



CHADHA POWER GQP Series Inverters User Manual

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USER MANUAL

INVERTERZ
GQP



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Dear Valued Customer,

We congratulate you for your excellent choice of our CHADHA POWER GQP INVERTER/UPS. Chadha Power GQP Series of Pure Sine Wave Inverters will provide complete comfort during the absence of utility power and provide your appliances the exact replication of mains Supply.

The salient features of CHADHA POWER GQP SERIES OF INVERTERS are:

- Pure Sine Wave Output Wave Shape
- Automatic Battery Charge Management
- Tri State of Charging i.e. Normal, Enhanced & High Charging Rate
- LCD Display for better user interface
- Automatic Overload, Battery Low, Heat-up & Short Circuit protection sense
- Mains Overload Protection Through Resettable Switch
- Phase Reverse Protection
- Manual Mains Bypass Facility
- Great Power Saving
- Easy to Service
- No Humming Noise

This manual provides you with a thorough understanding of your Chadha Power GQP INVERTER and its optimum use. Please read the installation and operating instructions in the manual carefully before installing and using your Chadha Power GQP Inverter. Pay special attention to the CAUTION and WARNING statements in this manual.

About the CHADHA POWER GQP SERIES OF INVERTERS

Chadha Power GQP Series of Pure Sine Wave Inverters transforms Direct Current (DC) to Alternating Current (AC). The battery acts as a reservoir ensuring continuous supply when utility power is not available.

Controls

Front Panel

There is ON/OFF Switch and LCD & LED Display.

Message Displayed on LCD

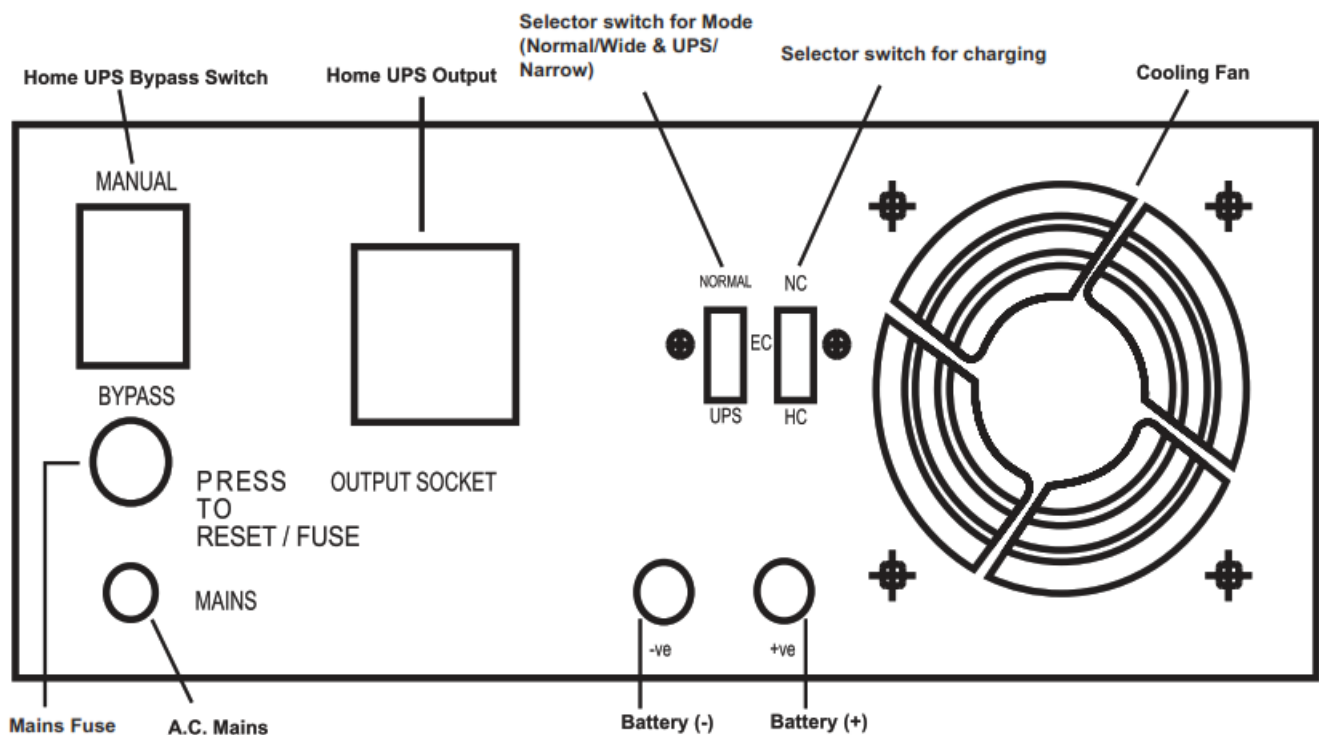
Battery Charging 12V	Battery is charging. When the battery is charged, the actual battery voltage to $\pm 0.2V$ accuracy is displayed.
Mains 220V	Displays status of AC mains voltage at the input
Mains CUT	Displays failure status of input AC mains at the input
Battery ON 12V	Displays battery voltage and its status
AC Mains Fuse Trip	Displays the protection status of AC Mains fuse fail
Battery Trip Low	Displays the protection status of battery low trip
Load 90%	Displays the load as a percentage of capacity of inverter
Overload Trip	Displays the protection status of trip in case of overload
Short Circuit Trip	Displays the protection status of trip in case of short circuit
UPS Mode ON	Displays the UPS Normal switch (rear panel) selection
LED Back-up ON	Glow when Mains is not available and system is functioning on battery
LED Charging/ Charged Blinking	Glow when mains is present and battery is charging
LED Charging/ Charged Continue Glow	When the battery is Charged



Rear Panel

Chadha Power GQP Inverters have two battery wires coming out from the rear side, a Thermal Circuit Breaker of 7/10Amp, (7Amp for 650VA, 850VA & 1050VA and 10Amp for 24V 1450VA), AC output socket and a power cord to connect with mains supply. Red coloured battery wire is to be connected to positive terminal of battery and black coloured wire to be connected to negative terminal of the battery.

Caution: Do not reverse the battery connections, it will blow the DC fuse connected in series with battery connection inside the Power Card



Some Safety Measures

Important Precautions

The output side of the AC wiring of CHADHA POWER Inverterz should never be connected to utility power or a DG set. This condition is far worse than a short circuit. If the unit survives this condition, it will shut down until connections are made. Installation should ensure that the AC output of CHADHA POWER Inverterz should not be connected to AC input.

Note: Connecting the battery cables to the CHADHA POWER Inverterz battery terminals may cause spark, usually accompanied by a “snap”. This is normal, don’t let it scare you.
Never disconnect battery cables while the CHADHA POWER Inverterz is delivering power or battery charger is operating. Always turn the switch off first.

General Precautions

- Before installing, connecting any wiring or using the CHADHA POWER Inverterz, read all instructions of this instruction manual.
- **CAUTION:** To reduce risk of injury, use only deep-cycle lead acid batteries.
- Do not expose the system to rain, snow or liquids of any type. Do not disassemble the system; call CHADHA POWER authorized service centre when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
- To reduce risk of electric shock, disconnect all the wiring from the system before attempting any maintenance cleaning. Turning off the system will not reduce this risk
- **WARNING:** WORKING IN VICINITY OF A LEAD ACID BATTERY IS DANGEROUS.
- Be extra cautious when working with metal tools on, or around batteries. The potential exists to drop a tool and short-circuit the batteries or other electrical parts resulting in sparks that could cause an explosion
- Do not leave batteries in discharged state for more than a day or two. They will undergo a chemical process called sulfation which can permanently damage the battery. Also batteries will self-discharge over a period time, so they should periodically be recharged even if they are not being used.
- **GROUNDING INSTRUCTIONS:** The CHADHA POWER Inverterz Sine Wave should be connected to a grounded, permanent wiring system.

Personal Precautions

- Someone should be in your audible range to come to your aid when you work near batteries.
- Have plenty of fresh water nearby in case battery acid contacts skin, clothing or eyes
- Wear complete eye protection and clothing protection. Avoid touching eyes while working near batteries. Wash hands when done.
- If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eyes, immediately flood eyes with running cool water for at least 15minutes and get medical attention immediately.
- Never attempt to charge a frozen battery.
- Before touching battery terminal make sure that the system is OFF and AC mains to the CHADHA POWER Inverter is also OFF.
- NEVER smoke or allow spark or flame in vicinity of the batteries.
- Remove personal metal items such as rings, bracelets, necklaces and watches when working with an electrical circuit. These items can cause a short circuit current high enough to weld a ring and may cause severe burns
- If it is necessary to remove any battery, always remove the grounded terminal from the battery first. Make sure all the accessories are off, so as not to cause arcing. Be sure that the area around the battery is well ventilated.
- Clean battery terminals. Be careful not to allow corrosion to come in contact with eyes.

- Study all battery manufacturers' specific precautions and recommended rate of charge
- Add only distilled water in each cell until battery acid reaches level specified by the battery manufacturer. This helps purge excess gas from cells. Do not over fill. For a battery without caps, carefully follow manufacturer's charging instructions.
- **CAUTION:** The CHADHA POWER INVERTERZ Pure Sine Wave should be connected to grounded, permanent wire system.

SPECIAL NOTICES:

1. The Chadha Power GQP Inverterz are for use with a nominal supply voltage of 12V/ 24V DC.
2. NoAC or DC disconnects are provided as an integral part of this system.
3. No over current protection for the battery supply is provided as an integral part of this system. Both AC & DC disconnects must be provided as part of the system installation.
4. No over current protection for the AC output wiring is provided as an integral part of the system. Over current protection of the AC output wiring shall be provided as part of the system installation.

Charging and Load Chart

CHARGING MODE

Parameter	Model with Rating			
	GQP 12V 650VA	GQP 12V 850VA	GQP 12V 1050VA	GQP 24V 1450VA
High Charging Current	13Amp \pm 1Amp			13Amp \pm 1Amp
Enhanced Charging Current	11Amp \pm 1Amp			11Amp \pm 1Amp
Normal Charging Current	09Amp \pm 1Amp			09Amp \pm 1Amp
Battery Boost Voltage	14.4V \pm 0.2V			28.8V \pm 0.4V
Battery Float Voltage	13.7V \pm 0.2V			27.4V \pm 0.4V
Charging Technique	Automatic Sense Intelligent Control (ASIC)			

LOAD CHART CHADHA POWER INVERTERZ*

Model	650 VA				850VA				1050VA				1450VA			
Options	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
Computers (TFT)	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	3
Printer (Laser)	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
TV (LCD 26")	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Tube light (40W)	3	0	2	1	4	0	3	1	4	0	3	1	8	0	6	2
Fan (80W)	3	0	3	2	4	0	3	3	5	0	4	3	8	0	6	4
CFL (15W)	4	28	5	3	4	37	5	5	5	42	5	5	4	62	9	5

* Depending on the actual VA rating/technical specifications of the appliance.
Specifications are subject to change without prior notice due to constant R&D effort.

APPLICATION CHART*

Back-up Power of all electrical loads:

- Computer & Printers
- Fan, Tubelights, CFL, LED Lights
- 1.V. Sets, DVD & Music System

Installation

Where to install

The system should be installed in a location that meets the following requirements :

- Dry — Do not allow water to drip or splash on the Chadha Power Inverterz
- Cool — The ambient air temperature around the system should be between 0 degC to 45 degC (32 degF to 113 degF). Cooler environment is better for the system.
- Ventilation : Allow at least two inches (5cm) of clearance around the system for air flow.
- Safe: Do not install the Chadha Power Inverterz in the same compartment as batteries or in any compartment which is storing flammable liquids such as gasoline.
- Close to battery – Install the system as close to the battery as possible in order to minimise the length of cable required to connect the system to the battery. It is better and cheaper to run longer AC wires than longer DC cables.

CAUTIONS! To prevent fire, do not cover or obstruct ventilation openings. Do not install the system in a Zero – clearance compartment. Overheating may result.

WARNING! This equipment contains components which tend to produce arcs or sparks. To prevent fire or explosion do not install in compartment containing batteries or flammable materials or in locations which require ignition protected equipment.

How to Install

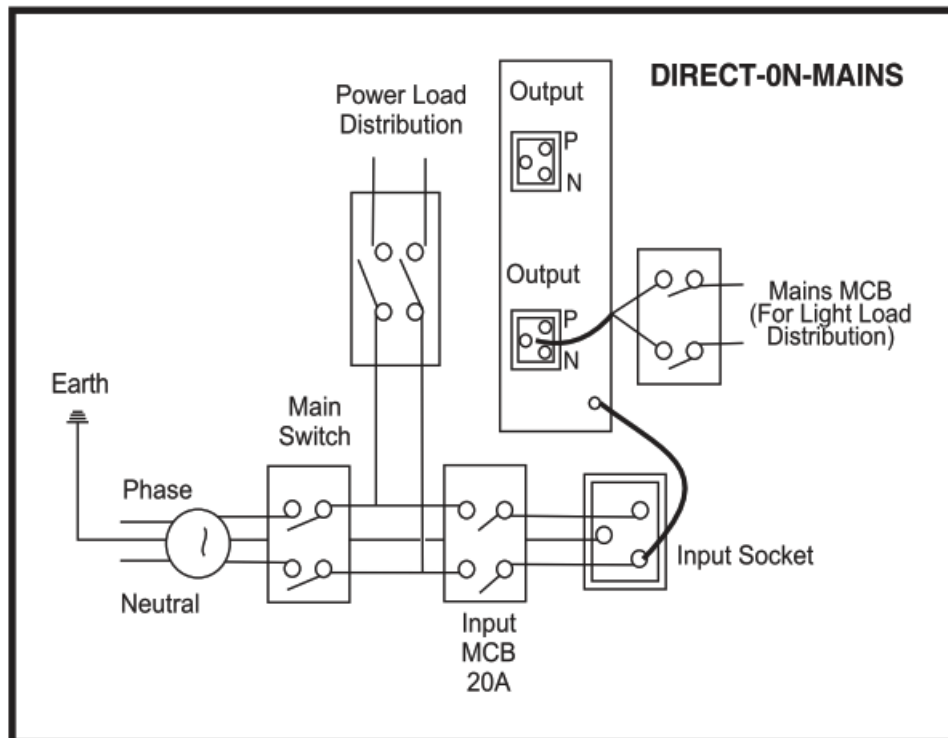
1. Ensure that the ON/OFF switch on the front panel of the Inverter is in OFF position before you begin the

installation

2. Connect the negative terminal of the battery to the thick black wire of system
3. Connect the positive terminal of the battery to the thick red wire of system

AC Cabling:

Plug in the power cord to the mains socket on the wall. The cabling should have proper earthing. Input supply should remain ON once the system is installed. Take output from output socket.



Start Operation

Once the AC and DC wiring have been installed and connected, take a moment to go re-examine all the connections and make sure they are secured and in the proper terminals.

1. Check to see that the CHADHA POWER Inverter is turned off and then apply battery (DC) power to it. Ensure that all wiring has been installed properly. Next turn On the battery bank DC disconnects or connect the proper fuse in line to the battery to complete the battery circuit.
2. Put ON/OFF switch to the ON position. This system should run a load without AC input (battery only). Place a load on the system and make sure it works.
3. To charge your batteries connect AC power to the system by plugging in the AC power and turning on the mains line. This shows that charger is working properly. Any AC load powered by the system should also work at this point since a portion of the AC power is passed through this CHADHA POWER Inverter to power the loads.
4. Disconnect the AC power, the system should transfer to battery mode immediately. This will be indicated by clicking sound as the internal transfer relay changes position
5. The system will begin to take power from the batteries and use it to power the load. And the load continues to operate uninterrupted.

The above steps will complete the functional test of the CHADHA POWER Inverter. If all areas pass, the system is ready for use. If something fails figure out the reason before proceeding or contact the service centre

Note: Manual / Bypass switch selection should be in manual mode. If the inverter is faulty, then select Bypass mode.

Maintenance

Very little maintenance is required to keep your CHADHA POWER operating properly. You should clean the exterior of the unit periodic a damp cloth to prevent accumulation of dust and dirt.

Troubleshooting Guide

Problems and Symptoms	Possible Cause	Solutions
No Output voltage No Display	Poor battery condition or battery connection loose	Use new battery or make proper connections
No output voltage Overload indication	Excess Load Applied	Reduce the excessive load from the Chadha Power inverter & reset by ON/OFF Switch
No output voltage. LCD shows all trip	Thermal shut down	Call the service support. There is overheat problem in the system
Fuse Trip	Thermal Circuit Breaker Trip/ AC Fuse Blown	Reset Thermal Circuit Breaker/ Replace AC fuse
Mains ON but Not Charging	UPS/ Normal Selection switch may be in UPS mode	Check Mains voltage at LCD Display & Selection of Normal / UPS mode as per specified voltage range
Mains ON but Not Charging	Bypass Switch may be in Bypass Mode	It should be in Manual Mode while Inverter is OK

Specifications

Technical Specifications

Parameter	Model with Rating			
	GQP 12V 650VA	GQP 12V 850VA	GQP 12V 1050VA	GQP 24V 1450VA
No Load Output Voltage	220V \pm 7V			
Output Frequency	50Hz \pm 1Hz			
Output Wave Form	Pure Sine Wave			
Nominal Battery Voltage	12V			24V
Battery Low Cut Off	10.5V \pm 0.2V			21.0V \pm 0.4V
Mains Input Voltage Range (at Normal Mode)	100V – 280V \pm 10V			
Mains Input Voltage Range (at UPS Mode)	180V – 260V \pm 10y			
Changeover Time – Mains to Back-up (UPS Mode)	5. 10 msec			
Changeover Time – Back- up to Mains (UPS Mode)	5 10 msec			
Changeover Time – Mains to Back-up (Normal Mode)	5 40 msec			
Changeover Time – Back-up to Mains (Normal Mode)	5 10 msec			



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GQP Series, Inverters, GQP Series Inverters

References

- [CP Chadha Power](#)
- [🌐 Chadha Power](#)

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