

LS SERIES II INVERTER

Instruction Manual



WELCOME

Latronics products are all proudly designed, engineered and manufactured in Australia. As a specialist sinewave inverter company we produce inverters for a diverse range of applications such as; mining, railways, telecommunications, marine, remote power, motor homes, and other industrial or commercial installations.

All products are engineered using the latest high quality components and manufactured to stringent quality standards, thus ensuring Latronics customers all enjoy many years of trouble free operation.

Please remember to register online at <http://latronics.com.au/warranty> to validate your 3 year warranty. Please retain your receipt as proof of purchase.

It is important to us at Latronics, that our clients enjoy the maximum benefits from our inverters in a safe and productive environment.

We strongly advise that you read through the next few pages of this manual, which explains all the modes of operation and relevant safety precautions for your new inverter.

If your inverter requires service or repair please contact Latronics as soon as possible.

Contact Details

LATRONICS
PO BOX 73
MOFFAT BEACH
QUEENSLAND 4551

Ph: 07 5491 6988
Fax: 07 5491 6792
Email: info@latronics.com.au
Web: www.latronics.com.au



WARNING

It is important that all wiring in the inverter installation complies with the relevant wiring standards. Any work on this inverter must be carried out by a suitably qualified electrical worker.

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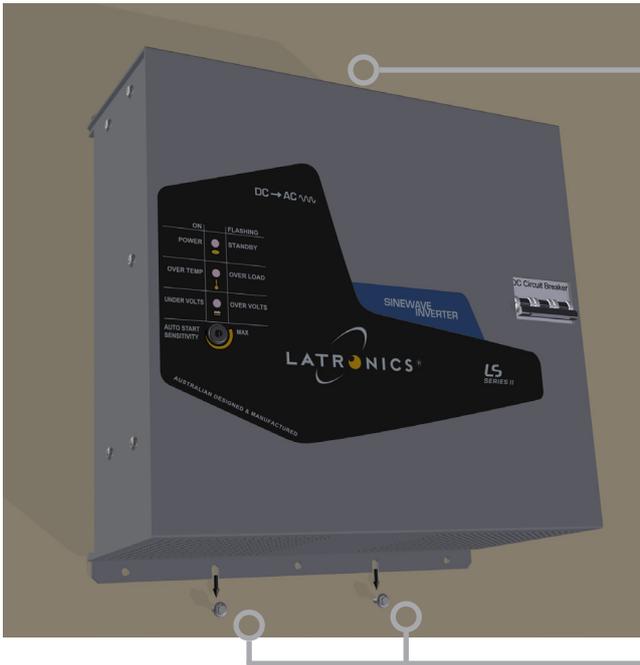
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INSTALLATION

To install the inverter please follow the instructions on the following pages. If you are unsure of any aspect of the installation please email or call Latronics.

Considerations Before Install

- Ensure the inverter has not been damaged in transit.
- The unit has a Pollution Degree of PD3. It is suitable for indoor, unconditioned installation.
- The unit must be placed in a well-ventilated area, not exposed to the open environment, and free from contaminants (i.e. exhaust gases, sea air, battery gases, dust).
- The LS inverter is of protective class I meaning the case must be earthed. This should be attached using the earth connection on the a.c. output junction box.
- A space of 10cm is needed on each side of the inverter for adequate transfer of internal heat.
- The inverters inputs and outputs are classified as over voltage category II.
For more information on over voltage category, see page 17
- The inverter can be mounted horizontally on table or floor. The inverter can also be mounted on a wall, taking note of the sticker being the correct orientation.



Fixings and mounting

Ensure at least 3 fixings are used at the top and at least two at the bottom.

Slots for easy mounting

Mount two fixing to the wall
Slot the inverter on

- Ensure the mounting surface is structurally sound.
- All fasteners should be rated to carry a minimum of 40kg.
- Inverter must **not** be:
 - Installed in direct sunlight.
 - Mounted on flammable material.
 - Mounted vertically,
 - Located such that it can be accidentally touched, as it can become hot during operation.



INSTALLATION

DC Wiring

- The inverter is designed to operate on a battery supply only.
- For best performance, the unit should be placed as close as possible, but not directly on top of the battery supply.
- The inverter d.c. input voltage is stated on the identification label of the inverter. Check that it is the same voltage as the battery supply.
- Ensure the inverter is switched OFF before connecting the d.c. supply. Turn the circuit breaker switch to the OFF position.
- Connect the inverter DIRECTLY to the battery terminals for best performance.
- Input leads marked RED = (positive), & BLACK = (negative).
- The inverter is fitted with a circuit breaker in line with the battery positive lead, which can negate the need for a battery fuse. (Check regulations)
- Maximum input current is limited by inbuilt circuit breaker. Please check nameplate for rating of circuit breaker.
- Interruption capacity of inbuilt circuit breaker is 4.5kA.
- Ensure you check the short circuit current of the battery bank. If the short circuit current is more than 4.5kA you must install an appropriately rated external circuit protection device.

Battery Sizing

- To ensure peak performance, it is important to choose the right battery for your inverter. The battery size required will depend on the load and intended running time. Use this formula as a general guide:
- Recommended battery size= Inverter rating in watts ÷ input voltage × 10
e.g. (2000W ÷ 12V) × 10 = 1666Ah
- Minimum battery size = Inverter rating in watts ÷ input voltage × 3
e.g. (2000W ÷ 12V) × 3 = 500Ah.
- Do not use an undersized battery as this may result in an inverter that does not start or that will rapidly discharge the battery and may cause damage to the battery.



OBSERVE POLARITY

Cables connecting the inverter to the battery are designed to achieve maximum efficiency and output power:

DC CABLES SHOULD NOT BE EXTENDED

INSTALLATION

AC Wiring

- Make sure the inverter is switched OFF before working on the mains wiring. Turn the circuit breaker switch into OFF position.
- Ensure that the a.c. wiring is separated from the d.c. wiring to reduce the occurrence of noise in the installation.
- In standard Latronics inverters the active and neutral of the 240V a.c. output are electrically isolated from the battery negative, battery positive, and earth connections.
- The inverter a.c. output is connected directly to the transformer output winding.
- Standard Latronics inverters have the a.c. output (active and neutral) floating with respect to the d.c. and earth. The earth connection is connected to the case only. This configuration provides the highest level of safety and most flexibility for installation wiring.
- The protective earthing connection should be attached to the earth terminal of the a.c. output junction box.
- When using an inverter with a transfer switch ensure that no highly inductive or capacitive loads are present such as pumps, compressors or similar. The reason for this is that transfer from an unsynchronised source can produce large spikes that can feed back onto the inverter and damage it.
- **Ensure that power will never be fed into the inverter a.c. output junction box from the mains or generator. This would result in the destruction of the unit and will not be covered by warranty.**
- Latronics inverters are suitable for use with type A and type B RCD's.
- Latronics inverters are suitable for MEN connection.
- The earth is connected internally to the inverter case.



WARNING

The inverter output is just as lethal as normal mains electricity. It is important that all wiring complies with the requirements of the relevant wiring standards. Any electrical work carried out on a.c./mains wiring and d.c. wiring is to be performed by suitably qualified electrical worker.

Systems with solar panels, when exposed to light, supply d.c. voltage.

INSTALLATION

Other Safety Considerations

- If the inverter is used in a manner not specified in this manual or by Latronics, protection provided by this equipment may be impaired
- All standard Latronics inverters have an isolation rating of 3500V between a.c. and d.c. via the toroidal transformer, which provides safe operation.
- All LS series inverters have short circuit protection which limits the maximum fault current to the 5 sec. surge rating of the inverter.
- All the switching electronics and control circuitry are on the d.c. input.
- For 12V, 24V and 48V d.c. inverters the circuit breaker assembly isolates the positive pole only from the battery supply.
- For 72V, 96V and 110V, 120V and 125V d.c. inverters the circuit breaker assembly isolates the positive and negative pole from the battery supply.
- If the battery voltage drops below nominal voltage this can effect the output voltage. If you have loads that are sensitive to low a.c. voltages please ensure the battery voltage is never able to drop below nominal voltage.
- All LS inverters contain double insulated mains frequency transformers.
- There are Y2 capacitors installed across active-earth and neutral-earth and are required for EMC. These capacitors can establish a voltage divider which shows on some multimeter's as a voltage from earth-active and earth-neutral.

BATTERY MAINTENANCE AND SAFETY

Battery Safety



CAUTION

A battery can present a risk of electric shock and high short-circuit current. The following precautions should be observed when working on batteries

- Remove watches, rings, or other metal objects.
- Use tools with insulated handles.
- Wear rubber gloves and rubber soled boots.
- Do not lay tools or metal parts on top of batteries.
- Disconnect charging source prior to connecting or disconnecting battery terminals.
- Determine if battery is inadvertently grounded. If inadvertently grounded, remove the source from the ground. Contact with any part of a grounded battery can result in electrical shock.
- The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance.
(Applicable to equipment and remote battery supplies not having a rounded supply circuit)
- When working on batteries protective clothing and eye wear should be worn.
- When replacing batteries, replace with the same type and number of batteries or battery packs. Consult with the battery manufacturer for more information on replacement.
- CAUTION: Do not dispose of batteries in a fire. The batteries may explode.
- CAUTION: Do not open or damage batteries. Released electrolyte is harmful
- **If in doubt have the work carried out by a suitably qualified electrical worker.**

BATTERY MAINTENANCE AND SAFETY

Battery Maintenance

Battery terminals require frequent care and maintenance. Very high current (up to several hundred amps), is drawn by the inverter when starting electrical motors and other high powered appliances. We recommend an inspection of the batteries and the interconnecting cable connections once every 1-3 months or as recommended by the battery manufacturer.

1. Regularly check all connections; make sure they are always tight. Battery terminals are often made of soft lead which will slowly compress over time eventually causing loose connections.
2. Check all connections are free of corrosion. Remove any corrosion and coat the terminals with vaseline or grease to help prevent future corrosion.
3. Take specific gravity or SG readings of each cell using a hydrometer to check the level and performance of each battery. Alternatively a battery voltage reading for each cell will suffice but may not be accurate for multiple batteries connected in parallel. Report any serious imbalance to your system installer or battery supplier for corrective action.

INVERTER OPERATION

LED Indicators

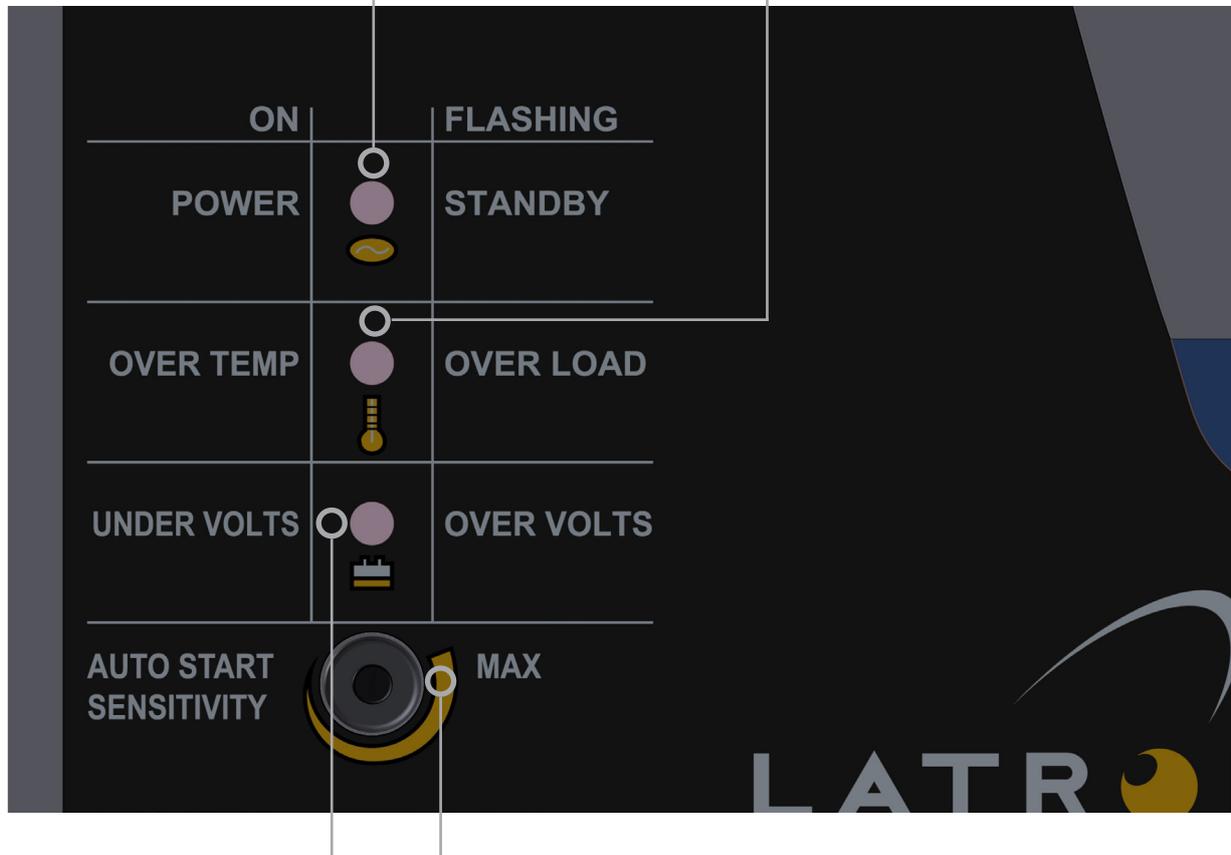
Standby/Power (Green LED)

This LED flashes when in standby mode (i.e. no loads connected). When a load is applied the LED will illuminate continuously to indicate that 240V a.c. is being supplied.

Over temp/Over load (Red LED)

If the internal temperature exceeds safe operating limits of the components for more than five seconds, the inverter will shut down in over temp with this LED on continuously.

Turn the ON/OFF switch off and allow 5 minutes for the inverter to cool, then turn it back on. If the applied load demands more current than the inverter can safely supply for more than 5 seconds, the inverter will shutdown in over load and this LED will flash.



Undervolts/Overvolts (Red LED)

In order to protect the battery the inverter will shutdown after 5 seconds if the battery voltage falls below its limit, (undervolts), or exceeds the maximum, (overvolts), as specified in the specifications table on page 22. For undervolts the LED will remain on continuous, while for an overvolts situation the LED will continue to flash.

Auto Start Sensitivity Adjustment

The screwdriver adjustment slot permits the operator to adjust sensitivity between 0- 20W. Due to lengthy 240V a.c. cables the inverter may sense fake loads. To combat this, turn the control clockwise. Alternatively turning the control in the opposite direction increases sensitivity. Turning the control fully anti-clockwise will disable the auto start feature and the inverter will remain constantly ON.

INVERTER OPERATION

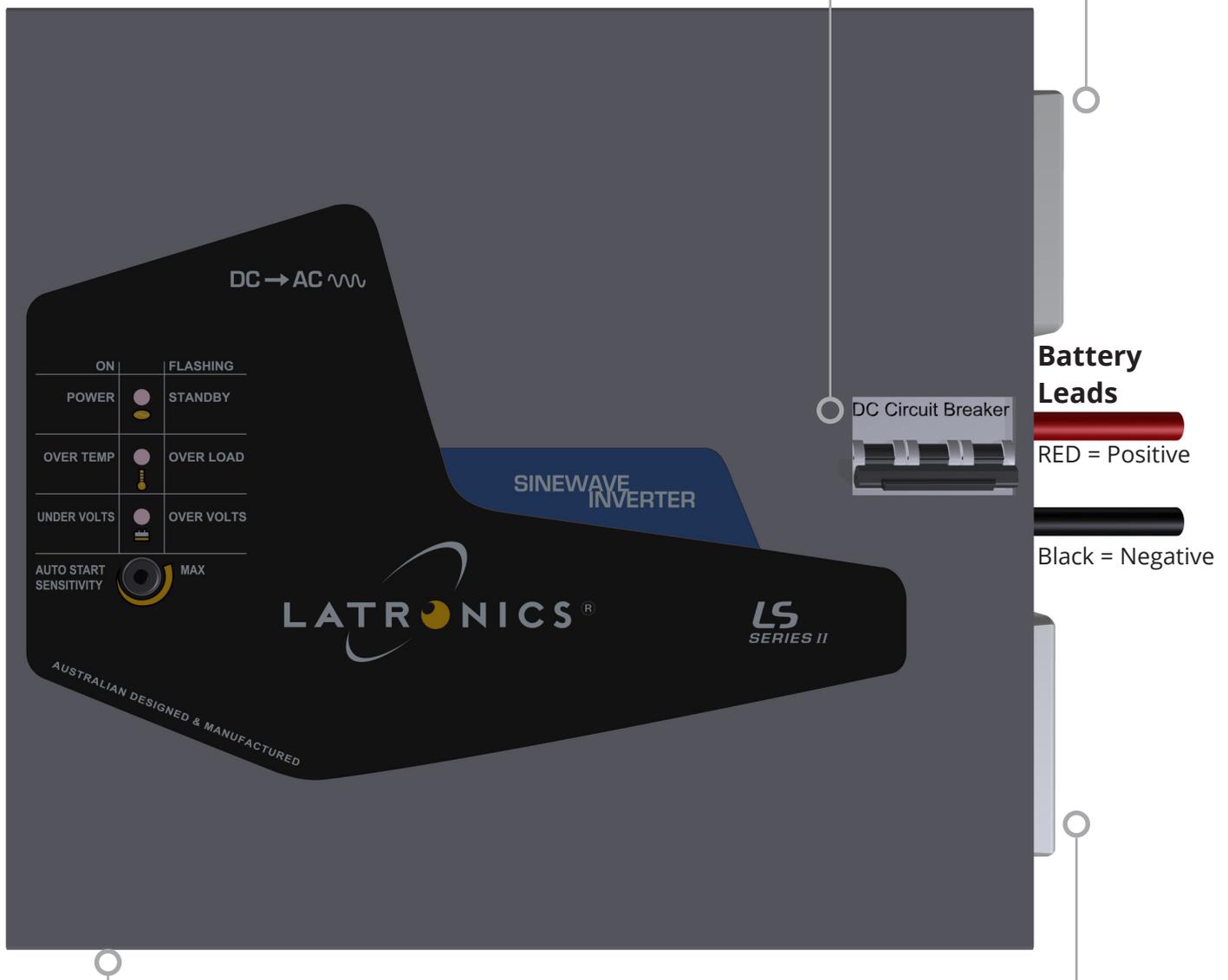
Inverter Features

Circuit Breaker ON/OFF Switch

The circuit breaker is designed for ease of operation and safety. By pushing the switch "UP", the battery supply is connected to the inverter. The circuit breaker will turn OFF automatically if too large a load is left on the inverter continuously. Reset the switch after allowing approximately 5 minutes to cool. If the inverter shuts down due to over load, under volts or over volts it can be reset by turning the circuit breaker OFF, waiting 10 seconds (or until LED goes out), then turning it on again.

3 Terminal Output Junction Box

For distribution of output power



Fan

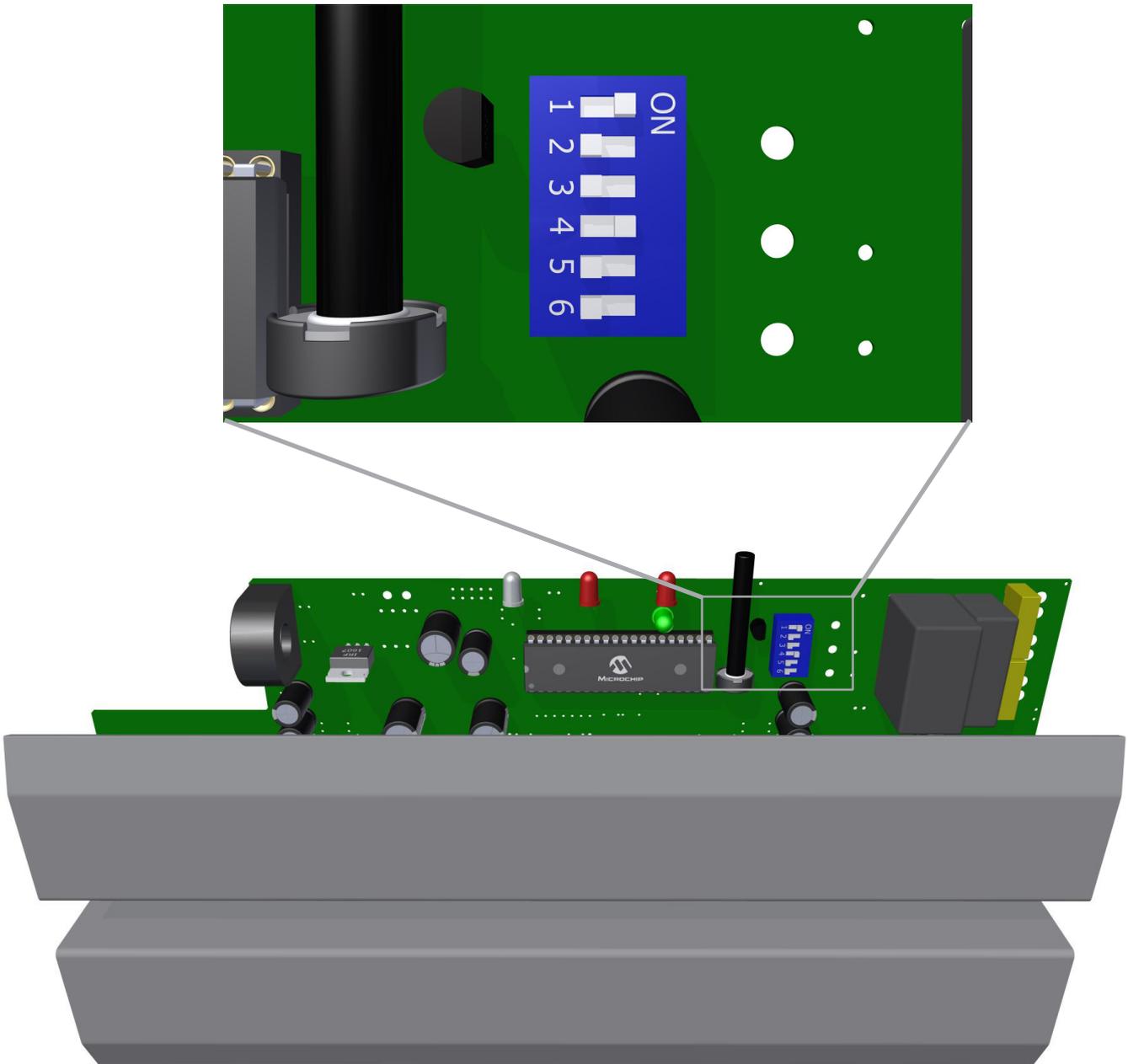
If the temperature inside the inverter reaches preset levels, the dual speed fan will switch on initially in low speed and then into high speed if the temperature continues to increase. Obstruction of the air intake and output will reduce the power rating of the inverter.

3 Terminal Input Junction Box

For connection of a.c. input power e.g. from generator.
(Available only on KX model inverters).

INVERTER CONFIGURATION

Dip Switch Location



WARNING

Due to dangerous voltages existing inside the unit, make sure the circuit breaker switch is turned off before opening the unit. Should you have any doubt about performing these modifications, we strongly recommend the use of a suitably qualified electrical worker.

INVERTER CONFIGURATION

Dip Switch Settings

In order to access these options you have to open the inverter. Before altering the settings switch inverter OFF, adjust the setting and switch inverter back ON again. We recommend these adjustments be carried out by a suitably qualified electrical worker.

SW1 **50/60 Hz**
ON = 50Hz (factory setting) OFF = 60Hz

If you need to operate American or Japanese equipment this option will allow your inverter to operate at 60Hz. Please note you may also need to change the output voltage to suit equipment.

SW2/SW3 **Output Voltage**
SW2 OFF & SW3 OFF = 240V a.c. (factory setting)
SW2 OFF & SW3 ON = 230V a.c.
SW2 ON & SW3 OFF = 225V a.c.
SW2 ON & SW3 ON = 220V a.c.

These two switches regulate the output voltage, please keep in mind these values are $\pm 4\%$

SW4 **Automatic Reset**
OFF=Disabled ON=Enabled (factory setting)

This feature is designed to restart the inverter and maintain power in the event of an external fault. Should the inverter shut down due to under voltage, over temperature or any fault condition it will attempt to reset every 8 minutes until the fault condition clears and normal operation resumes.

For over load shutdown the inverter will only attempt 5 restarts. If the inverter can not resume normal operation within 5 restarts, it will remain OFF until reset manually. This prevents continuous re-application of power to faulty appliances or wiring.

SW5 & SW6 **Under Voltage Settings**
SW5 OFF & SW6 OFF= (Factory setting)

For under voltage shutdown the inverter will restart when the battery voltage reaches the reconnect value as shown in the table below.

SETTING		12V VALUE		24V VALUE		48V VALUE	
SW5	SW6	DISCONNECT	RECONNECT	DISCONNECT	RECONNECT	DISCONNECT	RECONNECT
ON	ON	10.0	12.0	20	24	40	48
OFF	OFF	10.5	12.5	21	25	42	50
ON	OFF	11	13.0	22	26	44	52
OFF	ON	11.5	13.5	23	27	46	54

WARRANTY TERMS AND CONDITIONS FOR AUSTRALIA

Latronic Sunpower Pty Ltd (“Latronics”) provides the original purchaser of a Latronics product (“You”) with the following limited warranties as set out in this warranty certificate, in addition to your rights and remedies under consumer law.

The limited warranty periods of this inverter is 3 years. In all circumstances Latronics products are guaranteed from the date of purchase.

Part 1 - Warranty Descriptions

Latronics warrants to You that our products are guaranteed against defects in material or workmanship, when in normal use and service.

What you must do:

1. For a limited warranty to apply the registration warranty must be validly completed online at <http://latronics.com.au/warranty> by You, prior to the expiration of 3 months from the date of purchase.
2. You must provide proof of purchase.
3. Latronics recommends You keep your receipt as proof of purchase, should any difficulties arise concerning registration of your warranty.

Exclusions:

For the avoidance of doubt, the Latronics product warranties provided herein do not cover damage, malfunctions or service failures caused by, amongst other things:

- Unauthorized opening of the products, repair, alteration or substitution of nonstandard parts.
- Incorrect design and/or installation of ‘balance of system’.
- Acts of god, accident or similar cause.
- Failure to follow Latronics installation, operation or maintenance instructions.
- Abuse, misuse or negligent acts.
- Power surges, lightning, fire, flood, pest damage, accidental breakage, actions of third parties and other events or accidents outside Latronics’ reasonable control and not arising from normal operating conditions.
- Suitably qualified personnel not carrying out all a.c. and d.c. permanent wiring in accordance with relevant wiring rules.

Products supplied by Latronics, or Latronics agents are supplied under the express condition that no responsibility is implied or accepted by Latronics for any damage to any appliance, equipment or property used in combination with the correct operation of a Latronics product.

All conditions and warranties expressed or implied by statute, common law, equity, trade, custom, usage, or otherwise howsoever are hereby expressly excluded to the maximum extent permitted by law. Where so permitted, the liability of Latronics for a breach of condition or warranty that cannot be excluded is limited (at Latronics option) to the replacement or repair of the goods or of acquiring equivalent goods or the cost of replacing or repairing the goods or of acquiring equivalent goods.

Latronics does not undertake any commitment to guarantee continuity of supply in the case of obsolescence. In addition, Latronics reserves the rights to change its standard product range or specification of any model subsequently without notice and no liability as a result of these occurrences will be accepted.

WARRANTY TERMS AND CONDITIONS FOR AUSTRALIA

Part 2 - Returning a Latronics product for service under warranty.

If service is required contact your local supplier/installer or place of purchase for advice before following the below steps. To claim under warranty:

1. You should contact Latronics customer care centre on 07 5491 6988 or complete the online service form at <http://latronics.com.au/support>.
Product model number and serial number need to be readily available to enable prompt processing.
2. If, after investigation, the customer care centre determines the product is or may be defective in material or workmanship and within the warranty period, they will issue instructions on how to proceed with return and shipping to Latronics.
3. When packaging a Latronics product for return, appropriate measures must be taken by You to ensure the products are safely packed for transit. Products damaged in transit due to inadequate packaging will be void of warranty.
4. A Return Merchandise Authorisation (RMA) form with a valid RMA number must be completed and accompany products being returned.
5. If, as a result of further investigation by or on behalf of Latronics, such a defect is confirmed, then Latronics must, at its sole election, either repair or replace your Latronics product. Latronics will also, at their discretion, determine the most appropriate means to return any warranty repairs (or replacements) to You in a timely manner.

Part 3 - General Information

Replacement of any part or labour involved in repairs will not have the effect of extending the original period of the limited warranty of the goods. Any faulty part replaced under limited warranty becomes the property of Latronics for purpose of examination and claim under proprietary warranty.

Under these product warranties, Latronics is not responsible for and You hereby agree to bear any costs associated with removal, transportation, reinstallation of your Latronics products or any peripheral components in the balance of any system used in conjunction with Latronics products.

Products returned to Latronics without prior authorisation will be returned to the sender at their expense.

All warranty repairs are completed ex-factory to ensure:

- Fast service turn around time.
- Specialised, factory trained technicians.
- All required components are available (except in the case of obsolescence).
- Thorough testing to all Latronics specifications.
- Dedicated test equipment.
- Upgrades/updates to latest Latronics standards/specifications (where applicable).

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

OTHER ITEMS

How to reduce Radio Frequency Interference

Radio Frequency Interference (RFI) is a phenomenon that exists in modern society in many areas of electronics. For inverter users, RFI normally presents itself in the form of static and/or interference when listening to an AM radio and in unusual cases may interfere with TV reception. In order to comply with the appropriate International and/or Australian standards, Latronics has continued to invest significant time and effort into the reduction of RFI related emissions from the entire product range.

However with this compliance, there are situations where RFI may still be a cause for concern, and can differ greatly from installation to installation. Accordingly, the following is a list of recommendations made to assist in the overall reduction of RFI.

- **Separate d.c. and a.c. wiring:** Avoid running d.c. and a.c. cables in the same conduits and/or cable trenches. It is strongly recommended that d.c. and a.c. wiring be separated by the greatest distance possible. In extreme cases, the use of shielded conduit may be necessary.
- **Minimize length of d.c. cabling:** d.c. cables can act as an aerial, therefore all such cables should be kept as short as practicable. For best performance minimize d.c. cable length to inverter and batteries and if possible avoid the use of auxiliary d.c. loads.
- **240V a.c. earth:** For household installations, it is recommended that a “good” earth stake is located as nearby the inverter as possible.
- **AM and HF Radios:** These types of radio equipment inherently suffer from all forms of RFI, especially when the received signal level is weak. In such cases reception can sometimes be improved by relocation of the radio itself, alternatively the use of an appropriate external antenna and co-axial cable may be necessary. External antennas should be located in a manner that ensures maximum signal strength whilst affording the greatest possible distance away from the inverter and batteries.
- **Televisions:** TV signals are transmitted as FM waveforms. This type of signal fundamentally reduces the effects of RFI, therefore the use of a good antenna and feeder cable is normally sufficient to ensure quality reception. Locating the television as far as possible from the inverter may also improve picture clarity.

OTHER ITEMS

Inverter Servicing

- Check the inverter once a month to ensure it is operating correctly.
- Check that there is no obstructions for correct ventilation.

Repair and Decommissioning

If you believe your inverter is not functioning normally, please contact the Latronics service team on 07 5491 6988 or complete the online service form at <http://latronics.com.au/support>

When your inverter has reached the end of its life and is no longer working, please return the inverter back to Latronics for recycling and safe disposal. Over 80% of the LS Series Inverter is directly recyclable.

Overvoltage Categories

The concept of overvoltage categories is applied to each separate circuit in the power conditioning equipment including mains circuits, PV circuits, and other circuits, whether connected to or isolated from the mains and PV circuits.

Care should be taken when installing wiring that transients could be induced in conductors and over voltage suppression devices should be used to protect against such transients.

OTHER ITEMS

Fault Finding Procedure

Should the inverter appear to be malfunctioning we suggest the following to eliminate any external problems:

1. Turn the inverter "OFF" via the circuit breaker switch on the front panel.
2. Disconnect all a.c. wiring from the inverter.
3. Disconnect d.c. battery leads from battery. Clean all terminals by removing all grease/corrosion on both d.c. leads and battery terminals.
4. Ensure you have sufficient battery capacity at the nominal voltage (specified on the compliance label of your inverter).
5. Please note: Use minimum 100AH battery or the size of a substantial car battery.
6. Make connection directly to battery terminals and ensure all connections are tight.
7. Remove other wiring from the battery to ensure that the inverter is the ONLY device connected to the battery bank.
8. Ensure battery voltage is within the correct limits as outlined in the section INVERTER SPECIFICATIONS on page 22. If you do not have a d.c. voltmeter or multimeter check the front panel for overvolts and undervolts LED'S.
9. Turn the inverter ON via the circuit breaker switch on the front panel. Observe the lights on the front left of your inverter. Refer to INVERTER OPERATION on page 10 for explanation of indicator lights.
10. Plug in various appliances and monitor the inverters operation.
11. If inverter is still not working please contact technical support, details on page 24.

Helpful Hints

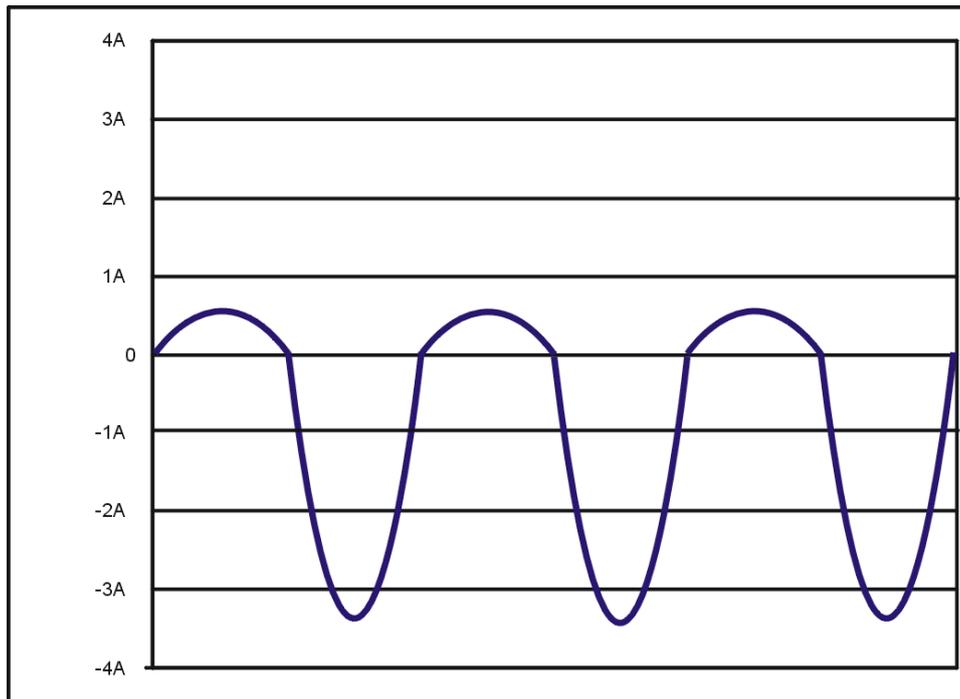
- Remember that the inverter automatically starts when a load is applied.
- Make sure leads and terminals are not corroded or faulty in any way.
- Make sure the inverter goes into STANDBY with no load switched on.
- Make sure the circuit breaker is reset properly. If unsure switch OFF and ON again.
- In extreme weather it is suggested to shutdown and disconnect the unit.

OTHER ITEMS

Inefficiency or Noise

Some appliances may cause the inverter to run inefficiently or more noisy than usual due to the current waveform they draw.

Certain appliances draw un-even load from a.c. supplies which from a mains supply might be OK. When operating from an inverter however it may unbalance the internal toroidal transformer which can cause the inverter to overheat or make undue noise. An example of an un-even current waveform is below



Some appliances that can cause this issue are

- Hair dryers
- Variable heat guns
- Washing machines
- Dish washers
- Air-conditioners
- Microwaves

This imbalance can be evened out by applying more load or trying a different model/brand.

Also ensure that the appliance has RCM compliance as uncertified equipment can put unnecessary noise back into the inverter.

If you are having trouble with a certain appliance please call Latronics for further assistance.

OTHER ITEMS

Declaration of Conformity

Manufacturer:

Latronic Sunpower Pty Ltd
105 Grigor Street West
Moffat Beach, Queensland
Australia, 4551

I Declare that the LS series of inverters conform to the requirements of the following standards

EN61000-6-1
EN61000-6-3
En55014
AS1044
EN60335-1
AS/NZS 3100
IEC 62109-1
IEC 62109-2



And therefore conform to the regulations of the EC directives
Directive 2004/108/CE (EMC directive), Directive 2006/95/CE (low voltage directive)
Date that CE marking was first affixed 2007

Also conforms to the RCM marking regulations for Australian emission standards

All products are manufactured with full traceability in accordance with the quality system requirements of AS/NZS ISO 9002

Signed

A handwritten signature in black ink, appearing to read "W. Pettit", is written over a faint, illegible printed name.

William Pettit
Latronics Chief Engineer
11th Jan 2016

SPECIFICATIONS & SERIAL NUMBER

Specification Table

The below specification table is for a standard LS model inverter.

Any options added to the inverter which are indicated by letters after the standard model number can change the below specification.

	INVERTER MODEL							
	LS-2012	LS-2324	LS-2548	LS-3024	LS-3548	LS-4024	LS-5048	LS-7048
Nominal D.C. Voltage	12V	24V	48V	24V	48V	24V	48V	48V
Continuous Power	2000W	2300W	2500W	3000W	3500W	4000W	5000W	7000W
1/2 Hour Rating	2200W	2800W	3000W	3700W	4100W	4500W	6000W	8500W
Surge Rating (5 Secs)	6000W	7000W	7500W	9000W	10500W	12000W	15000W	20000W
Input Voltage Range	10.5-17V	21-34V	42-68V	21-34V	42-68V	21-34V	42-68V	42-68V
Standby Current	75mA	45mA	35mA	50mA	40mA	60mA	55mA	60mA
Inverter ON - No Load	1.10A	0.51A	0.30A	0.60A	0.33A	1.10A	0.47A	0.49A
Peak Efficiency	90%	94%	94%	93%	94%	94%	95%	95%
Weight	22Kg	22kG	22Kg	24Kg	24Kg	30Kg	30Kg	34Kg
Dimensions	370mm(L) x 386mm(W) x 180mm(H)					475mm(L) x 458mm (W) x 187mm(H)		
Output Voltage	240Vac +/- 4%							
Output Frequency	50Hz +/- 0.1%							
Output Waveform	True Sinewave							
THD	< 4%							
Power Factor	All Conditions							
Autostart Sensitivity	0-20 W Adjustable							
Operating Temperature	-20°C to + 40°C							
D.C. to A.C. Isolation	3500V							
Protection Circuitry	Overtemperature, Overload/Short Circuit, Battery Undervoltage/Overvoltage							
Battery Leads	1.5m Long with 10mm Mounting Lugs							
A.C. Output Wiring	3 Terminal Hardwired Junction Box, Labeled 'AC Output'							
A.C. Input Wiring	3 Terminal Hardwired Junction Box, Labeled 'AC Input'							
A.C. Transfer Switch	240Vac, 40Amps, 50Hz (Surge 80a 0.5 Seconds) - Only with KX Option							
Chassis (Powder coated)	3mm Aluminium					4mm Aluminium		
Warranty	3 Years Parts and Labour (Back to Factory)							
Standards	IEC 62109-1, IEC 62109-2, AS3100, EN55014 & RCM							
Ratings	Specifications @ 25°C Ambient Nominal Battery Voltage & Unity Power Factor							
Operating Environment	5% - 95% (Non-Condensing) Humidity, up to 2000m About Sea Level							

Due to constant improvements, specifications are subject to change without prior notice

SPECIFICATIONS & SERIAL NUMBER

Model and Serial Number

Please remember to register online at <http://latronics.com.au/warranty> to validate your 3 year warranty. Please retain your receipt as proof of purchase.

Model Number:

Serial Number:

