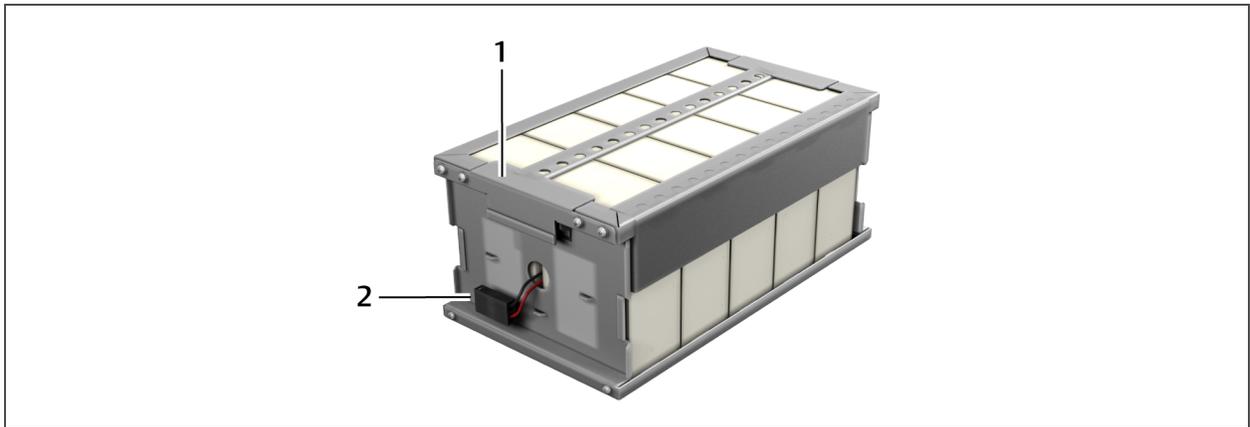
NO.	DESCRIPTION	NO.	DESCRIPTION
1	PD2-107 Receptacles: four L5-20R, four 5-15/20R	5	PD2-201 Receptacles: two IEC320-C19, eight IEC320-C13
2	PD2-108 Receptacles: two L6-30R, two L6-20R	6	PD2-202 Receptacles: twelve IEC320-C13
3	PD2-109 Receptacles: two L14-30R	7	PD2-204 Receptacles: two IEC309-32A, four IEC320-C13
4	PD2-200 Receptacles: four IEC320-C19, four IEC320-C13		

2.6 Internal Battery Packs

The UPS has two internal battery packs behind a battery-access door on the front of the unit. Each internal battery pack is fitted with a connector to link to the UPS.

GXT4 10,000-VA battery pack shown is shown in the figure. 5000-VA and 6000-VA battery packs have the same features.

Figure 2.8 Internal battery pack with connector

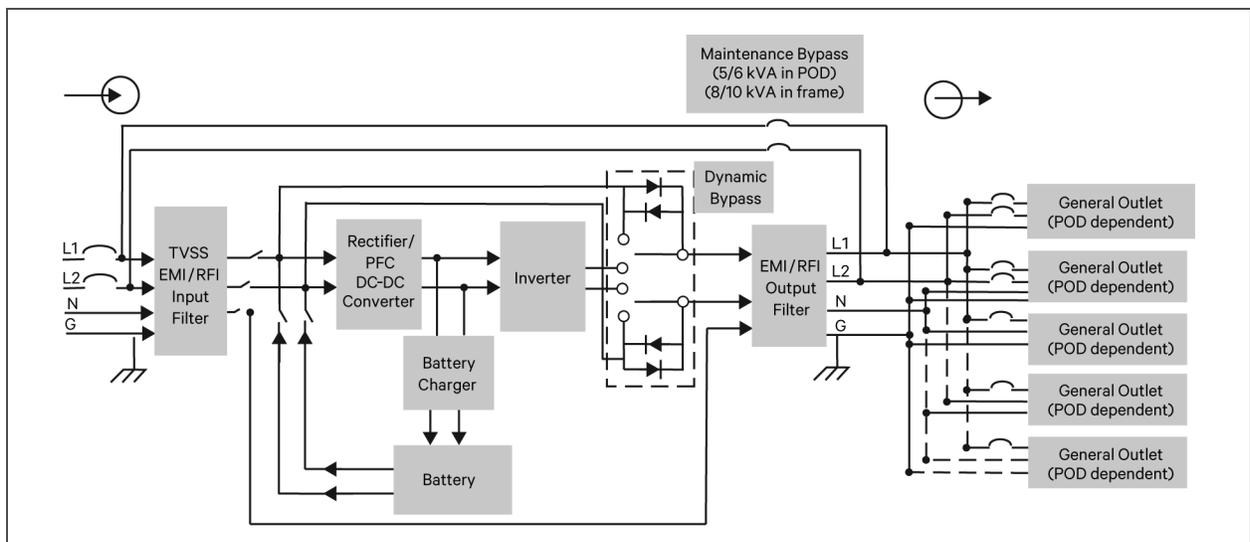


NO.	DESCRIPTION
1	Battery handle
2	Battery connector

2.7 Major Components

The UPS is composed of mains input, TVSS and EMI/RFI filters, rectifier/PFC, inverter, battery charger, DC-to-DC converter, battery, dynamic bypass and UPS output.

Figure 2.9 Operating principle diagram



2.7.1 Transient Voltage Surge Suppression (TVSS) and EMI/RFI Filters

The UPS has surge protection and filters that protect the connected load from power surges, electromagnetic interference (EMI) and radio frequency interference (RFI). These features can minimize any surges or interference present in the mains power. The filters also prevent surges or interference generated by the UPS from adversely affecting devices connected on the same branch as the UPS.

2.7.2 Rectifier/Power Factor Correction (PFC) Circuit

In normal operation, the rectifier/PFC circuit converts mains power to regulated DC power for use by the inverter while ensuring that the wave shape of the input current used by the UPS is near ideal. Extracting this sine-wave input current achieves two objectives:

- Efficient power use by the UPS
- Reduced reflected harmonics

This results in cleaner power available to other devices in the building that are not protected by the GXT4.

2.7.3 Inverter

In normal operation, the inverter utilizes the DC output of the PFC circuit to produce precise, regulated sine-wave AC power. When mains power fails, the inverter receives DC power from the DC-to-DC Converter. In either operation mode, the UPS inverter is online, continuously generating clean, precise, regulated AC output power.

2.7.4 Battery Charger

The battery charger utilizes energy from the mains power and precisely regulates it to continuously float charge the batteries. The batteries are being charged whenever the GXT4 is plugged in, even when the UPS is not turned On.

2.7.5 DC-to-DC Converter

The DC-to-DC converter raises the DC voltage from the battery to the optimum operating voltage for the inverter. This allows the inverter to operate continuously at its optimum efficiency and voltage, thus increasing reliability.

2.7.6 Battery

The GXT4 uses valve-regulated, non-spillable, lead acid batteries. To maintain battery design life, Operate the GXT4 in an ambient temperature of 15°C to 25°C (59°F to 77°F).

Optional external battery cabinets are available to extend battery run times.

2.7.7 Internal Bypass

The GXT4 provides an alternate path for mains power to the connected load in the unlikely event of a UPS malfunction. Should the UPS have an overload, over-temperature or any other UPS failure condition, the UPS automatically transfers the connected load to bypass. Bypass operation is indicated by an audible alarm and illuminated amber Bypass LED (other LEDs may be illuminated to indicate the diagnosed problem).

To manually transfer the connected load from the inverter to bypass, press the Standby/Manual Bypass button once and hold it for about 2 seconds

2.7.8 Maintenance Bypass

The GXT4 provides a manual maintenance bypass in a removable section of the rear of the UPS. This allows replacement of the UPS in the event of a UPS malfunction while keeping the connected equipment powered with utility power.

NOTE: The bypass power path does not protect the connected equipment from disturbances in the mains supply.

2.8 Operating Modes

The UPS operation modes include the following: Mains (AC) Mode, Bypass Mode, Battery Mode, Battery Recharge Mode, Active ECO Mode and Frequency Converter Mode.

Refer to [Operation and Display Panel](#) on page 37 for details about the operating mode indicators and control buttons.

2.8.1 Mains Mode

During Mains Mode, the mains provides input power to the GXT4. The filters, PFC circuit and inverter process this power to provide high-quality sine wave power to connected loads. The UPS maintains the batteries in a fully-charged state.

2.8.2 Manual Bypass Mode

Manual Bypass Mode occurs when the unit is manually placed in internal bypass by navigating the LCD menu to select *3 Control > 1 Turn On & Off > Turn UPS Bypass*. Bypass operation is indicated by an audible alarm and illuminated amber bypass indicator. (If other indicators are illuminated, refer to [Troubleshooting](#) on page 61). During Bypass Mode, mains power bypasses the inverter and provides energy to the connected load.

NOTICE

Risk of loss of power to the connected load. Can cause equipment damage.

Turning Off the UPS in Bypass Mode will result in loss of output power to the connected load.

2.8.3 Battery Mode

The GXT4 enters Battery Mode when mains power fails or is outside acceptable limits. The battery system supplies power through the DC-to-DC converter to the inverter to generate clean AC power for the connected loads.

When the GXT4 enters Battery Mode, the UPS sounds a half-second beep at 10-second intervals. When approximately 2 minutes of run time remains, the beeps sound every 5 seconds to warn that the battery is getting low (this Low Battery Warning is user-configurable).

In Battery Mode, the battery indicator will illuminate and the LCD will show the prompt *utility power not available*.

Press either the Up or Down button once, then press the Enter button to clear the prompt and silence the audible alarm. Once the alarm prompt has been acknowledged, the screen showing the estimated battery run time and battery capacity will be visible. Refer to [Troubleshooting](#) on page 61.

For approximate battery run times, refer to .

NOTICE

Risk of loss of power to the connected load. Can cause equipment damage.

Turning Off the GXT4 when it is in Battery Mode will result in loss of output power to the connected load.

If the UPS is turned Off manually, it must be manually restarted after mains power returns.

If the UPS is turned Off by a communication signal or because the batteries are depleted, it will operate as set in the configuration program for Auto-Restart (Refer to [Configuration Program](#) on page 49).

2.8.4 Battery Recharge Mode

Once mains power is applied to the GXT4, the Battery Charger begins charging the batteries.

2.8.5 Frequency Converter Mode

All models of the GXT4 are capable of frequency conversion. Frequency Conversion Mode can be selected using the configuration program. Allowable frequency operating modes include:

- Auto Sensing - 50 Hz or 60Hz – Bypass Enabled
- Auto Sensing - 50 Hz or 60Hz – Bypass Disabled
- Frequency Converter - 50 Hz – Bypass Disabled
- Frequency Converter - 60Hz – Bypass Disabled

NOTE: The default for all models of the Liebert® GXT4 is “Auto Sensing - 50 Hz or 60Hz – Bypass Enabled.”

2.8.6 Active ECO Mode

All Liebert® GXT4 models can operate in Active ECO Mode. In this mode, the connected equipment is powered through the bypass path to increase efficiency, reducing the electrical costs.

Active ECO mode keeps the rectifier and inverter operating, allowing the inverter to remain synchronized to bypass. This synchronization allows the transfer of the connected equipment to UPS inverter power almost seamlessly if bypass power falls outside the user-set limits. Once bypass power returns within the acceptable parameters, the UPS will return to Active ECO Mode operation.

The default setting is Active ECO Mode Off.

3 INSTALLATION

Do not start the UPS until after the installation is finished.



WARNING! Risk of electrical shock. Can cause equipment damage, injury and death. Before beginning installation, verify that all external overcurrent protection devices are open (Off), and that they are locked-out and tagged appropriately to prevent activation during the installation, verify with a voltmeter that power is Off and wear appropriate, OSHA-approved personal protective equipment (PPE) per NFPA 70E. Failure to comply can cause serious injury or death. Before proceeding with installation, read all instructions. Follow all local codes.

3.1 What's Included

- Terminal Block Communication Terminals
- Compact Disk with:
 - Configuration Program
 - User Manual (electronic version)
- Liebert® IntelliSlot Unity card (IS-UNITY-DP), factory installed
- USB Cable—one, 2 m (6-1/2 ft) long
- Rack mounting hardware, including screws, handles and rack slide kit
- Power-distribution box, installed on GXT4.
- Two plastic, tower-stand support-base sets (four pieces)
- Warnings, Safety Instructions booklet and WEEE recycling sheet (ISO 14001 compliance)

NOTE: The GXT4 External Battery Cabinet shipping package includes one battery cabinet, two spacers for tower configuration and one DC-power cable and rack-mounting hardware, including screws, handles and mounting rail kit.

3.2 Unpacking and Inspection

Unpack the UPS and conduct the following checks:

- Inspect the UPS for shipping damage. If any shipping damage is found, report it to the carrier and your local dealer or your Vertiv representative immediately.
- Check the accessories included in packaging list. If there is any discrepancy, contact your local dealer or your Vertiv representative immediately.



CAUTION: The UPS is heavy (see [Specifications](#) on page 65). Take proper precautions when lifting or moving it.

3.3 Preparation for Installation

3.3.1 Installation Environment

- Install the UPS indoors in a controlled environment, where it cannot be accidentally turned Off. The installation environment should meet the specifications listed in [Specifications](#) on page 65.
- Place it in an area of unrestricted air-flow around the unit, away from water, flammable liquids, gases, corrosives, and conductive contaminants. Avoid direct sunlight.

NOTE: Operating the UPS in temperatures above 77°F (25°C) reduces battery life.

3.3.2 Installation Clearances

Maintain at least 4 in. (100 mm) clearance in the front and rear of the UPS. Do not obstruct the air inlets on the front panel and rear panel of the UPS. Blocking the air inlets reduces ventilation and heat dissipation, shortening the service life of the unit.

3.4 Installing the UPS

The UPS may be installed as a tower or in a rack, depending on available space and use considerations. Determine the type of installation and follow the appropriate instructions. See [Tower Installation](#) below or [Rack Installation](#) on page 28.

After installing the UPS as a tower or in a rack, and before attempting to start-up, you must install the internal batteries. See [Installing the Internal Battery Kit\(s\)](#) on page 28.

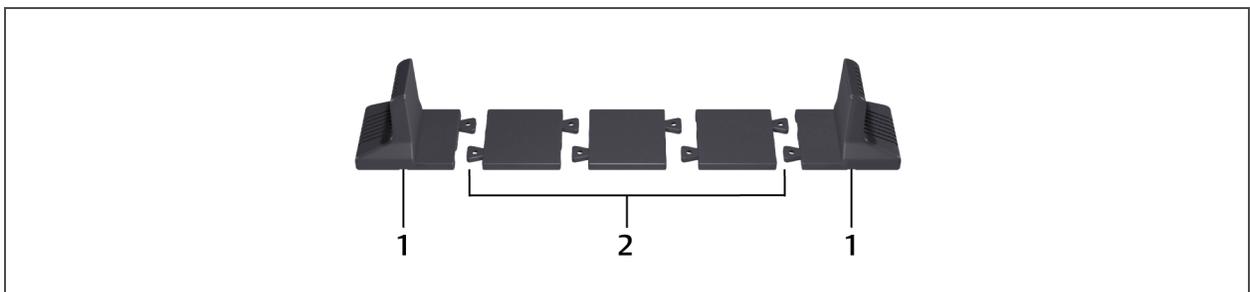
NOTE: When installing the UPS or making input and output connections, comply with all relevant safety codes and standards

3.4.1 Tower Installation

To install the GXT4 as a tower:

1. Take the support bases out of the accessories box.

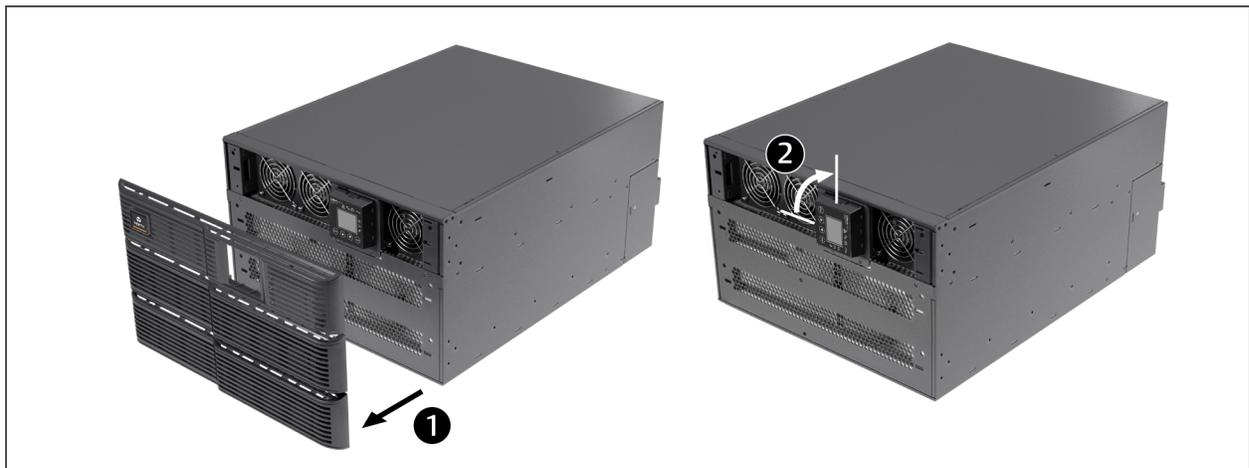
Figure 3.1 Support bases



NO.	DESCRIPTION
1	Support bases
2	Spacers with connectors

2. If optional, Liebert® external battery cabinets will be connected, take out the spacers shipped with the battery cabinet.
3. Connect the spacers and the support bases as shown in **Figure 3.1** on the previous page. Each GXT4 requires 2 support bases, one in the front and one in the rear.
4. Adjust the direction of the operation and display panel and logo on the GXT4.
 - a. Remove the front plastic bezel cover as shown the following figure.
 - b. Pull the operation and display panel gently, rotate it 90 degrees clockwise and snap it back into position, as shown.
 - c. Pull the logo on the front plastic bezel cover gently, rotate it 90 degrees clockwise and snap it back into position.
 - d. Replace the front plastic bezel cover.
The operation and display panel and logo have been rotated 90 degrees clockwise, for upright viewing.

Figure 3.2 Remove the front plastic bezel cover and rotate display



NO.	DESCRIPTION
1	Remove bezel cover.
2	Rotate display 90 degrees.

5. Place the GXT4 and any battery cabinets on the 2 support bases.
6. Now you are ready to install the internal batteries. See [Installing the Internal Battery Kit\(s\)](#) on the next page.

3.4.2 Rack Installation

When installed in a rack enclosure, the GXT4 UPS and external battery cabinets (EBC) must be supported by a shelf or rack-mount rails. The GXT4 and EBC units ship with all required hardware for rack-mount installation. Because different rack-mount options install differently, refer to the installation instructions provided with the rack mount kit being used.

Once the UPS is mounted in the rack, you are ready to install the internal batteries. See [Installing the Internal Battery Kit\(s\)](#) below.



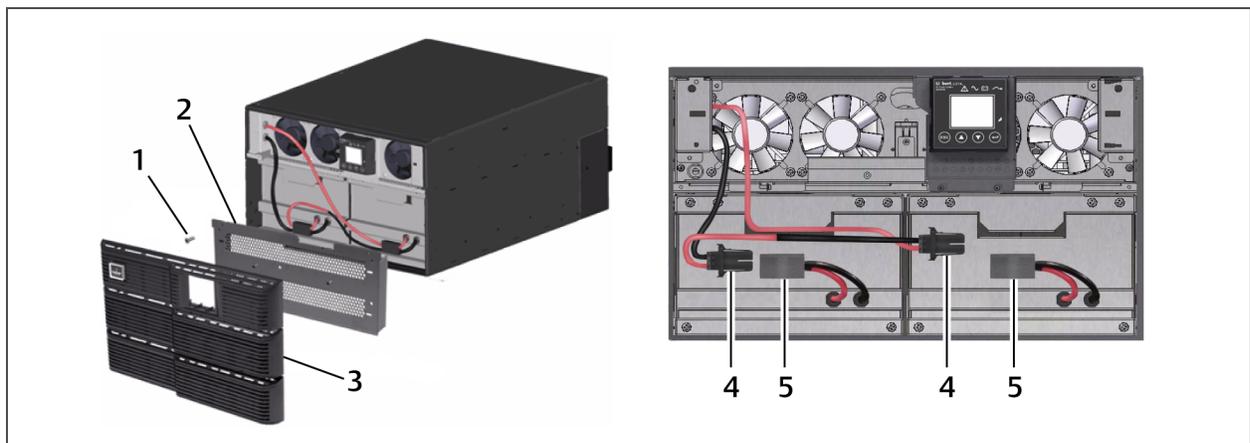
CAUTION: The GXT4 is heavy. The UPS must be installed as near the bottom of a rack as possible. If placed too high, it can make the rack top-heavy and prone to tipping over. For unit weights, see [Specifications](#) on page 65.

3.4.3 Installing the Internal Battery Kit(s)

The internal-battery kits are packed separately in boxes and are shipped in main box with the GXT4, which is also in its own box.

1. Loosen and remove the screws on the battery door, as shown in [Figure 3.3](#) below.
2. Lay the battery door and screws aside for reassembly.
3. Unpack the new internal battery pack. Take care not to destroy the packing.
4. Line up and slide in the new internal battery pack.
5. Connect the battery plug and battery receptacle, and ensure that the wires align red-to-red and black-to-black, see [Figure 3.3](#) below.

Figure 3.3 Removing the front bezel cover and battery door



NO.	DESCRIPTION	NO.	DESCRIPTION
1	Screws, 6	4	Battery connector
2	Battery door	5	Battery receptacle
3	Front bezel		

6. Push the battery wire and internal battery pack into the UPS.
7. Attach the front battery door with the 6 screws.
8. Attach the front plastic bezel cover to the UPS.

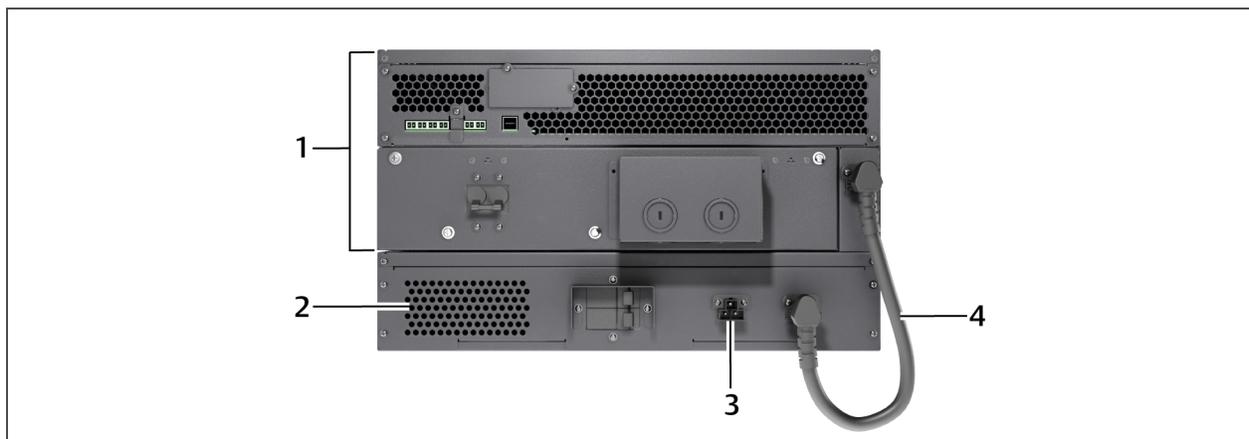
3.5 Installing External Battery Cabinets

! WARNING! Risk of electric shock. Can cause injury or death. Disconnect all local and remote electric power supplies before working with the UPS. Ensure that the unit is shut down and power has been disconnected before beginning any maintenance.

! CAUTION: The external battery cabinet(s) are heavy (see **Table 9.4** on page 71). Take proper precautions when lifting them.

Optional, Liebert® external battery cabinets (EBC) may be connected to the UPS to provide additional battery run time. External battery cabinets are placed on one side of the UPS in a tower configuration or stacked beneath the UPS in a rack configuration.

Figure 3.4 External battery cabinets connected to GXT4



NO.	DESCRIPTION	NO.	DESCRIPTION
1	GXT4	3	Second external-battery connector permits adding more battery cabinets to 6000-VA GXT4.
2	External battery cabinet (EBC)	4	Cable connects EBC to GXT4.

To install the external battery cabinet(s):

1. Inspect the EBC for freight damage. Report damage to the carrier and your local dealer or Vertiv representative.
2. Optional rack-mount hardware is shipped with the external battery cabinet and may be installed at this time.

- Securing hardware and slide rails are sold separately. Please contact your local dealer or Vertiv representative for these additional options and any assistance needed. Fasten the slides into position with the screws per the instructions included with the slide rails.
3. Use the enclosed support bases for the tower option to prevent tip-over. One additional set of support-base extensions ships with each EBC.
 4. Verify the that the EBC breaker is in the "Off" position.
 5. Connect the supplied EBC cable to the rear of the cabinet, then to the rear of the UPS.
 6. Turn the EBC breaker to the "On" position.
 7. Verify the circuit breaker on the EBC is in the "On" position.
 8. Use the included configuration program or the LCD display to program the UPS with the number of external battery cabinets connected. Instructions for the configuration program are in [Configuration Program](#) on page 49.

The UPS is now equipped with additional back-up battery run time. For approximate battery run times, refer to **Table 9.8** on page 76.

NOTE: When removing an EBC, the circuit breaker on the rear of the cabinet must be turned off before disconnecting the cable.

NOTE: If the UPS will be shipped or stored for an extended time, the connector should be disconnected. This will minimize any stand-by current drain on the batteries and help attain their design life.

3.6 Connecting Input/Output Power

The GXT4-5000RT208, Liebert GXT4-6000RT208 and Liebert GXT4-6000RTL630 are shipped with a power distribution box attached. The Liebert GXT4-8000RT208 and Liebert GXT4-10000RT208 are shipped with a cover plate over the power distribution connector.

Refer to the following instructions for removal and installation.

NOTE: Do not operate the UPS with the power distribution box removed. To shut off all power to this box and to the load, utility input power must be disconnected.

3.6.1 Installing the Power Distribution Box on 5000VA and 6000VA Models

1. Align the connectors and press the power-distribution box onto the UPS.
2. Hold the box firmly against the UPS and tighten the captive screws except the one over the maintenance bypass breaker.
3. Turn the output and input breakers "On."
4. Start the UPS according to start-up instructions.
5. Verify that the UPS lamp is illuminated.
6. Turn the maintenance bypass breaker "Off."
7. Insert the maintenance-bypass-interlock bracket behind the captive screw and tighten the screw.

NOTE: The maintenance bypass breaker interlock bracket must be installed behind the captive screw, and the screw must be tightened for the UPS to operate in inverter mode.

3.6.2 Install the Power Distribution Box on 8000VA and 10,000VA Models



WARNING! Risk of electric shock. Can cause injury or death. The UPS must be shut down or the load must be transferred to an external maintenance bypass before a power distribution box may be added, changed or removed. If the UPS will be shut down, the connected load must be shut down (refer to [Shutting Down the GXT4](#) on page 48). If the UPS will be transferred to maintenance bypass, it must be transferred to an external maintenance bypass. A maintenance bypass in the UPS frame must not be used. Verify that the GXT4 is shut down and that all local and remote electric input power has been disconnected before beginning any work on or in the UPS.

1. With the cover of distribution box removed, press the UPS and distribution box connectors together. Ensure that the connectors are fully seated.
2. Align the screw holes and press the power distribution box onto the UPS, making sure that the tabs at the bottom of the box fit into the slots on the UPS.
3. Attach the box to the UPS by installing screws into the two holes at the top of the box.
4. Tighten the screws.
5. Turn the output and input breakers On.
6. Start the UPS according to start-up instructions.

3.6.3 Electrical Connections for the Power-distribution Box

Electrical connections are made through a removable power distribution box that attaches to the rear of the UPS.

- PD2-HDWR-MBS, PD2-001, PD2-002, PD2-003, PD2-004, PD2-005, PD2-006 and PD2-007 models fit the 5000 and 6000VA models of the Liebert GXT4
- PD2-L630 fits the GXT4-6000RTL630
- PD2-101, PD2-102, PD2-103, PD2-104, PD2-105, PD2-106, PD2-107, PD2-108, PD2-109, PD2-200, PD2-201, PD2-202, PD2-204 models fit the 8000 and 10,000VA models of the Liebert GXT4

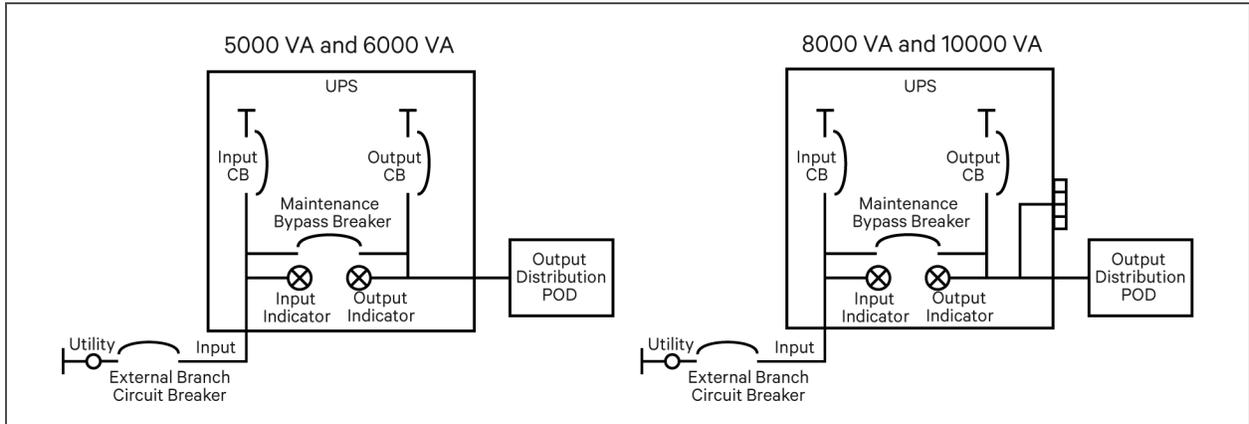
The installer must provide an upstream branch circuit breaker. The input circuit breaker on the distribution box and the output circuit breaker on the rear of the power distribution box disconnect all power between the main cabinet and the distribution box.

Models equipped with a manual bypass breaker pass bypass power directly to the bypass breaker from the input terminal block. The input circuit breaker on the distribution box does not disconnect power from the manual bypass breaker.

Table 3.1 Branch circuit breaker ratings

UNIT RATING	MAXIMUM BREAKER RATING
5000VA	D Type 30A Long Delay
6000VA	
8000VA	D Type 60-A Long Delay
10,000VA	

Figure 3.5 Distribution box electrical connections diagram



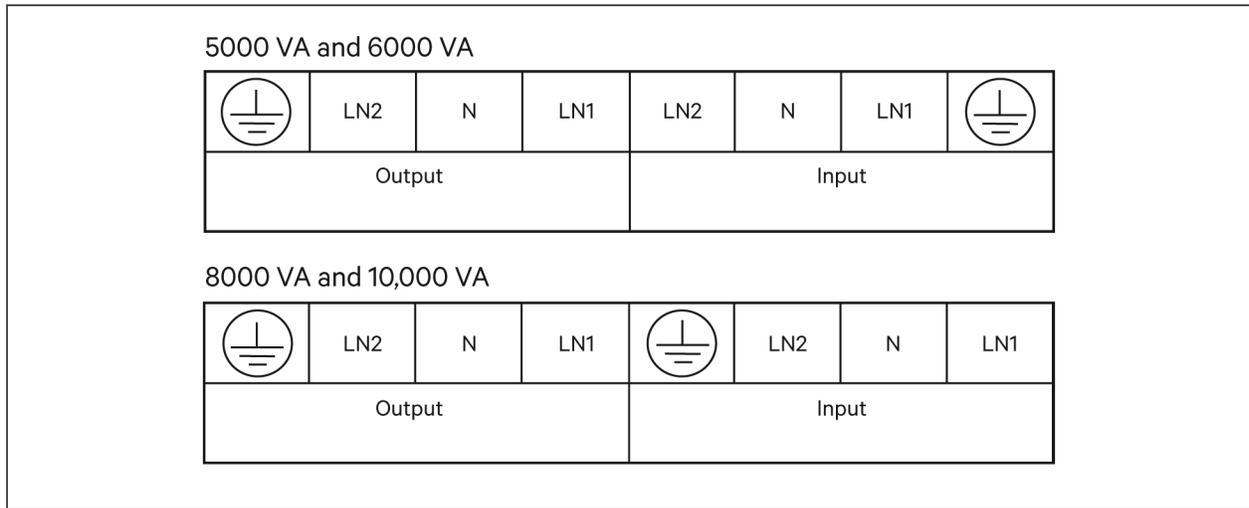
Terminal Block Connections

Conduit entry holes are provided on the rear and side of the box. Input and output wiring should not share the same conduit. We recommend using strain relief when installing the wire.

Table 3.2 Terminal-block Electrical specifications

UPS MODEL	RECOMMENDED (MAXIMUM) EXTERNAL OVERCURRENT PROTECTION	RECOMMENDED WIRE (INCLUDING GROUND WIRE) (75°C COPPER WIRE)	MAXIMUM WIRE ACCEPTED BY TERMINAL BLOCK	TERMINAL TIGHTENING TORQUE
GXT4-5000RT208 GXT4-6000RT208 GXT4-6000RTL630	30A	10 AWG (4 mm ²)	8 AWG (6 mm ²)	20 in-lb (2.26 Nm)
GXT4-8000RT208 GXT4-10000RT208	60-A	6 AWG (10 mm ²)	4 AWG (16 mm ²)	

Figure 3.6 Terminal block connections



1. We recommend installing a UL489-approved breaker upstream of unit.
2. The installer must provide circuit breaker protection according to local codes. The mains disconnect should be within sight of the UPS or have appropriate an appropriate lock-out. Maintain service space around the UPS or use flexible conduit.
3. The installer must provide output distribution panels, circuit breaker protection or emergency disconnects according to local codes. Output circuits must not share a common conduit with any other wiring.
4. GXT4 models with a cord-connected input plug that is to be used as the power disconnecting device must be installed near a wall socket or outlet that is easily accessible per the National Electric Code / NFPA 70 requirements. Models that qualify are:
 - GXT4-6000RTL630 with standard POD
 - GXT4-5000RT208 and GXT4-6000RT208 fitted with the optional PODs PD2-001, PD2-002, PD2-003, PD2-004, PD2-005, PD2-006 and PD2-007.

3.6.4 Removing the Power Distribution Box from 5000VA and 6000VA Models

1. Manually transfer the connected equipment to the internal bypass.
 - a. From the main menu select CONTROL, then press **Enter**.
 - b. Select *TURN ON & OFF* and press **Enter**.
 - c. Select *TURN ON UPS BYPASS* and press **Enter**.
The UPS transfers the connected loads to the internal bypass. (For help, refer to [Performing Manual Bypass](#) on page 48.)
 - d. Loosen the captive screw over the maintenance bypass breaker (see the following figure for the breaker's location).
 - e. Turn the maintenance bypass breaker On.

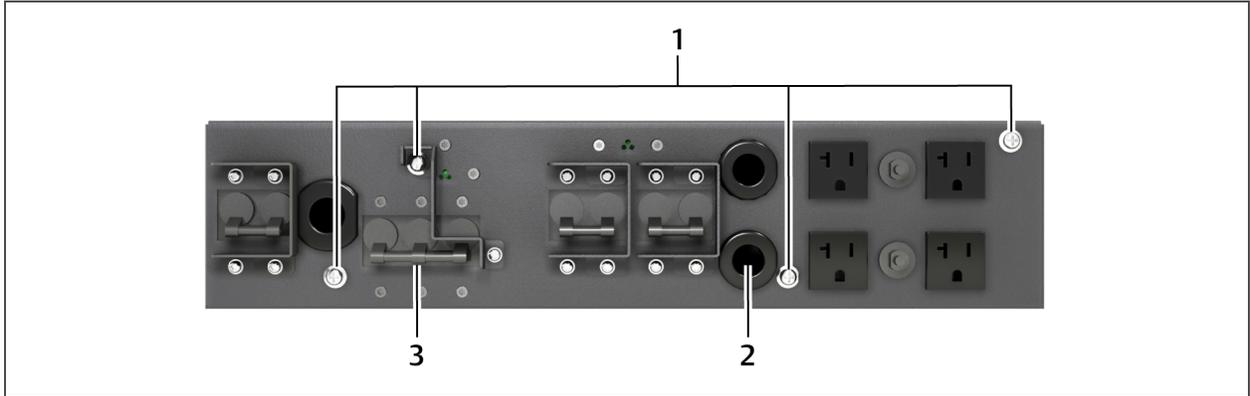
NOTICE

The load is unprotected from disturbances in the power supply while the UPS is on bypass.

2. Turn the output and input breakers Off.
3. Loosen other captive screws until the power distribution box releases.

4. Remove the power distribution box from the UPS and set it aside.
5. On the rear of the panel, loosen the screws of the protective cover for the connectors, slide it over the connectors, and tighten the screws.

Figure 3.7 Power distribution box removal from 5000VA and 6000VA models



NO.	DESCRIPTION
1	Captive screws to loosen.
2	Pigtails removed for clarity.
3	Maintenance bypass breaker

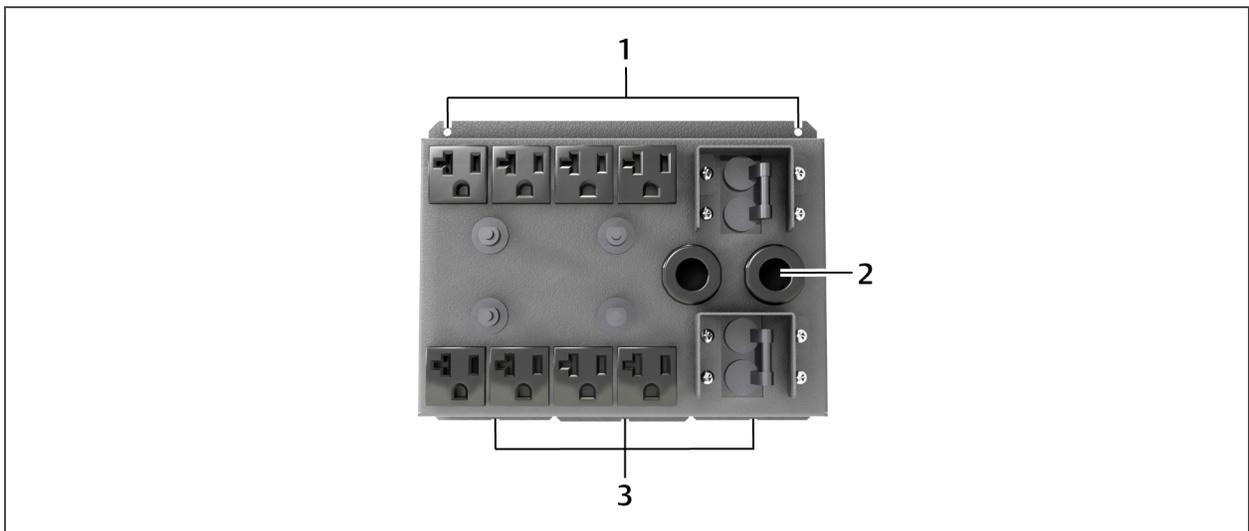
3.6.5 Removing the Power Distribution Cover from 8000VA and 10,000VA Models



WARNING! Risk of electric shock. Can cause injury or death. The UPS must be shut down or the load must be transferred to an external maintenance bypass before a power distribution box may be added, changed or removed. If the UPS will be shut down, the connected load must be shut down (refer to [Shutting Down the GXT4](#) on page 48). If the UPS will be transferred to maintenance bypass, it must be transferred to an external maintenance bypass. A maintenance bypass in the UPS frame must not be used. Verify that the GXT4 is shut down and that all local and remote electric input power has been disconnected before beginning any work on or in the UPS.

1. Shut down the GXT4 (for help, refer to [Shutting Down the GXT4](#) on page 48).
 - a. From the Main Menu select *CONTROL*, press Enter, then select *TURN ON & OFF*.
 - b. Press the enter key.
 - c. Select *TURN UPS OFF*, then press Enter.
Power to the connected loads is now Off.
2. Turn the output and input breakers Off.
3. Support the power distribution box and remove the two screws at the top of the box.
4. Remove the cover for power-distribution box from the UPS and set it aside.
5. If removing a power-distribution box, carefully pull apart the power-distribution-box connector and the UPS connector.

Figure 3.8 Power distribution box removal from 8000VA and 10,000VA models



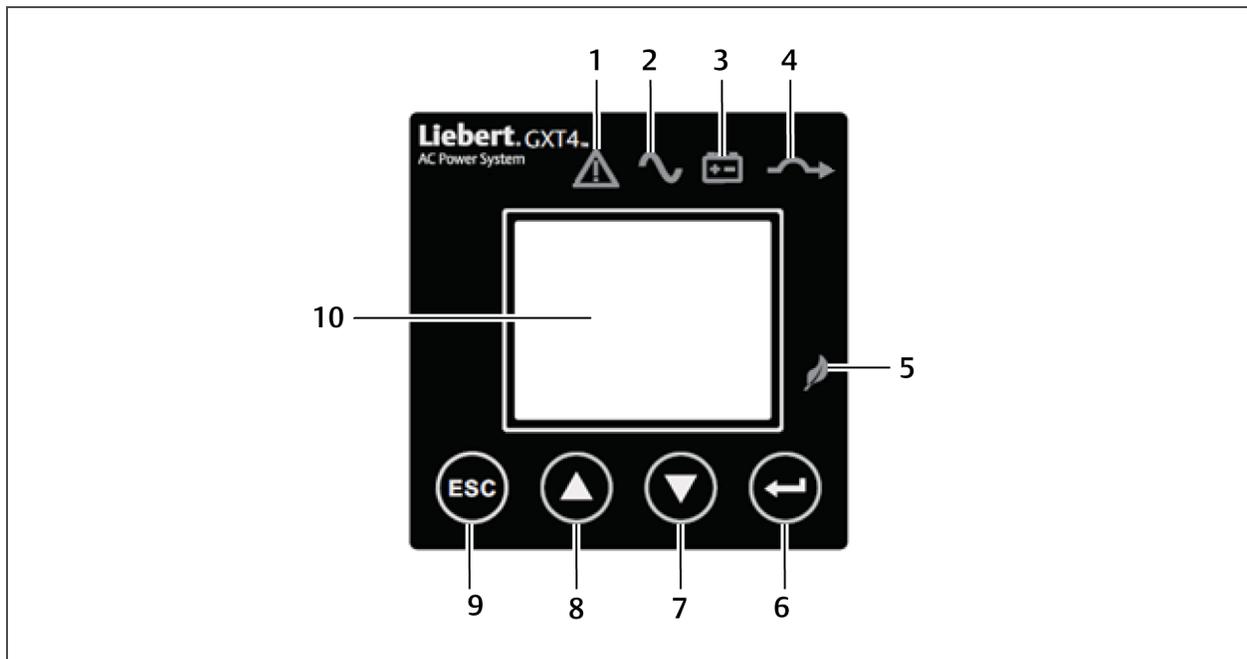
NO.	DESCRIPTION
1	Remove screws.
2	Pigtails removed for clarity.
3	Tabs slip into slots on the UPS.

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4 OPERATION AND DISPLAY PANEL

The operation and display panel on the front of the GXT4 has control buttons, LED indicators and a liquid-crystal display (LCD).

Figure 4.1 Operation and display panel



NO.	DESCRIPTION	NO.	DESCRIPTION
1	Fault indicator	6	Enter button
2	Inverter indicator	7	Down button
3	Battery indicator	8	Up button
4	Bypass indicator	9	Escape button
5	ECO mode indicator	10	LCD panel

4.1 LED Indicators

The LED indicators on the front of the operation and display panel are:

- Inverter
- Battery
- Bypass
- ECO Mode
- Fault

Figure 4.1 above, shows the indicators' locations. Their descriptions and functions are as follows.

Table 4.1 LED indicators

INDICATOR	COLOR	DESCRIPTION
Inverter	Green	On when the inverter is supplying power
Bypass	Amber	On when the load is supplied by the mains through automatic/manual bypass
Battery	Amber	On when the load is supplied by the battery
Fault	Red	On when an error has occurred within the UPS
ECO Mode	Green	On when the UPS is in ECO Mode

4.2 Control Buttons

The control buttons are described in the following table.

Table 4.2 Control buttons

BUTTON	DESCRIPTION
ESC	Pressing this button returns to the previous menu or aborts any change in the input data field before confirming.
Up	Pressing this button can move the cursor up or increase the value displayed in the input data field. When a menu is displayed on several screens, pressing the button can scroll up.
Down	Pressing this button can move the cursor down or decrease the value displayed in the input data field. When a menu is displayed on several screens, pressing the button can scroll down.
Enter	Pressing this button can enter the next level menu or confirm the parameter setting value.

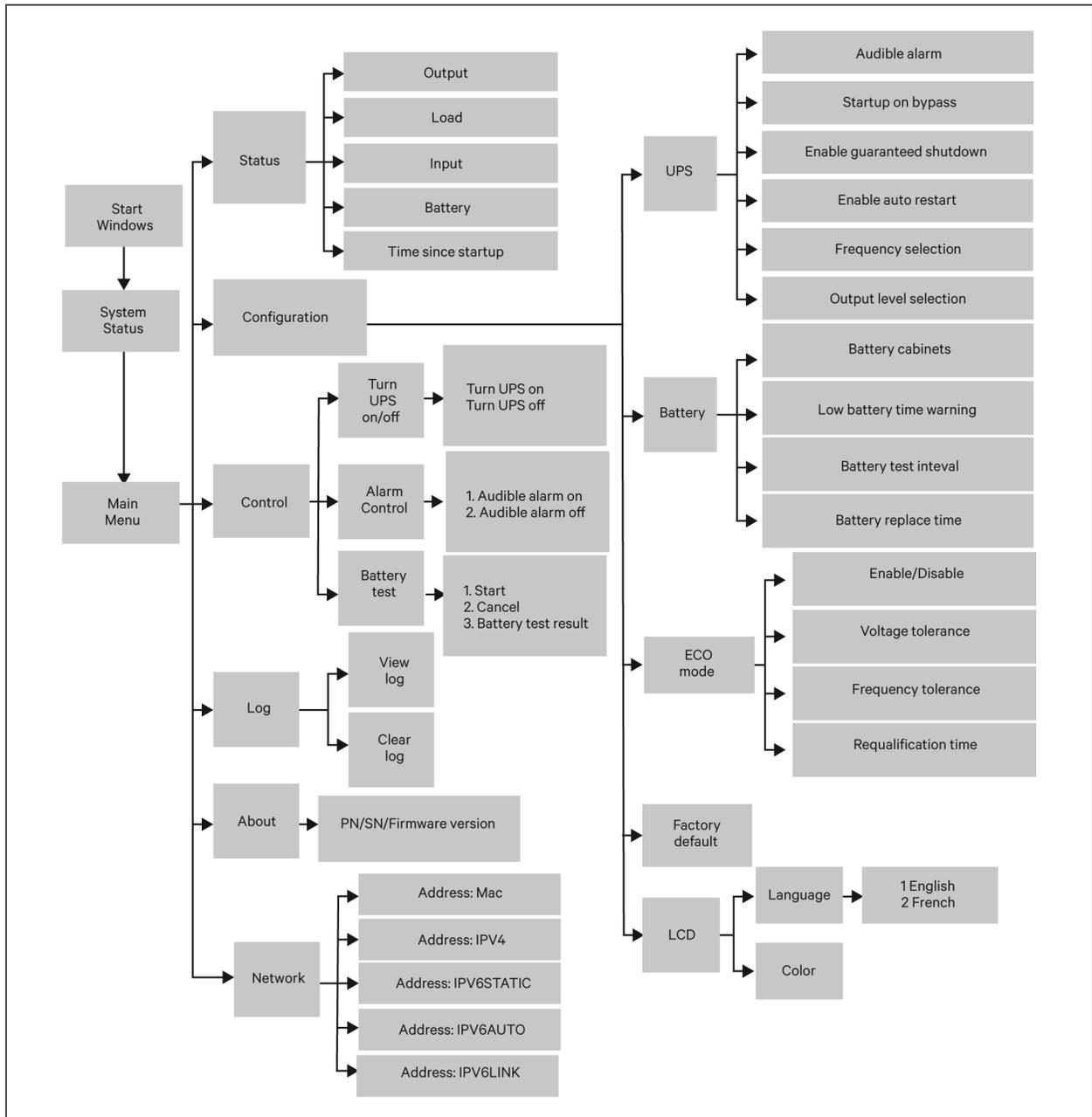
4.3 LCD

The LCD panel shows the UPS status and enables changes to the UPS settings by assisting in navigating through the GXT4 menu (see [Menu Structure](#) on the facing page).

4.4 Menu Structure

The menu structure of the LDC display is shown in the following figure.

Figure 4.2 Menu structure



4.4.1 Startup Screen

When the GXT4 is starting up, it initiates a self-test and displays the start-up screen about 10 seconds.

After about 10 seconds, the LCD shows one of the "On" screens. The screen shown depends on whether or not input power is available.

- When input power is available: TURN ON UPS.
- When input power is not available: AC NOT AVAILABLE START ON BATTERY?

To turn On the UPS, press the Up or Down button to select *YES* and press the Enter button. The UPS will start up, the LCD will display *UPS STARTING* and then *START SUCCESSFUL* after the UPS is turned On.

4.4.2 Default Screen

Press any button in the START SUCCESSFUL screen to enter the default interface.

NOTE: Values shown in the default screen will vary depending on installation and configuration.

In the default screen, the LCD shows the UPS model, output parameters, input parameters, battery capacity with run time estimate and load percentage. The UPS operation mode (online/inverter, ECO, Battery or Bypass) will be indicated by the LED indicators.

If no control button (ESC, Up, Down, Enter) is pressed for 2 minutes, the LCD will enter the screen-saver mode (back light turns off). It will remain off until a control button is pressed.

4.4.3 Main Menu Screen

Press the Enter button in the default screen to enter the MAIN MENU screen.

To select a sub menu, press the Up or Down button to move the cursor to the required item, then press the Enter button to enter its sub menu or set its parameter.

Menu options

STATUS Screen

In the MAIN MENU screen, select *STATUS* to enter the Status Screen, displaying OUTPUT, LOAD, INPUT, BATTERY and TIME SINCE STARTUP.

CONFIGURATION Screen

Select *MAIN MENU > CONFIGURATION* to enter the Configuration menu

In the CONFIGURATION screen, press the Up or Down button to move the cursor to the required item, then press the Enter button to enter a sub menu or set its parameters.

UPS Screen

Select *MAIN MENU > CONFIGURATION > UPS* to enter the UPS screen. This menu has six screens.

Press the Up or Down button to move the cursor to the required item, and press the Enter button to confirm the settings.

Battery Screen

Select *MAIN MENU > CONFIGURATION > BATTERY* to enter the BATTERY screen. This menu has four screens.

Press the Up or Down button to increase or decrease the value of the settings, and press the Enter button to confirm it.

ECO Mode Screen

Select *MAIN MENU > CONFIGURATION > ECO MODE* to enter the ECO MODE screens.

Press the Up or Down button to move the cursor to the required item, and press the Enter button to confirm the settings.

Outlet1 Output Control Screen

Select *MAIN MENU > 2 CONFIGURATION > 4 OUTLET1* to enter the OUTLET1 screen. This menu has two sub menus

Select *1 OUTLET CONTROL* and press the Enter button to enter the OUTLET CONTROL screen.

Press the Up or Down button to move the cursor to the required item, and press the Enter button to confirm the settings.

Outlet1 Outlet Setting screen

Select *MAIN MENU > 2 CONFIGURATION > 4 OUTLET1* to enter the OUTLET1 screen. This menu has two sub menus

Select *2 Outlet Setting* and press the Enter button to enter the OUTLET SETTING screen.

Outlet2 Screen

The Outlet2 screens are the same as the Outlet1 screens. The same settings are available as on the Outlet1 screen. If the Outlet2 group will have the same settings as the Outlet1 group, GXT4 offers a programming shortcut. When configuring the Outlet2 group, select *YES* and press the Enter button to apply the Outlet1 settings to the Outlet2 screen.

Press the Up or Down button to move the cursor to the required item, and press the Enter button to confirm the settings.

LCD screen

Select *Main Menu > 2 CONFIGURATION > 6 LCD* to enter the LCD screen. This menu has two sub menus, *LANGUAGE* and *COLOR*.

Select *1 LANGUAGE* and press the Enter button to enter the *LANGUAGE* screen.

Language screen

GXT4 supports multiple languages. For the list of supported languages and instructions on how to upload them, refer to the Configuration Program user manual on the included CD.

Color screen

Select *2 COLOR* and press the Enter button to enter the *COLOR* screen.

FACTORY DEFAULT screen

Select *MAIN MENU > 2 CONFIGURATION > 7 FACTORY DEFAULT* to enter the FACTORY DEFAULT screen.

Control Screen

Select *MAIN MENU > 3 CONTROL* to enter the CONTROL screen. This screen has three sub menus, TURN ON & OFF, ALARM CONTROL and BATT TEST.

In the CONTROL screen, press the Up or Down button to move the cursor to the required item, and press the Enter button to enter its sub menu.

TURN ON & OFF screen

Select *MAIN MENU -> 3 CONTROL -> 1 TURN ON & OFF* to enter the TURN ON & OFF screen. This screen shows one of two displays, TURN ON UPS and TURN OFF UPS, depending on the state of the UPS.

ALARM CONTROL screen

Select *MAIN MENU -> 3 CONTROL -> 2 ALARM CONTROL* to enter the ALARM CONTROL screen. This section allows active audible alarms to be silenced.

To completely turn off the audible alarm, select *CONFIGURATION > UPS*.

BATT TEST screen

Select *MAIN MENU -> 3 CONTROL -> 3 BATT TEST* to enter the BATT TEST screen.

Log Screen

Select *MAIN MENU -> 4 LOG* to enter the LOG screen. This screen has two submenus, VIEW LOG and CLEAR LOG.

CLEAR LOG Screen

Select *MAIN MENU > LOG > CLEAR LOG* to enter the CLEAR LOG screen.

Press the Up or Down button to move the cursor to the required item. Press the Enter button to confirm the settings.

ABOUT Screen

Select *MAIN MENU > ABOUT* to enter the ABOUT screen. The ABOUT screen displays UPS model, serial number, software version and hardware version.

Network

Select *MAIN MENU > NETWORK* to enter the NETWORK screen.

The NETWORK screen displays the MAC address and the IPv4 IP address. If the GXT4 is fitted with an optional Liebert® IntelliSlot Web card (Liebert IS-WEBCARD), the screen will display IPv6 IP address settings (IPv6 requires configuration).

4.5 Prompt List

A prompt screen is displayed during the operation of the system to alert you to certain conditions and/or to require your confirmation of a command or other operation. See the following table for the prompts and meanings.

Table 4.3 System prompts and meanings

PROMPT	MEANINGS
Mains Power Restored	The mains power returns and the UPS transfers back to mains (AC) mode.
UPS Return From A Low Battery Condition	The UPS transfers back to mains (AC) mode from battery low mode.
UPS Return From Battery Mode	The UPS transfers back to mains (AC) mode from battery mode.
UPS Self Test Successful	The UPS self-test is successfully performed.
UPS Shutdown Command Received	The UPS shut down was initiated through communication.
UPS Turn Off	The UPS shuts down and has no output power.
UPS Turn On	The UPS starts up successfully and supplies protected power to the load.
UPS Shutdown Process Had Been Canceled	The shutdown command sent through SNMP card to the UPS is canceled.
ECO Mode Enabled	The UPS is configured to ECO mode operation,
ECO Mode Disabled	The UPS is configured to Online mode, supplying protected power to the load through the inverter.
UPS Internal Temperature Return To Normal	The internal temperature of the UPS recovers to normal range.
UPS Load Return From Overload	The loads are reduced, and the UPS recovers to normal state from overload.
Load On Inverter	The inverter is on and supplies protected power to the load.
Load On ECO Bypass	The UPS is on ECO mode; the mains is supplying power to the load directly to reduce energy usage.
Bypass Power Restored	The bypass power recovered and the UPS can now transfer to bypass.

4.6 Warning List

All UPS warning messages are described the following table.

Table 4.4 Warning list

WARNING	DESCRIPTION
Mains Power Not Available	The mains power is not available, or it cannot satisfy the input requirements for the UPS to operate from mains power
UPS Batteries Low And Exhausted Soon	The battery capacity is low and will be exhausted soon
UPS Has Switched To Battery Mode	The mains power is abnormal or the PFC side is faulty, the UPS transfers back to Battery mode
Load On Bypass	The UPS transfers to Bypass mode, at this point, the input mains power supplies power to the load directly, and the load is not protected
Input Power Wiring Error	L-N line reverse or PE not connected.
Bypass Power Not Available	The bypass power is not available, or it cannot satisfy the requirements for the UPS transfers to bypass
UPS Maintenance Bypass Output	The UPS transfers to maintenance bypass.
AC input not qualified, cannot start UPS	The utility power is not qualified, the inverter cannot be powered up
Output disabled	REPO terminal connect error

4.7 Fault List

All UPS fault messages are described the following table.

Table 4.5 Fault list

FAULT	DESCRIPTION
UPS Self-Test Failed	The battery is bad or weak or not connected.
UPS Overload	The UPS is overloaded.
Inverter Out Of Order	The inverter has failed.
Battery Weak/Bad	The battery is bad or weak.
Output Short Circuit	The output connection is short-circuited.
DC Bus Overvoltage	The DC bus is faulty.
UPS Overtemperature	Overtemperature occurs to the UPS and the UPS will transfer to Bypass mode.
Charger Out Of Order	The charger has failed.
Fan Out Of Order	At least one fan is failed.
DC Bus Discharge Fail	DC-DC failure occurs.
Rectifier Out Of Order	Rectifier failure occurs.

If a fault occurs, the UPS automatically switches to Bypass Mode. The original operating mode will be maintained only in the case of a battery disconnection fault. The fault message alternates with UPS Mode once a second, the red fault indicator on the operation and display panel lights up and the alarm sounds continuously.

If a fault occurs:

1. Enter the ALARM CONTROL screen, and select *AUDIBLE ALARM ON* or *AUDIBLE ALARM OFF* to switch the alarm On or Off.
2. Enter the EVENT LOG screen, and select *VIEW LOG* to view the entire event log.

NOTE: There will be a short delay before the EVENT LOG screen displays the historical fault log to allow the log to load.

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5 OPERATION

This section describes checks to be made before starting the UPS, how to start the UPS, manual battery test, manual bypass, shutting down the UPS and disconnecting mains power from the UPS.

NOTE: The GXT4's battery has been fully-charged before delivery, but some charge will be lost during storage and shipping. To ensure that the battery has adequate reserve power to protect the connected load, charge the battery for 5 hours before putting the UPS into service.

5.1 Startup Checklist for the GXT4

Before starting the UPS, perform these checks:

1. Check that the input plugs and loads are connected properly and reliably.
2. Check that the internal battery kits are installed.
3. Check that the battery cable is connected properly.
4. Check that the communication cables are connected properly.

5.2 Starting the UPS

1. Have the unit wired by a qualified electrician, or for 5000- and 6000-VA models, plug the UPS into the appropriate AC outlet.
2. Close the input breaker on the rear of the unit.
3. The UPS will begin the start-up sequence once AC power is present.

NOTE: The UPS will sound an audible alarm, this is normal.

4. On the LCD, press either the Up or Down button once, then press the Enter button to turn On the UPS.
The UPS will sound the audible alarm again as the output receptacles are now being powered by the internal bypass, then will sound one more time as the inverter powers the connected equipment.
5. Check the LCD and LED indicators to ensure that the UPS is operating normally.
6. Check the load percentage on the default screen to ensure that the connected equipment is not exceeding the UPS's rated capacity.

The UPS is now providing conditioned and protected power to the connected equipment.

5.3 Performing a Manual Battery Test

To initiate a manual battery test, select *MAIN MENU > CONTROL > BATT TEST > START*.

- If the battery test results show *FAILED*, allow the UPS to recharge the batteries for 24 hours.
- Retest the batteries after 24 hours of charging.
- After the batteries have been retested, if the battery test still shows *FAILED*, contact your local Vertiv representative or Technical Support.

5.4 Performing Manual Bypass

To manually transfer the connected equipment to the internal bypass:

1. From the main menu select Control then press enter.
2. Select *TURN ON & OFF* and press Enter.
3. Select *TURN UPS BYPASS* and press Enter. The UPS will transfer the connected loads to the internal bypass.

If the internal bypass is not available because of input power problems, pressing this button once will be ignored. Bypass operation is indicated by an audible alarm and illuminated amber Bypass indicator. (If other indicators are illuminated, refer to [Troubleshooting](#) on page 61.)

5.5 Shutting Down the GXT4

To shut down the UPS from the LCD:

1. From the Main Menu select *CONTROL*, press Enter, then select *TURN ON & OFF*.
2. Press the Enter key.
3. Select *TURN UPS OFF*, then press Enter. Press either the Up or Down button to move the cursor to confirm the turn off command and press Enter.
The UPS will sound an audible alarm. This is normal.
4. Power to the connected equipment is now Off.

The UPS display will still be illuminated because the batteries are still being charged. The UPS may now be disconnected from AC power, and the UPS will completely shut down in approximately 15 seconds.

5.6 Disconnecting Input Power from the GXT4

1. After the UPS has been shut down as detailed in [Shutting Down the GXT4](#) above, disconnect the input cable from the wall socket.
2. Wait 30 seconds and verify that all indicators have turned Off and the fan has stopped. This indicates that the power-off is complete.
3. Turn the external battery cabinet breaker switch to the Off position if the UPS has an external battery cabinet.

After powering Off the UPS, the UPS ceases output and the load is powered Off.

5.7 Placing UPS in Maintenance Bypass

Maintenance Bypass Mode is used when maintenance or replacement is required. To place the unit in Maintenance Bypass:

1. Place the UPS on internal bypass. This may be done by either of the following methods:
 - a. Refer to [Performing Manual Bypass](#) above.
 - b. Slide the bracket away from the manual bypass breaker on the rear of the UPS. This requires loosening the captive screw and sliding the bracket up and away from the Manual Bypass breaker.
2. Move the Manual Bypass breaker on the rear of the UPS to the bypass position. This requires loosening the captive screw and sliding the bracket up and away from the Manual Bypass breaker.

6 COMMUNICATION

This section describes the communication ports on the rear of the UPS:

- Liebert® IntelliSlot™ port
- USB port (standard B-type)
- Terminal Block Communication



CAUTION: To maintain safety (SELV) barriers and for electromagnetic compatibility, signal cables should be segregated and run separate from all other power cables.

6.1 Liebert® IntelliSlot Communication Cards

The Liebert® IntelliSlot port accepts the following optional cards:

- Liebert® IntelliSlot Web Card (IS-WEBCARD)
- Liebert® IntelliSlot Unity Card (IS-UNITY-DP)

The Liebert® IntelliSlot Web Card provides SNMP monitoring and control of the UPS across the network.

The Liebert® IntelliSlot Unity Card provides SNMP and/or RS-485 monitoring of the UPS across the network and/or building management system. The Liebert® IntelliSlot UNITY card also enables monitoring external temperature, humidity and contact closure inputs using external sensors.

Follow instructions provided with the Liebert IntelliSlot card to configure the UPS or any additional ancillary product for the Liebert® GXT4. The instructions are available at <http://www.VertivCo.com/en-us/support/>.

6.2 USB Port Communication

The standard B-type USB port is used to connect the UPS and network server or other computer system.

A standard B-type USB port is provided to allow connection to a computer or network server. The USB port can be used to communicate with the GXT4 configuration program (see section [Configuration Program](#) below for details) or the Microsoft Windows shut-down feature.

6.2.1 Configuration Program

The configuration program is on the Liebert® GXT4 CD and can be used instead of making configuration setting changes from the LCD panel. The configuration program communicates to a computer running a Microsoft® Windows® operating system via the included USB cable.

For most users, the factory-default settings are adequate. This section give a brief overview of the features and parameters that are available for modification, as well as the factory-default settings. Should any changes be necessary, refer to the Configuration Program User Manual that is located on the included CD for further details.

The configuration program allows these features of the GXT4 to be changed:

- Change and set the display language
- Enable/Disable Auto-Restart (default is Enable)

- Select frequency converter operation with a fixed output frequency of 50 Hz or 60 Hz, bypass disabled (default is Auto-Select with bypass enabled)
- Set the Low Battery Warning alarm time from 2 to 30 minutes (default is 2 minutes)
- Enable/Disable the Auto-Battery test (default is Enable)
- Enable/Disable Auto-Restart after removing Remote shutdown (default is Disable)
- Set the wiring mode of Remote shutdown (default is normally open)
- Set the Auto-Enable output after remote shutdown (default is Disable)
- Set the Auto-Battery test to 8, 12, 16, 20, or 26 weeks (default is 8 weeks)
- Select the number of external battery cabinets connected to the UPS to adjust the remaining run time calculated by Vertiv software products (default is zero)
- Select one of multiple output voltages to match various voltages.

Table 6.1 Output voltage option

UPS MODEL	FACTORY DEFAULT SETTING	OUTPUT VOLTAGE OPTION
GXT4-6000RTL630	208 VAC	200V, 208V, 220V, 230V, 240V
GXT4-5000RT208 GXT4-6000RT208 GXT4-8000RT208 GXT4-10000RT208	208/120 VAC	200/100V, 208/120V, 220/110V, 230/115V, 240/120V, 220/127V

NOTICE

The output voltage settings cannot be changed while the UPS is On and powering connected loads.

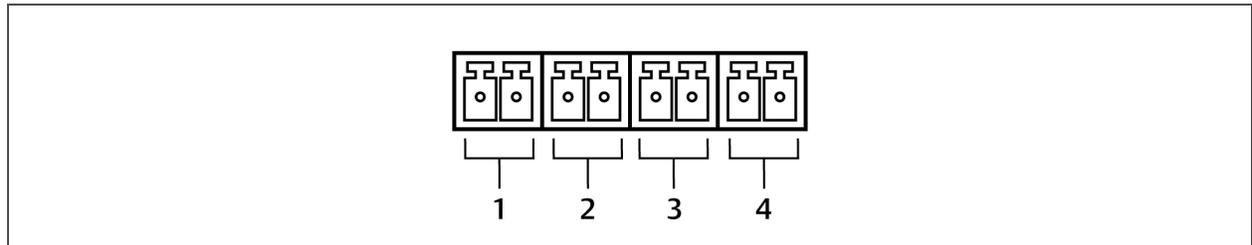
NOTE: Programming the output voltage of the GXT4-5000RT208, GXT4-6000RT208, GXT4-8000RT208, and GXT4-10000RT208 models to 220/110VAC automatically de-rates both the VA and Watt ratings to 90% of the units ratings and programming the output voltage to 200/100VAC automatically derates both the VA and Watt ratings to 80% of the units ratings (refer to [Specifications](#) on page 65 for the VA and Watt ratings)

NOTE: This program is compatible with UPS models beginning with ‘GXT4,’ as in ‘GXT4-3000RT230.’ It is not compatible with earlier versions of the Liebert® GXT UPS. A computer running Microsoft® Windows 2000®, Windows XP®, Windows Vista®, Windows 7 or Windows 8 is required to set up and run the configuration program.

6.3 Terminal Block Communication

The Terminal Block includes eight pins, as shown the figure

Figure 6.1 Terminal-block communication pin layout



NO.	DESCRIPTION
1	Low battery warning
2	On-battery warning
3	Any mode shutdown
4	Battery mode shutdown

6.3.1 Any Mode Shutdown

The purpose of Any Mode Shutdown is to shut down the UPS output by turning Off the rectifier, inverter and static switch so that there is no power to the loads.

Any Mode Shutdown can be operated locally or remotely:

- Local Any Mode Shutdown can be performed by shorting the pins in terminal 3.
- Remote Any Mode Shutdown can be performed using a switch mounted at a remote location and connected to the pins in terminal 3.

NOTE: Remote Power Off will be performed either by NO or NC contact of Any Mode Shutdown, depending on the settings in the configuration program.

A current-limited source for this optocoupler (+12 VDC, 50 mA) will be available from the UPS.

The connection to the UPS for remote connection will be via terminal block connector.

Any Mode Shutdown wiring must conform to all national, regional and local wiring regulations.



WARNING! When the Auto-Enable output option is selected and the UPS output is disabled using Any Mode Shutdown, the GXT4 output can turn On automatically and without warning if the connection is changed.

6.3.2 Battery Mode Shutdown

Battery Mode Shutdown permits shutting down the UPS by turning Off the rectifier, inverter and static switch so that there is no power to the load when the UPS is On Battery. The auxiliary power for the UPS will still be active.

Battery Mode Shutdown can be performed locally or remotely:

- Local Battery Mode shutdown can be performed by shorting the pins in terminal 4.
- Remote Battery Mode Shutdown can be performed using a switch mounted in a remote location and connected to the pins in terminal 4.

NOTE: Remote Power Off will be performed by NO contact.

A current-limited source (+12 VDC, 50 mA) will be available from UPS.

The connection to the GXT4 for remote connection will be via terminal block connector.

Battery Mode Shutdown wiring must conform to all national, regional and local wiring codes and laws.

This signal must last for 1.5 seconds or longer.

A battery shutdown signal will not cause an immediate shutdown. It will start a 2-minute shutdown timer. This timer cannot be stopped once triggered. If the mains power returns during this countdown, the GXT4 will still shut down and must remain shut down for 10 seconds. Whether the UPS turns back On when the power is restored depends on the auto-restart setting.

6.3.3 On Battery

On Battery signal is a Normally Open (NO) dry contact. When the UPS is supplying output power from the battery this dry contact will be closed.

6.3.4 Low Battery

Low Battery signal is a Normally Open (NO) dry contact. When the UPS is supplying output power from the battery and has reached the Low Battery Warning time selected in the configuration program, this dry contact will be closed.

The rated values for the dry contacts for the On Battery and Low Battery signals are:

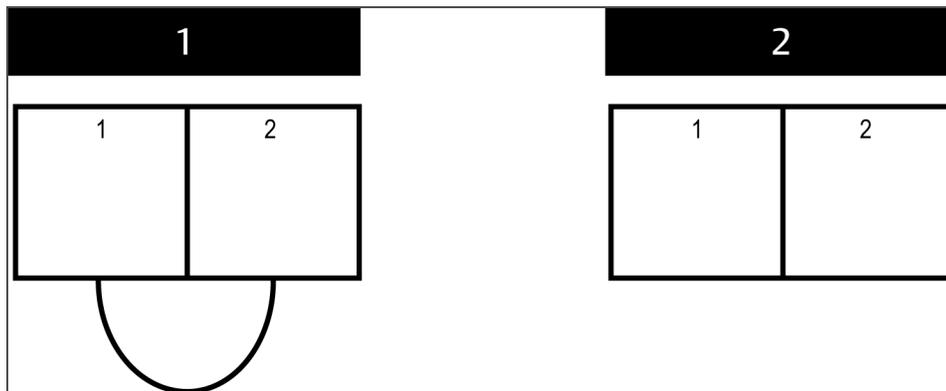
- Rated Voltage: 30 V (AC or DC)
- Rated Current: 300 mA

6.4 Remote Emergency Power Off—GXT4-6000RTL630

The UPS is equipped with a Remote Emergency Power Off (REPO) connector.

The user must supply a means of interfacing with the REPO circuit to allow disconnecting the UPS input feeder breaker to remove all sources of power to the UPS and connected equipment to comply with national and local wiring codes and regulations.

Figure 6.2 REPO switch connection diagram



NO.	DESCRIPTION
1	UPS ships with REPO jumper installed, allowing the UPS to operate. Normally-closed switch system (fail-safe)
2	Opening the REPO connection disables the UPS. Manual restart using the front panel is required after the REPO connection is closed again.



CAUTION: To maintain safety (SELV) barriers and electromagnetic compatibility, signal cables should be shielded and run separately from power cables.

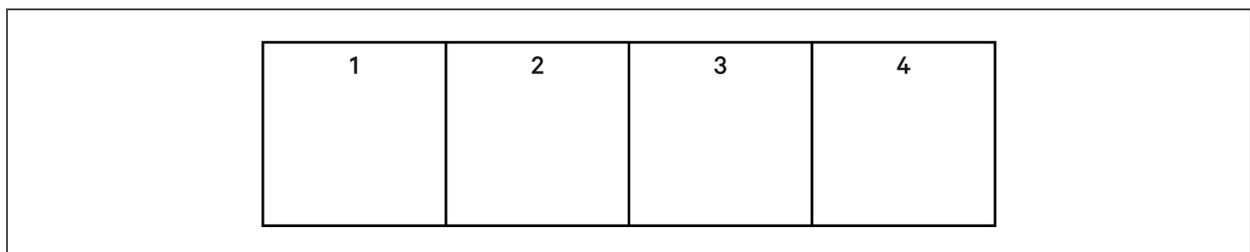
6.5 Remote Emergency Power Off—GXT4-5000RT208, GXT4-6000RT208, GXT4-8000RT208, GXT4-10000RT208

The following describes how the UPS ships, and how to install the jumper for various remote emergency power-off (REPO) configurations.

In all cases, +24 V is supplied by the GXT4 UPS.

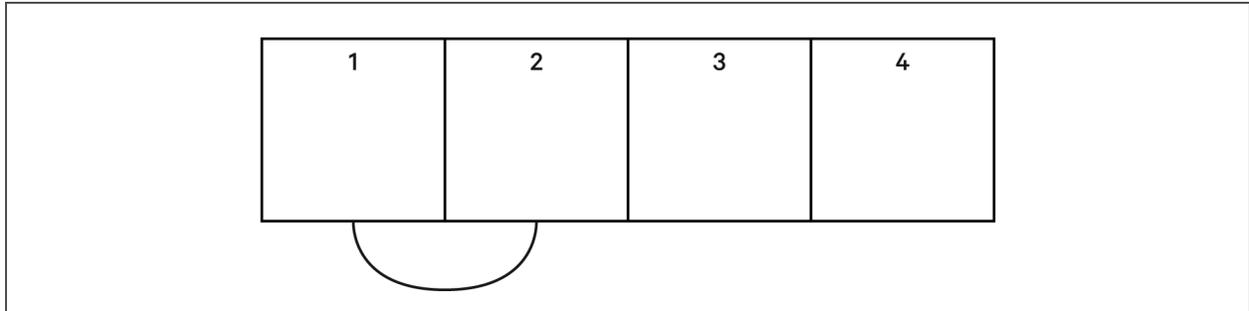
- The UPS ships with the jumper removed (jumper is in accessory bag).

Figure 6.3 UPS ships without jumper installed



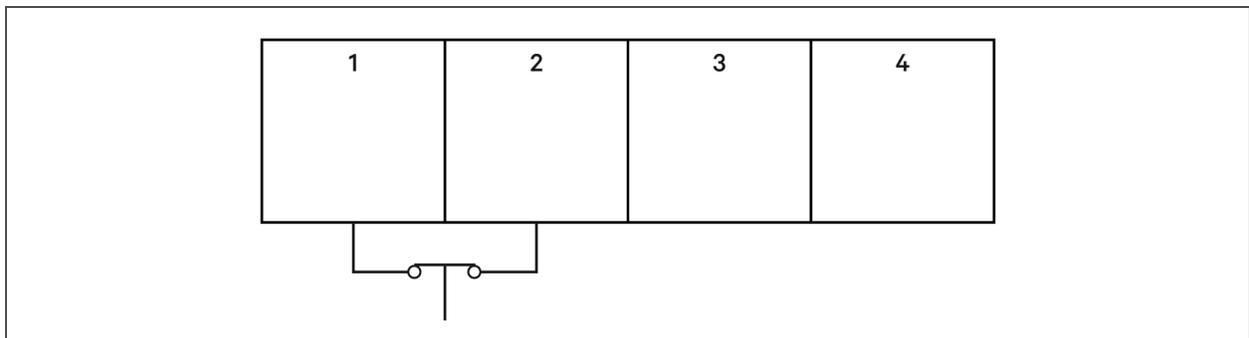
- To operate the UPS without a REPO connection, the jumper must be installed as shown in the figure.

Figure 6.4 UPS jumper installed to operate without REPO



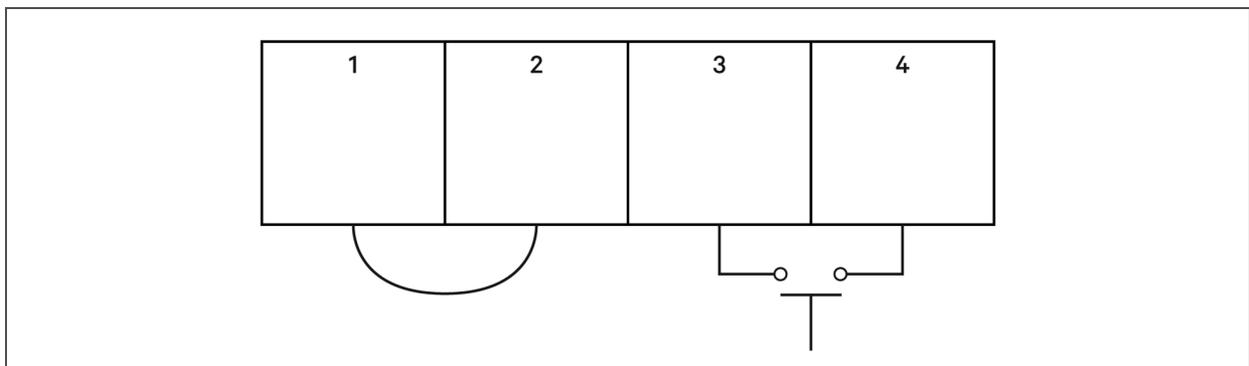
- To operate connected to a normally-closed (NC) REPO connection, the jumper is not installed, and the connection is wired to a remote switch.

Figure 6.5 UPS wired to NC remote switch



- To operate connected to a normally-open (NO) REPO connection, the jumper and the NO switch must be installed as shown in the figure.

Figure 6.6 UPS with jumper installed and wired to NO remote switch



7 MAINTENANCE



WARNING! Risk of electric shock. Can cause equipment damage, injury and death. A battery can present a risk of electrical shock and high short-circuit current.

Observe the following precautions when working on batteries:

- Remove watches, rings and other metal objects.
- Use tools with insulated handles.
- Wear rubber gloves and boots.
- Do not lay tools or metal parts on top of batteries.
- Disconnect charging source prior to connecting or disconnecting battery terminals.
- If the battery kit is damaged in any way or shows signs of leakage, contact your Vertiv representative immediately.
- Handle, transport, and recycle batteries in accordance with local regulations.
- Determine if the battery is inadvertently grounded. If it is inadvertently grounded, remove the source of the ground. Contact with any part of a grounded battery can result in electrical shock. The likelihood of such shock will be reduced if grounds are removed during installation and maintenance (applicable to a UPS and a remote battery supply not having a grounded supply circuit).

7.1 Replacing the Internal Battery Pack

The GXT4 allows you to replace the internal battery pack safely. Refer to **Table 7.1** below, for internal battery pack part numbers for GXT4:

Table 7.1 Replacement internal battery pack model number

UPS MODEL NUMBER	REPLACEMENT INTERNAL BATTERY PACK MODEL NUMBER	QUANTITY REQUIRED
GXT4-5000RT208 GXT4-6000RT208	GXT4-144VBATKIT	1
GXT4-6000RTL630	GXT4-240VBATKIT	2
GXT4-8000RT208 GXT4-10000RT208	GXT4-288VBATKIT	2

7.1.1 Battery Replacement Procedures

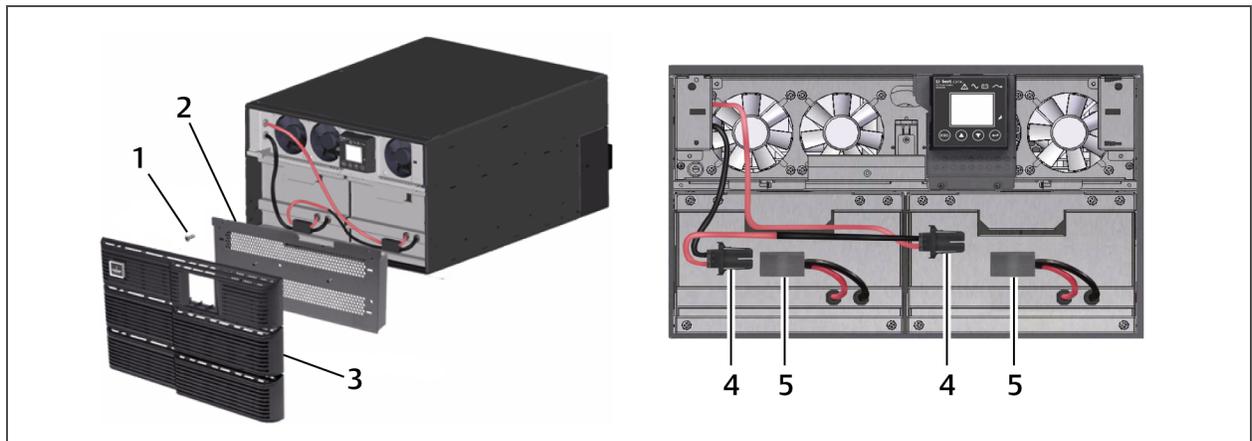
Read all safety cautions before proceeding. A trained user can replace the internal battery pack when the UPS is always in a restricted access location (such as a rack or server closet). Contact your local dealer or Vertiv representative to obtain the pricing of the appropriate replacement battery pack.



CAUTION: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

1. Remove the front plastic bezel cover from the UPS.
2. Loosen and remove the screws on the battery door, as shown in **Figure 7.1** below.
3. Lay the battery door and screws aside for reassembly.
4. Gently pull the battery wire out and disconnect the battery plug and battery receptacle, as shown in **Figure 7.1** below.

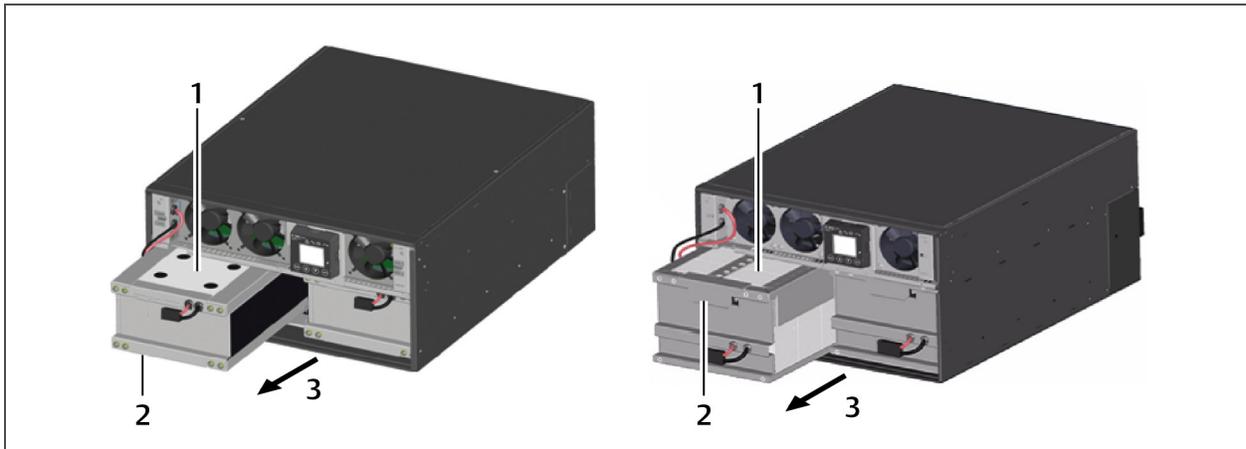
Figure 7.1 Removing the front bezel cover and battery door



NO.	DESCRIPTION	NO.	DESCRIPTION
1	Screws, 6	4	Battery connector
2	Battery door	5	Battery receptacle
3	Front bezel		

5. Grasp the battery handle, and pull the internal battery pack out of the UPS, as shown in the following figure.
Repeat this step if both battery packs will be replaced. Each model has two battery packs.

Figure 7.2 Pull out the battery



NO.	DESCRIPTION
1	Internal battery pack (one of two)
2	Battery handles
3	Pull out battery pack with handle.

6. Unpack the new internal battery pack. Take care not to destroy the packing. Compare the new and old internal battery pack to make sure they are the same type and model. If so, proceed with 7. If they are different, stop and contact your Vertiv representative, or Technical Support.
7. Line up and slide in the new internal battery pack.
8. Reconnect the battery plug and battery receptacle.
9. Push the battery wire and internal battery pack back into the UPS.
10. Reattach the front battery door with the 6 screws.
11. Reattach the front plastic bezel cover to the UPS.

NOTE: The internal battery pack is hot-swappable. However, caution should be exercised because during this procedure the load is unprotected from disturbances and power outages. Do not replace the battery while the UPS is operating in Battery Mode. This will result in a loss of output power and will drop the connected load.

7.2 Charging Batteries

The batteries are valve-regulated, non-spillable, lead acid and should be kept charged to attain their design life. The UPS charges the batteries continuously when it is connected to the utility input power.

If the UPS will be stored for a long time, We recommend connecting the UPS to input power for at least 24 hours every 4 to 6 months to ensure full recharge of the batteries.

7.3 Precautions

Although the Liebert® GXT4 is designed and manufactured to ensure personal safety, improper use can result in electrical shock or fire. To ensure safety, observe the following precautions:

- Turn Off and unplug the GXT4 before cleaning it.
- Wear rubber gloves and boots.
- Clean the UPS with a dry cloth. Do not use liquid or aerosol cleaners.
- Never block or insert any objects into the ventilation holes or other openings of the GXT4.
- Do not place the GXT4 power cord where it might be damaged.

7.4 Checking UPS Status

We recommend checking the UPS operation status every six months.

- Check if the UPS is faulty: Is the Fault Indicator On? Is the UPS sounding an alarm?
- Check if the UPS is operating in Bypass mode: Normally, the UPS operates in Normal Mode. If it is operating in Bypass Mode, stop and contact your local Vertiv representative or Technical Support.
- Check if the battery is discharging: When the utility input is normal, the battery should not discharge. If the UPS is operating in Battery Mode, stop and contact your Vertiv representative or Technical Support.

7.5 Checking UPS Functions

NOTE: UPS function check procedures may interrupt power supply to the connected load.

We recommend checking the UPS functions once every 6 months.

Back-up the load data before conducting the UPS functions check. Procedures are as follows:

1. Press the Standby/Manual Bypass button to check whether the alarm and indicators are normal.
2. Press the On/Alarm Silence/Manual Battery Test button to check again whether the indicators are On and the UPS is operating normally.
3. Press the On/Alarm Silence/Manual Battery Test button for three seconds after Inverter Mode. The UPS should initiate battery self-test. Check to determine whether the battery is operating normally. If not, stop and contact your Vertiv representative or Technical Support.

7.6 Replacing the Power Module on 8000 and 10,000VA models



CAUTION: The UPS must be switched to maintenance bypass before personnel begin to replace the power module.

NOTICE

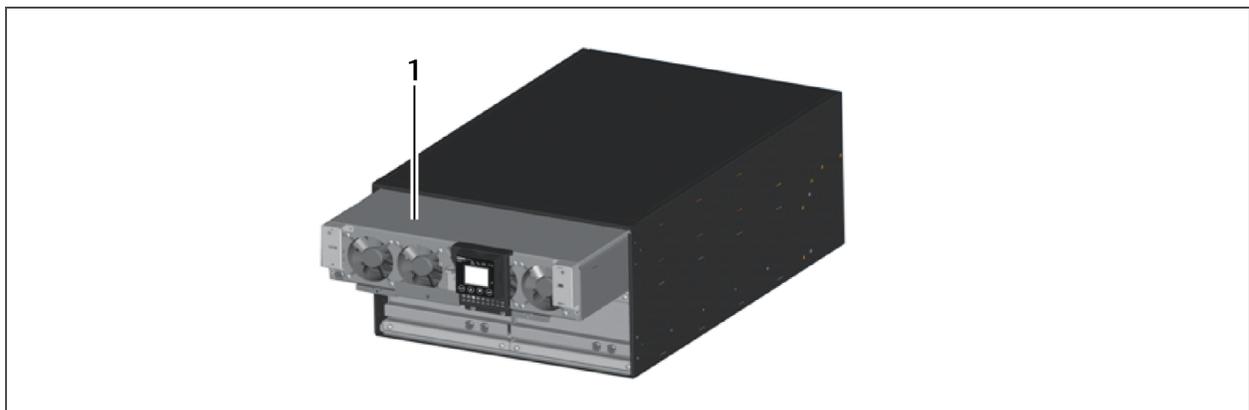
During the procedure, the connected load will not be protected from power disturbances, such as spikes, sags and failure.

To remove the UPS power module without shutting off power to the connected load:

1. Place the UPS on internal bypass. This may be done by any of the three following methods:

- a. Refer to [Performing Manual Bypass](#) on page 48.
- b. Slide the bracket away from the maintenance bypass switch on the rear of the UPS; this requires loosening the captive screw and sliding the bracket away from the maintenance bypass switch.
2. Move the manual bypass breaker on the rear of the UPS to the bypass position; this requires loosening the captive screw and sliding the bracket away from the manual bypass switch (see [Figure 2.6](#) on page 18).
3. Open the input circuit breaker on the rear of the UPS (see [Figure 2.6](#) on page 18).
4. Open the output circuit breaker on the rear of the UPS (see [Figure 2.6](#) on page 18).
5. Remove the top two front plastic bezels by pulling them forward.
6. Remove the power module cover grille and the battery cover grille with the screws securing them to the frame.
7. Disconnect the slotted battery connectors from the internal battery packs.
8. If additional external batteries are used, disconnect the two external battery connectors.
9. Slide power module restraint lever up out of the locked position.
10. Slide the power module out the front, supporting its weight as it is withdrawn.

Figure 7.3 Removing power module from GXT4 8000 and 10,000VA models



NO.	DESCRIPTION
1	Power module partially pulled-out.

11. Insert the replacement UPS power module.
12. Slide the power module restraint lever back into the locked position.
13. Reconnect the slotted internal battery connectors.
14. Reconnect the external battery cables, if used.
15. Reattach both front cover grilles.
16. Reattach the front plastic bezels.
17. Close the input circuit breaker on the rear of the UPS (see [Figure 2.6](#) on page 18).
18. Close the output circuit breaker on the rear of the UPS (see [Figure 2.6](#) on page 18).
19. Move the bypass breaker on the rear of the UPS back to the INVERTER position (see [Figure 2.6](#) on page 18).

20. Slide the bracket back next to the manual bypass breaker and tighten its thumbscrew.
21. Press the On button on the front panel one time to return the UPS to Normal Mode operation (see [Operation and Display Panel](#)).

NOTE: The power module restraint lever must be fully engaged for the UPS to operate in Normal Mode.

8 TROUBLESHOOTING

This section indicates various UPS symptoms you may encounter and provides a troubleshooting guide in the event the UPS develops a problem. Use the following information to determine whether external factors caused the problem and how to remedy the situation.

8.1 Symptoms that Require Troubleshooting

The following symptoms indicate the UPS is malfunctioning:

- The relative indicators illuminate, indicating the UPS has detected a problem.
- An alarm buzzer sounds, alerting the user that the UPS requires attention.

8.1.1 Faults

When the fault indicator is illuminated, the LCD displays the fault. The faults are described in **Table 8.1** below.

Table 8.1 Description of displayed faults

DISPLAYED FAULT	CAUSE	CORRECTIVE STEPS
UPS self test failed	The battery is bad or weak.	Contact technical support.
UPS shutdown command received	The UPS shuts down through communication.	Contact customer service.
UPS overload	The UPS is overloaded.	Reduce the load and contact technical support.
Inverter Out of Order	The inverter is faulty.	Contact technical support.
Battery Weak/Bad	The battery is bad or weak.	Replace the battery.
Output Short Circuit	The output connection is short-circuited.	Shut down the equipment and contact technical support.
DC Bus Overvoltage	The DC bus is faulty.	Contact technical support.
UPS Overtemperature	Over-temperature occurs to the UPS and the UPS will transfer to Bypass mode.	Reduce the load and contact technical support.
Charger Out of Order	The charger is faulty.	Contact technical support.
Fan Out of Order	At least one fan is faulty.	Contact technical support.
DC Bus Discharge Fail	A DC-DC failure occurs.	Contact technical support.

NOTE: If the UPS encounters a fault and no correction attempt is performed within 2 minutes, the LCD back light will flash (on 1 second and off 1 second) as an alert.

Press any button to exit the alert mode. If no correction attempt is performed on the UPS, the LCD back light will flash again until the UPS fault is corrected.

8.1.2 Audible Alarm

An audible alarm will sound in conjunction with the visual indicators to indicate a change in UPS operating status. The audible alarm will sound as described in the following table.

Table 8.2 Audible alarm description

CONDITION	ALARM
Battery discharge	Half-second beep every 10 seconds
Low battery	Two half-second beeps every 5 seconds
UPS fault, load on bypass	1-second beep every 4 seconds
UPS fault, no power to load	Continuous
Overload	Half-second beep every half second
Battery replacement	2-second beep every 2 minutes
Battery loss	Continuous
Wiring problem (loss of proper grounding for UPS)	Continuous
Bypass reminder	1-second beep every 60 seconds

8.2 Troubleshooting UPS Issues

In the event of an issue with the UPS, refer to the following table to determine the cause and solution. If the fault persists, contact Vertiv Technical Support. See [Technical Support](#) on page 77

Table 8.3 Troubleshooting table

PROBLEM	CAUSE	SOLUTION
UPS fails to start	UPS is short-circuited or overloaded	Ensure UPS is Off. Disconnect all loads and ensure nothing is lodged in output receptacles. Ensure loads are not defective or shorted internally.
	Batteries are not charged enough or not connected	Check to ensure the internal battery is connected. If it is not, make the connection and try to start the unit. If the battery is connected, leave the UPS connected to input power for 24 hours to recharge batteries, then try to start the unit.
Battery indicator is illuminated	UPS is not plugged in	UPS is operating from battery mode. Ensure UPS is securely plugged into the wall receptacle.
	UPS input protection fuse has blown/opened	UPS is operating from battery mode. Save data and close applications. Replace UPS input fuse, then restart UPS.
	Mains power is out of tolerance	UPS is operating from battery mode. Save data and close applications. Ensure mains supply voltage is within acceptable limits for UPS.
UPS has reduced battery backup time	Batteries are not fully charged	Keep UPS plugged in continuously at least 24 hours to recharge batteries.
	UPS is overloaded	Check load level indicator and reduce the load on the UPS.

Table 8.3 Troubleshooting table (continued)

PROBLEM	CAUSE	SOLUTION
	Batteries may not be able to hold a full charge due to age	Replace batteries. Contact your local dealer, Vertiv representative or Technical Support for replacement battery kit.
Battery indicator is flashing.	Battery source is not available; continuous horn.	Check battery connections, completely power down and restart UPS. NOTE: If the battery circuit opens while the UPS is running, it will be detected when the next battery test is performed.
Bypass indicator is flashing.	Because the voltage or frequency is outside acceptable limits, the bypass is disabled.	The AC input powers the PFC input and serves as the bypass source. If the AC is present but the voltage or frequency exceeds the acceptable range for safe operation with a load, the bypass will be disabled and this indicator will flash, indicating that the bypass is unavailable.

When reporting a UPS issue to Vertiv, include the UPS model and serial number. These are located in several places for your ease of location:

- on the top panel (rack mount orientation)
- the left side (tower orientation)
- the rear panel
- on the front of the unit behind the front plastic bezel
- on the LCD select *Main Menu > About*.

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9 SPECIFICATIONS

Table 9.1 Specifications for 5000 to 1000 VA models

MODEL NUMBER	GXT4-5000RT208	GXT4-6000RT208	GXT4-8000RT208	GXT4-10000RT208
MODEL RATING	4000W/5000VA	4800W/6000VA	7200W/8000VA	9000W/10000VA
Dimensions, Rack Mount, WxD xH				
Unit, in. (mm)	16.9 x 26.1 x 6.8 (430 x 662 x 173)		16.9 x 26.5 x 10.3 (430 x 672 x 261)	
Shipping, in. (mm)	35 x 27 x 26 (889 x 686 x 661)		35 x 27 x 32 (889 x 686 x 813)	
Weight lb (kg)				
Unit, lb (kg)	131.8 (59.8)		212.7 (96.7)	
Shipping, lb (kg)	202.8 (92)		297.6 (135)	
Input AC Parameters				
Nominal Operating Frequency	50 or 60Hz (Factory Default is 60Hz)			
Factory Default VAC	120/208VAC at 120 degrees		120/208VAC at 120 degrees	
L1-L2 Factory Default Input Phase Angle	120 degrees		120 degrees	
Allowable Input Phase Angle	120, 180, 240 degrees, auto-sensing on application of alternating current (Restrictions for L-N voltages other than 120-VAC)			
Factory Default L1-N, L2-N VAC	120 VAC nominal			
User Configurable L1-N, L2-N VAC	100/110/115/120VAC (can be modified with configuration program)			
Input Frequency w/o Battery Operation	40 - 70 Hz			
Input Power Connection	Hard-Wired Terminal Block 3W + G(L-L-N-G)			
L1-N, L2-N Maximum Allowable VAC	150VAC			
Output AC Parameters				
Factory Default VAC	120/208VAC @ 120 degrees			
L1-L2 Factory Default Output Phase Angle	120 degrees			
Allowable Output Phase Angle	120, 180, 240 degrees, auto-sensing on initial application of input AC			
Factory Default L1-N, L2-N VAC	120-VAC nominal			
User Configurable L1-N, L2-N VAC	100/110/115/120/127VAC, ±2%			
L1-N, L2-N, Operating Load Range				
105% to 130%	1 Minute			
131% to 150%	10 seconds			
151% to 200%	1 second			
>200% (impact load)	At least 5 cycles			
Bypass Protection Limits				
Disable Bypass Operation	If input voltage exceeds ±15% of the nominal voltage			

Table 9.1 Specifications for 5000 to 1000 VA models (continued)

MODEL NUMBER	GXT4-5000RT208	GXT4-6000RT208	GXT4-8000RT208	GXT4-10000RT208
MODEL RATING	4000W/5000VA	4800W/6000VA	7200W/8000VA	9000W/10000VA
Re-Enable Bypass Operation	If input voltage returns to within $\pm 10\%$ of nominal output voltage			
Disable Bypass Operation	When the input frequency prevents synchronous operation			

Table 9.1 Specifications for 5000 to 1000 VA models (continued)

MODEL NUMBER	GXT4-5000RT208	GXT4-6000RT208	GXT4-8000RT208	GXT4-10000RT208
MODEL RATING	4000W/5000VA	4800W/6000VA	7200W/8000VA	9000W/10000VA
Environmental				
Operating Temp, °F (°C)	32 to 104 (0 to 40)			
Storage Temp, °F (°C)	5 to 122 (-15 to 50)			
Relative Humidity	0% to 95%, non-condensing			
Operating Elevation	Up to 10,000 ft. (3000 m) at 77°F (25°C) without derating			
Audible Noise	less than 55dBA at 3.2ft. (1m) rear; less than 50dBA at 3.2ft. (1m) front and sides			
Agency				
Safety	UL 1778, c-UL Listed			
RFI/EMI	FCC Class A			
Surge Immunity	IEEE/ANSI C62.41 Category A & B			
Transportation	ISTA Procedure 1E			

Table 9.2 Specifications—Liebert GXT4-6000RTL630

MODEL NUMBER	GXT4-6000RTL630
MODEL RATING	4200W/6000VA
Dimensions, Rack Mount, W X D X H, in. (mm)	
Unit	16.9 x 22.6 x 8.5 (430 x 574 x 217)
Shipping	35 x 27 x 29 (889 x 686 x 737)
Weight, lb (kg)	
Unit	132.2 (60)
Shipping	216.5 (98)
Input AC Parameters	
Nominal Operating Frequency	50 or 60Hz (Factory Default, 60)
Factory Default VAC	208VAC
User Configurable VAC	208/220/230/240VAC (may be modified with configuration program)
Operating Voltage Range Without Battery Operation	176 – 280VAC
Maximum Allowable VAC	280VAC
Input Frequency Without Battery Operation	40 - 70Hz
Input Power Connection	L6-30P Plug (on PD-L630 power distribution box)
Output AC Parameters	

Table 9.2 Specifications—Liebert GXT4-6000RTL630 (continued)

MODEL NUMBER	GXT4-6000RTL630
MODEL RATING	4200W/6000VA
Factory Default VAC	208
Output Connections	(2) L6-20R and (2) L6-30R on 12" (300mm) cords (on PD-L630 power distribution box)
Frequency	50 Hz or 60Hz, Nominal
Waveform	Sinewave
Duration Inverter Will Support Rated Load	
105% to 130%	1 Minute
131% to 150%	10 seconds
151% to 200%	1 second
>200% (impact load)	At least 5 cycles
Bypass Protection Limits	
Disable Bypass Operation	If input voltage exceeds $\pm 15\%$ of the nominal voltage
Re-Enable Bypass Operation	If input voltage returns to within $\pm 10\%$ of nominal output voltage
Disable Bypass Operation	When the input frequency prevents synchronous operation
Environmental	
Operating Temp, °F (°C)	32 to 104 (0 to 40); No Derating
Storage Temp, °F (°C)	5 to 122 (-15 to 50)
Humidity	0% to 95% Relative Humidity, non-condensing
Operating Elevation	Up to 10,000 ft. (3000 m) at 77°F (25°C) without derating
Audible Noise	Less than 55dBA at 3.2ft. (1m) rear; Less than 50dBA at 3.2ft. (1m) front and sides
Agency	
Safety	UL 1778, c-UL Listed
EMI/EMC	FCC Class A
ESD	EN61000-4-2
Radiated Susceptibility	EN61000-4-3
Electrical Fast Transient	EN61000-4-4
Surge Immunity	EN61000-4-5
Transportation	ISTA Procedure 1E

Table 9.3 Internal battery cabinet specifications

MODEL NUMBER	GXT4-144VBATKIT	GXT4-240VBATKIT	GXT4-288VBATKIT
USED WITH UPS MODEL	GXT4-5000RT208 GXT4-6000RT208	GXT4-6000RTL630	GXT4-8000RT208 GXT4-10000RT208
Dimensions, Rack Mount, W x D x H, in (mm)			
Unit	8.1 x 19.3 x 2.8 (206 x 490 x 70)	7.2 x 15.4 x 4.4 (184 x 390 x 113)	8.1 x 19.7 x 5.3 (207 x 500 x 135)
Shipping	10.3 x 23.7 x 12.2 (262 x 602 x 310)	10.3 x 18.4 x 7 (262 x 467 x 178)	9.5 x 23.9 x 12.2 (242 x 607 x 310)
Weight lb (kg)			
Unit	75.8 (34.4)	45.4 (20.6)	71.1 (32.3)
Shipping	81.1 (36.8)	50.7 (23)	76.4 (34.7)
Type	Valve-regulated, non-spillable, flame retardant, lead acid		
Quantity x V x Rating	2 x 6 x 12V x 9.0 AH	2 x 10 x 12V x 5.0AH	2 x 12 x 12V x 9.0 AH
Battery Mfr / Part #	CSB UPS12460F2	CSB/HR1221W	CSB UPS12460F2
Backup Time	See Table 9.8 on page 76		
Recharge Time	5 hours to 90% capacity after full discharge into 100% load		

Table 9.3 Internal battery cabinet specifications (continued)

MODEL NUMBER	GXT4-144VBATKIT	GXT4-240VBATKIT	GXT4-288VBATKIT
USED WITH UPS MODEL	GXT4-5000RT208 GXT4-6000RT208	GXT4-6000RTL630	GXT4-8000RT208 GXT4-10000RT208
Environmental			
Operating Temp, °F (°C)	32 to 104 (0 to 40)		
Storage Temp, °F (°C)	5 to 122 (-15 to 50)		
Relative Humidity	0% to 95%, non-condensing		
Operating Elevation	Up to 10,000 ft. (3000 m) at 77°F (25°C) without derating		
Agency			
Safety	UL 1778, c-UL Listed		
RFI/EMI	FCC Class A		
Transportation	ISTA Procedure 1A		

Table 9.4 External battery cabinet specifications

MODEL NUMBER	GXT4-144VBATT	GXT4-240VBATT	GXT4-288VBATT
USED WITH UPS MODEL	GXT4-5000RT208 GXT4-6000RT208	GXT4-6000RTL630	GXT4-8000RT208 GXT4-10000RT208
Dimensions, W x D x H, in. (mm)			
Unit (with bezel)	16.9 x 26.1 x 3.3 (430 x 662 x 85)	16.9 x 22.6 x 6.8 (430 x 574 x 173)	16.9 x 26.5 x 6.8 (430 x 672 x 173)
Shipping	25.8 x 34.3 x 12.3 (655 x 872 x 312)	20.9 x 29.3 x 18.7 (530 x 745 x 475)	24.5 x 33.1 x 18.7 (622 x 842 x 475)
Weight, lb (kg)			
Unit	99.9 (45.3)	143.3 (65)	167.6 (76.2)
Shipping	121 (55)	176.4 (80)	198 (90)
Battery Parameters			
Type	Valve-regulated, non-spillable, lead acid		
Qty x V	2 x 6 x 12V x 9.0 AH	2 x 10 x 12V x 9.0AH	2 x 12 x 12V x 9.0 AH
Battery Mfr., Part #	CSB UPS12460F2; CSBHR1234WF2		
Backup Time	See Table 9.8 on page 76		
Environmental			
Operating Temp, °F (°C)	32 to 104 (0 to 40)		
Storage Temp, °F (°C)	5 to 122 (-15 to 50)		
Relative Humidity	0% to 95%, non-condensing		

Table 9.4 External battery cabinet specifications (continued)

MODEL NUMBER	GXT4-144VBATT	GXT4-240VBATT	GXT4-288VBATT
USED WITH UPS MODEL	GXT4-5000RT208 GXT4-6000RT208	GXT4-6000RTL630	GXT4-8000RT208 GXT4-10000RT208
Operating Elevation	Up to 10,000 ft. (3000 m) at 77°F (25°C) without derating		
Agency			
Safety	UL 1778, c-UL Listed		
RFI/EMI	FCC Class A		
Transportation	ISTA Procedure 1A		

Table 9.5 Power-distribution Specifications

for GXT4-5000RT208, GXT4-6000RT208 and GXT4-6000RTL630*

PD MODEL #	PD2-HDWR-MBS	PD2-001	PD2-002	PD2-003	PD2-004	PD2-005	PD2-006	PD2-007	PD2-L630*
Dimensions, W x D x H, in (mm)									
Unit	5.2x15.5x3.5 (132x393x88)								4.7x13.2x4.1 (119x335x105)
Shipping	9.5x20.7x9.1 (242x527x230)								10.2x18.4x8.7 (260x467x222)
Weight, lb (kg)									
Unit	6 (2.7)	8.8 (4)	8.6 (3.9)	8.6 (3.9)	9.9 (4.5)	10.6 (4.8)	9.5 (4.3)	9.5 (4.3)	8.8 (4)
Shipping	8.2 (3.7)	11 (5)	10.8 (4.9)	10.8 (4.9)	12.1 (5.5)	12.8 (5.8)	11.7 (5.3)	11.7 (5.3)	11 (5)
Electrical Specifications									
Amp Rating	30A 2-pole input breaker for UPS input power								
Input Power Connections	Hard-Wired Terminal Block 3W + G (L-L-N-G)	(1) L14-30P on a 10.5 ft. (3.2m) cord							(1) L6-30P
Output Power Connection	Hard-Wired Terminal Block 3W + G (L-L-N-G)	(4) 5-20R (1) L14-30R (1) L6-30R	(2) 5-20R (2) L6-20R	(4) 5-20R (2) L6-30R	(4) L5-20R (2) L5-30R	(4) L5-20R (2) L6-30R	(4) L6-20R	(2) L5-20R (2) L6-20R	(2) L6-30R (2) L6-20R
*PD2-L630 is only compatible with the GXT4-6000RTL630 UPS model									

Table 9.6 Power distribution box specifications for GXT4-8000RT208 and GXT4-10000RT208

POD MODEL #	PD2-101	PD2-102	PD2-103	PD2-104	PD2-105	PD2-106
Dimensions, W x D x H, in. (mm)						
Unit	7.4 x 5.7 (188 x 145)					
Shipping	11.9 x 20.6 x 8.7 (302 x 522 x 220)					
Weight, lb (kg)						
Unit	4.4 (2)	6.6 (3)	6.6 (3)	6.6 (3)	4.4 (2)	6.6 (3)
Shipping	6.6 (3)	8.8 (4)	8.8 (4)	8.8 (4)	6.6 (3)	8.8 (4)
Electrical Specifications						
Amp Rating	2-pole 60-A Input Breaker					
Input Power Connection	Custom Connector 3W + G(L-L-N-G) to UPS					
Output Power Connections	(2) L6-30R (8) 5-15/20R	(4) L6-20R (4) 5-15/20R	(4) 5-15/20R (4) L6-30R	(4) 5-15/20R (2) L6-30R (2) L6-20R	(4) 5-15/20R (2) L5-30R (2) L5-20R	(4) L6-20R (4) L5-20R

Table 9.7 Power distribution box specifications for GXT4-8000RT208 and GXT4-10000RT208

POD MODEL #	PD2-107	PD2-108	PD2-109	PD2-200	PD2-201	PD2-202	PD2-204
Dimensions, W x D x H, in. (mm)							
Unit	7.4 x 5.7 (188 x 145)						
Shipping	11.9 x 20.6 x 8.7 (302 x 522 x 220)						
Weight, lb (kg)							
Unit	6.6 (3)			4.4 (2)			6.6 (3)
Shipping	8.8 (4)			6.6 (3)			15 (6.8)
Electrical Specifications							
Amp Rating	2-pole 60-A Input Breaker						
Input Power Connection	Custom Connector 3W + G(L-L-N-G) to UPS						
Output Power Connections	(4) L5-20R (4) 5-15/20R	(2) L6-20R (2) L6-30R	(2) L14-30R	(4) IEC320-C19 (4) IEC320-C13	(2) IEC320-C19 (8) IEC320-C13	(12) IEC320-C13	(2) IEC309-32A (4) IEC320-C13

Table 9.8 Battery run time, minutes

NUMBER OF EXTERNAL BATTERY CABINETS	LOAD PERCENT OF CAPACITY	208/120 VAC RT MODELS				208 VAC RT MODEL
		5 KVA	6 KVA	8 KVA	10 KVA	6 KVA (L630)
Internal Battery	10%	134	112	121	98	92
	20%	65	52	63	48	39
	30%	39	31	42	32	34
	40%	27	21	29	22	26
	50%	20	15	22	16	18
	60%	16	12	18	13	16
	70%	12	9	14	10	12
	80%	10	8	11	7	10
	90%	8	6	9	7	9
	100%	7	5	8	5	8
Internal Battery + 1 External Battery Cabinet	10%	281	235	256	206	265
	20%	144	119	142	113	124
	30%	92	77	100	79	99
	40%	67	53	72	55	67
	50%	50	40	55	42	52
	60%	40	32	44	34	44
	70%	33	26	36	27	34
	80%	27	21	29	21	27
	90%	23	18	25	20	24
	100%	20	15	22	16	21

Table 9.8 Battery run time, minutes (continued)

NUMBER OF EXTERNAL BATTERY CABINETS	LOAD PERCENT OF CAPACITY	208/120 VAC RT MODELS				208 VAC RT MODEL
		5 KVA	6 KVA	8 KVA	10 KVA	6 KVA (L630)
Internal Battery + 2 External Battery Cabinets	10%	441	367	400	322	462
	20%	222	186	217	175	223
	30%	146	120	156	124	177
	40%	108	88	114	90	126
	50%	84	68	90	72	98
	60%	68	53	77	57	85
	70%	55	43	59	45	66
	80%	46	38	49	37	52
	90%	40	32	43	35	48
	100%	36	27	39	29	43
Internal Battery + 3 External Battery Cabinets	10%	603	505	550	444	671
	20%	304	252	298	236	323
	30%	198	166	210	170	254
	40%	147	122	156	126	182
	50%	117	95	126	100	145
	60%	95	78	106	82	126
	70%	81	63	86	68	100
	80%	68	53	72	53	83
	90%	57	45	61	50	74
	100%	50	40	55	42	65

Table 9.8 Battery run time, minutes (continued)

NUMBER OF EXTERNAL BATTERY CABINETS	LOAD PERCENT OF CAPACITY	208/120 VAC RT MODELS				208 VAC RT MODEL
		5 KVA	6 KVA	8 KVA	10 KVA	6 KVA (L630)
Internal Battery + 4 External Battery Cabinets	10%	766	638	696	566	883
	20%	389	322	381	302	429
	30%	252	208	269	214	336
	40%	188	156	198	161	237
	50%	149	122	161	129	190
	60%	122	100	136	107	166
	70%	104	84	111	87	135
	80%	88	72	92	72	111
	90%	78	60	83	67	100
	100%	68	53	75	56	90
Internal Battery + 5 External Battery Cabinets	10%	939	783	854	685	1108
	20%	476	393	467	370	538
	30%	307	255	329	262	420
	40%	227	190	239	195	296
	50%	181	149	195	156	235
	60%	149	122	166	130	207
	70%	127	104	136	109	168
	80%	110	88	114	88	139
	90%	95	78	102	84	126
	100%	84	67	91	73	115

Table 9.8 Battery run time, minutes (continued)

NUMBER OF EXTERNAL BATTERY CABINETS	LOAD PERCENT OF CAPACITY	208/120 VAC RT MODELS				208 VAC RT MODEL
		5 KVA	6 KVA	8 KVA	10 KVA	6 KVA (L630)
Internal Battery + 6 External Battery Cabinets	10%	1116	931	1015	814	1329
	20%	564	468	553	440	643
	30%	364	301	389	310	506
	40%	268	223	285	229	356
	50%	212	177	228	184	283
	60%	177	145	194	153	247
	70%	149	122	160	129	201
	80%	130	106	136	106	167
	90%	114	91	119	100	152
100%	101	82	110	86	139	

Run times in this table are approximate. They are based on new, fully charged standard battery modules at a temperature of 77°F (25°C) with 100% resistive UPS loading. Run times listed above can vary by ±5% due to manufacturing variances of the individual batteries.

9.1 Auto-Learning Battery Run Times

As batteries age, the estimated run times may become less accurate. The Liebert® GXT4 is programmed to “learn” from a full battery discharge and modify the estimated run time for the measured battery capacity. This can improve accuracy and compensate for aging batteries or batteries that operate at different ambient temperatures.

The UPS will update the anticipated run time calculation only under certain conditions.

- The UPS must have a steady load that is greater than 20%.
- The UPS must be at 100% charge at the start of a battery discharge.
- The battery discharge must continue uninterrupted until the batteries reach their end-of-discharge voltage.

If all conditions are not met, the run time calculation will not be modified.

If the configuration program is used to change the number of battery cabinets, then the values in the battery above table will be restored. This will override any value that is auto-learned.

APPENDICES

Appendix A: Technical Support

Our Technical Support staff is ready to assist you with any installation or operating issues you may encounter with your Liebert® product. Please call or e-mail us:

In Europe, Middle East, and Asia:

EMEA Multi-Language Technical support:

e: eoc@vertivco.com

p: Toll free 0080011554499

p: Toll +39 02 98250222

In the United States:

Technical support:

e: liebert.upstech@vertivco.com

p: 1-800-222-5877 menu option 1

Monitoring support:

e: liebert.monitoring@vertivco.com

p: 1-800-222-5877 menu option 2

Warranty support:

e: microups.warranty@vertivco.com

p: 1-800-222-5877 menu option 3

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