

CertaUPS

C550 USER MANUAL
A COMPLETE INSTALLATION
AND USER GUIDE

THE C550 SERIES

An uninterruptible power supply (UPS) incorporating online double conversion technology, which eliminates all mains power disturbances.

www.certaups.com

For assistance please contact your local CertaUPS partner.

CONTENTS

SAFETY INFORMATION	6
USER MANUAL SYMBOLS	6
HANDLING	6
OPERATING SAFETY	7
THE MODEL LIST	8
THE TECHNOLOGY	8
SUITABLE APPLICATIONS	9
UPS STANDARDS	9
UPS INSTALLATION	10
UNPACKING	10
C550 BOX CONTENTS CHECKLIST	10
C550R BOX CONTENTS CHECKLIST	11
INSTALLATION	11
C550 TOWER MODEL INSTALLATION	11
C550R RACKMOUNT MODEL INSTALLATION	12
WIRING	14
.....	14
TERMINALS	14
PARALLEL SET UP	15
C550 SERIES STARTUP AND SHUTDOWN	15
STARTING THE UPS WITH MAIN POWER PRESENT	15
STARTING THE UPS FROM BATTERY	15
UPS SHUTDOWN WITH MAINS POWER	16
UPS SHUTDOWN WITHOUT MAINS POWER	16
C550 SERIES OPERATION	17
LCD DESCRIPTION	17
DISPLAY FUNCTIONS	18
USER SETTINGS	19
LCD MENU SYSTEM	20
MAIN MENU	20
UPS STATUS	20
.....	20
MEASUREMENTS MENU	20
EVENT LOG	21
CONTROL MENU	21
IDENTIFICATION MENU	21
SETTINGS MENU	22
COMMUNICATION PORTS	23
EPO CONNECTION	23
DRY IN/DRY OUT CONTACTS	23
INTERFACE CARDS (OPTIONAL)	24
SOFTWARE	24

UPS MAINTENANCE	25
UPS CARE	25
TRANSPORTING THE UPS	25
STORING THE UPS	25
BATTERY REPLACEMENT	26
REPLACING THE EBM	26
RECYCLING A UPS	27
SILENCING THE ALARM	29
TECHNICAL DATA	29
ELECTRICAL SPECIFICATION	30
OPERATING ENVIROMENT	30
RUNTIMES	31
DIMENSIONS AND WEIGHTS	31

SAFETY INFORMATION

KEEP THESE INSTRUCTIONS IN A SAFE PLACE

This section contains essential information and instructions that should be followed to ensure the safe handling, installation and maintenance of CertaUPS equipment and batteries.

USER MANUAL SYMBOLS

The following will be referenced throughout this document.

SYMBOL	DEFINITION
	Caution! Follow instructions carefully
	Caution, risk of electric shock
	Power On/Off
	Alternating current (AC)
	Direct Current (DC)
	Grounding
	Recycle
	Not to be disposed of in general waste Waste electrical equipment or electronic equipment (WEEE) should not be disposed of in the general waste. CertaUPS systems should always be disposed of at a proper recycling/hazardous waste disposal centre. Please see page 10 for disposal guidance.

HANDLING

UPS handling weight guidelines

<18kg (<40lb)	One man
18 – 32 kg (40 – 70 lb)	Two man
32 – 55 kg (70 – 120 lb)	Three man
>55 kg (>120 lb)	Forklift

AUTHORISED PERSONNEL TO HANDLE ONLY

UPS systems contain both AC and DC when disconnected from the mains outlet and should only be serviced by qualified persons.

Before any handling please ensure that the following precautions are taken:

QUALIFIED PERSONNEL Any persons servicing the UPS must be qualified and knowledgeable in UPS technology and batteries	
CLOTHING Correct PPE should always be worn	
POWER OFF Ensure all mains power is disconnected before starting work	
TOOLS always use insulated tools. Do not lay tools down near the Ups or batteries. Follow all insulation procedures.	
UPS GROUNDING The UPS must always be properly grounded	

CAUTIONARY NOTES

Please be aware of the following risks when handling and operating CertaUPS units.

RISK TYPE	DETAILS
Electric shock	Even after the unit is disconnected from the mains power supply (building wiring socket), components inside the UPS are still energised to the battery which are potentially dangerous
	The battery circuit is not isolated from the input voltage. Hazardous voltages may occur between the battery terminals and the ground. Verify that no voltage is present before servicing.
Hazardous voltages	Repairs must be carried out only by qualified UPS Engineer.

FOR FURTHER INFORMATION ON REPLACEMENT PARTS AND SERVICING PLEASE CONTACT YOUR CertaUPS PARTNER.

OPERATING SAFETY

Before operating any UPS system, please read the following guidance:

DO NOT Install the UPS in a humid environment or expose to liquids	
DO NOT Block the ventilation of the UPS	
DO NOT Expose the UPS to direct sunlight or source of heat	
DO NOT Exceed ambient temperatures when operating or storing the UPS	
DO NOT Allow excessive particulates or foreign bodies enter the UPS	

DO Follow all connection procedures and operational instructions in the order in which they appear within this manual	
DO Check that the indicators on the rating plate correspond to the AC powered system and to the actual electrical consumption of all the equipment to be connected to the UPS	
DO Ensure the outlet is installed near the UPS and is easily accessible	
DO Store the UPS in a dry environment	
DO keep the UPS in a well ventilated area	

Additional considerations:

- To reduce the risk of fire, the unit connects only to a circuit provided with branch circuit overcurrent protection for:
 - 63A rating, for 6kVA models,
 - 100A rating, for 10kVA models
- The upstream circuit breaker for Normal AC/Bypass AC must be easily accessible. The unit can be disconnected from AC power source by opening this circuit breaker.
- If An additional AC contactor can be used for back feed protection, this must comply with IEC/EN 62040-1
- Disconnection and overcurrent protection devices shall be provided by others for permanently connected AC input (Normal AC/Bypass AC) and AC output circuits.
- The admissible storage temperature range is -15°C to +40°C with battery, -25°C to +60°C without battery.
- The operating temperature should be kept between 20 °C to 25 °C, failure to do so will reduce the expected battery design life

PRODUCT OVERVIEW

FULL PRODUCT DETAILS CAN BE FOUND AT WWW.CERTAUPS.COM/PRODUCT/CERTAUPS-C550/

The CertaUPS C550 series is an uninterruptible power supply (UPS) incorporating online double conversion technology, which eliminates all mains power disturbances.

THE MODEL LIST

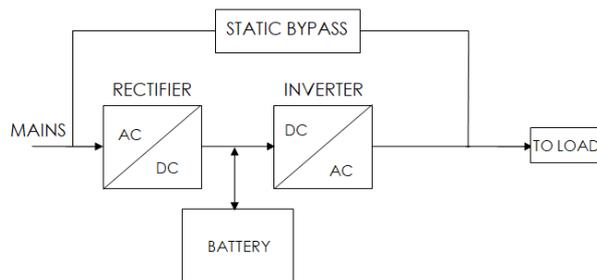
Please check that the unit you have purchased is correct by referring to the model number, which appears on the rear panel of the UPS unit.

ITEM	MODEL NAME	POWER RATING	MODEL TYPE	MODEL DESCRIPTION	OTHER
1	C550-060-B	6000VA/6000W	Tower	Internal battery model	Single Phase input Single Phase output
2	C550-060-C	6000VA/6000W	Tower	Charger model	Single Phase input Single Phase output
3	C550-100-B	10000VA/10000W	Tower	Internal battery model	Single Phase input Single Phase output
4	C550-100-C	10000VA/10000W	Tower	Charger model	Single Phase input Single Phase output
5	C550R-060-C	6000VA/6000W	Rack	Charger model	Single Phase input Single Phase output
6	C550R-100-C	10000VA/10000W	Rack	Charger model	Single Phase input Single Phase output

THE TECHNOLOGY

The C550 UPS series uses online double conversion technology, which ensures that clean and stable power is always provided. An online UPS operating in line mode always provides a consistent supply of AC power to the load. This is done by using the battery and the inverter to ensure a clean stable and supply. When the mains power fails, the battery is no longer supplied by the rectifier and the batteries begin to discharge.

Once the battery is depleted the UPS will no longer be able to generate AC power through the inverter and the output will in turn cease. Once the mains power is restored the rectifier will charge the batteries and then allow the inverter to provide power to the load once more.



Key features:

- Wide input voltage window
- Unity power factor
- Frequency converter feature
- EPO connection
- Future expansion or redundancy
- Plug in parallel kits
- Internal manual bypass
- Small footprint

SUITABLE APPLICATIONS

Ideally suited for small to medium sized offices, telecoms centers and security facilities. Please see list below (not exhaustive):

- Small data centers
- Server room
- IT facilities
- Telecoms
- Networking
- PCL
- Medical

ACCESSORIES

PART	DESCRIPTION
C-NMC	SNMP Network management card
C-REL	Relay card
C-DB9REL	Relay card (DB9 Interface)
C-EMP	Environmental monitoring probe (SNMP required)
C-MOD1	MODbus interface
MBSTOWER 1-3	Maintenance bypass switch

UPS STANDARDS

DESCRIPTION	STANDARD
Conduction/Radiation	IEC/EN 62040
	IEC 60950-1
Harmonic Current	IEC/EN 61000-3-2
Voltage Fluctuation	IEC/EN 61000-3-3
ESD	IEC/EN 61000-4-2
RS	IEC/EN 61000-4-3
EFT	IEC/EN 61000-4-4
Surge	IEC/EN 61000-4-5
CS	IEC/EN 61000-4-6
MS	IEC/EN 61000-4-8
Voltage Dips	IEC/EN 61000-4-11
Low frequency signals	IEC/EN 61000-2-2

PLEASE FIND UPS PRODUCT DIAGRAMS AND FULL TECHNICAL SPECIFICATIONS ON PAGE 32 OR VISIT WWW.CERTAUPS.COM/PRODUCT/CERTAUPS-C550/

UPS INSTALLATION

PLEASE ENSURE ALL SAFETY INSTRUCTIONS HAVE BEEN OBSERVED AND UNDERSTOOD PRIOR TO UNPACKING AND INSTALLING THE UPS

INSPECTION

Every effort is made to ensure that CertaUPS systems are packaged as safely as possible to ensure that no damage is incurred during shipment. Please visually inspect the UPS when it is received. Please keep all packaging in a safe place for future use.

IF THE DEVICE IS DAMAGED, PLEASE NOTIFY THE CARRIER IMMEDIATELY

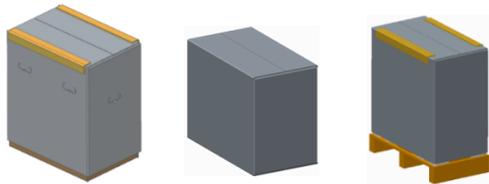
UNPACKING

The UPS unit must be positioned in a well-ventilated area that is free from excessive dust, heat and moisture. Please take note of the specified operating temperatures and remain within these guidelines.

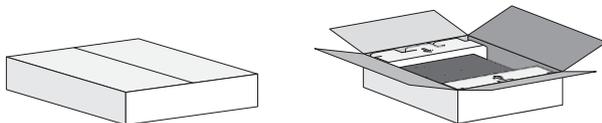


- Unpacking the unit in a low-temperature environment may cause condensation to occur in and on the device. **DO NOT** install the UPS/EBM until the inside and outside of the device are clear of condensation.
- The UPS/EBM is heavy. Follow any special precautions provided on the carton.
- Unpack the equipment and remove shipping carton and all the packaging materials. **DO NOT** lift the using the front panel and rear panel.

Tower model



Rackmount/tower model



PACKING MATERIALS MUST BE DISPOSED OF IN COMPLIANCE WITH ALL LOCAL WASTE MANAGEMENT REGULATIONS.

RECYCLING SYMBOLS ARE PRINTED ON THE PACKING MATERIALS TO FACILITATE SORTING.

C550 BOX CONTENTS CHECKLIST

C550 Series UPS	
USB A to B	
Software CD	
Quick Start Guide	
Warranty Card	

C550R BOX CONTENTS CHECKLIST

C550R Series UPS	
Rack rails	
USB A to B	
Software CD	
Quick Start Guide	
Warranty Card	
Horizontal stabilising bracket	

IF ANY OF THE ITEMS ARE MISSING FROM THE UPS BOX PLEASE NOTIFY YOUR SUPPLIER

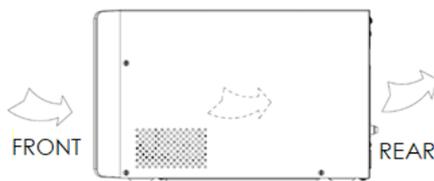
DO NOT FORGET TO REGISTER THE UPS WARRANTY WWW.CERTAUPS.COM/SUPPORT/WARRANTY-REGISTRATION/

INSTALLATION

DO NOT MAKE ANY UNLICENSED MODIFICATIONS TO THE UPS. THIS MAY INCUR DAMAGE AND AFFECT THE UPS WARRANTY.



- **DO NOT** connect the UPS to a mains supply until installation is completed
- Ventilation of the UPS is important for proper operation. Ensure the air vents on the front, side and rear of the UPS are clear. Allow adequate space around the UPS. The air flow diagram is shown as below:



Installation considerations:

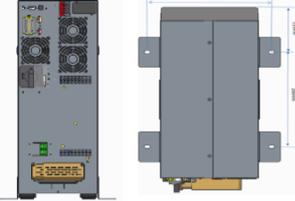
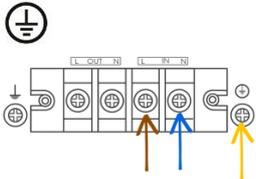
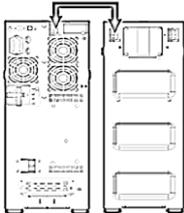
- The final location of the UPS unit must be on a flat stable surface in a well ventilated environment
- **DO** keep at least 150mm of free space behind the rear panel
- If installing an additional unit, place it next to the first unit in its final location
- **DO** allow the UPS to reach ambient temperature before turning on
- The UPS needs to be fully charged to achieve full autonomy
- As the C550R is only available as a charger model, it requires an External Battery Module (EBM).

C550 TOWER MODEL INSTALLATION

A QUICK START VIDEO GUIDE FOR THE C550 TOWER MODEL IS AVAILABLE AT WWW.CERTAUPS.COM/MEDIA

Tools required:

- Insulated screwdriver
- Correctly rated and fused loose cable

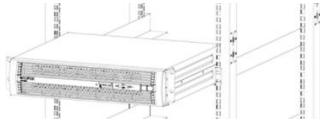
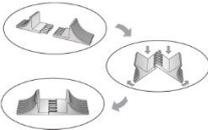
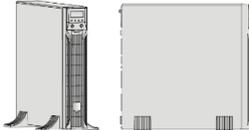
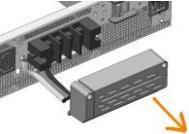
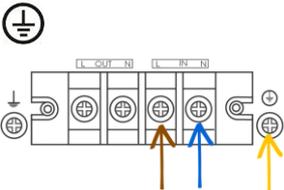
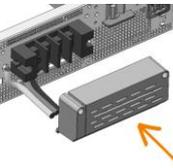
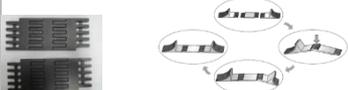
STEP ONE	<p>Ensure the master input breaker switch is OFF</p> 
STEP TWO	<p>Fit the stabiliser bracket. This requires four bolts</p> 
STEP THREE	<p>Once the UPS is positioned, connect the mains power cable to the UPS</p>
STEP FOUR	<p>Remove the terminal cover to reveal the terminal block</p>
STEP FIVE	<p>Connect the loose cable to the terminal block 'IN' and the earth cable to</p> 
STEP SIX	<p>Re-install the terminal cover to secure the connection and prevent damage</p>
STEP SEVEN	<p>Connecting the EBM. Secure the EBM in its final position and secure L brackets with the four bolts as completed with the UPS. Using the battery power cable, connect the EBM to the rear of the UPS.</p> 
STEP EIGHT	<p>Plug the UPS into a mains power socket and turn the input breaker 'ON'. The UPS will power on in bypass mode and begin charging</p>
STEP NINE	<p>Switch the UPS from bypass mode to online. Press and hold  for longer than 3 seconds. Once the light has settled on green the LCD display will show  signalling that the UPS is powered and protecting the equipment</p>

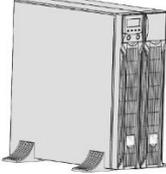
C550R RACKMOUNT MODEL INSTALLATION

A QUICK START VIDEO GUIDE FOR THE C550R RACKMOUNT/TOWER MODEL IS AVAILABLE AT WWW.CERTAUPS.COM/MEDIA

This series of UPS can be placed horizontally and vertically, with the LCD screen rotating 90 degrees.

STEP ONE	<p>Ensure the master input breaker switch is OFF</p> 
STEP TWO	<p>Installing the UPS in a rack position: Install the L bracket to the unit</p>

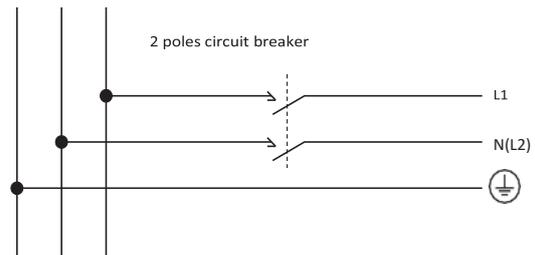
	 <p>Install the unit to the rack cabinet in a suitable U-space (Pre-install rail kit)</p>  <p>Installing the UPS in a tower position: Rotate the LCD screen to a vertical position</p>  <p>Set up the stabiliser bracket as below</p>  <p>Take the unit to the stabiliser brackets and place</p> 
STEP THREE	<p>Once the UPS is positioned, connect the mains power cable to the UPS</p>
STEP FOUR	<p>Remove the terminal cover to reveal the terminal block</p> 
STEP FIVE	<p>Connect the loose cable to the terminal block 'IN' and the earth cable to</p> 
STEP SIX	<p>Re-install the terminal cover to secure the connection and prevent damage</p> 
STEP SEVEN	<p>Connecting the EBM in a rack position: Secure the EBM in its final position and secure L brackets with the four bolts as completed with the UPS. Using the battery power cable, connect the EBM to the rear of the UPS.</p>  <p>Connecting the EBM in a tower position: Set up the extension plate as below and install to Stabiliser bracket from UPS</p> 

	<p>Place the UPS within the stabiliser bracket.</p>  <p>Connect to UPS with battery power cable.</p>  <p>If installing an additional EBM, place to the left and connect to the free battery port on the last EBM. A maximum of 6 EBMs can be connected in this way.</p>
STEP EIGHT	Plug the UPS into a mains power socket and turn the input breaker 'ON'. The UPS will power on in bypass mode and begin charging
STEP NINE	Switch the UPS from bypass mode to online. Press and hold  for longer than 3 seconds. Once the light has settled on green the LCD display will show  signalling that the UPS is powered and protecting the equipment

WIRING

Recommended upstream protection

UPS POWER RATING	UPSTREAM CIRCUIT BREAKER
6kVA	D curve – 63A
10kVA	D curve – 100A



Read the UPS safety instructions back-feed protection requirements page 7

Recommended cable cross-sections

MODEL	6K	10K
Protective earthing conductor (Min cross section)	6mm ² (8AWG)	10mm ² (6AWG)
Input L, N, G (Min conductor cross section)	6mm ² (8AWG)	10mm ² (6AWG)
Input fuse	80A	100A
Output L,N, (Min conductor cross section)	6mm ² (8AWG)	10mm ² (6AWG)

TERMINALS

Remove the terminal blocks cover (two screw)



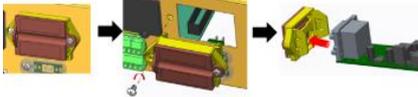
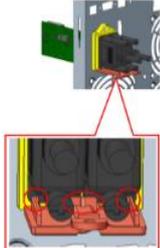
High leakage current:
Earth connection essential before connecting supply.



Remove the terminal blocks cover (two screw)
This type of connection must be carried out by a qualified electrician.

Before carrying out any connection check that the upstream protection devices (Normal AC source and Bypass AC source) are open "O" (Off).

PARALLEL SET UP

STEP ONE	<p>Remove the parallel port cover and insert the parallel PCB.</p> 
STEP TWO	<p>Install the parallel kit back to the unit and insert the parallel cable</p>
STEP THREE	<p>Re-install cover to the kit to secure the plug connection and prevent damage.</p> 

C550 SERIES STARTUP AND SHUTDOWN

STARTING THE UPS WITH MAIN POWER PRESENT

-  Please switch off the connected loads before turning on the UPS, and switch on connected devices one by one after the UPS is turned on. Switch off all connected loads before turning off the UPS.
-  The C550 Series UPS can be started either "hot" or "Cold", this mean the UPS can be activated regardless of whether the unit has a main supply (Hot) or if no mains power is available (Cold).
-  Verify that the total equipment ratings do not exceed the UPS capacity to prevent an overload alarm.

To start the UPS via mains power (Hot start):

1. Check all the connections are properly connected and correct.
2. Supply mains power to the UPS, the fans will start and the LCD will show the default UPS status summary screen.
3. Hold the  button continuously for more than 1 second, the buzzer will beep for 1 second and UPS starts to turn on.
4. After a few seconds the UPS will start in Line mode. If the utility power is abnormal, the UPS will transfer to Battery mode without output interruption to the UPS.

STARTING THE UPS FROM BATTERY

-  Before using this feature, the UPS must have been powered by utility power with output enabled at least once to ensure the unit is adequately charged.
-  After connecting the UPS to the battery, should wait 10s before pressing the  button for pre-charging the auxiliary power supply.
-  Battery start can be disabled.

To start the UPS via battery power (Cold start):

1. Check all the connections are properly connected and correct.
2. Press the  button continuously for more than 100ms, the UPS will power on. The fans will start and the LCD will show the default UPS status summary screen after finishing the initialisation self-test.
3. Pressing the  button continuously for more than 1 second, the buzzer will beep for 300ms, the UPS will start to turn initialise.
4. After a few seconds the UPS will transfer to Battery mode. If the mains power comes back the UPS will transfer to Line mode without output interruption of the UPS.

UPS SHUTDOWN WITH MAINS POWER



When in Bypass UPS output voltage is still present!

To shutdown the UPS with mains power:

1. Pressing the  button continuously for more than 3 seconds and the buzzer will beep for 300ms.
2. After that the UPS will transfer to bypass mode immediately.
3. In order to cut off the UPS output remove the mains power supply. A few seconds later the LCD display will shut down and no output power is available from the UPS output terminal.

UPS SHUTDOWN WITHOUT MAINS POWER

To shutdown the UPS without mains power:

1. Power off the UPS by pressing the  button continuously for more than 3 seconds, the buzzer will beep for 300ms at which point the UPS output will stop.
2. A few seconds later the LCD display will power off.

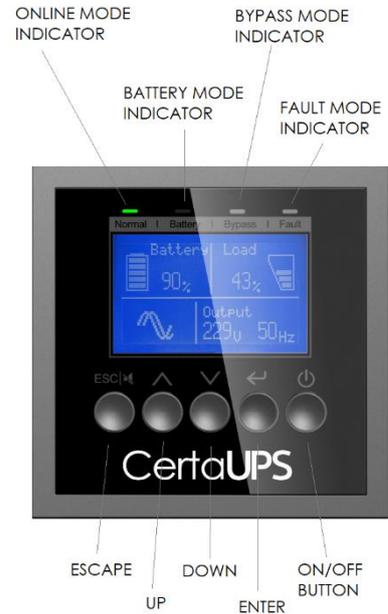
C550 SERIES OPERATION

FRONT PANNEL

The CertaUPS C550 has a five-button graphical LCD. It provides useful information about the UPS itself, load status, events, measurements and settings.

The following table shows the indicator status and description:

INDICATOR	STATUS	DESCRIPTION
Normal (Green)	On	The UPS is operating normally on Online or on High Efficiency mode.
Battery (Orange)	On	The UPS is on Battery mode.
Bypass (Orange)	On	The UPS is on Bypass mode.
	Flash	The UPS is on Standby mode.
Fault (Red)	On	The UPS has an active alarm or fault. See trouble-shooting on page 36 for additional information.

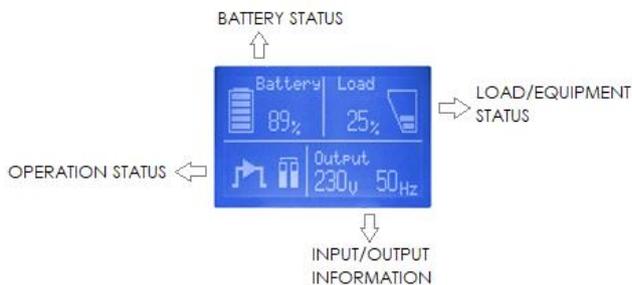


IF AN ERROR CODE APPEARS PLEASE REFER TO THE ALARMS AND FAULTS SECTION OF THE MANUAL PAGE 29 OR CONTACT YOUR CertaUPS REPRESENTATIVE

LCD DESCRIPTION

The LCD backlight automatically dims after 2 minutes of inactivity (except when a fault is present).

Press any button to restore the screen.



The table below gives details on the information provided by the UPS:

IF ANY OTHER STATUS APPEARS, OR FOR FURTHER GUIDANCE ON WHAT TO DO PLEASE SEE THE TROUBLESHOOTING SECTION ON PAGE 28 OR CONTACT A CertaUPS REPRESENTATIVE

OPERATION STATUS	CAUSE	DESCRIPTION
Standby mode 	The UPS is Off	UPS is operating without output
Online mode 	The UPS is operating normally	The UPS is powered and protecting the equipment
Battery mode  (1 beep every 4 seconds)	Mains failure has occurred, the UPS is in Battery mode	The UPS is powering the equipment from battery power. Prepare equipment for imminent shutdown
End of backup time  (1 beep every 1 seconds)	The UPS is in Battery mode and the battery is nearing depletion	This warning is approximate, and the actual time to shutdown may vary depending on configuration.
High Efficiency mode  (10ms transfer time in HE)	The UPS is operating in High Efficiency mode	Once mains power is lost or out of tolerance, the UPS will transfer to Line/Battery mode and the load is supplied from battery power.
Bypass mode 	An overload/fault has occurred, or the UPS has been instructed to enter Bypass mode	Equipment is powered but not protected by the UPS.
Converter mode 	The UPS is operating in converter mode, where the UPS will provide fixed output frequency (50Hz or 60Hz)	In converter mode, Once the mains power is lost or out of tolerance. The UPS will transfer to battery mode and the load is supplied continuously
Warning 	Warnings are present, this will not necessarily affect operation.	The UPS continues working, but the problem should be identified and resolved immediately, or it could prevent normal operation of the UPS
Fault 	A fault has been detected	The UPS will immediately cut off the output/transfer to bypass, and present an alarm
Overload 	The load exceeds the capacity of the UPS	Excess load should be removed to meet the UPS output rating
Battery test 	UPS is executing a battery test	The UPS is performing a Battery test. This is normal scheduled self-maintenance and is part of normal operation
Battery fail 	The UPS has detected a fault or a battery is disconnected	The battery failure symbol is shown and UPS will alarm. The fault should be investigated by a qualified UPS engineer
UPS Parallel 	Using two or three UPS for heavy load or redundancy	Two or three UPSs are operating in parallel

DISPLAY FUNCTIONS

The UPS is controlled using basic button functions via the LCD panel, basic operation functions include:

- Use the two middle buttons (▲ and ▼) to scroll through the menu structure.
- Press the Enter (←) button to select an option.
- Press the ESC button to cancel or return to the previous menu.
- When starting the UPS, the display is in the default UPS status summary screen.

MAIN MENU	SUBMENU	DISPLAY INFORMATION OR MENU FUNCTION
UPS status	N/A	[status summary screen] / [Alarm] / [Battery charging/Volt/level/remain time] / [mode/ Para Num. /Running time]
Measurements	N/A	[Load] W VA/ [Output/Current] A % / [Output/Voltage] V Hz/ [Input/Voltage] V Hz / [Battery] V % / [DC bus] V V / [temperature] °C / [Battery remaining time] Min
Control	Single battery test	Starts a manual battery test for single UPS
	Parallel UPS battery test	Starts a manual parallel battery test
	Single UPS turn off	Turns off one UPS in a parallel UPS system
	Reset fault status	Clears active fault
	Clear event log	Clears events
	Restore factory set	Returns all settings to original values
Settings	N/A	Sets parameters
Event log	N/A	Event list
Identification	N/A	[Product type/model] / [Part/Serial number] / [UPS firmware]

USER SETTINGS

The following table displays the options that can be changed by the user:

SUBMENU	AVAILABLE SETTINGS	DEFAULT SETTINGS
Password	Key the password	USER
Language	[English] [Chinese]	English
User password	[Disabled] [Enabled]	[Disabled]
Audible alarm	[Enabled] [Disabled]	[Enabled]
Output voltage	[208V] [220V] [230V] [240V] Can be changed in Standby mode and bypass mode	[230V]
Output frequency	[Autosensing] [50Hz] [60Hz]	[Autosensing]
Power strategy	[Normal] [High efficiency] [Converter]	[Normal]
Auto bypass	[Enabled] [Disabled]	[Enabled]
Auto restart	[Enabled] [Disabled] Authorize the product to restart automatically when mains supply is restored after a complete discharge	[Enabled]
Dry in	[Disabled] [SON] [SOFF] [Maintain bypass]	[Disabled]
Dry out	[Loaded power] [On battery mode] [Battery low] [Battery disconnected] [Bypass output] [UPS normal]	[Loaded power]
Start on battery	[Enabled] [Disabled]	[Enabled]
External Battery Modules	[0-20]	[1]
External Battery AH Setting	[0-300]	[120]
Battery remaining time	[Disabled] [Enabled]	[Enabled]
Charger current	[0-4] 0-4A for -B [0-12] 0-12A for -C	[1.4A] for 6K, [2A] for 10K [4A] for 6KS/10KS
Site wiring fault alarm	[Disabled] [Enabled]	[Disabled]
LCD contrast	[-5 ~ +5]	[+0]

LCD MENU SYSTEM

The LCD display can be used to access detailed information about the current UPS status.

BY DEFAULT, THE LCD WILL DISPLAY THE UPS STATUS SUMMARY SCREEN.

MAIN MENU

To cycle through the available UPS status summary screen information;

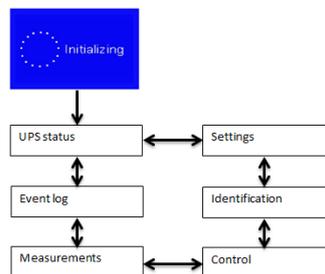
- Press ▲ or ▼ for less than 3 seconds, this will cycle information types: Alarms > Battery > System status >

To access the main menu, start from the UPS status summary screen

- Press ESC for more than 3 seconds, the display will enter main menu.

The main menu includes six areas:

- UPS status
- Measurement
- Event log
- Control
- Identification menu
- Settings

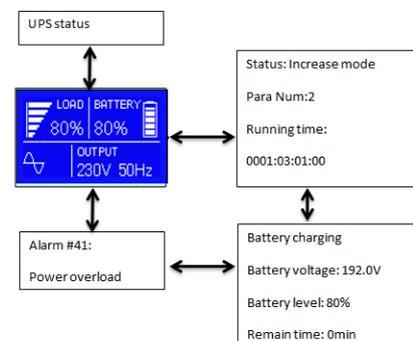


The following section outlines the working schematic for each of the above menu items.

UPS STATUS

- From the main menu press ← on the “UPS status” option, the display will enter the UPS status menu.
- By pressing ESC for more than 3 seconds, the display will return to the last main menu.

The content of UPS status menu provides additional information to the status summary screen.

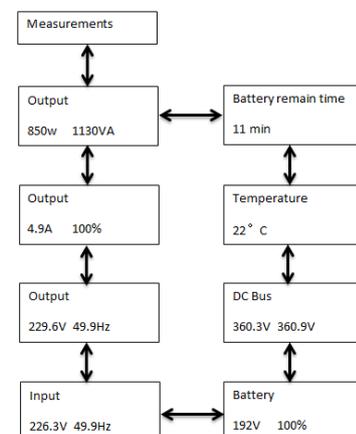


MEASUREMENTS MENU

- Press ← on the “Measurement” option, this will enter the measurement menu.

A lot of detailed information is available within this menu, including output voltage and frequency, output current, load capacity, input voltage and frequency, etc.

- By pressing ESC for more than 3 Seconds the display will return to the last main menu.



EVENT LOG

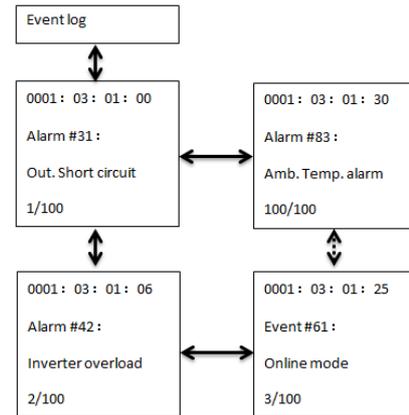
- By pressing **←** on "Event log" the display will enter the next event menu.

All previous events, alarms and faults will have been recorded here. This includes the description, event code, and the precise time when the event occurred.

- By pressing **▲** or **▼** for less than 3 seconds, all the events could be displayed one by one.

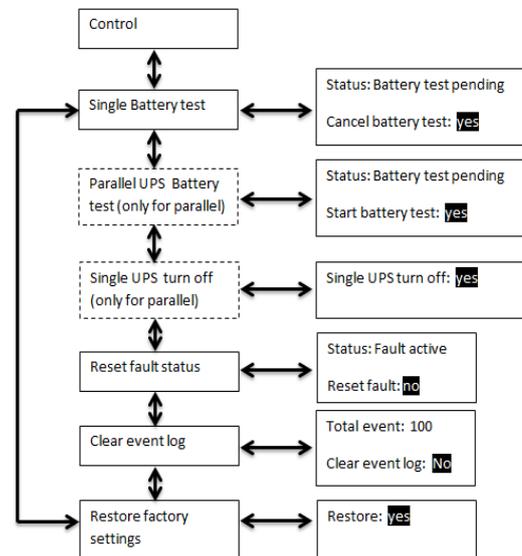
The maximum number of recorded events is 100. When the event log is full the oldest event will be overwritten.

- By pressing **ESC** for more than 3 seconds the display will return to the last main menu.



CONTROL MENU

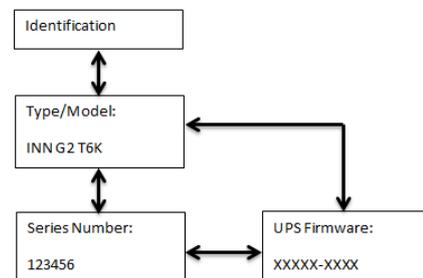
- By pressing **←** on the menu of "Control", the display enters the control menu.
- Battery test: this commands the UPS to carry out a battery self-test.
- Reset fault status**: when a fault occurs, the UPS will stay in fault mode and alarm until acknowledged. To clear the alarm, enter the "Reset Fault status" menu to clear the error. The UPS will stop alarming and return to bypass mode. The cause of the fault should be established and cleared prior to the ups being returned to normal operation
- Restore factory settings: all the settings will be returned to their factory defaults. This can only be done while in bypass mode.



TO REGISTER A FAULT PLEASE VISIT WWW.CERTAUPS.COM/SUPPORT/FAULT-REPORTING/

IDENTIFICATION MENU

- The identification information includes UPS serial number, firmware version and model.
- By press **ESC** for more than 3 seconds the display will return the last main menu.



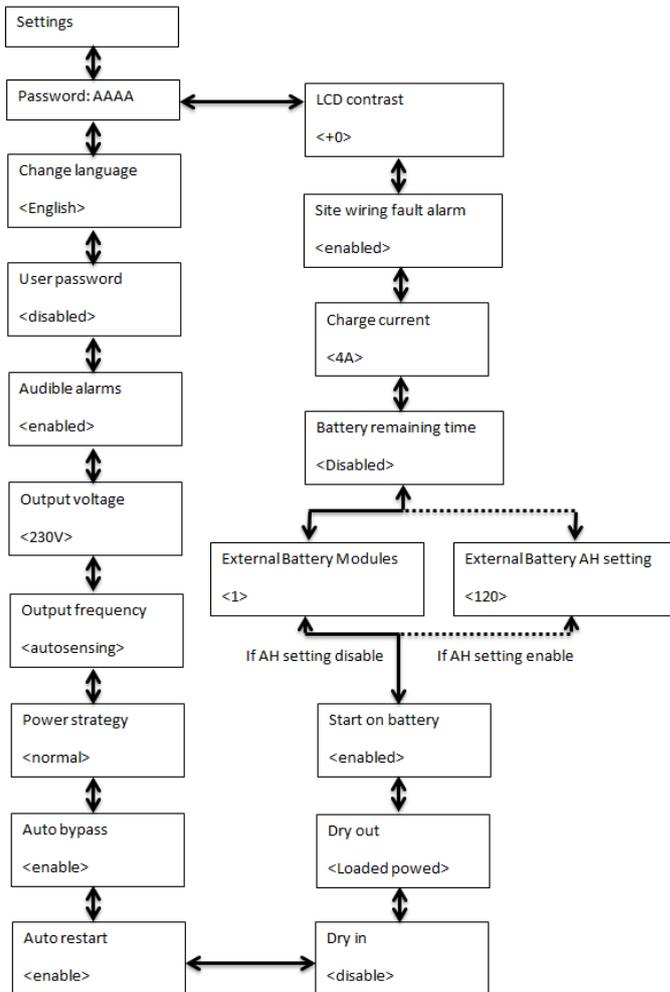
SETTINGS MENU



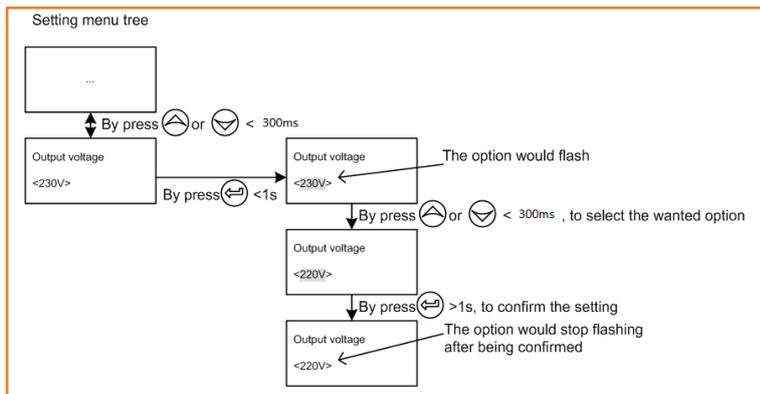
Please contact your local CertaUPS partner for further information before configuring the UPS.

MISCONFIGURATION COULD RESULT IN FAILURE OF THE EQUIPMENT AND PERSONAL INJURY.

Most settings in this menu require the UPS to be in bypass to take effect.



Example: set rated output voltage value



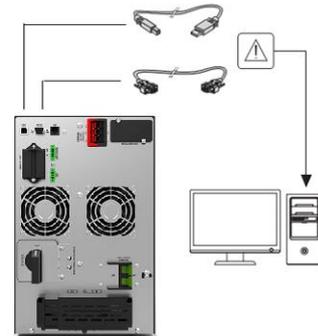
COMMUNICATION PORTS

RS232/USB



The RS232 and USB communication ports cannot be used simultaneously.

- Connect the communication cable to the serial or USB port on the computer.
- Connect the other end of the communication cable to the RS232 or USB communication port on the UPS.

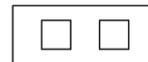


Both RS232 and USB connections allow for 2 way communication between the device connected and the UPS. This can be used for both issuing configuration commands, communicating with the UPS and issuing shutdown commands. When connected via USB to a PC the UPS will present itself as a HID compliant ACPI device allowing for zero configuration shutdown initiated by the UPS in the event of a power failure.

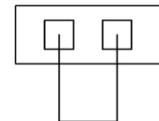
EPO CONNECTION

The EPO (Emergency Power Off) connection allows the UPS to be powered off by changing the state of either a normally open or normally closed circuit. The default state of the connection can be configured via the LCD display settings.

- Normally open - Normally the EPO circuit is open on the rear panel. Once the connector is closed with a wire, the UPS will stop output until EPO status is reset.



DISABLE EPO STATUS

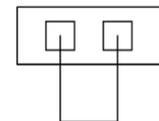


ENABLE EPO STATUS

- Normally closed - Normally EPO connector is closed with a wire on the rear panel. Once the connector is open, the UPS will stop output until the EPO status is disabled.



ENABLE EPO STATUS



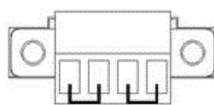
DISABLE EPO STATUS

DRY IN/DRY OUT CONTACTS

Dry in allows maintenance bypass to be remotely switched on and off. When the contact changes the maintenance, bypass is switched on or off depending on its current state.



Dry out could indicate the status of UPS.



dry out dry in

The Dry out port is normally closed, if the Dry out port is open it indicates an event has occurred such as:

Output overload
On battery mode
Battery low
Battery disconnected
Bypass enabled

INTERFACE CARDS (OPTIONAL)

The Network Management Card allows the UPS to communicate with monitoring devices by utilising network connectivity. The C550 series has one available expansion bay for the following connectivity cards:

- NMC/SNMP Card – this interface card provides SNMP and HTTP capabilities as well as monitoring through a Web browser interface using RJ45 10/100Mbps over TCP/IP.
- AS400 card - for RS485 communication protocol. Please contact your CertaUPS partner for details.

SOFTWARE

The C550 series is compatible with WinPower which is an open source, online UPS monitoring and management software tool.

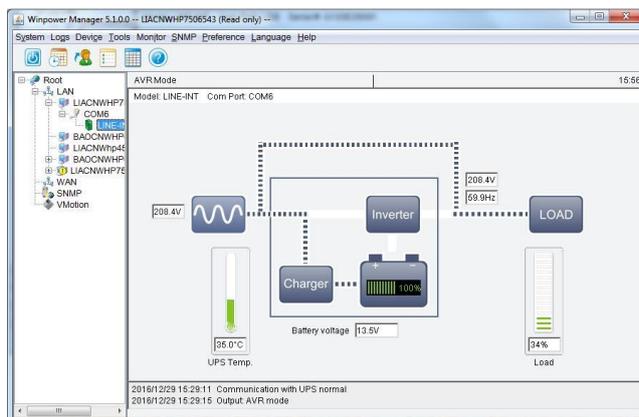
Key features:

- Power flow display for monitoring UPS status
- Scheduled system shutdown / restart
- Warning notification via E-mail / SMS / Windows system log*
- Scheduled UPS test
- Password security protection
- Remote monitor / control via LAN
- Safety to shutdown multi-system
- Selectable User Interface (Background)
- UPS parameter setting
- SNMP Central monitoring up to 1000 units
- Record logs for analysis
- Multi-language support: English, Italian, Turkish, Spanish, French, Portuguese, Polish, Thai, Germanic, Russian and Japanese.

*Requires a GSM modem (not supplied)

WinPower installation:

STEP ONE	Go to: https://www.certaups.com/downloads/ download winpower
STEP TWO	Choose the operating system you need and follow the instruction described on the website to download the software.
STEP THREE	When downloading all required files from the internet, enter the product key: 511C1-01220-0100-478DF2A



WHEN THE INSTALLATION IS COMPLETE, WinPOWER WILL APPEAR AS A GREEN PLUG ICON LOCATED IN THE SYSTEM TRAY, NEAR THE CLOCK.

FOR FURTHER GUIDANCE ON UPS MONITORING, PLEASE CONTACT YOUR CertaUPS PROVIDER OR VISIT WWW.CERTAUPS.COM

UPS MAINTENANCE

ADOPTING A PREVENTATIVE MAINTENANCE SCHEDULE IS CRITICAL TO ACHIEVING OPTIMUM UPS PERFORMANCE

UPS CARE

For the best preventive maintenance:

Keep the area around the equipment clean
Keep the equipment free from dust
Ensure the equipment is positioned in a well ventilated area
For maximum battery life keep the equipment at an ambient temperature of 20-25°C (77°F max)
Carry out regular environmental and battery checks



The batteries are rated for a 3-5 year service life. The service life varies depending on the frequency of usage and ambient temperature. Batteries used beyond expected service life will often have severely reduced runtimes. Replace batteries at least every 4 years to keep units running at peak efficiency and prevent failure.

TRANSPORTING THE UPS



THE INTERNAL UPS BATTERIES MUST BE DISCONNECTED BEFORE TRANSPORT



The following procedure should be performed or supervised by personnel knowledgeable about batteries and the required precautions. Keep unauthorised personnel away from batteries. If the UPS requires any type of transportation, the batteries must be disconnected (but not removed) before the unit is transported:

Verify that the UPS is off and disconnected from mains power
Place the UPS on a flat stable surface with the front of the cabinet facing you
Remove the UPS front cover
Disconnect the internal battery connectors
Replace the UPS front cover

To avoid damage and to prevent DOA's always use a reputable courier for all equipment transportation.

STORING THE UPS

UPS BATTERIES MUST BE RECHARGED EVERY SIX MONTHS. ALWAYS CHECK THE BATTERY RECHARGE DATE ON THE SHIPPING CARTON BEFORE USE.

Where UPS equipment is stored for a long period of time, the batteries must be recharged every six months. The optimal storage vdc for VLRA batteries, depending on environment is between 20-40%. This can be achieved by connecting the UPS to mains power.

DO NOT Store the equipment in a warm, damp, dusty environment	
DO NOT Use the equipment if the batteries have not been recharged/if the recharge date exceeds six months	
DO NOT Expose the UPS to direct sunlight or source of heat	
DO Store the equipment in a cool, dry, clean environment	
DO Ensure the batteries are recharged every six months for a minimum of 48 hours	
DO Ensure EBMs are recharged every six months for a minimum of 3 hours	

BATTERY REPLACEMENT



DO NOT DISCONNECT THE BATTERIES WHILE THE UPS IS IN BATTERY MODE



CONSIDER ALL WARNINGS, CAUTIONS, AND NOTES BEFORE REPLACING BATTERIES



ELECTRIC ENERGY HAZARD. DO NOT ATTEMPT TO ALTER ANY BATTERY WIRING OR CONNECTORS.

DO NOT Allow unauthorised personnel near the batteries. Servicing should be performed by qualified, knowledgeable personnel only	
DO NOT Dispose of batteries in a fire. Batteries may explode when exposed to flame	
DO NOT Open or modify the battery or batteries in any way. Released electrolyte is harmful to the skin and eyes and may be extremely toxic	
DO NOT Attempt to alter any battery wiring or connectors. Attempting to alter wiring can cause injury	

DO Ensure personnel servicing the batteries are all knowledgeable on the required precautions for battery servicing	
DO Replace the batteries with the same type and number of batteries or battery packs	
DO Dispose of the batteries responsibly. Please refer to local regulations and disposal requirements	
DO Determine if the battery is inadvertently grounded. If inadvertently grounded, remove source from ground. Contact with any part of a grounded battery can result in electrical shock. The likelihood of shock can be reduced if grounds are removed during installation and maintenance (applicable to equipment and remote battery supplies not having a grounded supply circuit).	
DO Disconnect charging source prior to connecting or disconnecting battery terminals	

Batteries can present a risk of electrical shock or burn from high short circuit current. Observe the following precautions:

Remove watches, rings, or other metal objects
Use tools with insulated handles
Do not lay tools or metal parts on top of batteries
Wear rubber gloves and boots

REPLACING THE EBM



THE EBM IS HEAVY AND REQUIRES A MINIMUM OF 2 PEOPLE TO LIFT INTO RACKING.

For the C550 tower module: Turn the MBS to bypass and switch off the input and then replace the EBM(s).
 For the C550R rotation module: If a PDU is connected to the UPS, turn the MBS to bypass and switch off the input, it is then safe to replace the EBM(s). If a PDU is not connected to the UPS, turn off the UPS and then replace the EBM.

To replace the EBM(s):

1. Unplug the EBM power cable and battery detection cable from the UPS. If additional EBM(s) are installed, unplug the EBM power cable from each EBM
2. Replace the EBM(s)



A SMALL AMOUNT OF ARCING MAY OCCUR WHEN CONNECTING AN EBM TO THE UPS. THIS IS NORMAL AND WILL NOT CAUSE SHOCK. INSERT THE EBM CABLE INTO THE UPS BATTERY CONNECTOR QUICKLY AND FIRMLY

- Plug the EBM cable(s) into the battery connector(s)
- Verify that the EBM connections are secure and that adequate bend radius and strain relief exist for each cable
- Connect the EBM cable to the UPS

To test new batteries:

1. Charge the batteries for 48 hours.
2. Press on the menu of "Control".
3. Select Control
4. Select Single battery test

The UPS starts a battery test if:

- The batteries are fully charged
- The UPS is in Normal mode with no active alarms
- Bypass voltage is acceptable

During the battery test, the UPS transfers to Battery mode and discharges the batteries for 10 seconds. The front panel displays  and the percentage of the test completed.

RECYCLING A UPS



CONTACT YOUR LOCAL RECYCLING OR HAZARDOUS WASTE CENTRE FOR INFORMATION ON PROPER DISPOSAL OF THE USED EQUIPMENT.

DO NOT dispose of the battery or batteries in a fire. Batteries may explode. Proper disposal of batteries is required. Refer to your regulations for disposal requirements.

DO NOT open or modify the battery or batteries. Released electrolyte is toxic and harmful to the skin and eyes.



DO NOT discard the UPS or the UPS batteries in the general waste. This product contains sealed lead acid batteries and must be disposed of responsibly. For more information contact your local recycling centre.



DO NOT discard of waste electrical or electronic equipment (WEEE) in the trash. For proper disposal contact your local recycling centre.

TROUBLESHOOTING

The C550 series is designed for durable, automatic operation. It also provides alerts whenever potential operating problems occur.

ALARMS SHOWN ON THE CONTROL PANEL DO NOT MEAN THAT THE OUTPUT POWER IS AFFECTED. INSTEAD THEY ARE PREVENTIVE ALARMS INTENDED TO ALERT THE USER

- Events are silent status information that are recorded into the Event log. Example = "AC freq in range".
- Alarms are recorded into the Event log and displayed on the LCD status screen with the logo blinking. Some alarms may be announced by a beep every 1 second. Example = "Battery low".
- Faults are announced by a continuous beep and red LED recorded into the Event log. Example = Out. Short circuit.

To check the Event log:

- By pressing  on the menu of "Event log".
- Scroll through the listed events or faults.
- The following table describes typical conditions.

ALARMS & FAULTS

TO REGISTER A FAULT PLEASE VISIT WWW.CERTAUPS.COM/SUPPORT/FAULT-REPORTING/

Use the following troubleshooting chart to determine the UPS alarm condition.

ALARM CODE	EVENT	CAUSE	ACTION
A0EA	RATED POWER DIFFERENCE Fault (Red) LED is flash 1 beep every 1 second	Power rating between individual ups in parallel are different	Ensure all power ratings within the parallel are the same
A0EB	HE IN PARALLEL Fault (Red) LED is flash 1 beep every 1 second	Within parallel systems one or more UPS modes are set as HE (high efficiency)	HE is not allowed in parallel configurations
A0E6	PARALLEL BATTERY STATUS Fault (Red) LED is flash 1 beep every 1 second	In parallel configurations a UPS is reporting a fault with batteries/EBM	Check battery connections, refer to EBM installation instructions.
A0E7	LINE INPUT DIFFERENT Fault (Red) LED is flash 1 beep every 1 second	Within parallel system, UPS1 in out ok, UPS2 input lost	Check the line input
A0E9	POWER STRATEGY DIFFERENT Fault (Red) LED is flash 1 beep every 1 second	Parallel system, UPS mode not consistent through configuration i.e. normal, converter HE are different	Check UPS OP mode, set OP mode be the same
A004	SITE WIRING FAULT Fault (Red) LED is flash 1 beep every 1 second	Site fault detection is supported on all models anytime there is a grounded neutral connection. Alarm triggers when the difference between ground and neutral voltage is > 15v.	Site fault detection should be enabled by default. It can still be enabled and disabled from the LCD settings menu. Reconnect all input wires
A011	NO BATTERY Fault (Red) LED is Flash 1 beep every 1 second	The batteries are disconnected.	Verify that all batteries are properly connected. If the fault persists, contact your service representative.
A012	BATTERY LOW Battery (Orange) LED is On. 1 beep every 1 second	The UPS is in Battery mode and the battery is running low.	Remaining runtime is low, prepare supported equipment for immediate shutdown or reinstate mains supply to the UPS.
A015	CHARGER FAIL Fault (Red) LED is flashing 1 beep every 1 second	Indicates that the UPS has confirmed the charger has failed	The UPS turns off the charger until the next power cycle. Contact your service representative
A041	OVERLOADED Fault (Red) LED is Flash 2 beeps every 1 second	Power requirements exceed the UPS capacity	Remove some of the equipment from the UPS. The UPS will continue to operate but may switch to Bypass mode or shut down if the load increases.
A072	ON MAINTAINENCE BYPASS Bypass (Orange) LED is on.	UPS was instructed to switch to bypass and will remain in bypass until given further instruction.	Check the maintain bypass switch status
A085	FAN FAILURE Fault (Red) LED is flash 1 beep every 1 second	Indicates that the fan could not operate normally	Check fans of UPS
E060	BYPASS MODE Bypass (Orange) LED is on.	An overload or a fault has occurred, or a command has been received putting the UPS in Bypass mode. Equipment is powered but not protected by the UPS.	Check for one of the following alarms: over temperature, overload or UPS failure.
E062	BATTERY MODE Battery (Orange) LED is On. 1 beep every 4 seconds.	A utility failure has occurred, and the UPS is in Battery mode.	The UPS is powering the equipment with battery power. Prepare your equipment for shutdown.
E063	HE MODE Line (green) LED is on.	The UPS is on bypass while operating on the High efficiency setting.	The equipment transferred to bypass utility power as a normal function of High Efficiency operation. Battery mode is available, and your equipment is protected.
F0E1	NEGATIVE POWER FAULT Fault (Red) LED is On. Beep continuous.	In parallel configurations a single UPS is reporting negative fault	Redundancy mode, the faulty UPS triggers a fault, all UPSs in parallel configuration will generate a fault code. Contact your service representative
F0E2	PARALLEL CABLE LOSS Fault (Red) LED is On. Beep continuous.	In parallel configurations a parallel cable disconnected	Reconnect the parallel cable to clear the fault. If the issue persists contact your service representative
F016	BATTERY OVER VOLTAGE Fault (Red) LED is On. Beep continuous.	Indicates that the battery voltage is too high	The UPS will turn off the charger until the battery voltage is normal
F021	BUS OVER VOLTAGE Fault (Red) LED is On. Beep continuous.	Indicates that the UPS is reporting a BUS over voltage fault	The UPS transfers to Bypass mode if supporting the load
F022	BUS UNDER VOLTAGE Fault (Red) LED is On. Beep continuous.	Indicates that the UPS is reporting a BUS under voltage fault	The UPS transfers to Bypass mode if supporting the load
F023	BUS Unbalance Fault (Red) LED is On. Beep continuous.	Indicates that the positive BUS voltage and negative BUS voltage are out of tolerance	The UPS transfers to Bypass mode if supporting the load
F024	BUS SHORT Fault (Red) LED is On. Beep continuous.	Indicates that the BUS voltage decreased out of tolerance	Contact your service representative

F025	BUS SOFTSTART FAIL Fault (Red) LED is On. Beep continuous.	Indicates that the BUS could not soft start successfully	Contact your service representative
F031	OUTPUT SHORT CIRCUIT Fault (Red) LED is On. Beep continuous.	Indicates that the UPS has detected abnormally low impedance placed on its output and considers it a short circuit	Remove all output loads. Turn off the UPS. Check UPS output for possible short circuit. Ensure short circuit is removed before turning on again.
F032	INV OVER VOLTAGE Fault (Red) LED is On. Beep continuous.	Indicates that the UPS reported an inverter over voltage fault	The UPS transfers to Bypass mode if supporting the load
F033	INV UNDER VOLTAGE Fault (Red) LED is On. Beep continuous.	Indicates that the UPS get inverter under voltage fault	The UPS transfers to Bypass mode if supporting the load
F034	INV SOFTSTART FAIL Fault (Red) LED is On. Beep continuous.	Indicates that the inverter could not soft start successfully	Contact your service representative
F042	INV OVERLOAD Fault (Red) LED is On. Beep continuous.	UPS has transferred to bypass or fault mode because of overload in inverter mode	The UPS transfers to Battery mode if supporting the load. Remove some of the output load from the UPS
F043	BYPASS OVERLOAD Fault (Red) LED is On. Beep continuous.	UPS has cut off the output and transferred to fault mode because of overload in bypass mode or HE mode.	Remove some of the output load from the UPS
F081	OVER TEMP Fault (Red) LED is On. Beep continuous.	The UPS internal heat sink temperature is too high, or a fan has failed. At warning level, the UPS generates the alarm but remains normal or battery mode. If the temperature rises another 2°C the UPS transfers to Bypass mode or Standby mode.	Clear vents and remove any heat sources. Allow the UPS to cool and ensure the airflow around the UPS is not restricted then restart the UPS. If overheating persists, contact your service representative.
F093	BACK FEED Fault (Red) LED is On. Beep continuous.	UPS has unexpected bypass current in battery mode	Transfer to maintenance bypass and call service.

SILENCING THE ALARM

- Press the ESC (Escape) button on the front panel display for 2 Seconds to silence the alarm.



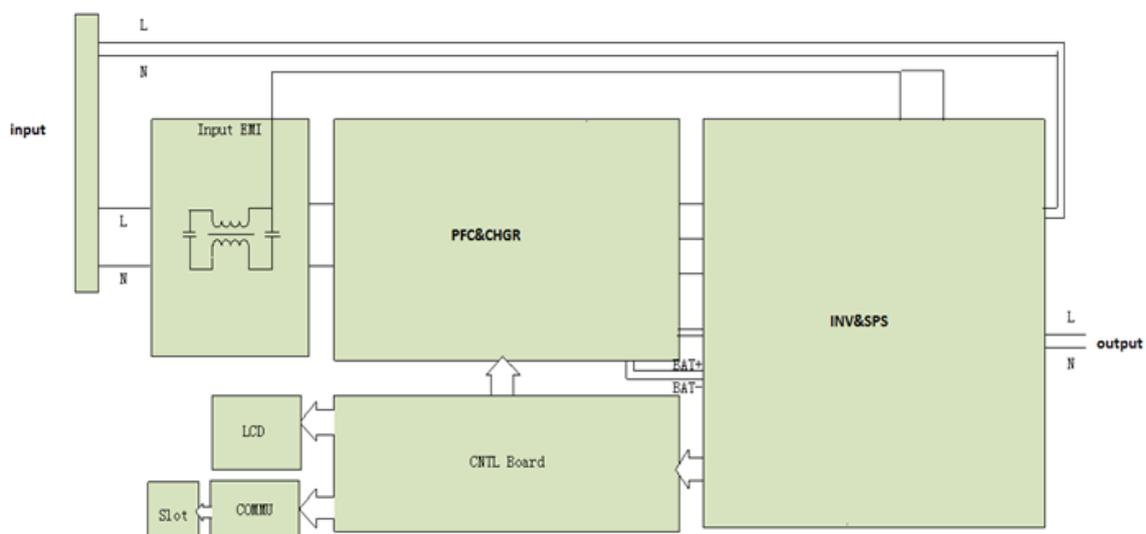
Check the alarm condition and perform the applicable action to resolve the condition.



If an alarm status changes the alarm will need to be silenced again.

TECHNICAL DATA

BLOCK DIAGRAM



ELECTRICAL SPECIFICATION

INPUT						
Model No.	C550-060-B	C550-060-C	C550-100-B	C550-100-C	C550R-060-C	C550R-100-C
Phase	Single					
Frequency	40~70 Hz					
Current(A)	220/230/ 240/250VAC	220/230/ 240/250VAC	220/230/ 240/250VAC	220/230/ 240/250VAC	220/230/ 240/250VAC	220/230/ 240/250VAC
	230V / 32.3A	230V / 42.3A	230V / 50.9A	230V / 60.2A	230V / 50.9A	230V / 60.2A
OUTPUT						
Model No.	C550/R-060-B/C			C550/R-100-B/C		
Power rating*	6000VA/6000W			10000VA/10000W		
Voltage	220Vac/230Vac/240Vac/250Vac					
Frequency	50/60Hz					
Wave form	Sinusoidal					
BATTERIES						
Model No.	C550-060-B	C550-060-C (EBM)	C550-100-B	C550-100-C (EBM)	C550R-060-C (EBM)	C550R-100-C (EBM)
Voltage	192V	192V	192V	192V	192V	192V
Capacity	7ah x 16	9 ah x 16	9 ah x 16	9 ah x 16	9 ah x 16	9 ah x 16

OPERATING ENVIROMENT

Ambient Temperature	0°C to 40 °C (Full load no de-rating) 40 °C to50 °C output power derated to 50% load, Charger current derated 50%
Operating humidity	< 95% no condensing
Altitude	< 3000m
	3000m (Above 3000m altitude10% derating per 1000m)
Storage temperature	-25°C~55°C (-13 to 130°F)
Audible noise	< 50 dBA at 1 meter typical for 6kVA models < 55 dBA at 1 meter typical for 10kVA models

*Above 3000m altitude10% derating per 1000m.

RUNTIMES

MODEL	EMB CODE	EBM QTY	RUNTIME @ 100%	RUNTIME @ 75%	RUNTIME @ 50%	RUNTIME @ 25%
C550-060-B	NA	0	4 Mins	6 Mins	13 Mins	33 Mins
C550-060-C	NA	0	0 Mins	0 Mins	0 Mins	0 Mins
C550-060-C	C550-BB	1	19 Mins	28 Mins	49 Mins	117 Mins
C550-060-C	C550-BB	2	48 Mins	72 Mins	118 Mins	266 Mins
C550-060-C	C550-BB	3	83 Mins	117 Mins	192 Mins	300+
C550-060-C	C550-BB	4	116 Mins	166 Mins	269 Mins	300+
C550-060-C	C550-BB	5	153 Mins	217 Mins	300+	300+
C550-060-C	C550-BB	6	189 Mins	268 Mins	300+	300+
C550-100-B	NA	0	3 Mins	6 Mins	12 Mins	31 Mins
C550-100-C	NA	0	0 Mins	0 Mins	0 Mins	0 Mins
C550-100-C	C550-BB	1	7 Mins	12 Mins	21 Mins	52 Mins
C550-100-C	C550-BB	2	21 Mins	31 Mins	53 Mins	127 Mins
C550-100-C	C550-BB	3	37 Mins	52 Mins	90 Mins	206 Mins
C550-100-C	C550-BB	4	52 Mins	78 Mins	128 Mins	288 Mins
C550-100-C	C550-BB	5	71 Mins	103 Mins	167 Mins	300+
C550-100-C	C550-BB	6	88 Mins	127 Mins	208 Mins	300+

*Calculated to 20°C

**Runtime given below are for both the tower and "R" variants.

DIMENSIONS AND WEIGHTS

Model No.	Dimensions W×H×D (mm)	Net Weight (kg)
C550-060-B	220 x 589 x 492	52.7
C550-060-C	220 x 348 x 492	3.9
C550-100-B	220 x 589 x 492	34
C550-100-C	220 x 589 x 492	15.2
C550-BB	220 x 589 x 487	84.6
C550R-060-C	438 x 86.2 x 573	13.1
C550R-100-C	438 x 86.2 x 573	15
C550R-BB	438 x 129 x 593	45.4

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