



Vertiv™ Liebert® GXT MT+ EX 1-3 kVA

User Manual

The information contained in this document is subject to change without notice and may not be suitable for all applications. While every precaution has been taken to ensure the accuracy and completeness of this document, Vertiv assumes no responsibility and disclaims all liability for damages resulting from use of this information or for any errors or omissions. Refer to other local practices or building codes as applicable for the correct methods, tools, and materials to be used in performing procedures not specifically described in this document.

The products covered by this instruction manual are manufactured and/or sold by Vertiv. This document is the property of Vertiv and contains confidential and proprietary information owned by Vertiv. Any copying, use or disclosure of it without the written permission of Vertiv is strictly prohibited.

Names of companies and products are trademarks or registered trademarks of the respective companies. Any questions regarding usage of trademark names should be directed to the original manufacturer.

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.

TABLE OF CONTENTS

1 Important Safety Instructions	1
2 Important Safety Warning	3
2.1 Transportation	3
2.2 Preparation Before Installation	4
2.3 Product Installation	4
2.4 Operation	5
2.5 Maintenance, Service, and Faults	5
3 Installation and Setup	7
3.1 Rear Panel View	7
3.2 Setup the UPS	9
4 Operations	13
4.1 Button Operation	13
4.2 LCD Panel	14
4.3 Audible Alarm	16
4.4 LCD Display Wordings Index	17
4.5 UPS Settings	18
4.6 Operating Mode Description	21
4.7 Faults Reference Code	23
4.8 Warning Indicator	24
5 Storage and Maintenance	25
6 Troubleshooting	27
7 Technical Specifications	29
8 Appendices	i
Appendix A: UPS Installation Guide	i

This page intentionally left blank

1 Important Safety Instructions

IMPORTANT! This manual contains important safety instructions that must be followed during the installation and maintenance of the Vertiv™ Liebert® GXT MT+ EX 1-3 kVA UPS. Read this manual thoroughly, and the safety and regulatory information are available at [Compliance Regulatory Info](#).


Purpose of the Document

This document applies to Vertiv™ Liebert® GXT MT+ EX 1-3 kVA UPS and cooling solutions which maintain optimal environmental control of technological ecosystems at minimal operating costs. This document gives an overview of the specifications, installation, commissioning, and maintenance procedures with troubleshooting from the user's perspective. The figures used in this document are for reference only.

Please read this manual carefully before installing, maintaining, and troubleshooting.

Styling used in this Guide

The styles used in the manual will be defined as mentioned in the following table:

Situation	Description
Warning/Danger/Caution	 WARNING! The Warning/Danger/Caution note indicates a hazardous or potentially harmful situation that can result in death or injury. It also indicates instructions that need to be adhered to, failing which may result in danger and safety issues thereby having an adverse effect on the reliability of the device and security. Even for practices not related to physical injury, to avoid equipment damage, performance degradation, or interruption in service, follow the warning instruction.
Note	NOTE: The Note section indicates additional and useful information. It also calls attention to best practices and industry-best protocols that are standardized and help make maximum utilization of the resources at hand. Helpful information related to the product also comes under the Note heading, helping the users with the definitions, concepts, and terminologies used in the manual.

Version History

Version	Revision Date	Remarks
V1	12/06/2023	Initial Release

This page intentionally left blank

2 Important Safety Warning

It is recommended to comply with all warnings and operating instructions in this manual strictly.



WARNING! Do not operate this unit before reading all safety information and operating instructions carefully.



WARNING! Read this product manual and the safety precautions carefully, before installing, and commissioning this unit. Failure to comply with these precautions might risk the personnel safety or put the product in danger.

This manual contains information concerning the installation and operation of the Vertiv™ Liebert® GXT MT+ EX 1-3 kVA UPS (hereinafter referred to as UPS). It is recommended to read this manual carefully prior to installation.

It is recommended to read the safety precautions very carefully before operating the unit in order to minimize the risk of any accident. The words "Caution," "Note," and "Warning" used in this user manual and on the product do not represent all the safety precautions to be observed and are only a supplement to the various safety precautions. Therefore, installation and operation personnel must receive the required training and follow the correct operations and all the safety points before operation.

When operating the Vertiv products, the operation personnel must observe the safety rules in the industry, the general safety points, and special safety instructions provided by the Vertiv.

2.1 Transportation

- It is recommended to transport the UPS system only in the original package to protect against shock and impact.

2.2 Preparation Before Installation

- If the UPS system is relocated from a cold environment to a warm environment, condensation may occur.



WARNING! The UPS system must be completely dry before installation.

It is recommended to schedule and allow at least two hours for the UPS system to adapt to the surroundings.



WARNING! Do not install the UPS system near water or in a moist environment.



WARNING! Do not install the UPS system where it would be exposed to direct sunlight or near the heater.



WARNING! Do not block ventilation holes in the UPS housing.

2.3 Product Installation



WARNING! Do not connect equipment which would overload the UPS system (e.g. laser printers) to the UPS output sockets. The load on the ups system should not exceed the rated capacity of the UPS. Overloading of UPS can impact on UPS operation.

- Cabling should be carried out in such a way that no one can step on or trip over them accidentally.
- Do not connect domestic appliances such as hair dryers to UPS output sockets.
- The UPS can be operated by any individual with no previous experience.
- Connect the UPS system only to a shockproof earthing outlet which must be easily accessible and must be located nearby the UPS system.
- It is recommended to 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 outlet (shockproof outlet).
- It is recommended to use only VDE-tested, CE-marked power cables to connect the loads to the UPS system.
- When installing the unit, ensure that the sum of the leakage current of the UPS and the connected devices should not exceed 3.5 mA.

2.4 Operation



WARNING! Do not disconnect the mains cable on the UPS system or the building wiring outlet (shockproof socket outlet) during operations since this would cancel the protective earthing of the UPS system and of all connected loads.

- The UPS system can function as its own internal current source (batteries).



CAUTION: The UPS output sockets may be electrically live even if the UPS system is not connected to the building wiring outlet. It is recommended to first press the OFF/Enter button to disconnect the mains supply in order to completely disconnect the UPS system.

- Prevent fluids or any other foreign objects from entering the UPS system.

2.5 Maintenance, Service, and Faults

- The UPS system operates with hazardous voltages. The maintenance, service, and repairs must be carried out only by authorized trained 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.



CAUTION: 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-capability capacitors such as BUS-capacitors.

- Only trained engineers with the necessary knowledge of the batteries must be allowed to replace batteries and supervise operations. Unauthorized access to the batteries must not be permitted.



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, ensure that no voltage is present!



WARNING! Batteries may cause electric shock and have a high short-circuit current. It is recommended to take the precautions listed below, including any additional safety measures that may be required when working with batteries:

Remove wristwatches, rings, and other metal objects.

Only use tools with properly insulated grips and handles.

When changing batteries, install the same number and same type of batteries.



WARNING! Do not attempt to dispose of batteries by burning them. This could cause a battery explosion.



WARNING! Do not open or destroy batteries as it can result in the escaping of the electrolytes that can be toxic and can cause serious injury to the skin and eyes.

- It is recommended to replace the fuse with the same type and ampere rating in order to avoid fire hazards.
- Do not dismantle the UPS system.

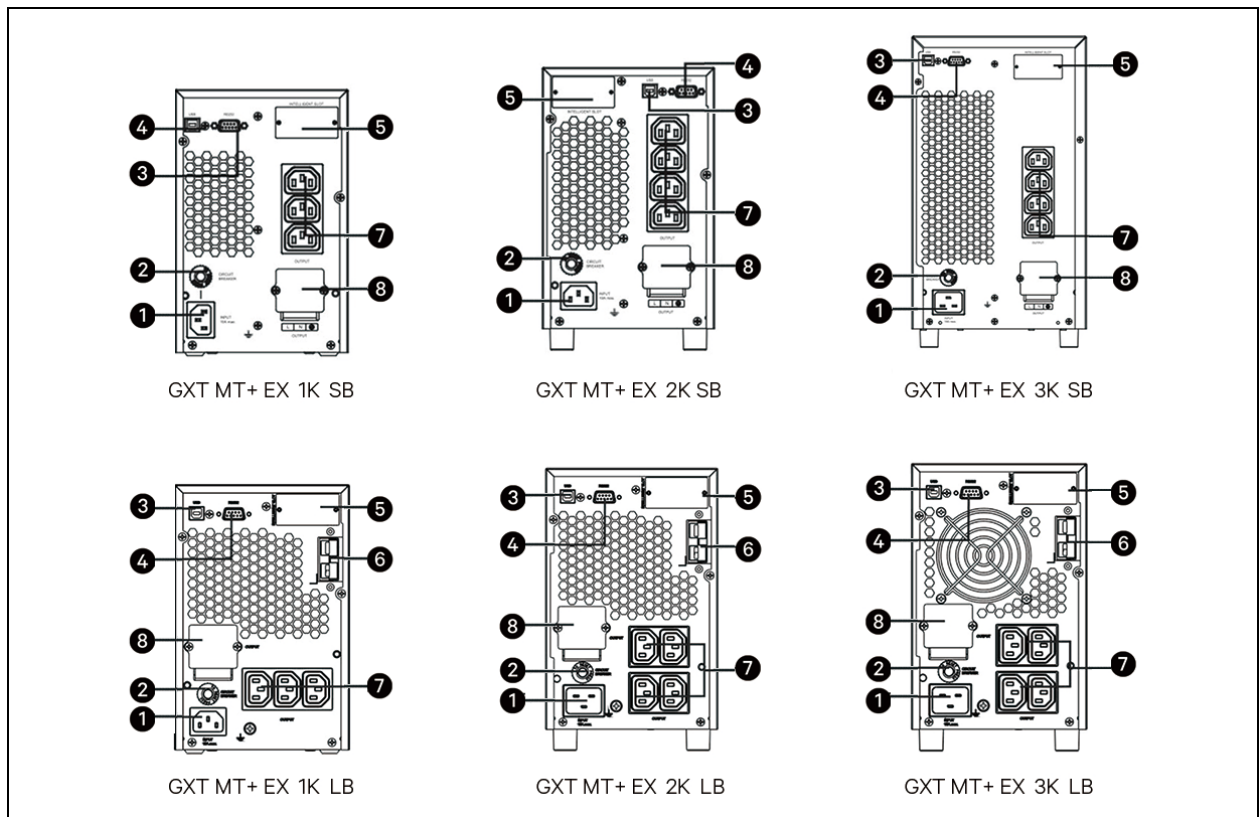
3 Installation and Setup

This chapter describes the list of essential steps needed to be work carried out before installation, including unpacking, inspection, lifting, hoisting, and transportation of the Vertiv™ Liebert® GXT MT+ EX UPS.

3.1 Rear Panel View

Upon the arrival of the unit at the specified site location, the receiver should arrange the trained personnel to unpack and inspect the unit. It is recommended that before unpacking, the unit should be brought as close to the installation site as possible.

Figure 3.1 Rear panel view



Parameter	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 (only available for L model)
7	Output receptacles
8	Output terminal

3.2 Setup the UPS

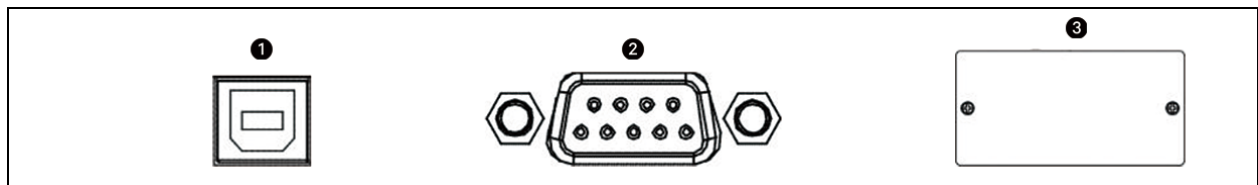
Step 1: UPS input connection

Plug the UPS into a two-pole, three-wire, grounded outlet only. Avoid using extension cords. The power cord is supplied in the UPS package.

Step 2: UPS output connection

- For socket-type outputs, connect devices to the outlets.
- For terminal-type inputs or outputs, follow below steps for the wiring configuration:
 - a. Remove the small cover of the terminal block.
 - b. Suggest using 14 AWG or 2.1 mm² power cords.
 - c. Upon completion of the wiring configuration, ensure that the wires are connected correctly and properly.
 - d. Place the small cover back to the rear panel.

Step 3: Communication connection Communication port:



Parameter	Description
1	USB port
2	RS-232 port
3	Intelligent slot

It is recommended to connect the communication cable on one end to the USB/RS-232 port and the other to the communication port of the connected PC to enable unattended UPS shutdown/start-up and status monitoring.

It is possible to schedule UPS shutdown/start-up and monitor UPS status with the monitoring software installed in the PC.

The UPS is equipped with an intelligent slot that is suitable for either an SNMP or an AS400 card. The UPS will provide advanced communication and monitoring options after installation of either an SNMP or an AS400 card to the UPS.

NOTE: The USB port and the RS-232 port cannot be active simultaneously.

Step 4: Switch on the UPS

To switch on the UPS, press the ON/MUTE button on the front panel for two seconds.

NOTE: During the first five hours of normal operation, the battery fully charges. Do not anticipate the battery to be fully charged during this initial charging period.

Step 5: Install software

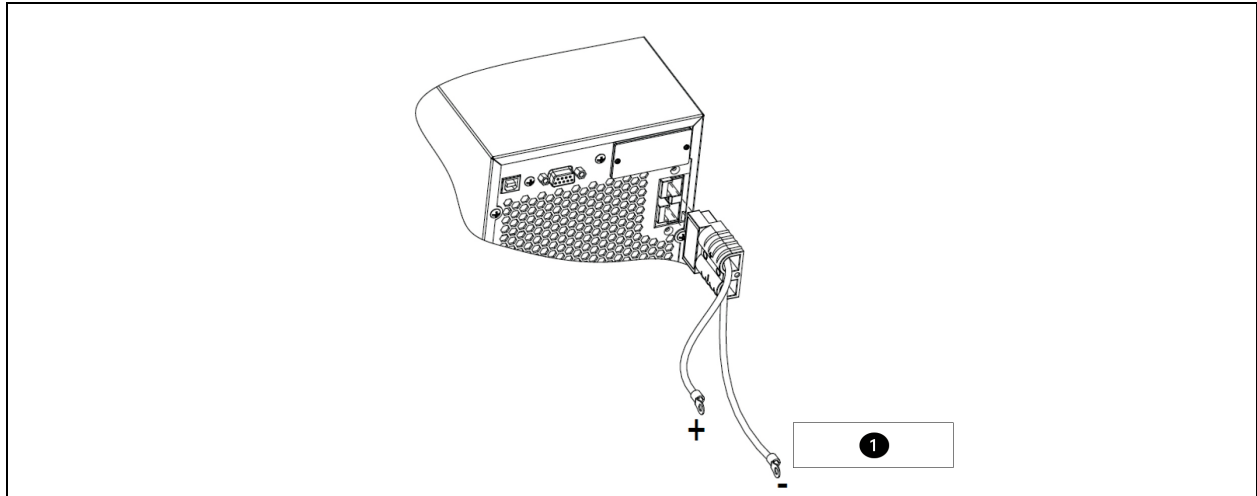
Install the UPS monitoring software to properly configure UPS shutdown for optimum computer system protection. It is recommended to insert the CD included (with the UPS packaging) into a CD-ROM drive to install the monitoring program. If not, follow the procedures below to obtain and install monitoring software from the Internet:

1. Visit the website <http://www.power-software-download.com>.
2. To download the program, click the "ViewPower" software icon and then select the suitable operating system (OS).
3. To install the program, follow the on-screen instructions.
4. When the user restarts the computer, the monitoring program will display an orange plug symbol located in the system tray, near the clock.

Step 6: External battery connection

To connect an external battery, refer to **Figure 3.2** below.

Figure 3.2 External battery connection



Parameter	Description
1	External Battery

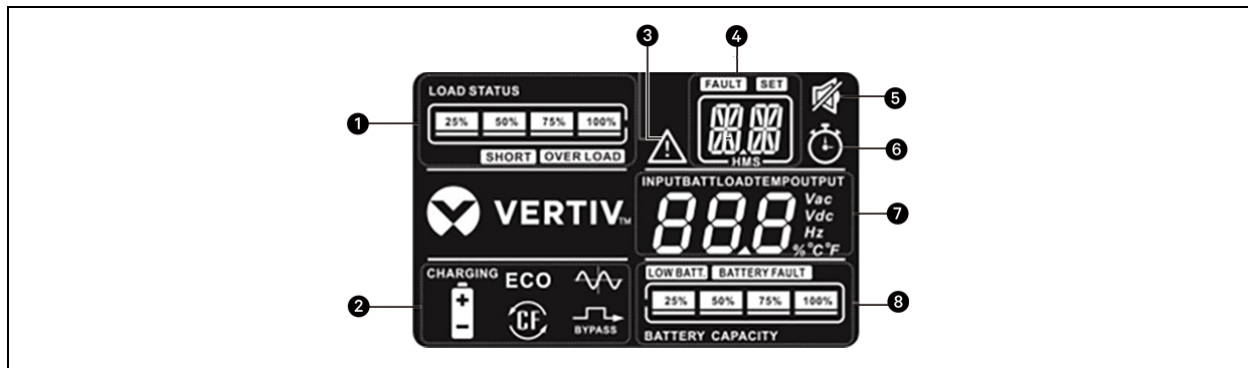
This page intentionally left blank

4 Operations

4.1 Button Operation

Button	Function
ON/Mute Button	<ul style="list-style-type: none"> To switch on the UPS, press and hold the ON/MUTE button for at least 2 seconds. Mute the alarm: When the UPS is on battery mode, to enable or disable the alarm system, press and hold this button for at least 5 seconds. However, it will be automatically enabled when the next set of warnings or errors occur. Up key: In UPS setting mode, press this button to return to the previous selection display. Switch to UPS self-test mode: To activate the UPS self-testing when in AC mode, ECO mode, or converter mode, press and hold the ON/MUTE button for 5 seconds.
OFF/Enter Button	<ul style="list-style-type: none"> Turn off the UPS: Under normal power conditions, the UPS will be in standby mode or will switch to Bypass mode if the Bypass enable setting is enabled by pressing this button. Confirm selection key: In UPS setting mode, press this button to confirm the settings you have selected.
Select Button	<ul style="list-style-type: none"> Switch LCD message: To change the LCD message for input voltage, input frequency, battery voltage, output voltage, and output frequency, press this button. Setting mode: When the UPS is in standby or bypass mode, press and hold this button for 5 seconds to enter UPS in the setting mode. Down key: In UPS setting mode, press this button to display the next selections.
ON/Mute + Select Button	<ul style="list-style-type: none"> When the main power is normal, press the ON/Mute and Select buttons simultaneously for 5 seconds to enter bypass mode. The UPS will then enter bypass mode. When the input voltage is out of the allowed range, this operation will become inapplicable.

4.2 LCD Panel



Parameter	Description
1	Load information
2	Mode operation information
3	Warning indicator
4	Fault and warning information/setting operation/backup time setting
5	Mute operation
6	Backup time indicator
7	UPS information
8	Battery information

Table 4.1 LCD Panel Display Function




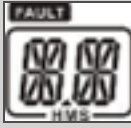


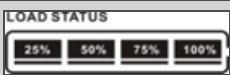


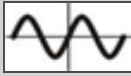




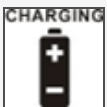



Display parameter	Function
Remaining backup time setting and information	
	Indicates the remaining backup time in pie chart.
	Indicates the remaining backup time in numbers. H: hours, M: minute, S: second
Setting operation	
	Indicates the value set in the setting operation.
Fault and warning information	
	Indicates that the warning situation occurs.
	Indicates the warning and fault codes, and the codes are listed in details in the section UPS Settings 4.5 on page 18.
Mute operation	
	Indicates that the UPS alarm is disabled.
UPS information	
	Indicates the input and output voltage, frequency, battery voltage, load information, and internal temperature. Vac: input/output voltage, Vdc: battery voltage, Hz: frequency, %: load level, and °C/°F: temperature.
Load information	
	Indicates the load level by 0% to 25%, 26% to 50%, 51% to 75%, and 76% to 100%.
	Indicates overload.
	Indicates the load or the UPS output is short-circuited.
Mode operation information	






Table 4.1 LCD Panel Display Function (continued)

Display parameter	Function
	Indicates the UPS is in online mode.
	Indicates the UPS is in battery mode.
	Indicates the UPS is bypass mode.
	Indicates the UPS is in ECO mode.
	Indicates the UPS is in converter mode.
	Indicates the UPS is charging battery.
Battery information	
	Indicates the Battery capacity by 0% to 25%, 26% to 50%, 51% to 75%, and 76% to 100%.
	Indicates the battery is faulty.
	Indicates low battery level and low battery voltage.

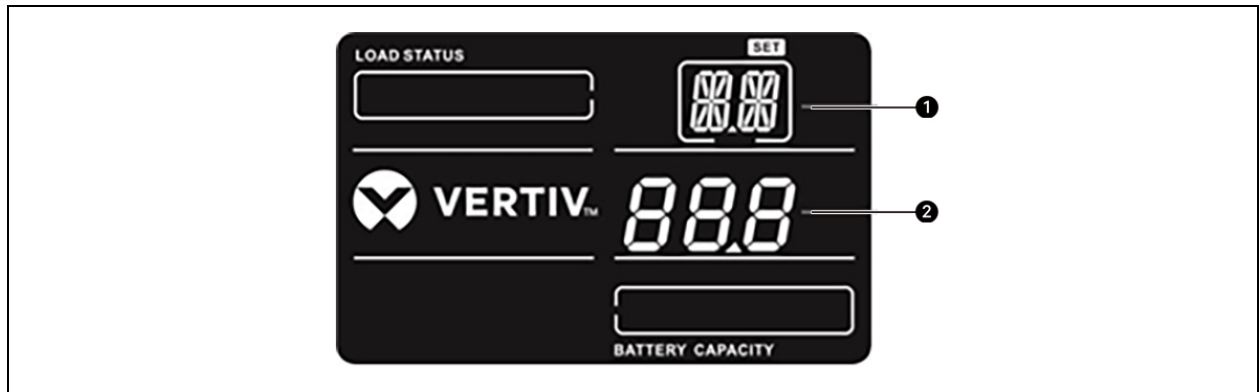
4.3 Audible Alarm

Alarm	Sound Output
Battery Mode	Alarming every 4 seconds
Low Battery	Alarming every second
Overload	Alarming twice every second
Fault	Continuously Alarming
Bypass Mode	Alarming every 10 seconds

4.4 LCD Display Wordings Index

LCD Area	Abbreviation	Display content	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 range
	W.T		Waiting
	F.U		Bypass frequency unstable
	E.E		EEPROM error

4.5 UPS Settings



Parameter	Function
1	It's for program alternatives. Refer to Table 4.2 on the facing page.
2	It is the setting option or value for each program.

Table 4.2 UPS interface settings








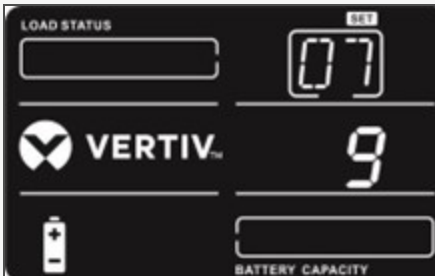

Parameter	Interface	Setting
01: Output voltage setting		<p>Parameter 2: Output voltage setting</p> <p>Select the following output voltage in parameter 2:</p> <p>208: indicates output voltage is 208 Vac</p> <p>220: indicates output voltage is 220 Vac</p> <p>230: indicates output voltage is 230 Vac (Default)</p> <p>40: indicates output voltage is 240 Vac</p>
02: Frequency Converter enable/disable		<p>Parameter 2: Enable or disable converter mode.</p> <p>Select the following two options:</p> <p>CF ENA: converter mode enable CF</p> <p>DIS: converter mode disable (Default)</p>
03: Output frequency setting	 	<p>Parameter 2: Output frequency setting.</p> <p>Select the initial frequency on battery mode:</p> <p>BAT 50: indicates output frequency is 50 Hz (Default)</p> <p>BAT 60: indicates output frequency is 60 Hz If converter mode is enabled, Select the following output frequency:</p> <p>CF 50: indicates output frequency is 50 Hz (Default)</p> <p>CF 60: indicates output frequency is 60 Hz</p>
04: ECO enable/disable		<p>Parameter 2: Enable or disable ECO function.</p> <p>Select the following two options:</p> <p>ENA: ECO mode enable</p> <p>DIS: ECO mode disable (Default)</p>

Table 4.2 UPS interface settings (continued)

Parameter	Interface	Setting
05: Bypass enable/disable when UPS is off		<p>Parameter 2: Enable or disable Bypass function.</p> <p>Select the following two options:</p> <p>ENA: Bypass enable</p> <p>DIS: Bypass disable (Default)</p>
06: Autonomy limitation setting		<p>Parameter 2: Set up backup time on battery mode for general outlets.</p> <p>0-999: Setting the backup time in minutes from 0-999 in battery mode.</p> <p>0: When setting as “0”, the backup time will be only 10 seconds.</p> <p>999: When setting as “999”, the backup time setting will be disabled.</p>
07: Battery total Ah setting		<p>Set up the battery total Ah of the UPS. (unit: Ah)</p> <p>7-999: setting the battery total capacity from 7-999 in Ah.</p> <p>Set the correct battery total capacity if external battery bank is connected.</p> <p>If the unit is standard model, the Ah is fixed to 9 Ah.</p> <p>If the unit is long-run model, the default setting is 65 Ah.</p>
00: Exit setting		<p>ESC: Exit the setting menu.</p>

4.6 Operating Mode Description

Table 4.3 UPS LCD Display





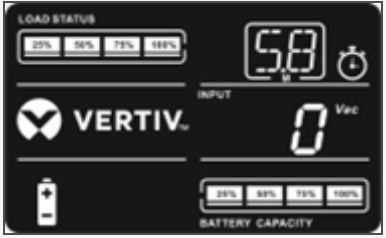
Operating mode	Description	LCD display
Switch on	When pressing “ON/MUTE” button, if battery voltage is within permissible range, “ON” will flash until the UPS is turned on.	 The LCD display shows 'LOAD STATUS' with a progress bar, 'ON' in a box, 'VERTIV.' logo, 'INPUT' voltage as '0 Vac', and 'BATTERY CAPACITY' with a 20% to 100% scale.
Online mode	When the input voltage is within permissible range, UPS will provide pure and stable AC power to output. The UPS will also charge the battery at online mode.	 The LCD display shows 'LOAD STATUS' with a progress bar, 'OK' in a box, 'VERTIV.' logo, 'INPUT' voltage as '230 Vac', and 'BATTERY CAPACITY' with a 20% to 100% scale.
ECO mode	Energy saving mode: When the input voltage is within voltage regulation range, UPS will bypass voltage to output for energy saving.	 The LCD display shows 'LOAD STATUS' with a progress bar, 'OK' in a box, 'VERTIV.' logo, 'INPUT' voltage as '230 Vac', 'CHARGING ECO' indicator, and 'BATTERY CAPACITY' with a 20% to 100% scale.
Frequency Converter mode	When input frequency is within 40 Hz to 70 Hz, the UPS can be set at a constant output frequency, 50 Hz or 60 Hz. The UPS will still charge battery under this mode.	 The LCD display shows 'LOAD STATUS' with a progress bar, 'OK' in a box, 'VERTIV.' logo, 'INPUT' voltage as '230 Vac', 'CHARGING ECO' indicator, and 'BATTERY CAPACITY' with a 20% to 100% scale.











Table 4.3 UPS LCD Display (continued)

Operating mode	Description	LCD display
Battery mode	When the input voltage is exceeds the acceptable range or power failure and alarm is Alarming every 4 second, UPS will backup power from battery.	 <p>The LCD display shows 'LOAD STATUS' with a progress bar from 20% to 100%. The input voltage is 58V. The VERTIV logo is present. The battery capacity is shown as a bar from 20% to 100%.</p>
Bypass mode	When the input voltage is exceeds the acceptable range or power failure and alarm is Alarming every 4 second, UPS will backup power from battery.	 <p>The LCD display shows 'LOAD STATUS' with a progress bar from 20% to 100%. The status is 'OK'. The input voltage is 230V. The VERTIV logo is present. The battery capacity is shown as a bar from 20% to 100%.</p>
Standby mode	When input voltage is within permissible range but UPS is overload, UPS will enter bypass mode or bypass mode can be set by front panel. Alarm is Alarming every 10 second.	 <p>The LCD display shows 'LOAD STATUS' with a progress bar from 20% to 100%. The status is 'OK'. The input voltage is 230V. The VERTIV logo is present. The battery capacity is shown as a bar from 20% to 100%.</p>
Fault mode	UPS is powered off without output power, but the battery still can be charged.	 <p>The LCD display shows 'LOAD STATUS' with a progress bar from 20% to 100%. The status is '11'. The input voltage is 230V. The VERTIV logo is present. The battery capacity is shown as a bar from 20% to 100%.</p>

4.7 Faults Reference Code

Fault event	Fault code	Icon	Fault event	Fault code	Icon
Bus start fail	01	x	Inverter voltage Low	13	x
Bus over	02	x	Inverter output short	14	SHORT
Bus under	03	x	Battery voltage too high	27	BATTERY FAULT
Bus unbalance	04	x	Battery voltage too low	28	BATTERY FAULT
Bus short	05	x	Over temperature	41	x
Inverter soft start fault	11	x	Over load	43	OVER LOAD
Inverter voltage high	12	x	Charger failure	45	x

4.8 Warning Indicator

Warning	Indicator		Alarm
	Word	Icon (flashing)	
Low battery	b.L		Alarming every second
Battery is not connected	O.L		Alarming twice every second
Overload battery is not connected	N.C		Alarming every second
Overcharge	O.C		Alarming every second
Waiting	W.T		Alarming every second
Charger failure	C.H		Alarming every second
Out of bypass voltage range	b.V		Alarming every second
Battery fault	b.F		Alarming every second
Bypass frequency unstable	F.U		Alarming every second
EEPROM error	E.E		Alarming every second

5 Storage and Maintenance

Operation

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

NOTE: Ensure to deliver the used battery to a recycling facility or ship it to the dealer in the replacement battery packing material.

Storage

Before storing the UPS, charge it for 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 to 40 °C	Every 3 months	1 to 2 hours
40 °C to 45 °C	Every 2 months	1 to 2 hours

This page intentionally left blank

6 Troubleshooting

If the UPS system does not operate correctly, refer to the below table:

Symptom	Possible cause	Remedy
No indication and alarm even though the mains is normal	The AC input power is not connected correctly and properly	Check if input power cord is connected correctly and properly to the mains
	The AC input is connected to the UPS output	Plug AC input power cord to AC input correctly
 <p>The  and  icon are flashed on LCD display and alarm is alters every second</p>	The external or internal battery connection is incorrect	Check if all batteries are connected correctly and properly
Fault code is shown as 27 and the icon  indicated on LCD display and alarm is continuously alerts	Battery voltage is too high or the charger is faulty	Contact your Vertiv representative
Fault code is shown as 28 and the icon  lighted on LCD display and alarm is continuously alerts	Battery voltage is too low or the charger is faulty	Contact your Vertiv representative
 <p>The  and  icons are flashed on LCD display and alarm is alerted twice every second</p>	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.
	The UPS gets locked in the Bypass mode following the repeated overloads, therefore the mains are sed to supply power to all connected devices.	Firstly, remove any extra loads from the UPS output, then shut down the UPS and restart.
Fault code is shown as 43 and The icon  is lighting on LCD display and alarm is continuously Alarming	The UPS shut 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  is lighting on LCD display. Alarm is continuously Alarming	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

Symptom	Possible cause	Remedy
Fault code is shown as 1, 2, 3, 4, 5, 11, 12, 13, 41 and 45 on LCD display and alarm is continuously Alarming	A UPS internal fault has occurred. There are two possible results: 1. The load is still supplied, but directly from AC power via bypass 2. The load is no longer supplied by power	Contact your Vertiv representative
Battery backup time is shorter than nominal value	Batteries are not fully charged	Charge the batteries for at least 5 hours and then check capacity. If the problem still persists, consult your Vertiv representative
	Batteries defect	Contact your Vertiv representative to replace the battery
Fault code is show as 05 on LCD display. At the same time, alarm is continuously Alarming and output is cut off	A UPS internal has occurred and BUS is short circuit	Consult your Vertiv representative. If the UPS power is on again before repair, the DC/DC mosfet will damage

7 Technical Specifications

Capacity*		1000 VA/900 W	2000 VA/1800 W	3000 VA/2700 W
Input				
Voltage Range	Low Line Transfer	180 Vac/160 Vac/140 Vac/120 Vac ± 5% (Ambient Temp.< 35 °C) (based on load percentage 100% to 80%; 80% to 70%; 70% to 60%; 60% to 0%)		
	Low Line Comeback	195 Vac/175 Vac/155 Vac/145 Vac ± 5% (Ambient Temp.<35 °C) (based on load percentage 100% to 80%; 80% to 70 %; 70% to 60%; 60 % to 0%)		
	High Line Transfer	300 Vac ± 5 %		
	High Line Comeback	290 Vac ± 5 %		
Frequency Range		40 Hz to 70 Hz		
Phase		Single phase with ground		
Power Factor		≥ 0.99 @ nominal voltage (input voltage)		
Output				
Output voltage		208 Vac /220 Vac /230 Vac /240 Vac		
AC Voltage Regulation		± 1% (Batt. Mode)		
Frequency Range		(47 Hz to 53 Hz) or (57 Hz to 63 Hz) (Synchronized Range)		
Frequency Range (Batt. Mode)		(50 Hz ± 0.25 Hz) or (60 Hz ± 0.3 Hz)		
Overload		Ambient Temp.< 35 °C 105% to 110%: UPS shuts down after 10 minutes at battery mode or transfer to bypass when the utility is normal 110%~130%: UPS shuts down after 1 minute at battery mode or transfer to bypass when the utility is normal 130% to 150%: UPS shuts down after 3 seconds at battery mode or transfer to bypass when the utility is normal >150%: UPS immediately shuts down.		
Current Crest Ratio		3:1		
Harmonic Distortion		≤ 3% THD (Linear Load) → ≤ 6% THD (Non-linear Load)		

Capacity*		1000 VA/900 W	2000 VA/1800 W	3000 VA/2700 W
Transfer Time	AC Mode to Batt. Mode	Zero		
	Inverter to Bypass	4 ms (Typical)		
Waveform (Batt. Mode)		Pure Sinewave		
Efficiency				
AC Mode		90%	90%	90%
Battery				
Standard Model	Battery Type	12 V/9 Ah	12 V/9 Ah	12 V/9 Ah
	Numbers	2	4	6
	Recharge Time	4 hours recover to 90% capacity (Typical)		
	Charging Current	1.0 A (max.)		
	Charging Voltage	27.4 Vdc ± 1%	54.7 Vdc ± 1%	82.1 Vdc ± 1%
Long-run Model*	Battery Numbers	3	6	6
	Charging Current	1.0 A/2.0 A/4.0 A/6.0 A		
	Charging Voltage	41.0 Vdc ± 1%	82.1 Vdc ± 1%	82.1 Vdc ± 1%
Mechanical				
Standard Model	Dimension, D × W × H	282 × 145 × 220 (mm)	397 × 145 × 220 (mm)	421 × 190 × 318 (mm)
	Net Weight (kgs)	9.8	17	27.6
Long-run Model*	Dimension, D × W × H	282 × 145 × 220 (mm)	397 × 145 × 220 (mm)	
	Net Weight (kgs)	4.1	6.8	7.4
Environment				
Operation Humidity	20% to 90% RH @ 0 °C to 50 °C (non-condensing)			
Noise Level	Less than 45 dBA @ 1 Meter			

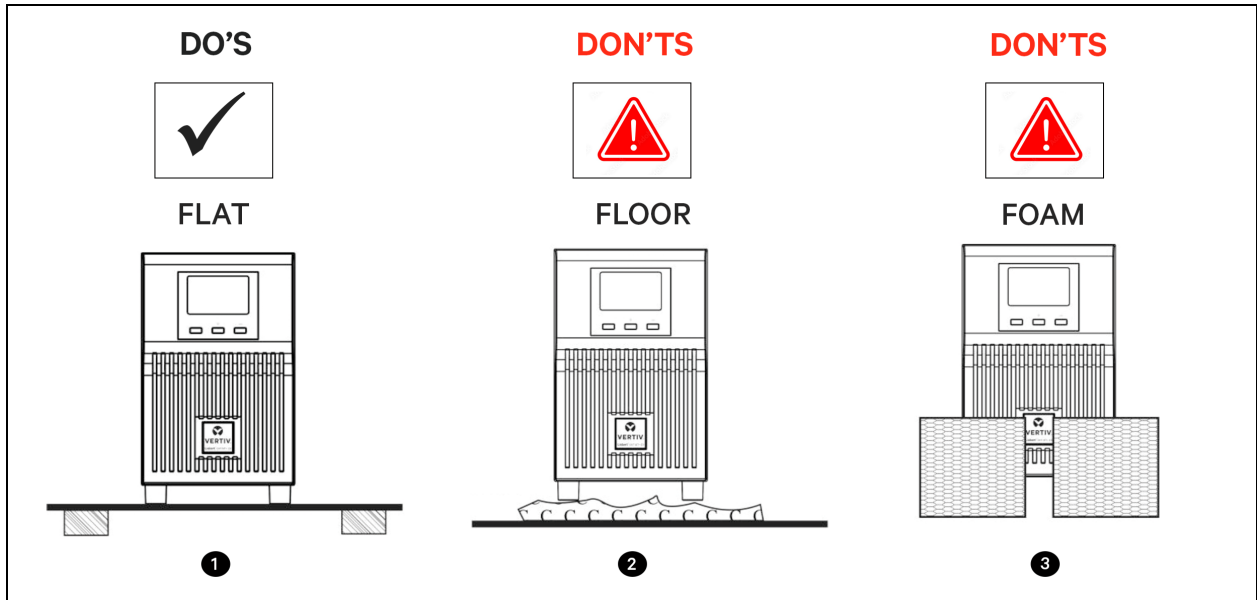
Capacity*	1000 VA/900 W	2000 VA/1800 W	3000 VA/2700 W
Management			
Smart RS-232 or USB	Supports Windows® 2000/2003/XP/Vista/2008/7, Linux, Unix, and MAC		
Optional SNMP	Power management from SNMP manager and web browser		
*Derate capacity to 70% of capacity in Frequency converter mode or when the output voltage is adjusted to 208 Vac.			
**Product specifications are subject to change without further notice.			

This page intentionally left blank

8 Appendices

Appendix A: UPS Installation Guide

1. UPS should be placed on a flat and clean surface. Place it in an area away from vibration, dust, humidity, high temperature, flammable liquids, flammable gases, and corrosive and conductive contaminants. Install the UPS indoors in a clean environment, where it is away from windows and doors. Maintain a minimum clearance of 100 mm in the bottom of the UPS to avoid dust and high temperature.



Parameters	Descriptions
1	Flat surface Installation
2	Floor surface Installation
3	Foam surface Installation

2. It is recommend to maintain an ambient temperature range of 0 °C to 45 °C for UPS optimal operation. For every 5 °C above 45 °C, the UPS will derate 12% of nominal capacity at full load. The maximum permissible operating temperature requirement for UPS operation is 50 °C.

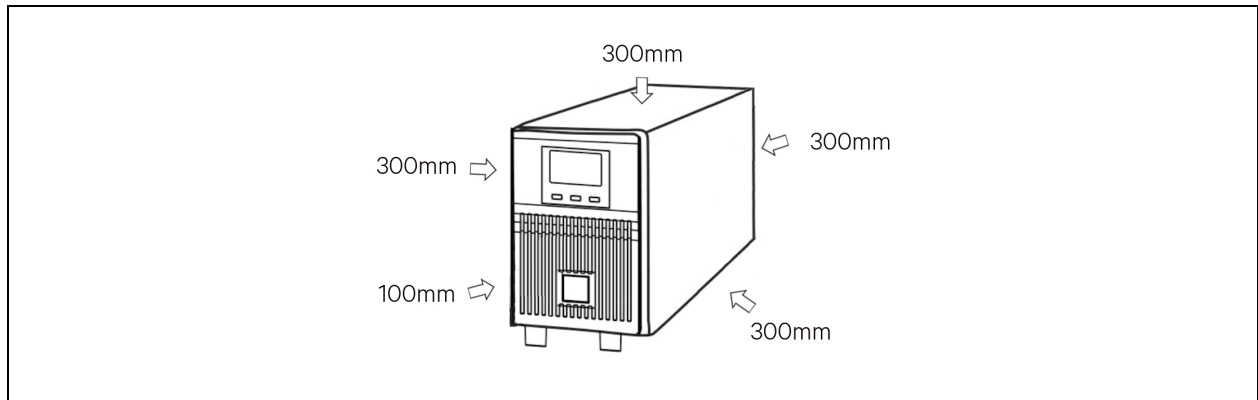
3. It's required to maintain maximum altitude of 1000 m to keep UPS normal operation at full load UPS. If it's used in high altitude area, please reduce connected load. Altitude derating power with connected loads for UPS normal operation is listed as below:

Table i.1 Altitude derating power with connected loads for UPS normal operation list

Altitude (m)	Derating factor *
1000	1.0
1500	0.95
2000	0.91
2500	0.86
3000	0.82
3500	0.78
4000	0.74
4500	0.7
5000	0.67
Based on density of dry air = 1.225 kg/m ³ at sea-level, 15 °C	
NOTE: Since fans lose efficiency with altitude, forced air-cooled unit will have a smaller derating	

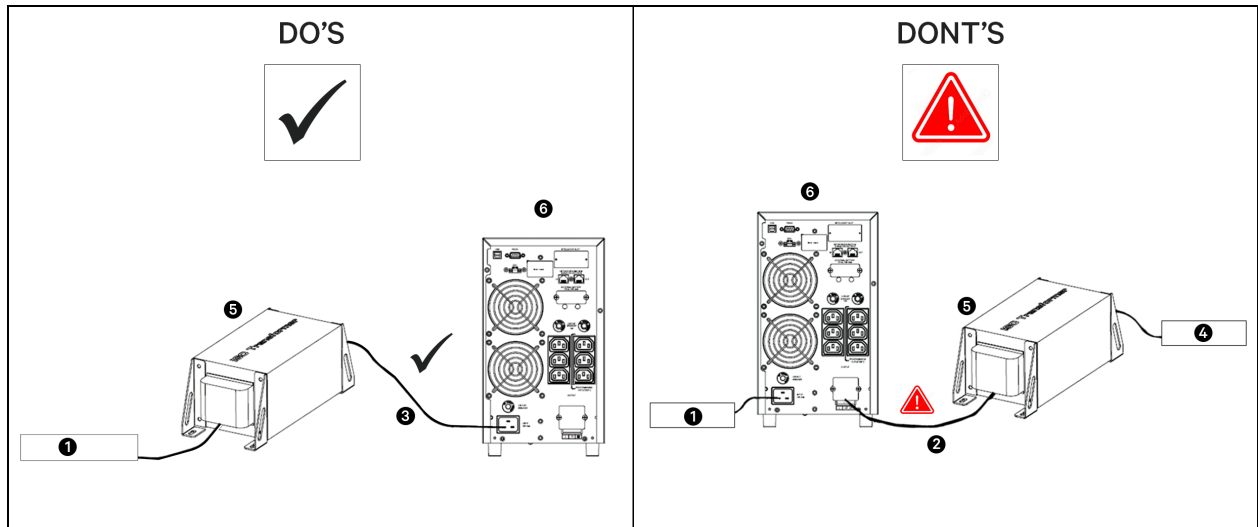
4. Use supplied RS-232 or USB communication cable to connect RS-232/USB port of UPS and RS-232/USB port of PC. After installing the 'ViewPower' software in PC, the software can be deployed to remote monitor the UPS.

5. Place the UPS:



The UPS is equipped with fan for cooling. Therefore, place the UPS in a well-ventilated area. The minimum clearance of 100 mm must be maintained in the front of the UPS and 300 mm in the rear side, and two sides of the UPS for heat dissipation and easy-maintenance.

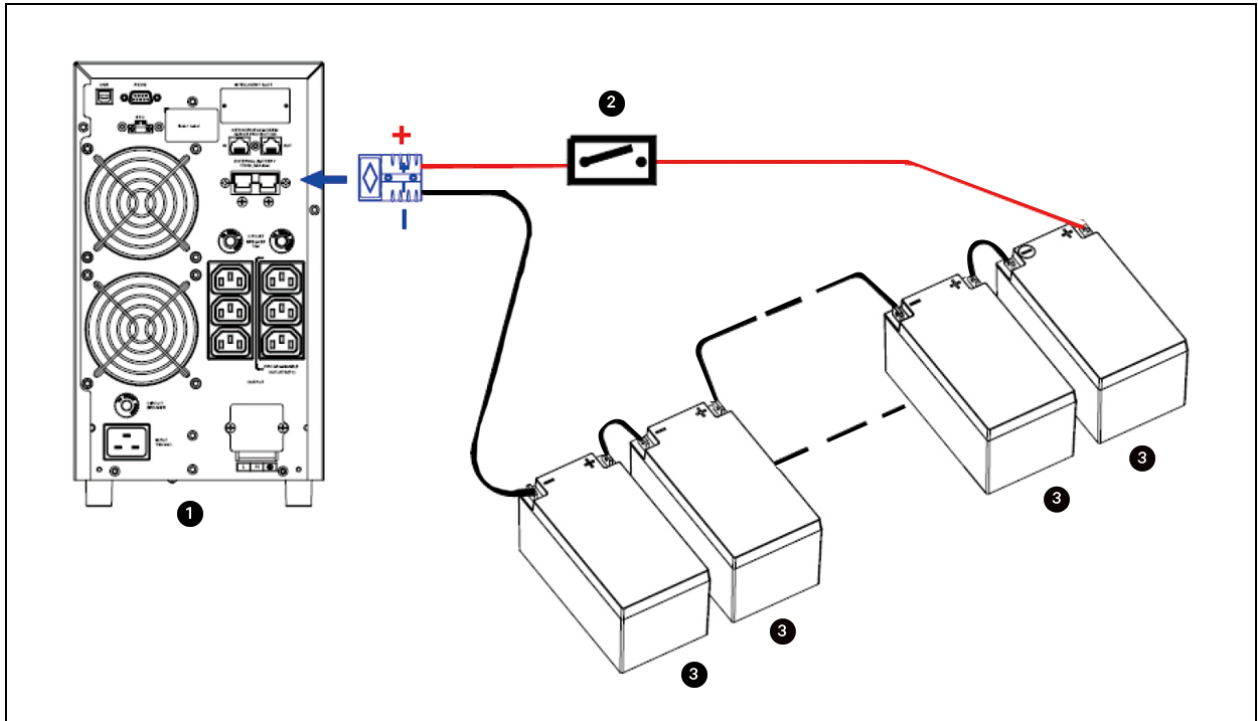
6. Connect To Transformer:



Parameters	Descriptions
1	Mains power
2	Output
3	input
4	Load
5	Transformer
6	UPS

! **WARNING!** Do not connect transformer to output of the UPS. Otherwise, it will cause UPS internal fault and force UPS to enter to fault mode. Hence, connect the transformer to the input of the UPS.

7. Connect to External Battery Pack:



Parameter	Description
1	UPS
2	Breaker
3	External battery packs

When connecting external battery packs, ensure to connect polarity correctly. Connect the positive pole of the battery pack to the positive pole of the external battery connector in UPS and the negative pole of the battery pack to the negative pole of the external battery connector in UPS. Polarity mis-connection will cause UPS internal fault. It is recommended to add one breaker between the positive pole of the battery pack and positive pole of external battery connector in UPS to prevent damage to battery packs from internal fault.

The required specifications of breaker: voltage $\geq 1.25 \times$ battery voltage/set; current ≥ 50 A

Select the battery size and numbers connected batteries in accordance with the UPS specifications and the required backup time.

It is recommended to use batteries in the temperature range of 15 °C to 25 °C in order to enhance the service-life of the battery.

This page intentionally left blank

Connect with Vertiv on Social Media



<https://www.facebook.com/vertiv/>



<https://www.instagram.com/vertiv/>



<https://www.linkedin.com/company/vertiv/>



<https://www.twitter.com/Vertiv/>



[Vertiv.com](https://www.vertiv.com)

© 2023 Vertiv Group Corp. All rights reserved. Vertiv™ and the Vertiv logo are trademarks or registered trademarks of Vertiv Group Corp. All other names and logos referred to are trade names, trademarks or registered trademarks of their respective owners. While every precaution has been taken to ensure accuracy and completeness here, Vertiv Group Corp. assumes no responsibility, and disclaims all liability, for damages resulting from use of this information or for any errors or omissions.

UM-IN(EX)-EN-GXTMTEX-V1-23-06