1-3kVA Online Tower UPS

User Manual

Important Safety Instructions

DANGER

The battery can present a risk of electrical shock and high short circuit current.

Following precautions should be observed before replacing the battery.

- **Wear rubber gloves and boots.**
- **Remove rings, watches and other metal objects.**
- **Use tools with insulated handles.**
- **Do not lay tools or other metal objects on the batteries.**
- **If the battery is damaged in any way or shows signs of leakage, contact your local representative immediately.**
- **Do not dispose of batteries in a fire. The batteries may explode.**
- **Handle, transport and recycle batteries in accordance with local representative**

WARNING

Improper use can result in electrical shock or fire. To ensure safety, observe the following precautions:

- **Turn off and unplug the UPS before cleaning it.**
- **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 UPS.**
- **Do not place the UPS power cord where it might be damaged.**

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1.Electromagnetic Compatibility

*** Safety**	
IEC/EN 62040-1-1	
*** EMI**	
Conducted Emission.....IEC/EN 62040-2	Class C2
Radiated Emission.....IEC/EN 62040-2	Class C2
***EMS**	
ESD.....IEC/EN 61000-4-2	Level 4
RS.....IEC/EN 61000-4-3	Level 3
EFT.....IEC/EN 61000-4-4	Level 4
SURGE.....IEC/EN 61000-4-5	Level 4
Low Frequency Signals.....:IEC/EN 61000-2-2	
Warning: This is a product for commercial and industrial application in the second environment-installation restrictions or additional measures may be needed to prevent disturbances.	

NOTICE

- This is a product for restricted sales distribution to informed partners.
- Installation restrictions or additional measures may be needed to prevent radio interference.
- Operated the UPS in an indoor enviroment only in an ambient temperature range of 0-40°C(32-104°F).
- Install it in a clean environment, free from moisture, flammable liquids, gases and corrosive substance.

WARNING

This UPS contains no user-serviceable parts except the internal battery pack. Under no circumstance attempt to gain access internally, due to the risk of electric shock or burn.

Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the precautions.

Keep unauthorized personnel away from the batteries.

Proper disposal of batteries is required. Refer to your local laws and regulations for disposal requirement.

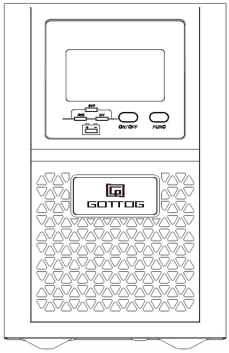
DO NOT CONNECT equipment that could overload the UPS or demand DC current from the UPS, for example: electric drills, vacuum cleaners, laser printers, hair dryer or any appliance using half-wave rectification.

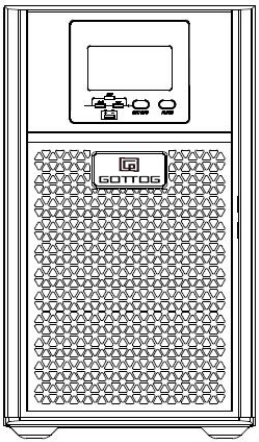
2. Introduction

The UPS is an on-line UPS. An on-line UPS continuously regulates its output voltage, whether utility power is present or not. It supplies connected equipment with clean sinewave power.

For ease of use, the UPS features a LCD display to indicate all information of UPS, and provide kinds of function buttons.

2.1 Front View

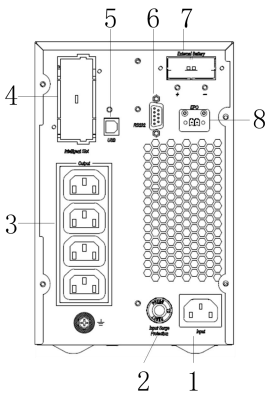


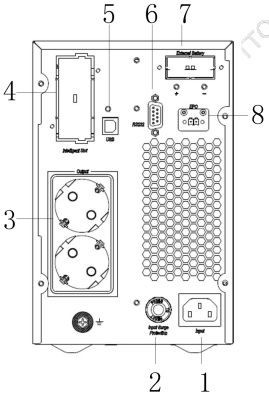


1K(long backup/standard) 2K/3K(standard)

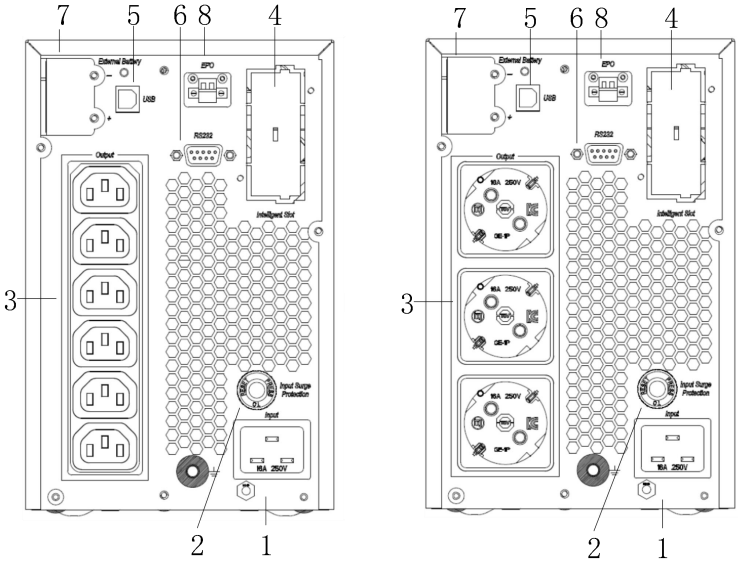
2K/3K(long backup)

2.2 Rear View

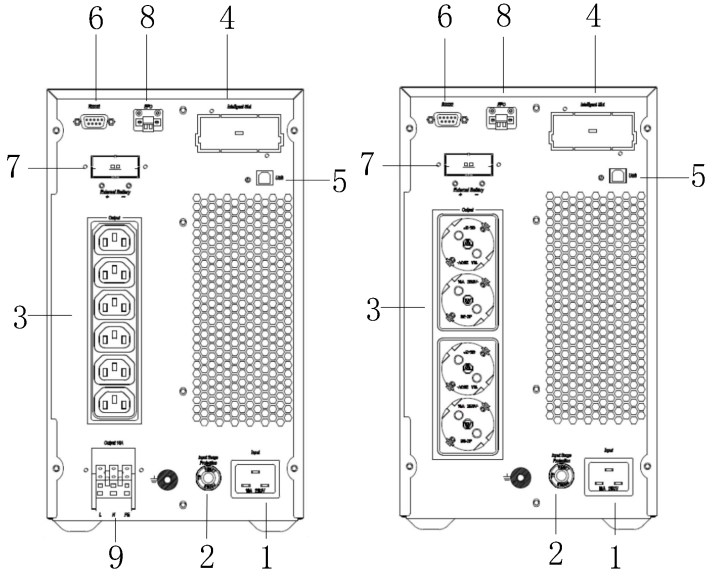




1KVA rear view



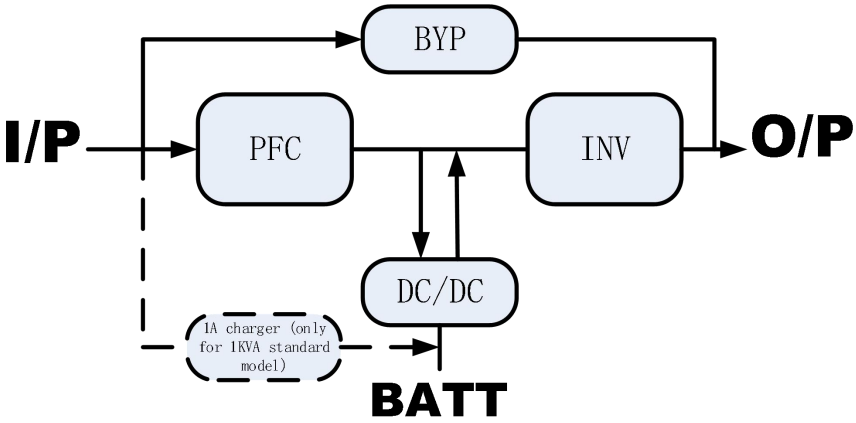
2K,3K(long backup) rear view



2KB,3KB (standard) rear view

1	Input socket
2	Input surge protection
3	Output socket
4	Intelligent slot
5	USB (optional)
6	RS232
7	External battery terminal
8	EPO (NC)
9	Output 16A connector

3. System Description



3.1 Rectifier/Power Factor Correction (PFC) Circuit

In normal operation, the rectifier/power factor correction (PFC) circuit converts utility AC power to regulated DC power for use by the inverter while ensuring that the waveform of the input current used by the UPS is near ideal. Extracting this sinewave input current achieves two objects:

- The utility power is used as efficiency as possible by the UPS.
- The amount of distortion reflected on the utility is reduced.

This results in cleaner power being available to other devices in the building not being protected by the UPS.

3.2 Inverter

In normal operation, the inverter utilize the DC output of the power factor correction circuit and inverters it into precise, regulated sinewave AC power. Upon a utility power failure, the inverter receives its required energy from the battery through the DC-to-DC converter. In both modes of operation, the UPS inverter is on-line and continuously generating clean, precise, regulated AC output power.

3.3 1A Battery Charger

The charger is only available in 1KVA standard model.

3.4 DC-to-DC Converter

The DC/DC converter utilizes energy from the battery system and raises the DC voltage to the optimum operating voltage for the inverter. The converter includes boost circuit which is also used as PFC.

The DC/DC converter also converts DC bus energy to charge batteries in all models except

1KVA standard model.

3.5 Battery

The standard model include value-regulated, non-spillable, lead acid batteries inside. To maintain battery design life, operate the UPS in an ambient temperature of 14-25°C.

3.6 Dynamic Bypass

Bypass connect loads directly to the utility if inverter was failure.

NOTICE

The bypass power path does NOT protect the connected equipment from disturbances in the utility supply.

4. Product Specification and performance

1. General Specification

Model		1K Standard	1K Long backup	2K Standard	2K Long backup	3K Standard	3K Long backup
Power Rating		1000VA/ 1000W	1000VA/ 1000W	2000VA/ 2000W	2000VA/ 2000W	3000VA/ 3000W	3000VA/ 3000W
Frequency (Hz)		50/60		50/60		50/60	
Input	Voltage	110Vac~288Vac					
	Current	5.5A max.		11A max		16A max	
Battery	Model	Internal	Depend on external battery	Internal	Depend on external battery	Internal	Depend on external battery
	Numbers	3		6		8	
	Max charging	1A	1-12A	1A	1-12A	1A	1-12A
	Voltage	36VDC	36VDC	72VDC	72VDC	96VDC	96VDC
	Current	35A max	35A max	35A max	35A max	35A max	35A max
Output	Voltage	200V/208V/220V/230V/240V					
	Current	5/4.8/4.5/4.3/4.2A		10/9.6/9/8.6/8.4A		15/14.4/13.5/12.9/12.6A	
Dimension (WxDxH) mm		144*355*220		190*400*319	144*398*220	190*400*319	144*398*220

2. Electrical Performance

Input			
Model	Voltage	Frequency	Power Factor
1-3KVA	Single-phase	+-5Hz@50or60Hz	>0.99(Full load)

Output					
Voltage Regulation	Power Factor	Frequency tolerance.	Distortion	Overload capacity	Crest ratio
±1%	1	±0.5% of normal	THD<2%@Full Linear Load THD<5%@Full nonlinear load	102%~110%: 30mins， 110%~125%:10mins， 125%~150%: 30 seconds	3:1 maximum

3. Operating Environment

Temperature	Humidity	Altitude	Storage temperature
0°C-40°C	<95%	<1000m	-20°C-70°C

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

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

5. Installation

5.1 Unpacking and Inspection

1) Unpack the packaging and check the package contents. The shipping package contains:

- 1 UPS
- 1 user manual
- 1 Input Cable
- 1 Battery Cable (For Long backup model only)

2) Inspect the appearance of the UPS to check if there is any damage during transportation. Do not turn on the unit and notify the carrier and dealer immediately if there is any damage or lacking of some parts.

5.2 Mechanical Installation

NOTE

- The UPS must be installed in a location with good ventilation, far away from water, inflammable gas and corrosive agents.
- Ensure the air vents on the front and rear of the UPS are not blocked so as to ensure good ventilation.
- Condensation to water drops may occur if the UPS is unpacked in a very low temperature environment. In this case it is necessary to wait until the UPS is fully dried inside out before proceeding installation and use. Otherwise there are hazards of electric shock.

NOTICE

DO NOT connect the battery plug to the battery socket of UPS first, otherwise, it may cause electric shock.

5.2.1 Installation

5.2.1.1 Connecting Input and Output Cables

1. Input cable connection

The UPS is connected via the power plug, please use a proper socket with protection against electric current, and pay attention to the capacity of the socket: over 10A for 1KVA, over 16A for 2KVA and 3KVA.

2. Output cable connection

The total output power shall not exceed 1kVA/1kW,2kVA/2kW,3kVA/3kW. Simply plug the load power cable to the output socket of UPS to complete connection.

*Except from using socket as output, 3KVA has output terminal as well for load which current is over 10A.

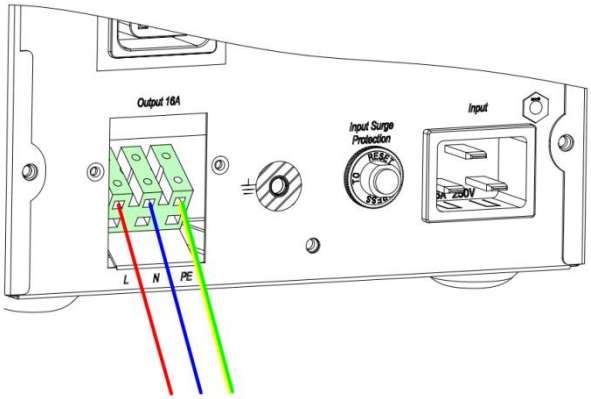


Fig.3 Output terminal of 3KVA

1). Remove the cover of output terminal.

2). Use AWG14 wires for terminal wiring configuration as fig.3.

3). Please check if the wires are securely affixed.

5.3 Operating procedure for connecting the long backup time model UPS with the external battery

Notice: Please connect the external battery at least 40AH while the charge current is 8A, at least 20AH for 4A.otherwise may cause damage to the battery.

1. The nominal DC voltage of external battery pack is 36VDC/1kVA, 72VDC/2kVA, 96VDC/3kVA. Connect in series the batteries of the pack to ensure proper battery voltage. To achieve longer backup time, it is possible to connect multi-battery packs, but the principle of “same voltage, same type” should be strictly followed.

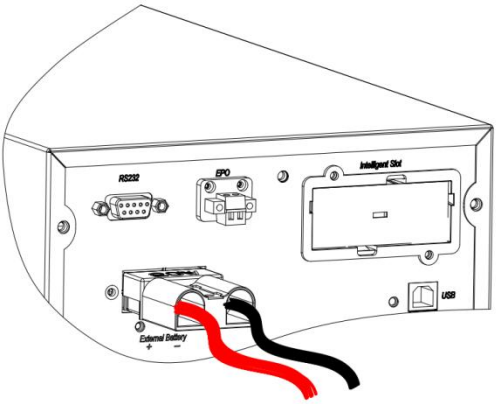


Fig.4 Battery terminal connection

2. Take out battery cable delivered with the UPS. One end of battery cable is a plug and the other end has 2 open wires.
3. Connect the RED wire to the “+” terminal of the battery. Connect the BLACK wire to the “-“ terminal of the battery.
4. Connect the external battery plug to the battery socket on the rear panel.
5. Set battery capacity parameters according to section Parameter settings 6.3.-Battery capacity setting.

NOTICE

DO NOT connect the battery plug to the battery socket of UPS first, otherwise, it may cause electric shock.

6. Display and Settings

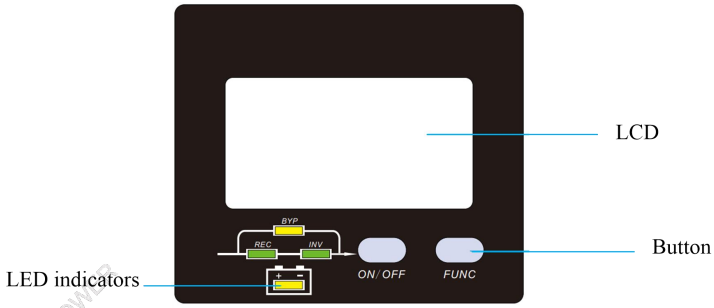


Fig 6-1: Display Panel

6.1 Description of Panel

Controls	Description
ON/OFF	1.Press ON/OFF to start inverter when rectifier is OK **NOTE** *Not available when UPS is set in automatically start mode* 2.Press ON/OFF for 2.5s to shut down inverter and transfer to bypass 3.Press ON/OFF for 2.5s to shut down UPS completely when UPS is in battery mode 4.Press ON/OFF to confirm setting when in setting mode
FUNC	Functional button: 1.Press FUNC to page down to check LCD menu 2.Press FUNC for 1.5s at the page 1 to mute off, press again to mute on 3.Press FUNC and ON/OFF together for 2.5s to enter in setting mode 4.Press FUNC for 1.5s at the page 4 to fault clear
Indicators	**Description**
REC	Rectifier indicator: green--rectifier is normal, green flicker--rectifier is starting, dark—rectifier is not working
INV	Inverter indicator: green--inverter is normal, green flicker--inverter is starting or tracking with bypass(ECO), dark—inverter is not working
BYP	Bypass indicator: yellow—bypass is normal, yellow flicker—bypass alarm ,dark—UPS is in normal mode and bypass is normal
BAT	Battery indicator: yellow—battery discharged, yellow flicker—No battery or battery alarm, dark—battery is connected

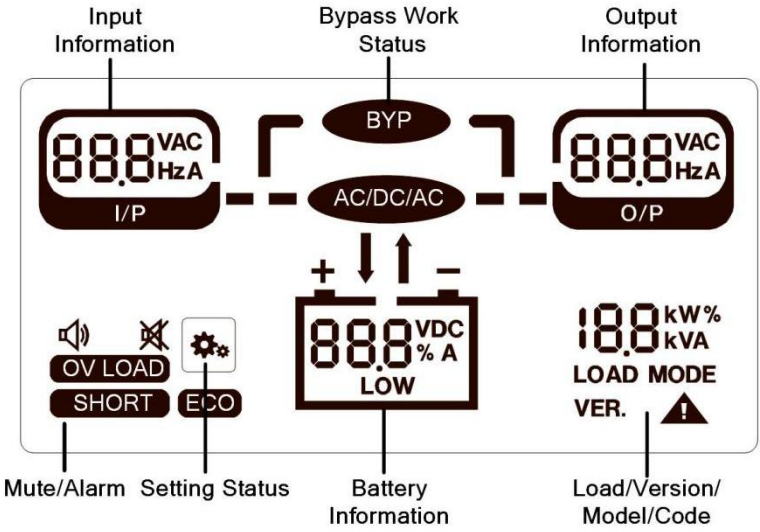


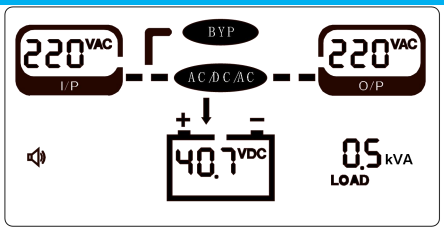
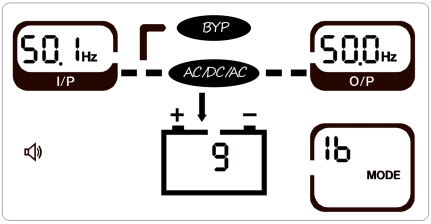
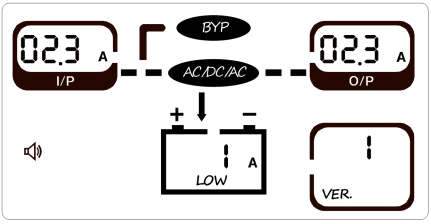
Fig 6- 2: LCD Menu

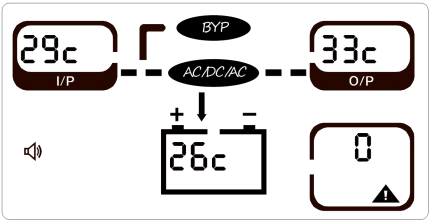
6.2 Description of LCD Menu

Menu	Information
Input information	Main input: voltage VAC, current A, frequency Hz Bypass input (bypass “B” flicks): Voltage VAC, current A, frequency Hz PFC temperature: 66c—66℃
Battery information	Battery: voltage VDC, Battery current A, remained capacity %, battery low alarm LOW, battery temperature (c)
Output information	Output information: Voltage, current, frequency INV temperature: 66c--66℃
Alarm	: mute on/off OV LOAD : over load SHORT: output short ECO: working in ECO mode
Load/Version/model/Code	Load: active load KW, apparent load KVA, load percent % VER: firmware version. V1.021 for

Menu	Information
	example (v1 and 021 display in turn) MODE: system model, 1b,1L,2b,2L,3b,3L ⚠: warning code, refer to "***7. Trouble Shooting***" to get detailed code list
Others	⚙: setting mode BYPASS: bypass conversion

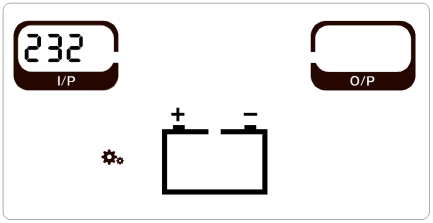
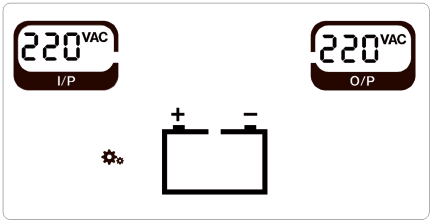
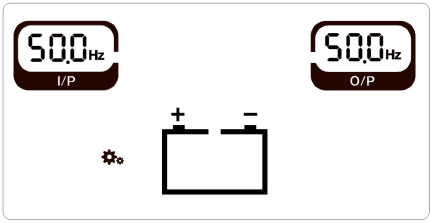
Press **FUNC** to check information:

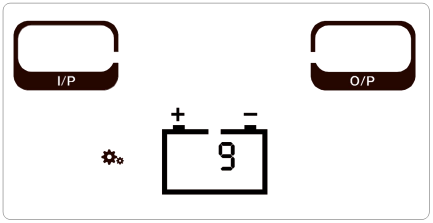
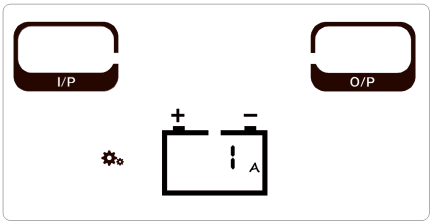
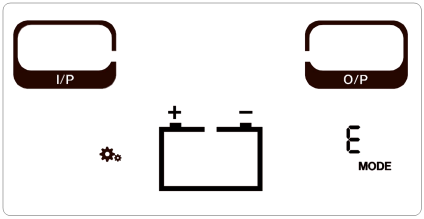
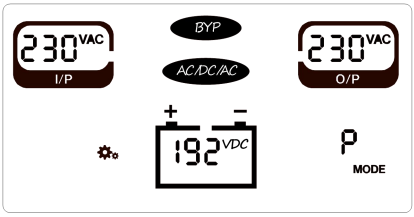
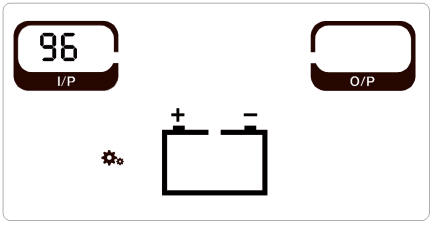
Page	Description
	Page 1: INPUT voltage: 220VAC OUTPUT voltage: 220VAC Battery voltage: 40.7VDC LOAD: 0.5KVA Load percent (%), active power(KW), apparent power(KVA) are displayed in turn ***Press "FUNC" for 1.5s in this page to mute off***
	Page 2: INPUT frequency: 50Hz OUTPUT frequency: 50Hz Battery AH: 9AH-200AH System MODEL: 1b—1KVA standard L- Long backup model, b- standard model
	Page 3: INPUT current: 2.3A OUTPUT current: 2.3A Battery current: 1A (downwards arrow: charge, upwards arrow: discharge, no arrow: no battery) Firmware Version: V1.17 (v1 and 17 display in turn)

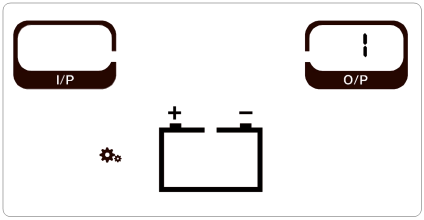
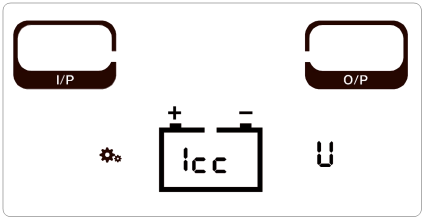
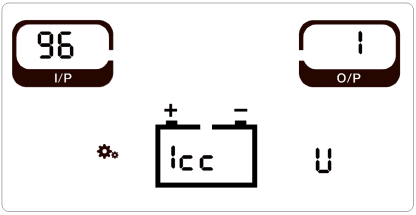
	Page4: Input and output temperature29℃,33℃ Battery temperature: 26℃ ⚠alarm code: 0 *Press "FUNC" for 2.5s to manually fault clear*

6.3 Parameters Setting

If want to set rated parameters, press ON/OFF and FUNC buttons together for 2.5s to enter in setting mode, "SETTING" on the bottom of LCD present and all LEDs flicks, LCD displays current setting in turn.

Main page	Press "FUNC" to select setting menu, press "ON/OFF" to confirm selection and enter in setting. 123—rated setting, 232—RS232 setting, 234—SNMP card, 485—485 setting, 567—setting recovery.	
Input and output rated voltage setting	Set 240 then enter in rated setting. Select input and output voltage as 200VAC/ 208VAC/ 220VAC/ 230VAC/ 240VAC, press FUNC to select, press ON/OFF to confirm selection and enter in next page	
Input and output rated frequency setting	Select input and output frequency as 50Hz/60Hz, press FUNC to select, press ON/OFF to confirm selection and enter in next page	

Battery capacity setting	Select battery AH according to real application, press FUNC to select, press ON/OFF to confirm selection and enter in next page	
Charger current setting	Charger current could be set as below: Standard model: 1A Long backup model: 1,2,3,4,5,6,7,8A Press FUNC to select, press ON/OFF to confirm and enter in next page	
System mode	S-Normal mode E-ECO mode Press FUNC to select, press ON/OFF to confirm and exit setting.	
Exit	If all settings are finished, settings will be displayed on LCD, press ON/OFF to exit. The setting will be activated after restart UPS.	
Communication protocol setting	Select 232, 240 or 485 at main page to set communication: Baud rate:96—9600, 12—1200, 24—2400,48—4800,192--19200 Press “ON/OFF” to confirm	

	and enter in ID setting	
Communication ID setting	Set ID as 1 to 32. Press “ON/OFF” to confirm and enter in protocol setting	
Communication protocol setting	0cc--ModBus 1cc--RTU 2cc—NetAgent Press “ON/OFF” to confirm and finish communication setting	
Exit setting	If all settings are finished, settings will be displayed on LCD, press ON/OFF to exit. The setting will be activated after restart UPS.	

NOTE

Press “FUNC” and “ON/OFF” at any setting page for 2.5s to exit setting mode.

7. Operation

7.1 Operation Mode

7.1.1 Turn on the UPS at normal mode

1) After you make sure that the power supply connection is correct, and then close the battery breaker (long backup time model), after that turn on the utility power. The fans rotate, and LCD is on
2) REC led starts to green flicker. BYP led is steady yellow and UPS works in bypass model. Inverter then starts and the INV led green flickers when REC led is steady green.
3) About several seconds, the UPS turn into normal mode. Inverter feeds power to the load.

7.1.2 Turn on the UPS from battery

1) Make sure that the breaker of the battery pack is in the “ON” position (long backup model), press the ON/OFF button once to power on the LCD, then press ON/OFF button again for 5 seconds.
2) A few seconds later, the UPS turns into Battery mode, and inverter feeds the load.

7.1.3 Turn off the UPS at normal mode

1) Press ON/OFF button for 2.5 second, UPS transfers to bypass.
2) Turn off utility power
3) If it’s a long backup model, open the battery breaker to turn off UPS completely. If it’s an internal battery model, the UPS will shutdown completely after several seconds.

7.1.4 Turn off the UPS at battery mode

1) To power off the UPS by pressing the ON/OFF button for more than 2.5 second
2) When being powered off, the UPS will turn into No Output mode. Finally, the UPS will shut down completely.

NOTICE

Please turn off the connected loads before turning on the UPS and turn on the loads one

by one after the UPS is working in INV mode. Turn off all of the connected loads before turning off the UPS.

8. Battery Maintenance

8.1 Battery maintenance

The batteries used for standard models are value regulated, sealed lead-acid, maintenance free battery.

- The UPS should be charged once every 4 to 6 months if it has not been used for a long time.
- In the regions of hot climates, the battery should be charged and discharged every 2 months. The standard charging time should be at least 12 hours.
- Under normal conditions, the battery life lasts 3 to 5 years. In case if the battery is found in bad condition, earlier replacement should be made.
- Battery replacement should be performed by qualified personnel.
- Replace batteries with the same number and same type of batteries.
- Do not replace the battery individually. All the batteries should be replaced at the same time following the instructions of the battery supplier.

8.2 Replacing Internal Battery

Battery replacement procedures

Step 1: Remove the cover of UPS

Step 2: Remove the clamp kits of batteries

Step 3: Disconnect battery cables one by one from batteries and then take out the batteries one by one.

Step 4: Assemble new batteries as Annex. C

Do not replace the internal battery pack while the UPS is operating. It will cause personnel hazardous!

9. Battery disposal

9.1 Battery Disposal

1) Before disposing of batteries, remove jewelry, watches and other metal objects.
2) Use rubber gloves and boots, use tools with insulated handles.
3) If it is necessary to replace any connection cables, please purchase the original materials from the authorized distributors or service centers, so as to avoid overheat or spark resulting in fire due to insufficient capacity.
4) Do not dispose of batteries or battery packs in a fire. The batteries may explode.
5) Do not open or mutilate batteries, released electrolyte is highly poisonous and harmful to the skin and eyes.
6) Do not short the positive and negative of the battery electrode, otherwise, it may result in electric shock or fire.
7) Make sure that there is no voltage before touching the batteries. The battery circuit is not isolated from the input potential circuit. There may be hazardous voltage between the battery terminals and the ground.
8) Even though the input breaker is disconnected, the components inside the UPS are still connected with the batteries, and there are potential hazardous voltages. Therefore, before any maintenance and repairs work is carried out, switch off the breaker of the battery pack or disconnect the jumper wire of connecting between the batteries.
9) Batteries contain hazardous voltage and current. Battery maintenance such as the battery replacement must be carried out by qualified personnel who are knowledgeable about batteries. No other persons should handle the batteries

10. Trouble shooting

This section describes checking the UPS' status. This section also indicates various UPS symptoms a user 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.

10.1 Checking UPS status

It recommended that checking the UPS operation status every six months.

- Check whether the UPS is faulty: Is the Fault Indicator on? Is the UPS sounding an alarm?
- Check whether 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 representative, or Channel Support.
- Check whether 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 local representative, or Channel Support.

10.2 Adjust the factors caused the problem

When the fault indicator is on, press FUNC button to see the fault code and warn code. Fault and warn codes are listed as following:

Code	Event	Possible cause	Solution
1	Warn: Battery not connected	Battery not connected	Check if battery switch is off or battery cables are disconnected
2	Warn: EPO	Emergency power off	Short the EPO terminal 1&2 to activate EPO
3	Warn: Inverter on Less	Available ups capacity is less then the load capacity.	Please reduce the load capacity or make sure that the UPS capacity is big enough.
4	Warn: Input voltage abnormal	Utility is failure	/
		Input surge protector opens	If utility is normal but rectifier is not working, reset input surge protector
5	Warn: Line neutral wires reversed	Input Line and neutral is reversed	Check the polarity of line wire and neutral wire
6	Warn: Bypass	Bypass voltage is out of	Check if utility power is indeed

	voltage abnormal	bypass range or is off	out of range.
7	Fault: Bypass fail	Bypass input power is abnormal or bypass input breaker is opened.	Please recover bypass input power, otherwise there will be no backup circuit when UPS is faulty.
8	Warn: Bypass over load	Load is on bypass and is overload	Remove some loads to ensure that total loads is less than 95% of rated capacity
9	Warn: Bypass overload timeout	Load is on bypass and overload. Overload time is longer than the overload capacity of bypass. UPS will shutdown output and loads will loss power.	Remove some loads and restart UPS again. When UPS is working normally, turn on loads one by one.
10	Warn: Transfer times over limit in 1 hour	Transfer times between inverter and bypass is over 5 in recent 1 hour. UPS works in bypass mode.	Check if output is overload or some loads are shorted. Remove the failure loads and restart the UPS or wait for starting inverter automatically.
11	Warn: output shorted	Something shorted	Please remove all loads from UPS output. Check if UPS output is shorted. If not, please check all loads.
12	Warn: End of discharge	UPS works in battery mode for long time after utility failure. UPS output will be off until utility power is on.	Please save your data when UPS alarm “utility fail”
13	Fault: Battery self-detect fault	UPS transfer to battery mode for 20 seconds to check if batteries are normal	Please check the battery cables connect.
14	Fault: Rectifier fault	Bus over voltage, bus unbalance, rectifier starting failure, bus under voltage, input fuse is off	Please contact with distributer or service center.
15	Fault: Inverter	Inverter over voltage, inverter	Please contact with distributer

	fault	under voltage,	or service center.
16	Warn: Rectifier over temperature	Rectifier heatsink is over temperature or the temp sensor is not connected correctly.	● Check if fans are working normally ● Check if any thing block ventilation ● Check if the sensor is connected correctly Check if the environmental temp is over the range of UPS
17	Fault: Fan failure	One or more fans are failure, fan wires are loosen	Please contact with distributer or service center
18	Warn: Inverter overload	Loads are on inverter and over the capacity of the UPS	Remove some loads to ensure that total loads is under the capacity of the UPS
19	Warn: Inverter overload timeout	Load is over the capacity of the UPS and timeout, UPS will transfer to bypass mode if bypass is available	Remove some loads to under 95%, UPS will transfer to inverter automatically
20	Warn: Inverter over temperature	Inverter heat sink is over temperature or the temp sensor is not connected correctly.	Check if fans are working normally Check if any thin block ventilation Check if the sensor is connected correctly Check if the environmental temp is over the range of UPS
21	Warn: Battery low	UPS works in battery and battery voltage is low	Recover input power or save data upon “battery low”
22	Warn: input natural line lost	Input natural line disconnect	Please check the input cables connect.
23	Fault: Bypass Fan failure	One or more fans are failure, fan wires are loosen	Please contact with distributer or service center.
24	Warn: Manual shutdown	UPS will shutdown output or transfer to bypass mode	/
25	Fault: Charger fault	There is no charger output.	Please contact with distributer or service center.
27	Warn: input over	Abnormal large current enter	Please contact with distributer

	current	in rectifier.	or service center.
28	Warn: auxiliary power supply lost	Auxiliary power supply abnormal.	Please contact with distributer or service center.
29	Fault: UPS model fault	UPS model ID detect abnormal.	Please contact with distributer or service center.
30	Fault: Output CT fault	Output current detection CT reversed connection	Please check the output current transformer connect.
/	Battery discharge time diminishes	The battery has not been fully charged	Charge the battery for more than 10 hours.
		UPS is overload	Check the loads and remove some devices.
		Battery aged	Replace the batteries. Please contact with distributer or service center to obtain replacement components for batteries.

NOTICE

Please provide the following information when reporting fault UPS:

The UPS model and serial NO. the warn and fault code happened.

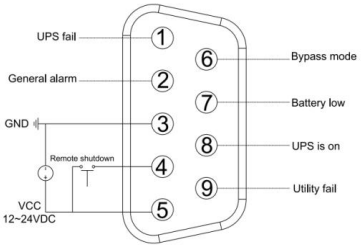
Details of fault, include LED indicates, buzzer beeps, power condition, load capacity and configuration of battery (long backup time model)

Annex A. Dry Contact Card

There are two types of dry contact card for option: DB9 port, phoenix port.

Max output current for them is 1A.

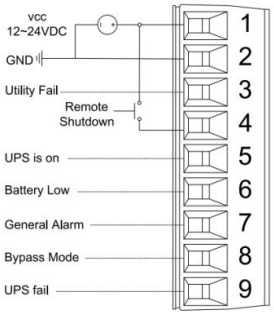
NC:normally close/NO:normally open



a. DB9 port

Description of DB9 port:

Port PIN / Function	DB9	Description
UPS fail(Other functions can be set)	1	Pin1 to pin5 is open if something is failure in UPS. If not, NC(Can set reverse logic)
General alarm(Other functions can be set)	2	Pin2 to pin5 is open if something is abnormal. If not, NC(Can set reverse logic)
GND	3	External power supply GND
Remote shutdown (Other functions can be set)	4	1.UPS shutdowns rectifier and inverter if utility is normal. 2.UPS shutdowns completely if in battery mode. 3.Remote shut down if in high level
VCC	5	External power supply.12VDC~24VDC, Common connection.
Bypass mode	6	Pin6 to pin5 is close if UPS works in bypass mode. If not, NO.(Can set reverse logic)
Battery low(Other functions can be set)	7	Pin7 to pin5 is open if battery voltage is low. If not, NC.(Can set reverse logic)
Normal mode	8	Pin8 to pin5 is NC if UPS works in normal mode.(Can set reverse logic)
Utility fail(Other functions can be set)	9	Pin9 to pin5 is open if utility is failure. If not, NC.(Can set reverse logic)



b. Phoenix port

Description of Phoenix port:

Port PIN / Function	Phoenix	Description
VCC	1	External power supply.12VDC~24VDC, Common connection.
GND	2	External power supply GND
Utility fail(Other functions can be set)	3	Pin3 to pin1 is open if utility is failure. If not, NC.(Can set reverse logic)
Remote shutdown	4	1.UPS shutdowns rectifier and inverter if utility is normal. 2.UPS shutdowns completely if in battery mode. 3.Remote shut down if in high level
Normal mode	5	Pin5 to pin1 is NC if UPS works in normal mode.(Can set reverse logic)
Battery low(Other functions can be set)	6	Pin6 to pin1 is open if battery voltage is low.If not, NC.(Can set reverse logic)
General alarm(Other functions can be set)	7	Pin7 to pin1 is open if something is abnormal. If not, NC.(Can set reverse logic)
Bypass mode	8	Pin8 to pin1 is close if UPS works in bypass mode. If not, NO.(Can set reverse logic)
UPS fail(Other functions can be set)	9	Pin9 to pin1 is open if something is failure in UPS. If not, NC.(Can set reverse logic)

Annex B. EPO

EPO(Emergency Power Off) is a function to shutdown UPS completely at emergency condition. This function can be activated through a remote contact or a similar switch provided by the user. Normal, EPO terminals is shorted. If at emergency, open the EPO, UPS close the rectifier, inverter output immediately:

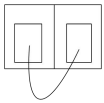
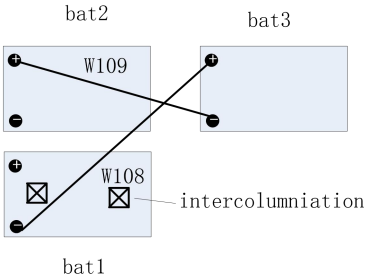


Fig.9 EPO function

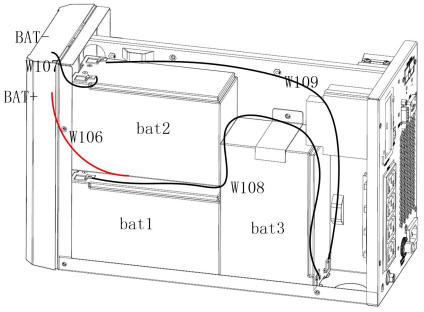
Annex C. Battery Assembly

1k battery assembly

Step1. Connect battery cables outside of UPS as below



Step2. Put bat1 in UPS firstly, then connect W106 to bat1.



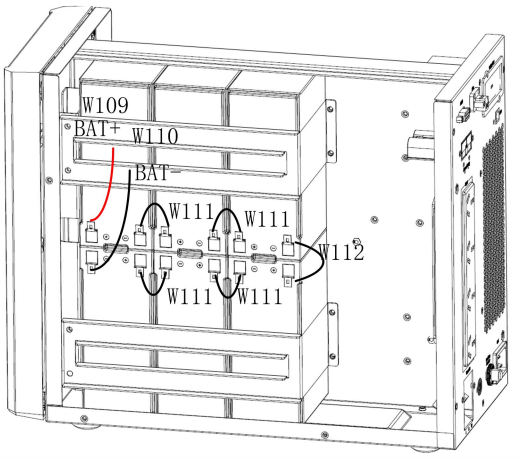
Step3. Put bat2 and bat3 in UPS as figure.

Step4. Connect W107 to bat2

2k battery assembly

Step1. Put all batteries in UPS as figure below

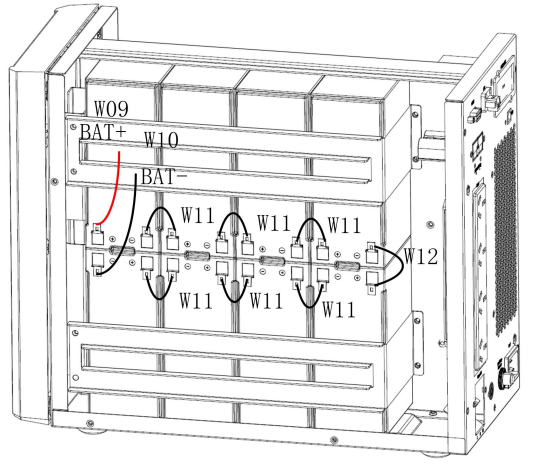
Step2. Connect all cables as figure below one by one



3k battery assembly

Step1. Put all batteries in UPS as figure below

Step2. Connect all cables as figure below one by one



Operational Summary & Support

The GSS Series 1~3kVA Online Tower UPS delivers stable, continuous power for servers, network devices, and data center infrastructure.
Follow the installation, operation, and maintenance procedures to ensure reliable performance, extend equipment life, and maintain long-term efficiency.
Perform regular inspections and battery checks, keep ventilation paths clear, and avoid unauthorized internal repairs. Always comply with applicable electrical safety regulations.
For technical assistance or after-sales support, contact our service team. Our engineers are committed to maintaining reliable operation of your critical power systems.

About Gottogpower

Gottogpower provides UPS systems and integrated power solutions for data centers and industrial applications worldwide.
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