Vertiv™ Liebert® GXT RT+ UPS

Installer/User Guide

127 V Input, 127 V Output
110 V Input, 110 V Output

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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.vertiv.com/en-us/support/ for additional assistance.

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1 Important Safety Instructions

Comply with all warnings and operating instructions in this manual strictly. Save this manual and carefully read the following instructions before installing the unit. Do not operate this unit before reading all safety information and operating instructions carefully.

Transportation

Only transport the UPS system in the original packaging to protect against shock and impact.

Preparation

- Condensation may occur if the UPS system is moved directly from a cold to a warm environment. The UPS system must be absolutely dry before being installed. Please allow at least two hours for the UPS system to acclimate the environment.
- Do not install the UPS system near water or in moist environments.
- Do not install the UPS system where it would be exposed to direct sunlight or near a heater.
- Do not block ventilation holes in the UPS housing.

Installation

- Do not connect appliances or devices which would overload the UPS system (e.g. laser printers) to the UPS output sockets.
- Place cables in such a way that no one can step on or trip over them.
- Do not connect domestic appliances such as hair dryers to UPS output sockets.
- Connect the UPS system only to an earthed shockproof outlet which must be easily accessible and close to the UPS system.
- Please use only VDE-tested, CE-marked mains cable (e.g. the mains cable of your computer) to connect the UPS system to the building wiring shockproof outlet.
- Please use only VDE-tested, CE-marked power cables to connect the loads to the UPS system.
- When installing the equipment, ensure that the sum of the leakage current of the UPS and the connected devices does not exceed 3.5 mA.

Operation

- Do not disconnect the mains cable on the UPS system or the building wiring shockproof outlet during operations since this would cancel the protective earthing of the UPS system and of all connected loads.
- The UPS system features its own, internal power source (batteries). The UPS output sockets or output terminal blocks may be electrically live even if the UPS system is not connected to the building wiring outlet.
- In order to fully disconnect the UPS system, first press the OFF/Enter button to disconnect the mains.
- Prevent fluids and foreign objects from entering the inside of the UPS system.

Maintenance, Service, and Faults

- The UPS system operates with hazardous voltages. Repairs may be carried out only by qualified maintenance personnel.
- Caution - risk of electric shock. Even after the unit is disconnected from the mains (building wiring outlet), components inside the UPS system are still connected to the battery and electrically live and dangerous.
- Before carrying out any kind of service and/or maintenance, disconnect the batteries and verify that no current is present and no hazardous voltage exists in the terminals of high energy capacitors such as BUScapacitors.
- Only persons that are adequately familiar with batteries and with the required precautionary measures may replace batteries and supervise operations. Unauthorized persons must be kept well away from the batteries.
- Caution - risk of electric shock. The battery circuit is not isolated from the input voltage. Hazardous voltages may occur between the battery terminals and the ground. Before touching, please verify that no voltage is present!
- Batteries may cause electric shock and have a high short-circuit current. Please take the precautionary measures specified below and any other measures necessary when working with batteries:
    - Remove wristwatches, rings and other metal objects
    - Use only tools with insulated grips and handles.
- When changing batteries, install the same number and same type of batteries.
- Do not attempt to dispose of batteries by burning them. This could cause battery explosion.
- Recycle or dispose of batteries properly according to local regulations.
- Do not open or destroy batteries. Escaping electrolyte can cause injury to the skin and eyes. It may be toxic.
- Please replace fuses only with the same type and amperage in order to avoid fire hazards.
- Do not dismantle the UPS system.

2 GXT RT+ Description

2.1 UPS Features and Available Models

The GXT RT+ includes the following features. Table 2.1 below , lists the available models and power ratings.

- Input power factor of 0.9.
- Automatic bypass, allowing the load to transfer to the mains in case of an overload or internal fault.
- Optional tower or rack installation to meet varying installation requirements.
- Adapts to areas with unstable power-mains supply via high-frequency double-conversion topology structure, with high input-power factor, wide input-voltage range, and output immune to grid interference.
- ECO power-supply mode helps you save the maximum amount of energy.

Table 2.1 UPS Models and Power Ratings

MODEL NUMBER	NOMINAL POWER RATING
GXTRT-1000LVRT2UXL GXTRT-1000LVRT2UXLB	1000 VA/900 W
GXTRT-1500LVRT2UXL GXTRT-1500LVRT2UXLB	1500 VA/1350 W
GXTRT-2000LVRT2UXL GXTRT-2000LVRT2UXLB	2000 VA/1800 W
GXTRT-3000LVRT2UXL GXTRT-3000LVRT2UXLB	3000 VA/2700 W

2.2 External Battery Cabinet

Optional external battery cabinets are available for the UPS. See Table 2.2 below to determine which EBC works with your system. Only connect an external battery of the same voltage and chemistry to the UPS.

Table 2.2 External Battery Cabinet

EBC MODEL NUMBER	COMPATIBLE UPS MODELS
GXTRT-EBC24VRT2U	GXTRT-1000LVRT2UXL GXTRT-1000LVRT2UXLB
GXTRT-EBC36VRT2U	GXTRT-1500LVRT2UXL GXTRT-1500LVRT2UXLB
GXTRT-EBC48VRT2U	GXTRT-2000LVRT2UXL GXTRT-2000LVRT2UXLB
GXTRT-EBC72VRT2U	GXTRT-3000LVRT2UXL GXTRT-3000LVRT2UXLB

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3 Installation and Setup

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

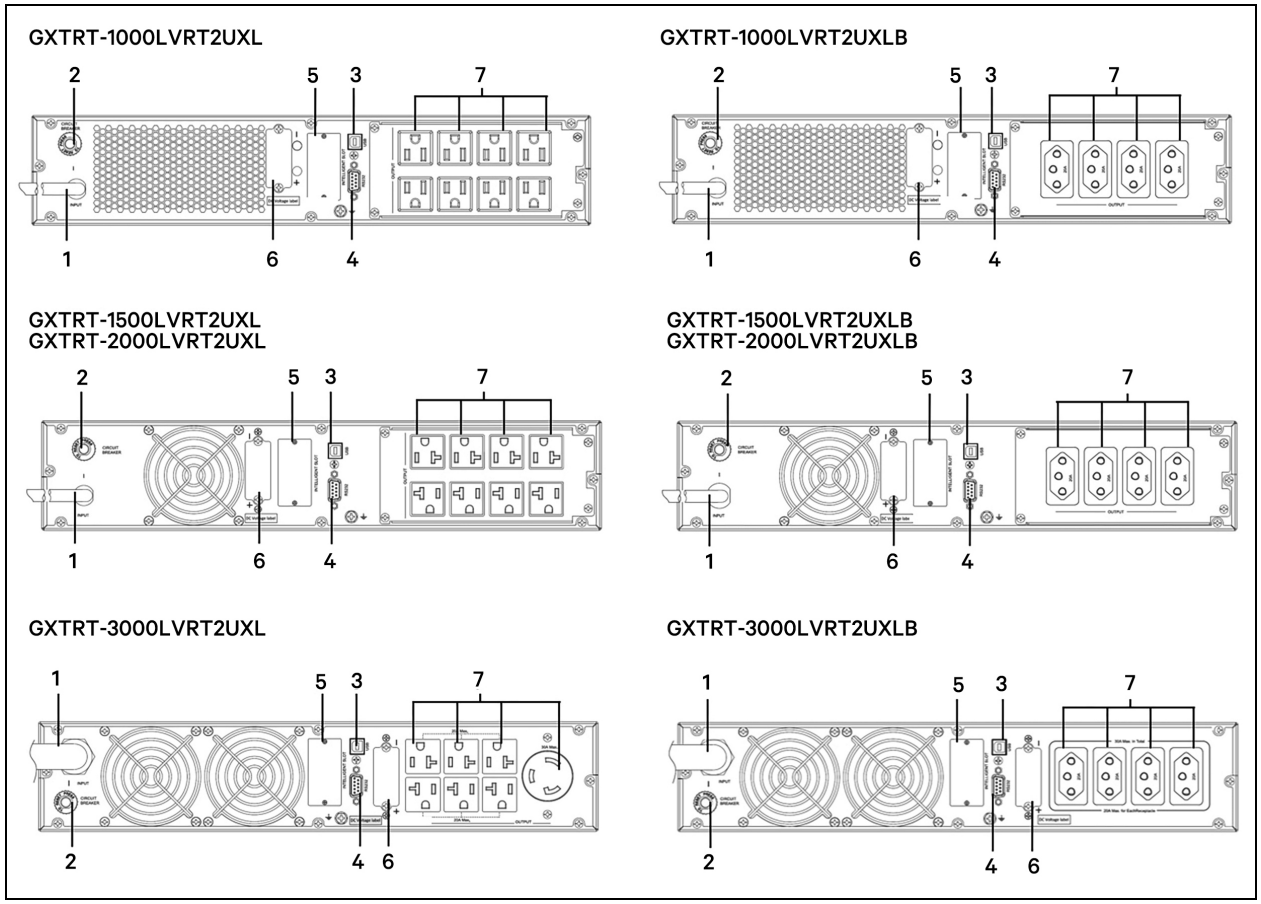
The UPS should be installed in an area away from vibration, dust, humidity, high temperature, flammable liquids, gases, corrosive and conductive contaminants. Install the UPS indoors in a clean environment, where it is away from windows and doors. Maintain minimum of 100 mm clearance on the front and rear panels of the UPS.

3.1 What's Included

- UPS
- Quick installation guide
- Safety and regulatory statements
- 4 x Tower feet
- 2 x UPS rack ears
- 8 x Rack ear screws (M4 x 8mm)
- USB type A to B cable
- Rail slide kit box:
    - Left and right rail set
    - 8 x Rail kit screws (M6 x 12mm)
    - 4 x Fixing studs (Ø8.5mm x 15.5mm)
    - 6 x Rack nuts (M6)

3.2 Rear Panel Views

Figure 3.1 Rear Panels



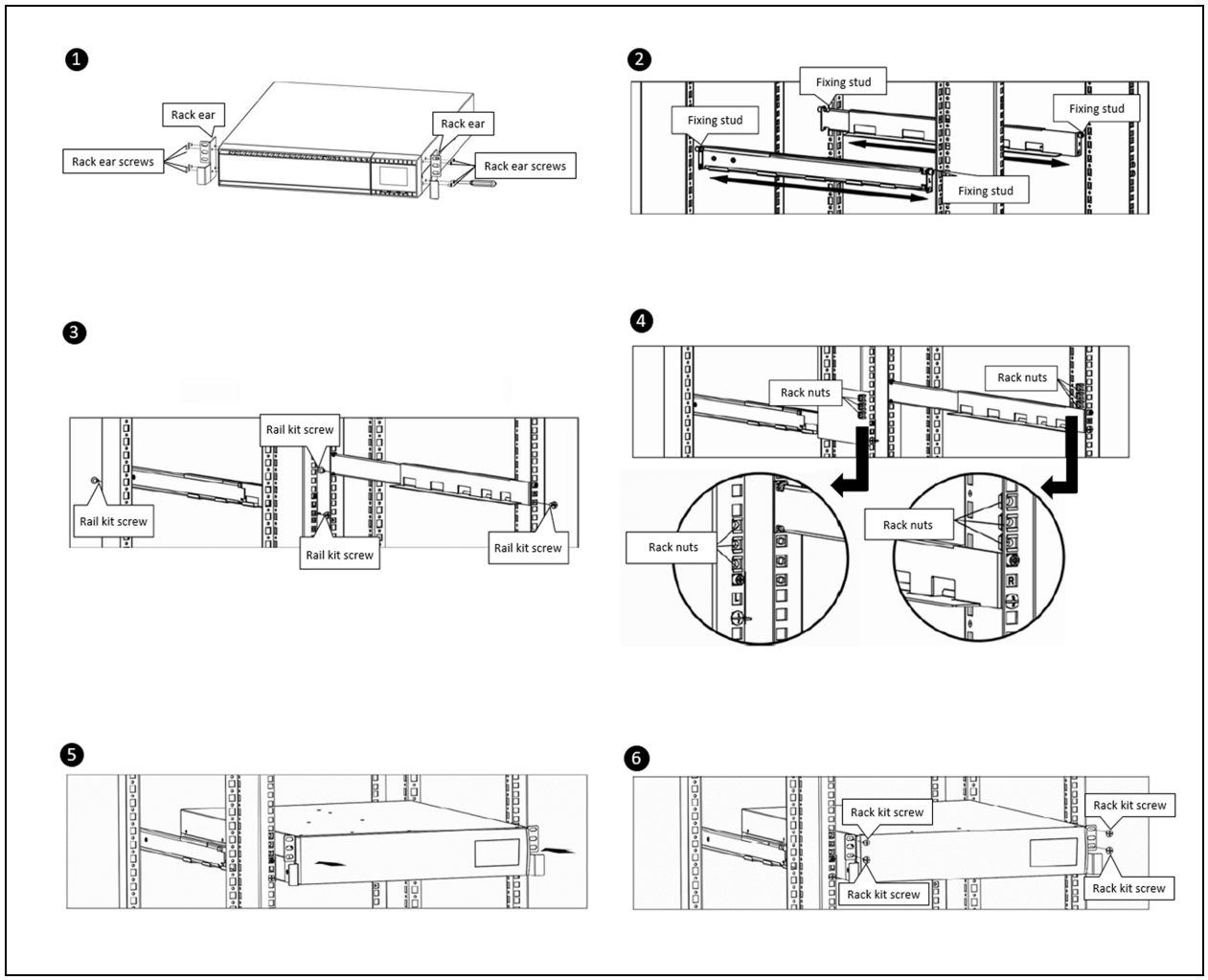
ITEM	DESCRIPTION
1	AC input
2	Input circuit breaker
3	USB communication port
4	RS 232 communication port
5	SNMP intelligent slot (option)
6	External battery connection
7	Output receptacles

3.3 Installing the UPS

3.3.1 Rack Installation

1. Attach the rack ears with four rack ear screws to the front right and left sides of the UPS.
2. Attach two fixing studs to each rail. Select the desired U position and position the rails onto the rack using the fixing studs.
3. Attach two rail kit screws to each rail to secure the rails to the rack.
4. Attach three rack nuts on each side of the rack.
5. Place the UPS with attached rack ears onto the rail supports. The batteries may be temporarily removed for easier installation.
6. Attach two rail kit screws to each UPS or EBC rack ear and corresponding rack nut to secure the UPS to the rack.

If using an optional external battery cabinets (EBC), follow steps 1-6. However, batteries cannot be removed from EBC in step 5.



3.3.2 Tower Installation

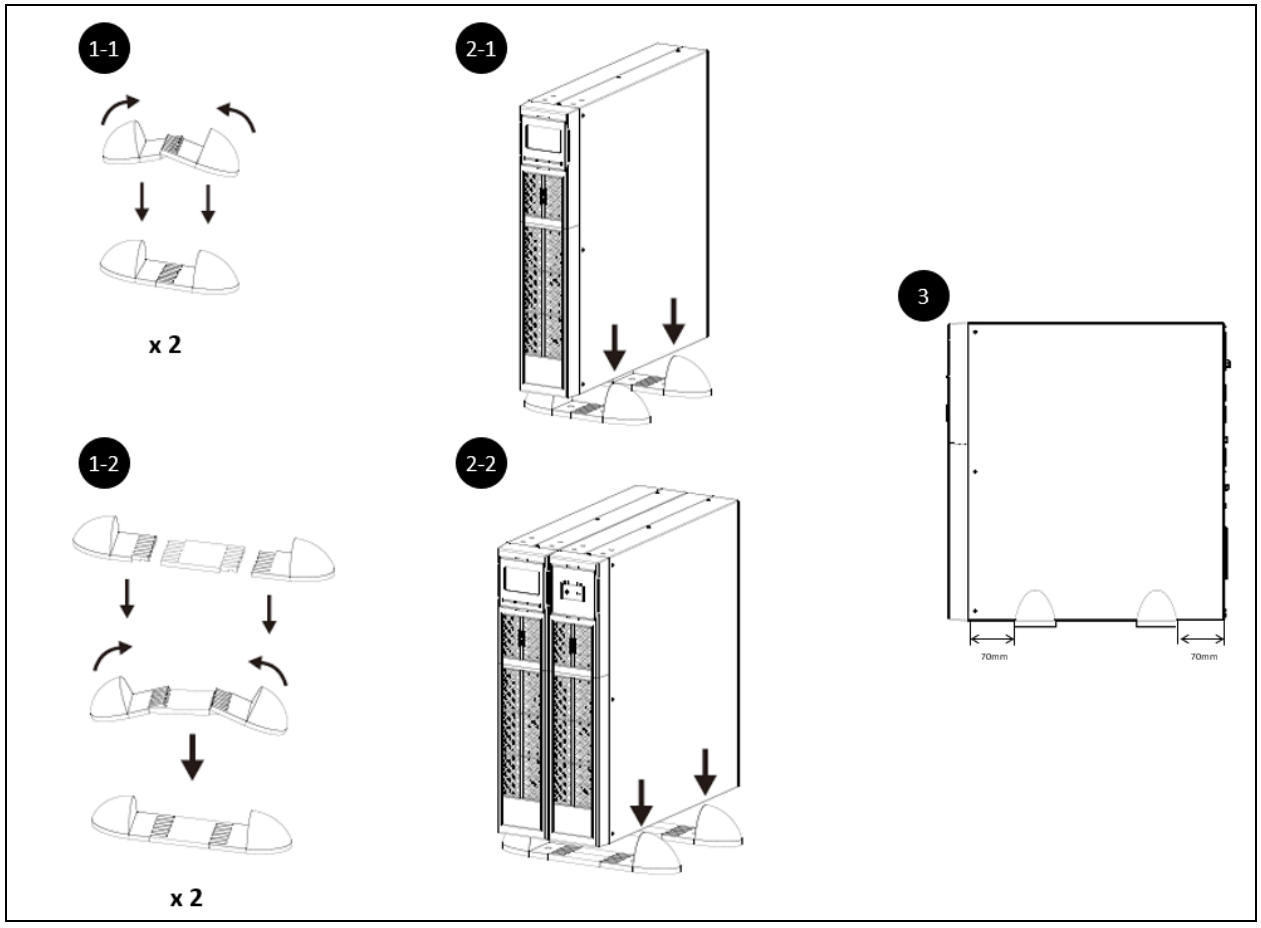
1-1. Connect the tower feet together to assemble two tower stands.

1-2. If using an external battery cabinet (EBC) connect a spacer between the tower feet and assemble two tower stands.

2-1. Place the UPS in the tower stands.

2-2. If using an EBC place the UPS and EBC in the tower stands.

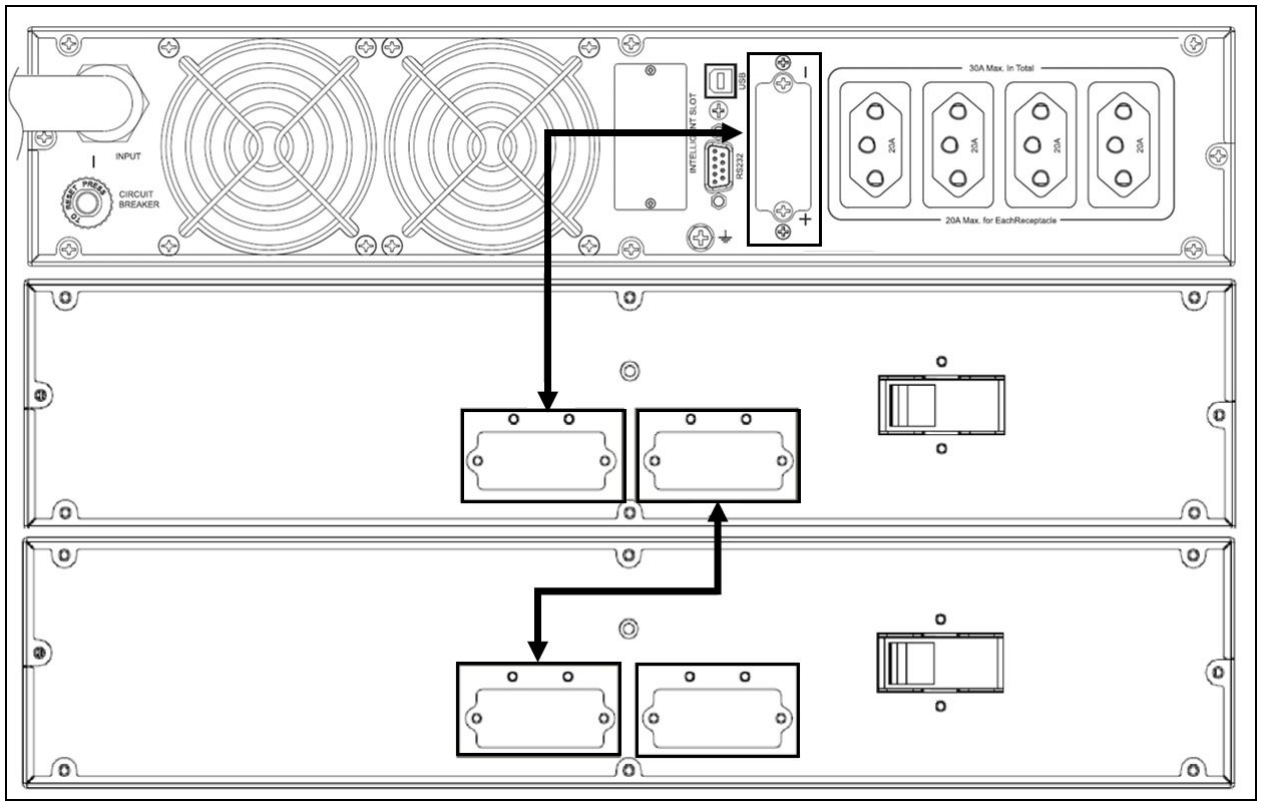
3. Ensure tower supports are 70mm from the front and rear edges of the UPS/EBC.



3.4 Setup the UPS

Step 1: Connect battery wires

If using External Battery Cabinets (EBCs), verify that the EBC breaker is in the “Off” position. Then, connect one end of the supplied EBC cable to the UPS and one end to the battery cabinet. If connecting more than one external battery, connect one end of the external battery cable to the second connector on the battery cabinet, then connect the other end to the next battery cabinet.



NOTE: GXTRT-3000LVRT2UXLB shown in example

Step 2: UPS input connection

Ensure that all the loads are first powered off. Connect to an input power supply/wall outlet that is properly protected by a circuit breaker in accordance with national and local electrical codes. The input receptacle must be grounded.

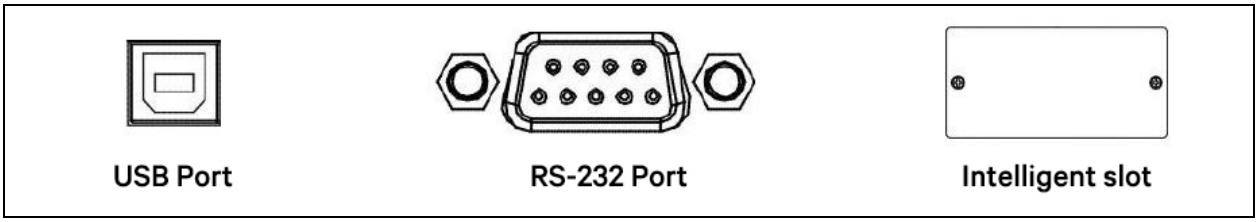
NOTE: While every precaution has been taken to ensure that the battery is in good condition, Vertiv™ recommends plugging the UPS into AC input and to charge the battery for at least 12 hours prior to providing full backup time protection for any utility power abnormality.

MODEL NUMBER	RECOMMENDED CIRCUIT BREAKER
GXTRT-1000LVRT2UXL GXTRT-1000LVRT2UXLB	12A
GXTRT-1500LVRT2UXL GXTRT-1500LVRT2UXLB	15 A
GXTRT-2000LVRT2UXL GXTRT-2000LVRT2UXLB	20 A
GXTRT-3000LVRT2UXL GXTRT-3000LVRT2UXLB	30 A

Step 3: UPS output connection

Connect devices to be protected to the UPS outlets.

Step 4: Communication connection



To allow for unattended UPS shutdown/start up and status monitoring, connect one end of the communication cable to the USB/RS-232 port and the other to the communication port of your PC. With monitoring software installed, you can schedule UPS shutdown/start up and monitor UPS status through your PC.

The UPS is equipped with an intelligent slot for either a SNMP or VFC card. Connect either a SNMP or VFC card for advanced communication and monitoring options.

NOTE: The USB port and RS-232 port cannot operate at the same time.

Step 5: Turn on the UPS

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

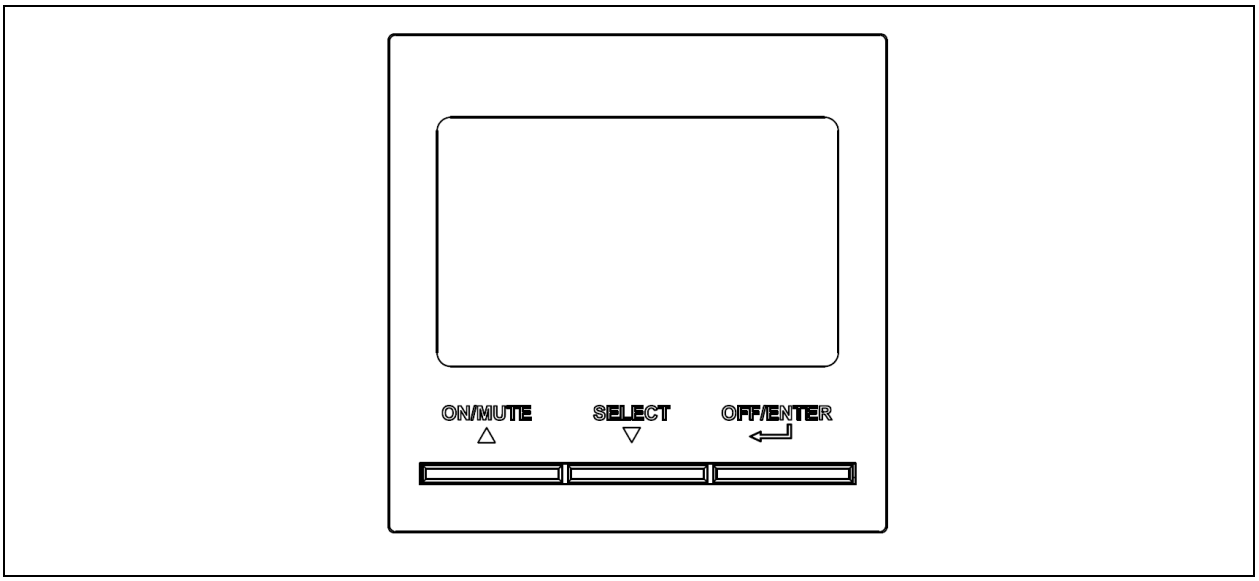
Step 6: Install software

For optimal computer system protection, install UPS monitoring software to fully configure UPS shutdown of the attached computer. Follow the steps below to download and install monitoring software from the Internet:

1. Go to the website http://vertiv.com/Liebert-GXT-RT-Plus
2. Select the appropriate ViewPower download link for the OS of the attached computer.
3. Follow the on screen instructions to install the software.
4. When your computer restarts, the monitoring software will appear as an orange plug icon located in the system tray, near the clock.

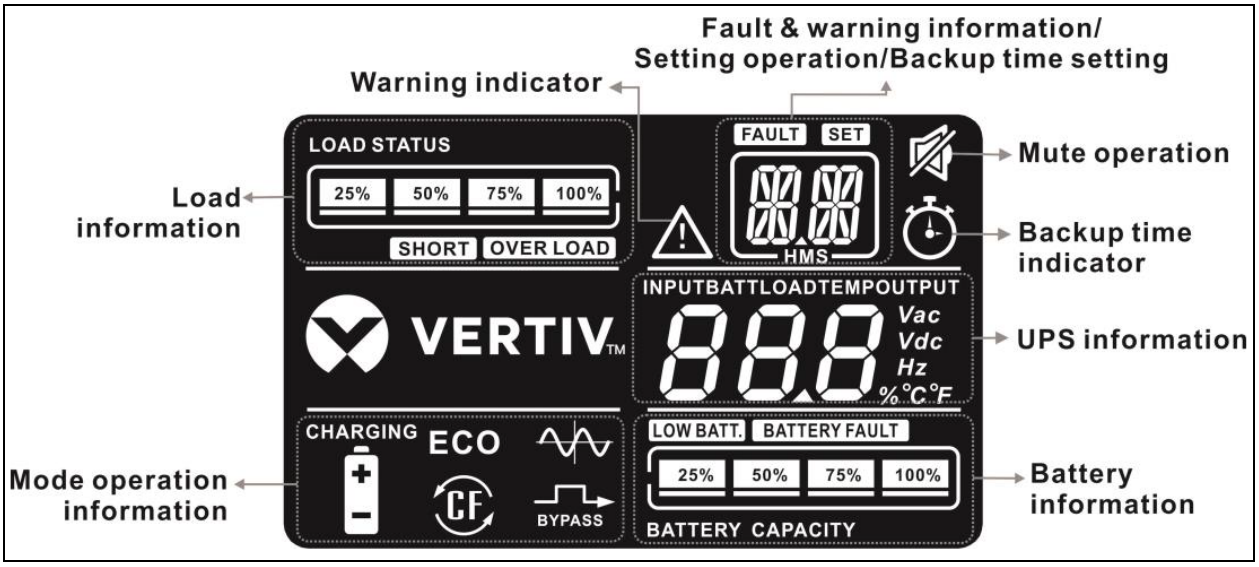
4 Operations

4.1 Button Operation

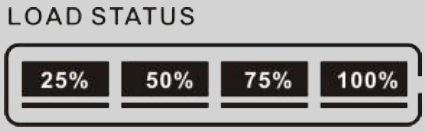
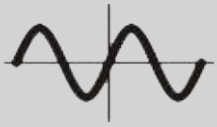


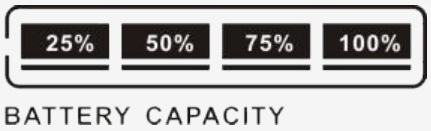
BUTTON	FUNCTION
ON/MUTE/UP	• Turn on the UPS: Press and hold ON/MUTE/UP button for at least 2 seconds to turn on the UPS. • Mute the alarm: When the UPS is on battery mode, press and hold this button for at least 5 seconds to disable or enable the current active audible alarm. The audible alarm will automatically enable if another warning or error occurs. • Up key: Press this button to display previous selection in UPS settings menu. • Switch to UPS self-test mode: Press and hold ON/MUTE/UP button for 5 seconds to enter UPS self-testing while in AC mode, ECO mode, or converter mode.
OFF/ENTER	• Turn off the UPS: When the UPS is on, press and hold this button for at least 2 seconds to turn off the UPS. The UPS will enter standby mode or bypass mode, if enabled. • Settings menu enter: When in the settings menu, press and hold to enter the setting option. Press and hold again to return to the setting number.
SELECT/DOWN	• Switch LCD display: Press this button to change the LCD display for input voltage, input frequency, battery voltage, output voltage and output frequency. • Settings menu: Press and hold this button for 5 seconds to enter the settings menu when UPS is in standby mode. • Down key: Press this button to display next selection in the settings menu
ON/MUTE/UP + SELECT/DOWN Buttons	• Switch to bypass mode: When the main power is normal, press ON/MUTE/UP and SELECT/DOWN buttons simultaneously for 5 seconds. The UPS will enter bypass mode if the input voltage is within the acceptable range. This is the normal way to switch to bypass. If desired, the UPS can also be set to switch to bypass when switched off instead of turning off all outputs. See Section UPS Setting 05: Bypass enable/disable when UPS is off on page 17 for details.

4.2 LCD Panel



DISPLAY	FUNCTION
Remaining backup time setting and information	
	Illuminated when UPS is in battery backup mode.
	Indicates the backup time remaining in number of hours, minutes, or seconds. H: hours, M: minute, S: second
Setting operation	
	Shows the setting number currently selected when in the settings menu.
Fault & warning information	
	A warning or fault is occurring.

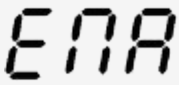
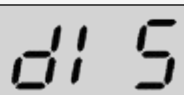
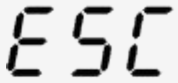
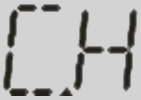
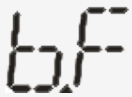
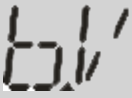
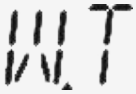
DISPLAY	FUNCTION
	Shows the active warning or fault code. The codes are listed in detail in UPS Setting .
Mute operation	
	The audible alarm is disabled when this is lit.
UPS information	
	Shows the currently selected status from the following list: • Vac input voltage • Vac output voltage • Vdc battery voltage • Hz frequency • % load level • °C/°F internal temperature
Load information	
	Displays the output load level by showing 1- 4 bars: • 1 bar - 0-25% • 2 bars - 26-50% • 3 bars - 51-75% • 4 bars - 76-100%
	The output is overloaded.
	The output is shorted.
Mode operation information	
	The UPS is in online mode.
	The UPS is in battery mode.

DISPLAY	FUNCTION
	The UPS is in bypass mode.
	The UPS is in ECO mode.
	The UPS is in frequency converter mode.
	The UPS is charging the battery.
Battery information	
	Displays the battery capacity by showing 1- 4 bars: 1 bar - 0-25% 2 bars - 26-50% 3 bars - 51-75% 4 bars - 76-100%
	The battery has faulted.
	The battery level is low.

4.3 Audible Alarm

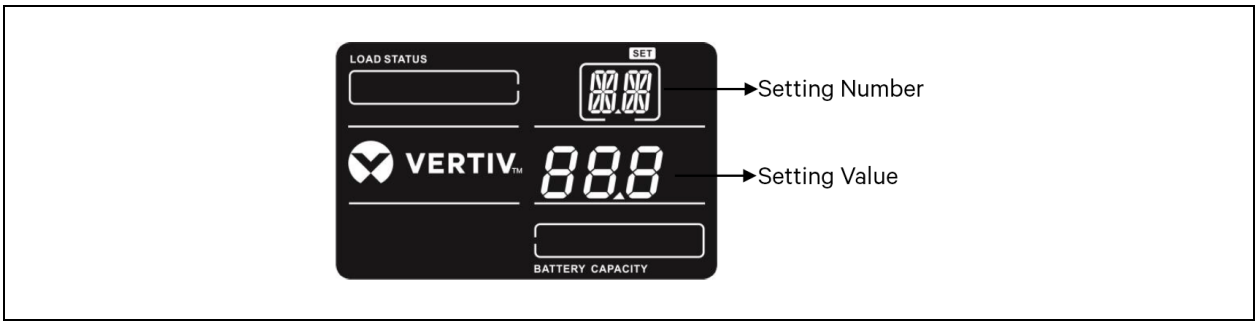
Condition	Audible Alarm
Bypass Mode	Sounds every 10 seconds
Battery Mode	Sounds every 4 seconds
Low Battery	Sounds every second
Overload	Sounds twice every second
Fault	Continuously sounds

4.4 LCD Display Wordings Index

LCD AREA	DISPLAY CONTENT	ABBREVIATION	MEANING
		ENA	Enable
		DIS	Disable
		ESC	Escape
		b.L	Low battery
		O.L	Overload
		N.C	Battery is not connected
		O.C	Overcharge
		C.H	Charger
		b.F	Battery fault
		b.V	Bypass voltage out of range
		W.T	Waiting
		F.U	Bypass frequency unstable
		E.E	EEPROM error

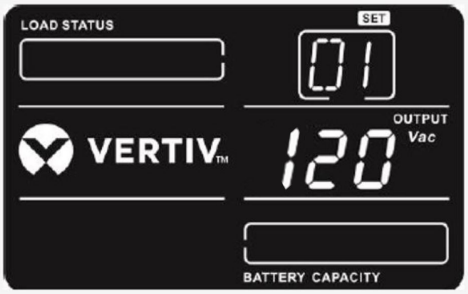
4.5 UPS Setting

To adjust UPS settings, switch the UPS to standby mode and press and hold the select button for 5 seconds to enter the settings menu. Use the arrow keys to browse to the desired setting and then press enter to select it. Once selected, use the arrow keys to select the desired settings value. Browse to setting 00, ESC and press enter to select ESC to leave the menu.

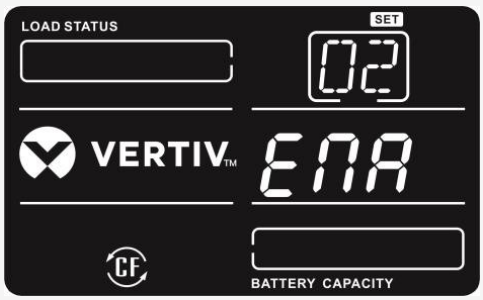


- Setting number and setting value are shown when browsing the UPS setting menu.
- Setting number indicates the setting selected to be modified. Refer to the table below for details of each setting.
- Setting value indicates the current value selected for the displayed setting number.

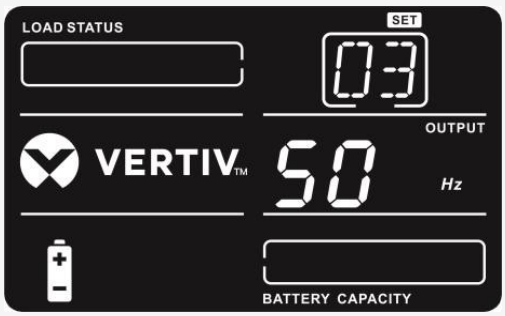
01: Output voltage setting

INTERFACE	SETTING
	You may choose the following output voltages: **110**: output voltage is 110 Vac (Default on UXL models) **120:** output voltage is 120 Vac **127:** output voltage is 127 Vac (Default on UXLB models)

02: Frequency Converter enable/disable

INTERFACE	SETTING
	Enable or disable frequency converter mode. **CF ENA:** converter mode enable **CF DIS:** converter mode disable (Default)

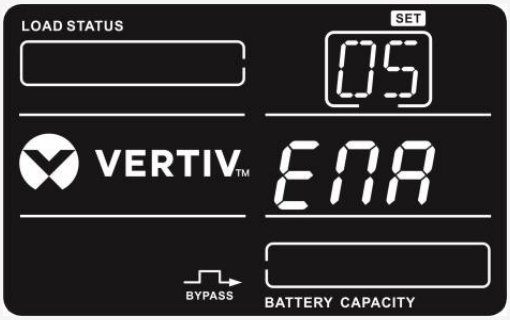
03: Output frequency setting

INTERFACE	SETTING
	Set output frequency: **50:** output frequency is 50 Hz **60:** output frequency is 60 Hz (Default)

04: ECO enable/disable

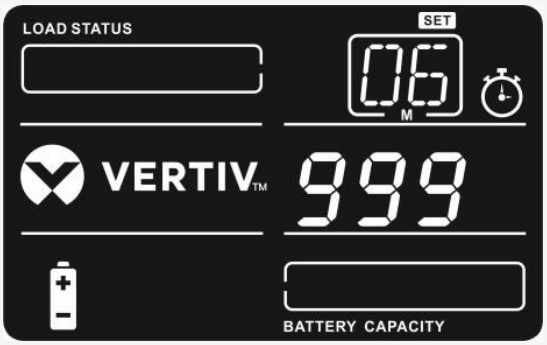
INTERFACE	SETTING
	Enable or disable ECO mode. **ENA:** ECO mode enabled **DIS:** ECO mode disabled (Default)

05: Bypass enable/disable when UPS is off

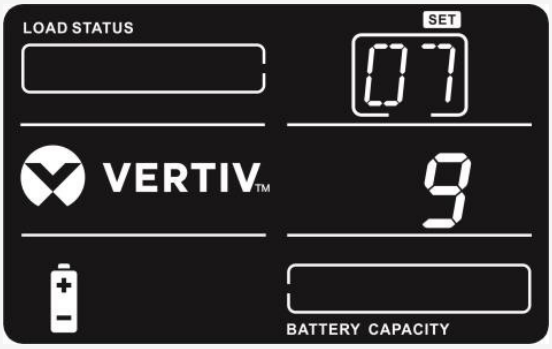
INTERFACE	SETTING
	Enable or disable bypass mode when the UPS is off. **ENA:** Bypass enable **DIS:** Bypass disable (Default)

NOTE: Press and hold ON/MUTE and SELECT simultaneously for 5 seconds to enter bypass mode while the UPS is on and input voltage is within the acceptable range.

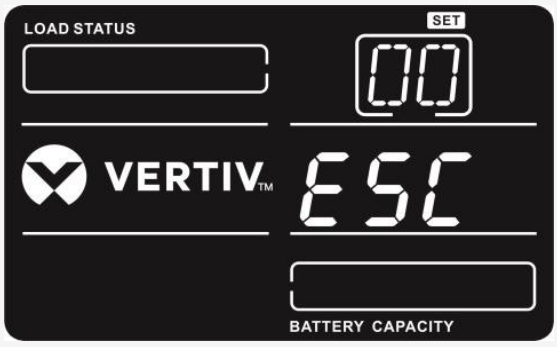
06: Backup time setting

INTERFACE	SETTING
	Sets the amount of backup time on battery mode for outlets when utility power is removed. **0:** Backup time is 10 seconds. **1-998:** Set the backup time from 1-998 minutes **999:** The backup time setting is disabled. Output is provided until battery end of discharge (Default)

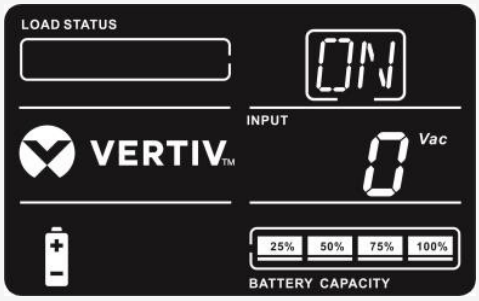
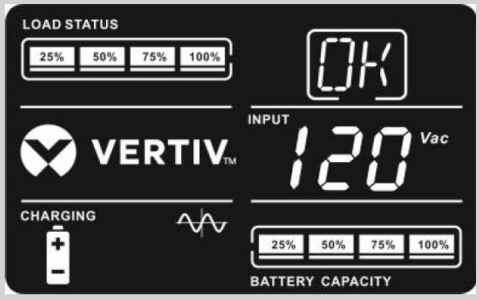
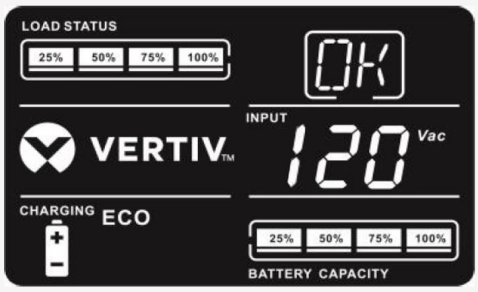
07: Battery total AH setting

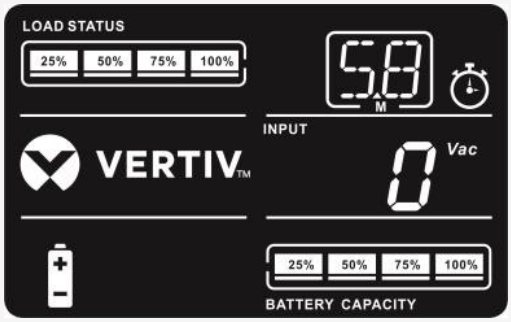
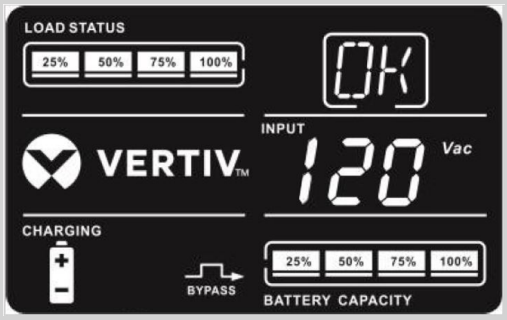
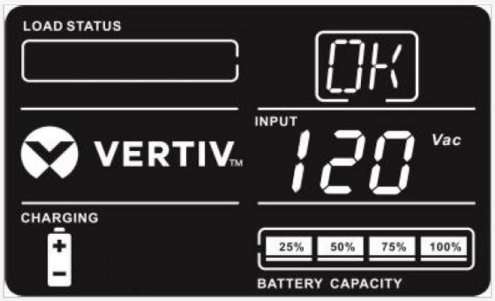
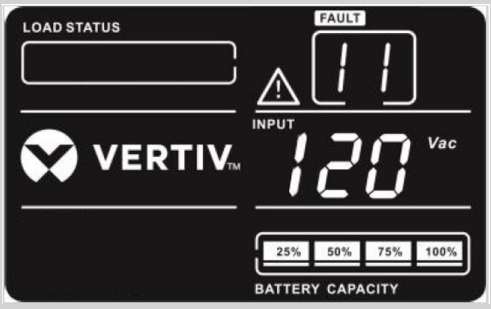
INTERFACE	SETTING
	Set the external battery cabinet (EBC) total amp hour (AH) if EBC is connected. **7-999:** sets the total battery capacity from 7-999 in AH. Add 18AH for each EBC connected. For example set 27AH for one connected EBC (18AH+9AH), set 45AH for two connected EBCs (18AH+18AH+9AH).

00: Exit setting

INTERFACE	SETTING
	**ESC:** Exit the setting menu.

4.6 Operating Mode Description

OPERATING MODE	DESCRIPTION	LCD DISPLAY
Turn on	When pressing the “ON/MUTE” button, if battery voltage is within acceptable range, “ON” will flash until the UPS is turned on.	
Online mode	When the input voltage is within acceptable range, UPS will provide pure and stable AC power to output. The UPS will also charge the battery in online mode.	
ECO mode	Energy saving mode: When the input voltage is within voltage regulation range, UPS will bypass input voltage to the output to save energy.	
Frequency Converter mode	When input frequency is within 40 Hz to 70Hz, the UPS can be set at a constant output frequency, 50 Hz or 60 Hz. The UPS will still charge battery under this mode.	

OPERATING MODE	DESCRIPTION	LCD DISPLAY
Battery mode	When the input voltage is outside the acceptable range, the UPS will provide backup power from the battery and the alarm will sound every 4 seconds.	
Bypass mode	When input voltage is within the acceptable range but the UPS is overloaded the UPS will enter bypass mode. Bypass mode can also be set by pressing and holding the ON/MUTE/UP and SELECT/DOWN buttons simultaneously for 5 seconds while the UPS is on or through the settings menu while the UPS is off. The alarm will sound every 10 seconds.	
Standby mode	UPS output is off, but the battery is still charged as needed.	
Fault mode	The UPS is in fault mode when no output power can be supplied from the UPS and the fault icon and number are displayed on the LCD display. The alarm will sound continuously.	

4.7 Faults Reference Code

FAULT EVENT	FAULT CODE	FAULT ICON
Bus start fail	01	X
Bus over	02	X
Bus under	03	X
Bus unbalance	04	X
Inverter soft start fail	11	X
Inverter voltage high	12	X
Inverter voltage low	13	X
Inverter output short	14	
Battery voltage too high	27	
Battery voltage too low	28	
Over temperature	41	X
Over load	43	
Charger failure	45	X

4.8 Warning Indicators

WARNING	INDICATOR		ALARM
	WORD	ICON (FLASHING)	
Low battery	b.L		Sounds every second
Over load	O.L		Sounds twice every second
Battery is not connected	N.C		Sounds every second
Overcharge	O.C		Sounds every second
Waiting	W.T		Sounds every second
Charger failure	C.H		Sounds every second

WARNING	INDICATOR		ALARM
	WORD	ICON (FLASHING)	
Bypass voltage out of range	b.V		Sounds every second
Battery fault	b.F		Sounds every second
Bypass frequency unstable	F.U		Sounds every second
EEPROM error	E.E		Sounds every second

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5 Troubleshooting

If the UPS system does not operate correctly, please use the table below to resolve the problem.

SYMPTOM	POSSIBLE CAUSE	REMEDY
No indication and alarm even though the mains is normal	The AC input power is not connected well	Check if the input power cord is firmly connected to the mains
	The AC input is not connected to the UPS output	Plug the AC input power cord to AC input correctly
The icons  and  are flashing on the LCD display. The alarm sounds every second.	The external or internal battery is incorrectly connected	Check if all batteries are connected well
Fault code is shown as 27 and the icon BATTERY FAULT is lighting on the LCD display. The alarm sounds continuously.	Battery voltage is too high or the charger has faulted	Contact Vertiv
Fault code is shown as 28 and the icon BATTERY FAULT is lighting on the LCD display. The alarm sounds continuously.	Battery voltage is too low or the charger has faulted	Contact Vertiv
The icons  and OVER LOAD are flashing on the LCD display. The alarm sounds twice every second.	UPS is overloaded	Remove excess loads from UPS output
	UPS is overloaded. Devices connected to the UPS are fed directly by the electrical network via the Bypass.	Remove excess loads from UPS output
	After repetitive overloads, the UPS is locked in the Bypass mode. Connected devices are fed directly by the mains	Remove excess loads from UPS output first. Then shut down the UPS and restart it
Fault code is shown as 43 and the icon OVER LOAD is lighting on the LCD display. The alarm sounds continuously.	The UPSshuts down automatically because of overload at the UPS output	Remove excess loads from UPS output and restart it
Fault code is shown as 14 and the icon SHORT is lighting on the LCD display. The alarm sounds continuously.	The UPS shut down automatically because short circuit occurs on the UPS output	Check output wiring and if connected devices are in short circuit status
Fault codes are shown as 1, 2, 3, 4, 11, 12, 13 , 41 and 45 on the LCD display. The alarm sounds continuously.	A UPS internal fault has occurred. There are two possible results: 1. The load is still supplied, but directly from AC power via bypass. 2. The load is no longer supplied by power.	Contact Vertiv
Battery backup time is shorter than nominal value	Batteries are not fully charged	Charge the batteries for at least 5 hours and then check the capacity. If the problem still persists, consult Vertiv
	Batteries are defective	Contact Vertiv to replace the battery

6 Storage and Maintenance

6.1 Operation

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

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

6.2 Storage

Before storing, charge the UPS for at least 5 hours. Store the UPS covered and upright in a cool, dry location. During storage, recharge the battery in accordance with the following table:

STORAGE TEMPERATURE	RECHARGE FREQUENCY	CHARGING DURATION
-25 °C - 40 °C	Every 3 months	1-2 hours
40 °C - 45 °C	Every 2 months	1-2 hours

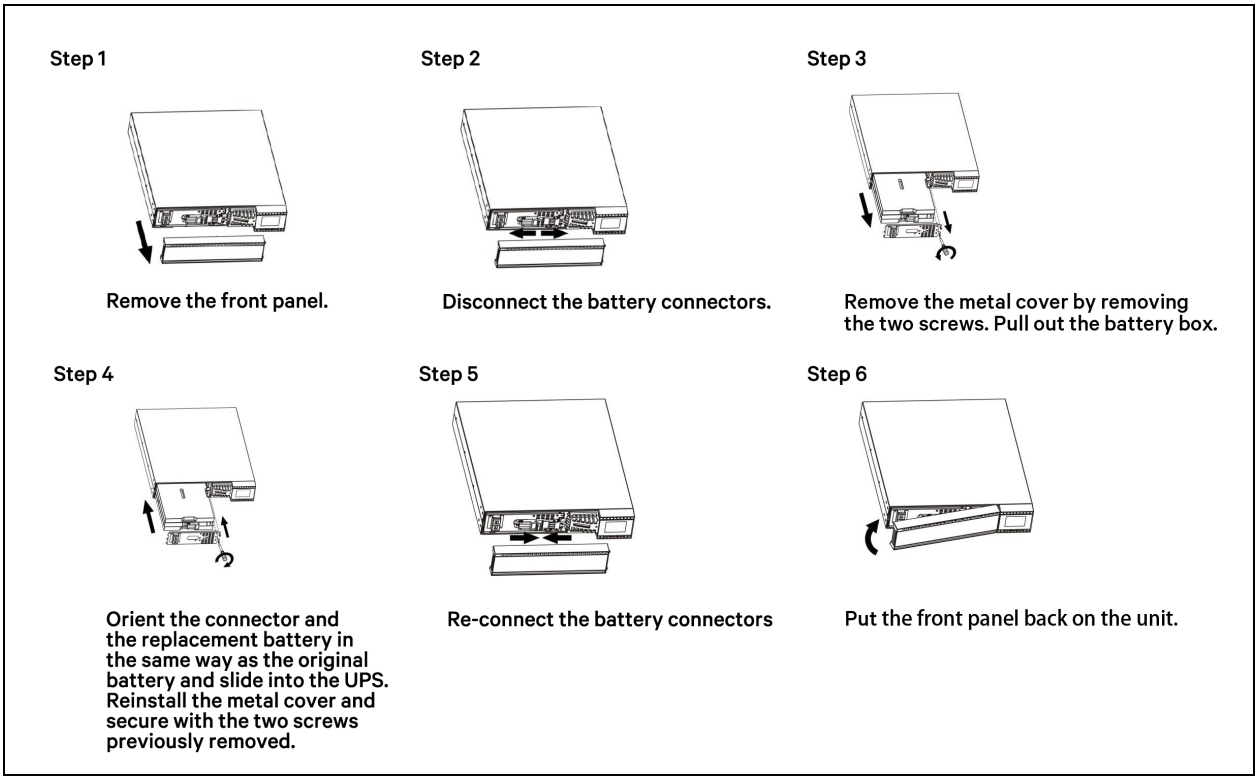
6.3 Battery Replacement for Rack UPS

NOTICE

This UPS is equipped with hot swappable internal batteries that the user can replace without shutting down the UPS or connected loads. Replacement is a safe procedure, isolated from electrical hazards.

CAUTION: Read all warnings, cautions, and notes before replacing batteries.

NOTE: Upon battery disconnection, equipment is not protected from power outages.



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7 Specifications

Table 7.1 UPS Specifications

CAPACITY		1000 VA/ 900 W	1500 VA/ 1350 W	2000 VA/ 1800 W	3000 VA/ 2700 W
GXTRT-		1000LVRT2UXL 1000LVRT2UXLB	1500LVRT2UXL 1500LVRT2UXLB	2000LVRT2UXL 2000LVRT2UXLB	3000LVRT2UXL 3000LVRT2UXLB
INPUT					
Voltage Range	Low Line Transfer	90 VAC / 80 VAC /70 VAC / 60 VAC ± 5% (Ambient Temp. < 35 °C) (Based on load percentage 100% - 80% / 80% - 70% / 70% - 60% / 60% - 0%)			
	Low Line Comeback	100 VAC / 90 VAC / 80 VAC / 70 VAC ± 5 % (Ambient Temp. < 35 °C) (Based on load percentage 100% - 80% / 80% - 70% / 70% - 60% / 60% - 0%)			
	High Line Transfer	150 VAC / 140 VAC ± 5 % (Based on load percentage 80% - 0% / 100% - 80%)			
	High Line Comeback	145 VAC / 135 VAC ± 5 % (Based on load percentage (80% - 0% / 100% - 80%)			
Frequency Range		40 Hz - 70 Hz			
Phase		Single phase with ground			
Power Factor		0.95 @ nominal input voltage			
OUTPUT					
Output Voltage		110/120/127 VAC			
Output Power Factor		0.9			
AC Voltage Regulation		± 1% (Batt. Mode)			
Frequency Range		47 - 53 Hz or 57 - 63 Hz (Synchronized Range)			
Frequency Range (Batt. Mode)		50 Hz ± 0.5% or 60 Hz ± 0.5%			

Table 7.1 UPS Specifications (continued)

CAPACITY		1000 VA/ 900 W	1500 VA/ 1350 W	2000 VA/ 1800 W	3000 VA/ 2700 W
GXTRT-		1000LVRT2UXL 1000LVRT2UXLB	1500LVRT2UXL 1500LVRT2UXLB	2000LVRT2UXL 2000LVRT2UXLB	3000LVRT2UXL 3000LVRT2UXLB
Overload in Online Mode		Ambient Temp. < 35 °C: < 105%: Operate continuously 105% - 110%: Transfer to bypass after 10 minutes 110% - 130%: Transfer to bypass after 30 Seconds 130%-150%:: Transfer to bypass after 3 seconds >150% Transfer to bypass or shut down immediately Ambient Temp. > 35 °C: < 105%: Operate continuously 105% - 110%: Transfer to bypass after 5 minutes 110% - 130%: Transfer to bypass after 15 seconds 130%-150%: Transfer to bypass after 1.5 seconds >150% Transfer to bypass or shut down immediately			
Overload in Battery Mode		Ambient Temp. < 35 °C: < 105%: Operate continuously 105% - 110%: UPS shuts down after 10 minutes 110% - 130%: UPS shuts down after 30 seconds 130%-150%: UPS shuts down after 3 seconds >150% Transfer to bypass or shut down immediately Ambient Temp. > 35 °C: < 105%: Operate continuously 105% - 110%: Transfer to bypass after 5 minutes 110% - 130%: Transfer to bypass after 15 seconds 130%-150%: Transfer to bypass after 1.5 seconds >150% Transfer to bypass or shut down immediately			
Overload in Bypass Mode		< 110%: Operate continuously 110% - 120%: UPS shuts down after 30 minutes 120% - 130%: UPS shuts down after 10 minutes 130% - 150%: UPS shuts down after 1 minute > 150%: UPS shuts down immediately			
Transfer Time	AC Mode to Batt. Mode	Zero			
	Inverter to Bypass	4 ms (Typical)			
Waveform		Pure Sinewave			
EFFICIENCY					

Table 7.1 UPS Specifications (continued)

CAPACITY	1000 VA/ 900 W	1500 VA/ 1350 W	2000 VA/ 1800 W	3000 VA/ 2700 W
GXTRT-	1000LVRT2UXL 1000LVRT2UXLB	1500LVRT2UXL 1500LVRT2UXLB	2000LVRT2UXL 2000LVRT2UXLB	3000LVRT2UXL 3000LVRT2UXLB
Online Mode	88%	88%	89%	90%
Battery Mode	83%	84%	85%	87%
ECO Mode	93%	94%	94%	95%
BATTERY				
Battery Type	Valve-regulated, non-spillable, lead acid			
Quantity x Voltage x Rating	2 x 12V x 9Ah	3 x 12V x 9Ah	4 x 12V x 9Ah	6 x 12V x 9Ah
Recharge Time	4 hours recover to 90% capacity (Typical)			
Charging Current	1.0 A (max.)			
Charging Voltage	27. 2 VDC ± 1%	40.9 VDC ± 1%	54.4 VDC ± 1%	81.7 VDC ± 1%
PHYSICAL				
Unit Dimensions D X W X H (mm)	310 X 438 X 86	410 X 438 X 86		630 X 438 X 86
Unit Weight (kgs)	11.4	16.9	19.5	27.9
Shipping Dimensions D X W X H (mm)	600 x 500 x 240	700 x 565 x 240		760 x 600 x 240
Shipping Weight (kgs)	15.9	22.2	24.4	34.5
COMMUNICATIONS				
RS232	Service Port			
USB	ViewPower			
Optional SNMP	Power management from SNMP manager and web browser			
AGENCY				
Safety	IEC 62040-1: 2017 IEC 62040-1: 2008+A1: 2013 EN 62040-1: 2019			
EMI	EN IEC 62040-2: 2018			
Surge Immunity	EN 61000-4-5: 2014 Class 2 L-N, Class 3 L-G			
Transportation	ISTA 2A			
ENVIRONMENTAL REQUIREMENTS				
Operating Temperature, ℃	0 to 50*			
Storage Temperature, ℃	-20 to 50			

Table 7.1 UPS Specifications (continued)

CAPACITY	1000 VA/ 900 W	1500 VA/ 1350 W	2000 VA/ 1800 W	3000 VA/ 2700 W
GXTRT-	1000LVRT2UXL 1000LVRT2UXLB	1500LVRT2UXL 1500LVRT2UXLB	2000LVRT2UXL 2000LVRT2UXLB	3000LVRT2UXL 3000LVRT2UXLB
Operating Relative Humidity	8% to 80%, non-condensing			
Storage Relative Humidity	5% to 95%, non-condensing			
Operating Elevation	2000 m without derating. Between 2000 and 3000 m, derate 1% for every 100m. Operation above 3000 m is not supported.			
Noise Level	55 dBA max @1 Meter			
*To extend battery life, it is recommended to use the UPS in the range of 15 - 25 °C. The threshold of low line transfer and low line comeback is increased when Ambient Temp. is 35 - 50 °C. 70% derating of output when Ambient Temp. is 40 - 50 °C. The overload capacity is decreased when Ambient Temp. is 40 - 50 °C. Transfer to bypass mode and show temp. alarm when Ambient Temp. > 50 °C and transfer back to online mode when Ambient Temp. < 40 °C.				

Table 7.2 EBC Specifications

CAPACITY	1000 VA/ 900 W	1500 VA/ 135 0 W	2000 VA/ 1800 W	3000 VA/ 2700 W
GXTRT-	EBC24VRT2U	EBC36VRT2U	EBC48VRT2U	EBC72VRT2U
PHYSICAL				
Unit Dimensions D X W X H (mm)	410 x 438 x 86		510 x 438 x 86	630 x 438 x 86
Unit Weight (kgs)	16.2	21.2	28.6	40.8
Shipping Dimensions D X W X H (mm)	600 x 500 x 240		700 x 565 x 240	760 x 600 x 240
Shipping Weight (kgs)	21.1	26.1	34.3	47.2
BATTERY				
Battery Type	Valve-regulated, non-spillable, lead acid			
Battery Configuration	Two parallel strings of two 12V/9Ah batteries in series.	Two parallel strings of three 12V/9Ah batteries in series.	Two parallel strings of four 12V/9Ah batteries in series.	Two parallel strings of six 12V/9Ah batteries in series.
Charging Voltage	27.2 VDC ± 1%	40.9 VDC ± 1%	54.4 VDC ± 1%	81.7 VDC ± 1%
AGENCY				
Safety	IEC 62040-1:2017 IEC 62040-1:2008+A1: 2013 EN 62040-1: 2019			
EMI	IEC/EN 62040-2:2018			
Surge Immunity	EN 61000-4-5: 2014 Class 2 L-N, Class 3 L-G			
Transportation	ISTA 2A			
ENVIRONMENTAL REQUIREMENTS				

Table 7.2 EBC Specifications (continued)

CAPACITY	1000 VA/ 900 W	1500 VA/ 135 0 W	2000 VA/ 1800 W	3000 VA/ 2700 W
GXTRT-	EBC24VRT2U	EBC36VRT2U	EBC48VRT2U	EBC72VRT2U
Operating Temperature, °C	0 to 50			
Storage Temperature, °C	-20 to 50			
Operating Relative Humidity	8% to 80%, non-condensing			
Storage Relative Humidity	5% to 95%, non-condensing			
Operating Elevation	2000 m without derating. Between 2000 and 3000 m, derate 1% for every 100 m. Operation above 3000 m is not supported.			

Table 7.3 GXTRT-1000LVRT2UXL and GXTRT-1000LVRT2UXLB Runtime Table

LOAD			INTERNAL BATTERY ONLY	NUMBER OF EXTERNAL BATTERY CABINETS					
				1	2	3	4	5	6
%	VA	W	Minutes						
25	250	225	19	69	129	184	240	291	335
50	500	450	9	38	70	103	139	176	213
69	690	621	5.3	26	48	72	95	120	145
75	750	675	5	10	10	10	10	10	10
80	800	720	3.5	3.5	3.5	3.5	3.5	3.5	3.5
90	900	810	3.5	3.5	3.5	3.5	3.5	3.5	3.5
100	1000	900	3.1	3.5	3.5	3.5	3.5	3.5	3.5

NOTE: When the output load is >80% of full load, the discharge time limit is set to 3.5 min. When the output load is >70% and <80%, the discharge time limit is set to 10 min. When the output load is <70% load, there is no limit other than battery capacity.

Table 7.4 GXTRT-1500LVRT2UXL and GXTRT-1500LVRT2UXLB Runtime Table

LOAD			INTERNAL BATTERY ONLY	NUMBER OF EXTERNAL BATTERY CABINETS					
				1	2	3	4	5	6
%	VA	W	Minutes						
25	375	338	21	76	143	203	261	321	380
50	750	675	9	38.5	72	106	143	180	215
69	1035	932	5.5	26.2	48	72	97	123	150
75	1125	1013	5	10	10	10	10	10	10
80	1200	1080	3.5	3.5	3.5	3.5	3.5	3.5	3.5
90	1350	1215	3.5	3.5	3.5	3.5	3.5	3.5	3.5
100	1500	1350	3.2	3.5	3.5	3.5	3.5	3.5	3.5

NOTE: When the output load is >80% of full load, the discharge time limit is set to 3.5 min. When the output load is >70% and <80%, the discharge time limit is set to 10 min. When the output load is <70% load, there is no limit other than battery capacity.

Table 7.5 GXTRT-2000LVRT2UXL and GXTRT-2000LVRT2UXLB Runtime Table

LOAD			INTERNAL BATTERY ONLY	NUMBER OF EXTERNAL BATTERY CABINETS					
				1	2	3	4	5	6
%	VA	W	Minutes						
25	500	450	23	85	159	228	300	364	423
50	1000	900	9	39	73	111	151	188	225
69	1380	1242	6	27	50	77	104	132	160
75	1500	1350	5.7	10	10	10	10	10	10
80	1600	1440	3.5	3.5	3.5	3.5	3.5	3.5	3.5
90	1800	1620	3.5	3.5	3.5	3.5	3.5	3.5	3.5
100	2000	1800	3.2	3.5	3.5	3.5	3.5	3.5	3.5

NOTE: When the output load is >80% of full load, the discharge time limit is set to 3.5 min. When the output load is >70% and <80%, the discharge time limit is set to 10 min. When the output load is <70% load, there is no limit other than battery capacity

Table 7.6 GXTRT-3000LVRT2UXL and GXTRT-3000LVRT2UXLB Runtime Table

LOAD			INTERNAL BATTERY ONLY	NUMBER OF EXTERNAL BATTERY CABINETS					
				1	2	3	4	5	6
%	VA	W	Minutes						
25	750	675	26	95	168	242	312	380	443
50	1500	1350	10.5	42	78	115	155	195	234
69	2070	1863	6	28	52	79	107	136	165
75	2250	2025	5.8	10	10	10	10	10	10
80	2400	2160	3.5	3.5	3.5	3.5	3.5	3.5	3.5
90	2700	2430	3.5	3.5	3.5	3.5	3.5	3.5	3.5
100	3000	2700	3.3	3.5	3.5	3.5	3.5	3.5	3.5

NOTE: When the output load is >80% of full load, the discharge time limit is set to 3.5 min. When the output load is >70% and <80%, the discharge time limit is set to 10 min. When the output load is <70% load, there is no limit other than battery capacity

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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: warranty.channel.emea@vertiv.com

p: Toll free 0080011554499

In the United States

Technical support

e: liebert.upstech@vertiv.com

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

Monitoring support

e: liebert.monitoring@vertiv.com

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

Warranty support

e: microups.warranty@vertiv.com

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

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