USER'S MANUAL

POWER INVERTER

www.lalelaretail.co.za

Lalela

Dear Valued Customer

Thank you for purchasing the Lalela Inverter. We hope you will enjoy the product.

HOW TO USE THE INVERTER

1. Plug the power cable from the box into the AC input socket at the back of the device and plug the inverter into the wall and turn the wall socket on.
2. Plug your multiplug / devices you want to power from the inverter into the AC output of the Inverter.
3. Turn the inverter power button on and leave it on continuously.
4. The Inverter will automatically charge the batteries to full capacity.
5. The inverter will switch seamlessly between Eskom power and backup power to ensure you are always powered up.
6. When load shedding is over there is an automatic switch back to Eskom power and the batteries are recharged.

ADVANTAGES OF LIFEPO4 (LITHIUM IRON PHOSPHATE BATTERIES)

Lithium iron phosphate batteries (LiFePO4 or LFP) offer lots of benefits compared to lead-acid batteries, namely: Longer life span, faster charging, no maintenance, lightweight, improved discharge and charge efficiency.

Lithium has a long lifespan

Lithium iron phosphate batteries live up to 2000 cycles at 80 percent depth of discharge, without decreasing in performance. The average lifetime of led acid is 150 - 200 cycles.

High Efficiency

Lithium iron phosphate batteries (LiFePO4) have 100% of their capacity available. Additionally, their fast charge and discharge rates cause them to be a great fit for all sorts of applications. Fast charging reduces any downtime and increases efficiency.

Lightweight

Lithium iron phosphate batteries (LiFePO4) offer high power density which causes lithium batteries to be relatively small and light. Compared to lead-acid batteries lithium provides great energy density and are at least half the mass.

No Active Maintenance

Lithium iron phosphate batteries (LiFePO4) don't require active maintenance to extend their service life. Also, the batteries show no memory effects and due to low self-discharge (<3% per month), you can store them for a longer period of time. Lead-acid batteries need to be cycled every 2 as the acid will start to sulphate on the top of the battery and will start decreasing the life of the battery.

WARRANTY

Please note that the Inverter trolley comes with a 12-month manufacturing warranty. The warranty covers manufacturing and material defects only. The warranty does not cover power surges or lightning damage.

Power Surges

The unprecedented power shortages have presented the problem as communicated by Eskom as well of power surges. Power surges occur when the flow of electricity is interrupted, then started again, or when something sends electricity flowing back into the system. Power surges are not covered under the warranty for the Lalela Inverters.

It is recommended that customer invests in power surge protection, although as indicated by Eskom, even this may not protect appliances if the surge is high enough. It is therefore recommended to remove the unit entirely during load shedding. Once the power has returned and stabilised, the plug can be returned to the wall socket.

Inverter heads carry a 12-month warranty from date of purchase against manufacturing and material defect and hence failure as a result of a power surge, that is not covered, will attract a repair cost to return the unit to working condition.

WARNING

Only plug in the following devices, Laptop, Desktop, Monitor, Router, ONT (Fibre Box), TV, Lamp, TV, DSTV Decoder

Do not plug in any high wattage items into the inverter such as but not limited to heaters, hair dryers, fridges, vacuum cleaners, microwaves, compressors as **this will void the warranty on the inverter.**

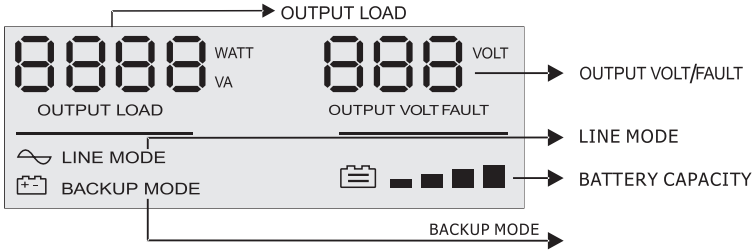
This is a modified sine wave inverter and cannot power anything with an AC motor and doing so can damage the Inverter as well as the appliance / device. Lalela will accept no responsibility for damage or harm cause to the device.

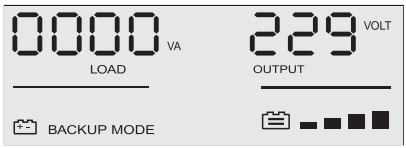
The warranty does not cover lightning damage or power surges

Lalela will accept no responsibility for damage or harm cause to any person and device as a result of negligent use.

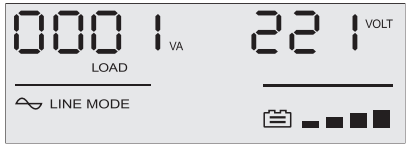
LCD Display Specifications

By pressing the power switch the Inverter works in normal mode, including ON/OFF, Charging mode and fault mode. When LCD starts to work it will display all information for 3 seconds.

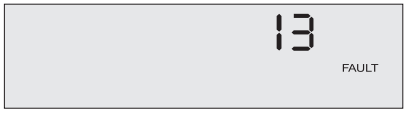




Inverter Mode



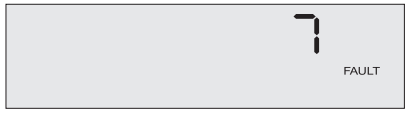
Line Mode



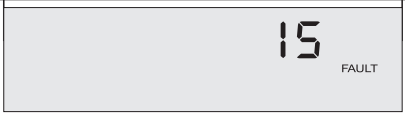
Short circuit

Over load fault

DC overvoltage fault



Fan block fault



DC low voltage

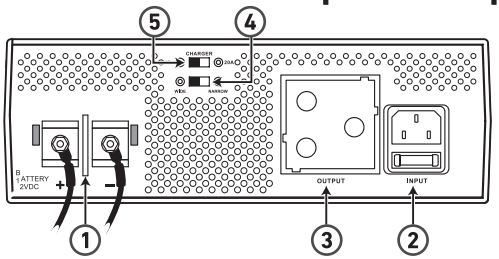
Output over voltage

Output low voltage

AC IN/OUT voltage difference>10V

Alarm	Code
Battery low voltage	0
Inverter output overload	1
Input AC power low voltage	2
Input AC power high voltage	3
Input AC power low frequency	4
Input AC power high frequency	5
Battery high voltage	6

Rear Panel and Output Description

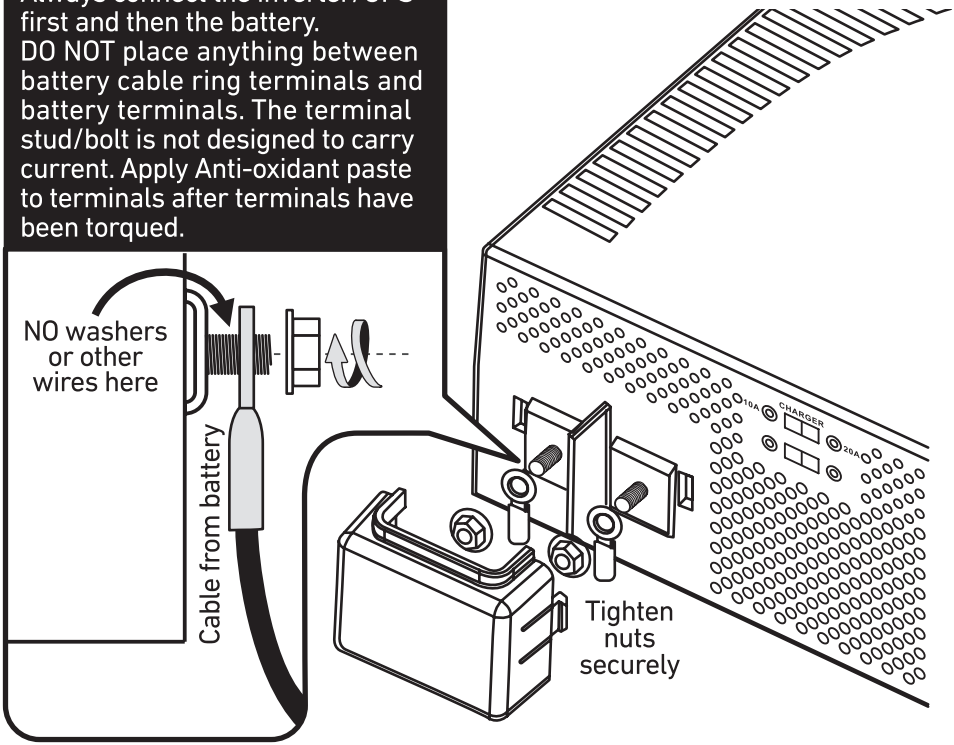


1. DC input connector (battery terminal).
2. AC input and 10A / 20mm fuse.
3. Output receptacle.
4. Input voltage range selector: (See specifications chapter).
5. Charge current selector: 10A/20A adjustable.

A. Select 'Narrow' setting for general electrical appliance such as tube lights, energy saving lamps, TV, Juicer & mixer etc, but it is not suitable to meet high-power motor or inductive load such as the fridge of 1 KW the motor of 800W, air cooler, PC (having risk of rebooting) and so on. In this mode, the Inverter / UPS operating voltage, in 'mains' mode, is within 170-280Vac with the same output voltage. The line sensitivity is higher.

B. Select "Wide" setting to save energy. In this mode the operating range of voltage for the Inverter / UPS is 90-280Vac, hence the output voltage will be the same as the MAINS input voltage. The Inverter / UPS unit in 'Wide' mode has a lower sensitivity. You can connect and use only for certain appliances, such as a lamp or a fan.

Caution!
Always connect the inverter/UPS first and then the battery.
DO NOT place anything between battery cable ring terminals and battery terminals. The terminal stud/bolt is not designed to carry current. Apply Anti-oxidant paste to terminals after terminals have been torqued.



Specifications

Model		720W Inverter / UPS	1440W Inverter / UPS
Capacity		720W / 1200VA	1440W / 2400VA
AC Input	Nominal voltage	220 / 230 / 240VAC	
	Input voltage range	90~280VAC	
	Nominal frequency	50 / 60Hz (Auto Detection)	
Input Voltage Range Selector	Narrow	170~280VAC	
	Wide	90~280VAC	
Inverter Mode Output	Voltage	230VAC + 10 / -18%	
	Frequency	50 / 60Hz ± 0.5Hz	
	Waveform	Modified sine wave	
	Efficiency (AC to AC)	> 95%	
	Efficiency (DC to AC)	> 80%	
	No load input current	Approx 2A DC	
Battery	Nominal voltage	12V DC	24V DC
Charger	Boost voltage	14.4 +/- 0.4V	28.8 +/- 0.4V
	Float Voltage	13.7 +/- 0.2V	27.4 +/- 0.4V
	Charging current 10A	± 2A	
	Charging current 20A	± 2A	
	Overcharging protection	15.5 +/- 0.4V	31 +/- 0.8V
	Charging time 10A	< 13 hours	
	Charging time 20A	< 7 hours	
Transfer	Transfer time	Typical 15-20ms, 40ms max.	
LCD Indicator	Input/Battery, Output/Load/Fault, Load level, Battery capacity, Line mode, Backup mode.		
Audible Alarm	Low battery voltage in battery mode	Beeps every 2 seconds	
	Overload	Beeps every 0.5 second	
	Fault	Beeps continuously	
Environment	Temperature	0 ~ 40°C	
Physical	Dimension (mm) DxWxH	255 x 80 x 224	
	Net weight (Kg)	2.3Kg	2.5Kg
Protections	Deep discharge, Overcharge, Short circuit, Overload, Battery short, Over voltage, Under voltage.		

Troubleshooting

Problem	Possible Causes	Remedy
No LED display	Battery Weak	Re-charge battery
	Battery defective	Battery replacement
	Power switch is not pressed	Press and hold power switch
Mains normal but works in inverter mode	AC Input missing	Check AC input connection
	Input protector is effective	Have the input fuse checked/replaced by a qualified person
Alarm buzzer beeps continuously	Overload	Verify that the load matches the capability specified in the specs
	Wrong / looped 220AC connection	Ensure that 220VAC input plug is not plugged into 220VAC output socket
Back up time is shortened	Overload	Remove some non-critical load
	Battery voltage is too low	Charge battery for 8 hours or more

Appendix A

Models	Input/output cables (gauge copper wire)	Battery cables (gauge copper wire)
1200VA / 12VDC	At least 18 AWG / 0.8mm^2	At least 12 AWG x 2
2400VA / 24VDC	At least 18 AWG / 0.8mm^2	At least 12 AWG x 2