

TG Series owner manual

new grid
connect
inverter



welcome

Latronics®

**empowering
Australians**

overview of Latronics

Latronics products are all proudly designed, engineered and manufactured in Australia.

As a specialist inverter manufacturer we produce inverters for a diverse range of applications such as: residential, mining, railways, telecommunications, marine, remote power, motor homes and other industrial or commercial installations.

In order to produce the most reliable products available, Latronics inverters have been designed to endure the most rugged terrain and the harshest conditions across the Australian continent.

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

It is important to us that our clients enjoy the maximum benefits from our inverters in a safe and productive manner. We strongly advise that you read through this manual which comprehensively explains all the modes of operation and relevant safety precautions of the TG Series Inverter.

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TG Series



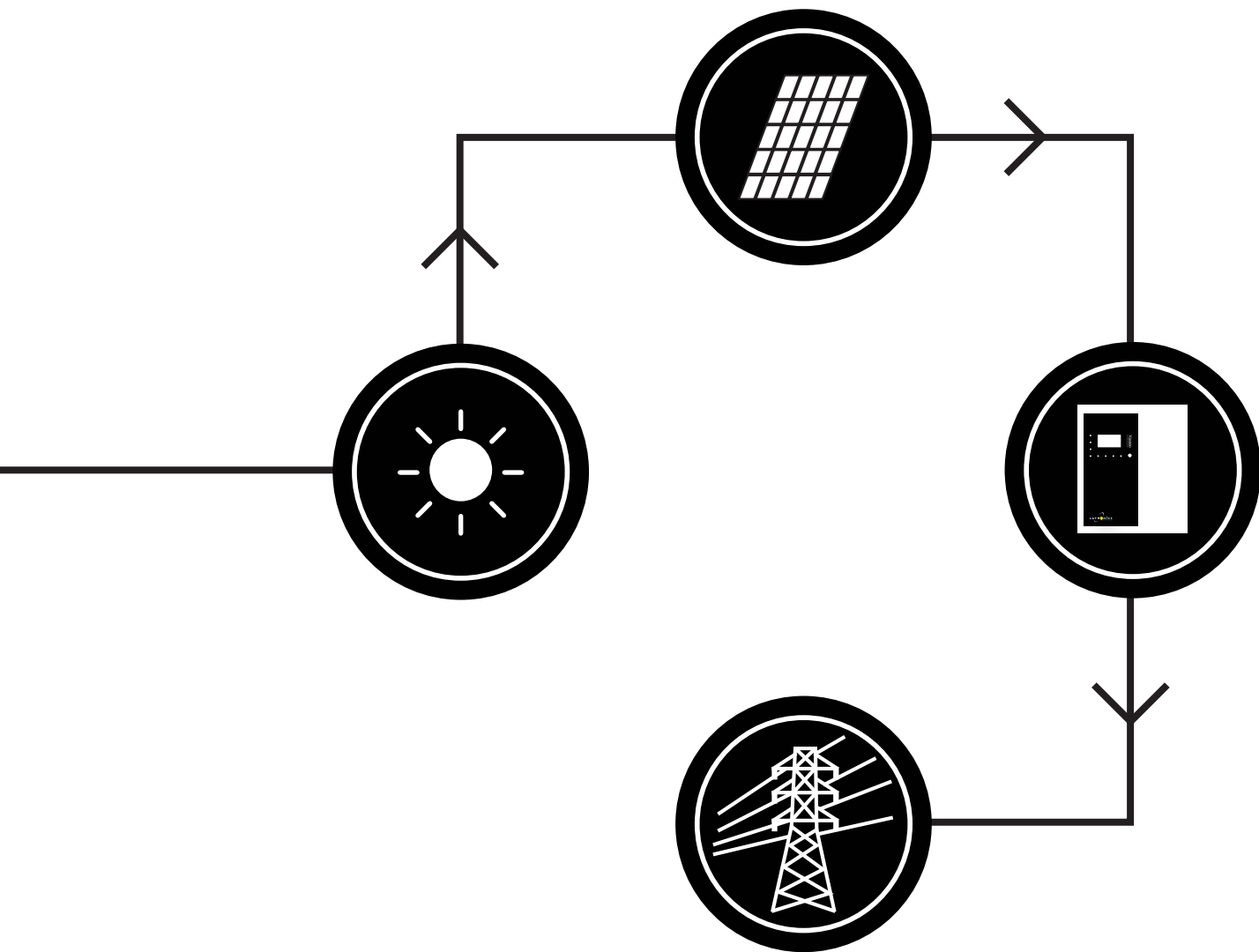
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overview of a grid connect system

A solar grid connect system is a green way of offsetting the amount of power the utility needs to generate to service its customers.

It is usually decentralised and only operates during daylight hours.

Depending on your local regulations, the energy generated during these hours may be used in your house first or go straight out to the public grid.



glossary of terms

PV panels

(Photovoltaic Panels) Generate DC power in the conversion of light through to electrical energy.

Grid connect inverter

Converts DC power to AC power suitable for feeding into the public utility grid.

LED

(Light Emitting Diode) Energy efficient lighting and indicator choice.

Wi-Fi

Allows for wireless internet connection through a wireless router.

LCD

Liquid Crystal Display.

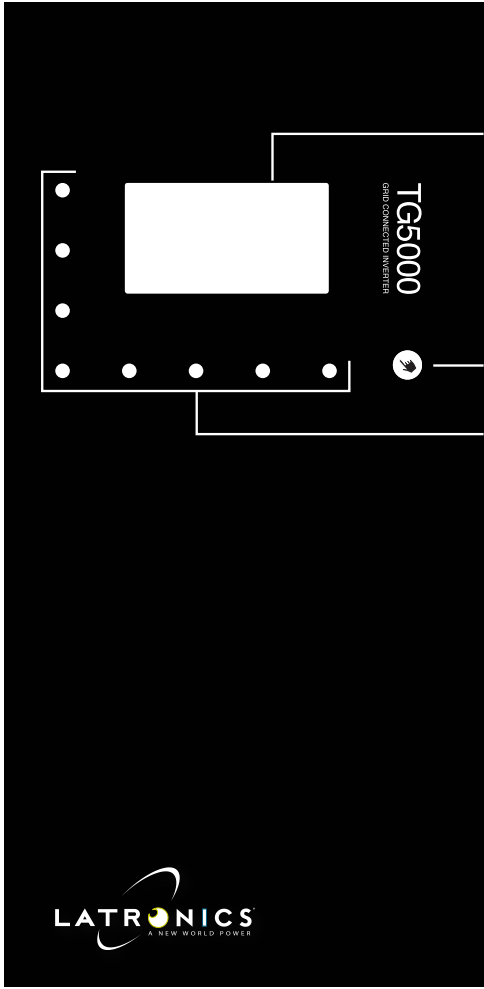
RJ45 connector

Similar to a telephone jack but slightly wider. Used to connect Ethernet cable.

Solar Array

A group of solar panels.

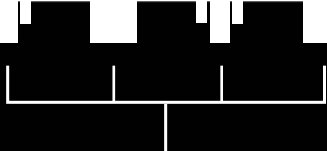
overview of TG Series Inverter



LCD screen

Multifunction button

LED indicators



DC solar input

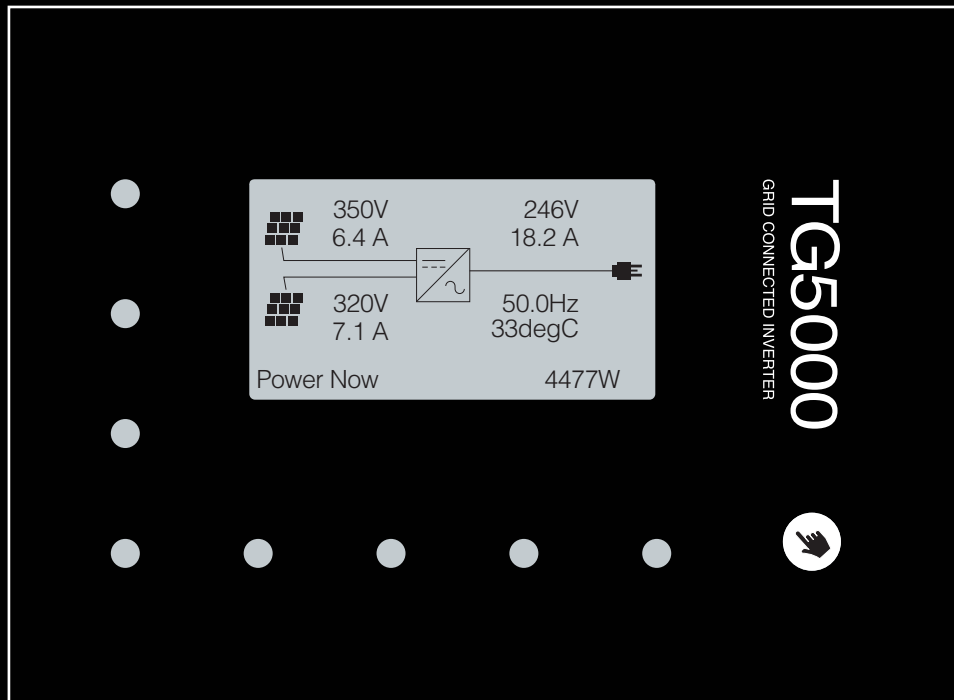


Wi-Fi antenna



AC mains connection

LCD and button operation



Please check your inverter once a month to ensure it has not ceased generation for any reason

The front LCD is asleep to conserve power under normal operation. To wake it up press the multifunction button. This button is used to scroll through the multiple screens of the inverter.

The main screen shows an overview of your solar system including solar values, AC grid values, temperature, status and power as shown on the previous page. The remaining screens show power generation for the day, week and month. Please note these values are for informational purposes only and are not to be used for revenue metering.

The multifunction LEDs are useful for a quick glance indication. When the inverter is running, the LEDs act as a bar graph running top to bottom, left to right displaying the amount of power being generated.

Under other conditions, such as fault conditions, the LEDs will glow a different colour depending on the mode i.e. red for 'error'.

shutdown procedure

Removal of the inverter must be completed by a suitably qualified person

In day-to-day operation a grid connected inverter does not usually need to be shut down or disconnected. In the event you are required to shut down the inverter please

1

Isolate the solar panel array

2

Isolate the mains to the inverter

Isolation of these power sources could be via switches, isolators or plugs so please follow the 'shutdown and isolation' procedure given to you by your solar installer on original installation.

fault finding

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

1

Turn the inverter OFF by switching the external DC & external AC isolators OFF. Leave OFF for 60 seconds.

2

Turn on both inputs and the LCD should then turn on. After approximately 5 seconds the inverter should start its 'grid check' with the LEDs glowing yellow. (Please note this step may take up to 60 seconds.)

3

After 60 seconds the inverter should go online and start to produce power. If the RED LEDs appear or you are still having problems then please go through the error messages on page 16.

TG series grid

Input (DC)	TG5000	TG4600
Absolute Max. input voltage	500V	
Operating voltage range	120 - 500V	
Panel MPP voltage	150 - 400V	
Rated input voltage	400V	
Start input voltage	150V	
Recommended max solar input	6500W	6000W
Max. input current per channel	15A	
Number of independent MPPT inputs	2	
MPPT efficiency	>99%	

Output (AC)	TG5000	TG4600
Rated power (@ 230 V, 50 Hz)	4950W	4600W
Max. AC power	5500W	5000W
AC nominal voltage / range (adjustable)	230V / 205-265V	
AC grid frequency / range (adjustable)	50Hz / 45-55 Hz	
Rated grid frequency / rated grid voltage	50 Hz / 230 V	
Max. output current	23A	20A
Power factor at rated power	0.99	
Phase Connections	Single Phase	
THD (%)	≤ 4%	

connect specifications

General data

Max. efficiency / European efficiency	97.1% / 96.5%
Dimensions (W / H / D)	400 / 450 / 185 mm
Weight	27kg
Ambient temperature range	-25°C to 60°C
Self-consumption (at night)	<5W
Topology	Transformerless
Cooling Concept	Convection

Features

DC connection	MC4
AC connection	Wieland Gesis
Display	Monochrome LCD Graphics
Interface	Wi-Fi
Warranty	5 years

Specifications and all manual content are subject to change without notice.

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.



1

Separate DC and AC wiring

Avoid running DC and AC cables in the same conduits and/or cable trenches. It is strongly recommended that DC and AC wiring be separated by the greatest distance possible. In extreme cases, the use of shielded conduit may be necessary.

2

Minimise length of DC cabling

DC cables can act as an aerial, therefore all such cables should be kept as short as is practicable. For best performance, minimise DC cable length to inverter and solar panels.

3

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 coaxial 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.

4

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.

faults

If you have gone through the fault finding procedure on page 10 and the unit still appears to be malfunctioning, please see below for further instruction

Wi-Fi is not working

Please go through the Wi-Fi connectivity procedure in the supplied “TG Series connectivity manual” that came with your inverter.

No LCD or LEDs are being displayed

There is no mains supply to the inverter. Please check solar main switch in your switch board is in the ‘ON’ position. If the switch is on and still no LCD or LED’s are displayed please call your solar installer for further instructions.

Inverter is displaying red flashing LED’s

Please go through the error messages on the next page for further details.

error messages

When there is an error with the solar installation the front LEDs will glow red. To check what the error is go to the “Control status” page on the inverter.

LCD is displaying grid out of range

The mains voltage or frequency is not correct and needs to be checked by your solar installer or your local electricity distributor.

LCD is displaying no DC input

There is no solar power coming through to the inverter. Please check DC isolators located next to the inverter or next to the array are in the 'ON' position. If these switches are on and are still displaying the error, please call your solar installer for further instructions.

LCD is displaying power limited

The power limited mode is executed when the inverter has exceeded its rated temperature. This can be caused by incorrect installation (i.e. in direct sunlight or limit/no ventilation). Please contact your solar installer for further instructions.

Over 80% of the TG Series Inverter is directly recyclable

Inverter repair and decommissioning

If you believe your inverter is not functioning normally please contact the installer of your solar system. If they are uncontactable please call or email the Latronics service team on the contact details provided on page 22.

When your grid connect inverter has reached the end of its life and is no longer working, it must be safely removed by a suitably qualified person. Once off the wall please return the inverter back to Latronics for recycling and safe disposal.

TG Series manufacturer's warranty

TG Series

1. Latronics warrants that during the Warranty Period the TG Series Inverter will be free from defects in parts, manufacture or workmanship subject to the following terms and conditions.
2. The Warranty Period is 5 years from the date of purchase.
3. This warranty only applies to TG Series Inverters purchased and installed in Australia.
4. Latronics 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 for 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.
5. The benefits provided to you by this warranty are in addition to other rights and remedies available to you as a consumer under a law in relation to the goods to which this warranty relates.
6. The terms and conditions of this warranty only apply to the additional benefits provided by this warranty. Nothing in this warranty affects or is intended to affect your rights and remedies under the statutory guarantees under consumer law.
7. In order for you to receive any benefits under this warranty:
 - a. You must provide proof of purchase. Latronics recommends you keep your receipt as proof of purchase; and
 - b. The identification label on the TG Series Inverter must be completely legible to Latronics; and
 - c. The Warranty Registration Card must be properly completed and returned within 3 months from the date of purchase to Latronics at:

Latronic Sunpower Pty Ltd
PO Box 73
Moffat Beach Qld 4551
OR

Complete online <http://warranty.latronics.com.au>

- If you fail to provide proof of purchase or the identification label is not completely legible or you fail to lodge a warranty registration card Latronics is entitled to refuse to provide warranty benefits.
8. This warranty does not cover any direct or indirect loss or damage to any appliance, equipment, service or property caused by:
 - a. Unauthorised opening, repair or alteration of the inverter including unauthorised substitution of non-standard parts
 - b. Incorrect design and/or installation of the grid-connected photovoltaic system
 - c. Force majeure events (including war, nuclear accident, industrial action, earthquake, flood, fire, cyclone, storm, lightning or other physical natural disaster)
 - d. Failure to follow Latronics installation, operation or maintenance instructions including failure to provide proper ventilation
 - e. Abuse, misuse or negligent acts
 - f. Power failure, power surges, over voltage, pest/insect damage, accidental breakage, actions of third parties and other events or accidents outside Latronics' reasonable control and not arising from normal operating conditions
 - g. The failure to carry out all AC and DC wiring in accordance with the Wiring Rules and relevant standards
 - h. Incorrect transport or inadequate packaging
 - i. Cosmetic defects to the case that do not affect the operation of the inverter or the generation of power
 9. If your TG Series Inverter becomes defective during the warranty period and Latronics is responsible under this warranty, Latronics has the option of:
 - a. Repairing the defect onsite by Latronics personnel or agents; or
 - b. Repairing the defect at Latronics factory; or
 - c. Replacing the inverter onsite by Latronics personnel or agents with an equivalent replacement inverter according to age and model; or
 - d. Replacing the inverter at Latronics factory with an equivalent replacement inverter according to age and model.
 10. In the case of repairs or replacement onsite by Latronics personnel or agents [clause 10(a) & clause 10(c)] Latronics will pay the cost of repair work and materials including the cost of transportation of materials as well as travel and accommodation of Latronics personnel or agents.
 11. In the case of repairs or replacement at Latronics factory [clause 10(b) & clause 10(d)] Latronics will pay:
 - a. the cost of transportation of the inverter subject to clause 13; and
 - b. the cost of repair work and materials.
- Latronics will not pay or contribute to the cost of removing or reinstalling the inverter unless Latronics first agrees to pay or contribute to those costs before work commences.
12. Transportation under this warranty shall be by land or sea by Latronics approved transporters. In no case will Latronics pay the cost of overnight express or air freight unless Latronics agrees otherwise before shipping occurs.
 13. As a result of technical advances the replacement inverter [clause 10(c) & clause 10(d)] may not be compatible with other components of your existing grid-connected photovoltaic system including monitoring. This warranty does not cover any costs to fix any incompatibility.

14. Other than as set out in the next sentence, in all cases of repair or replacement, the remaining warranty period will be transferred to the replacement inverter or repaired components. A repair or replacement will only have the effect of extending the original warranty period for an equivalent period the inverter was inoperative if:
 - a. You have signed up to Latronics Cloud Server Monitoring if available; and
 - b. Your inverter remains connected to Latronics Cloud Server; and
 - c. Latronics determines the fault was caused by a defect covered under this warranty.
15. Any faulty part replaced under this warranty becomes the property of Latronics for the purpose of examination and claim under any supplier's warranty for the part.
16. Provided Latronics is not subject to any statutory liability, this warranty does not cover claims of compensation for:
 - a. Loss of profits
 - b. Lost power that has not been generated and fed back into the grid
 - c. Costs of unauthorised removal, transportation, reinstallation or installation of the inverter or any other components of the grid-connected photovoltaic system
 - d. Direct or indirect damages arising from a defective inverter.
18. **Warranty benefits described in clause 10 above will only be provided at Latronics cost if Latronics first:**
 - a. **agrees with you as to the procedure to be taken on your warranty claim; and**
 - b. **agrees to pay the costs.**
18. Latronics may in its discretion elect not to pay for any unauthorised transport costs. Latronics may in its discretion elect not to pay for any costs of unauthorised return. Products returned to Latronics without prior authorisation will be returned to the sender at their expense.
19. Before returning the inverter you must contact our Customer Care Centre on 1300 550 204 with the Product Model Number and Serial Number readily available to enable prompt processing. The Customer Care Centre will then issue instructions on how to proceed.
20. When packaging the inverter for return you must ensure the inverter or components are safely packed for transit in their original or equivalent packaging. This warranty does not cover damage in transit caused by inadequate packaging.
21. Latronics will, at its discretion, determine the most appropriate means to return the repaired or replacement inverter to you in a timely manner.
22. A claim under this warranty may be sent to:

Latronic Sunpower Pty Ltd
105 Grigor Street West
Moffat Beach Qld 4551
PO Box 73
Moffat Beach Qld 4551
Phone 1300 550 204
Email info@latronics.com.au

conditions

Latronics

<http://www.latronics.com.au>

The manufacturer of this product.

Clean Energy Council of Australia

<http://www.cleanenergycouncil.org.au>

The highest body representing Australia's clean energy sector.

Standards Australia

<http://www.standards.org.au>

The peak non-government Standards body in Australia.

useful websites

contact Latronics

Latronics head office and manufacturing facility is located on the Sunshine Coast in Queensland, Australia

**Postal address
PO Box 73
Moffat Beach
QLD 4551 Australia**

**phone 1300 550 204
fax (07) 5491 6792
email info@latronics.com.au
web www.latronics.com.au**

serial no.

Made in Australia

www.latronics.com.au
info@latronics.com.au
1300 550 204