



SOLAR GREEN TECH USER MANUAL



Total Renewable Energy



Solar GreenTech User Guide

Thank you for choosing our Solar Green Tech

ATTENTION! It's extremely important that you read and understand this user manual before operation. SGT 240v refers to the solar Green Tech unit models SGT 1200/1200+/1200+2 SGT1500/1500+/1500+2/1800 +/1800w+2

The SGT is designed to work outdoors with IP65 all-weather rated when the lid is correctly closed only. The unit outputs 240v domestic AC electricity and if misused is capable of causing electric shock and even death. For further information contact us at Info@solargreentech.co.uk

The Solar Green Tech 240v 1500w/1800w is a safe and reliable source of outdoor power and conforms to UKCA, CE and IET on-Site Guide BS 7671 :2018 standards.

It is absolutely necessary and your responsibility to ensure that the Solar Green Tech generator is always in good condition with no sign of damage to the interior or external parts of the unit including the solar panel. If there is signs of damage Do Not Use and contact us for further advice.

HOW IT WORKS:

Firstly the SGT produces zero emissions, zero noise, zero maintenance, zero fuel bills, zero hassle.

The Unit works quite simply by harnessing the UV light from the sun via the solar panel then fed into the units 12v internal Lithium ion battery Via a Victron MPPT controller. That battery power is then converted using clever inverter technology in to 240v pure sine wave equivalent to domestic supply

As long as the solar panel is facing in the general direction of the sun it will always be charging through the day. The more sun the solar panel is exposed to the quicker the generator will charge. The solar panel will still charge on a cloudy day but at a slower rate.

Please Note: When using the unit continuously for more than 10 minutes at max power (100%) I.e. using heavy powered appliances the unit can run hot and safely turn itself off. Similar to running any electronic or mechanical device I.e. a vehicle or petrol generator at 100% for prolong time. Its advised that when you run continuously for more than 10 minutes that you don't exceed more than 75% capacity when possible. This will protect the unit and help prolong the life of both the unit and battery.

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Please note if you have selected to purchase in addition the mains charger be advised that this is designed to be used only to top up the battery for example for before you go away and only if needed. The unit is primarily a solar charged unit and solar charge must remain the priority means of charging.

The SGT Portable Power Station comes with 120W 6.6A folding weatherproof Solar Panel,

Fitted with a 100Ah 1280Wh LiFePO4 Battery with a 1500w/3000w or 1800w/3600w pure sine wave Inverter and solar controlled by a Victron MPPT solar charge controller. (Bluetooth standard on 1800w version)

The SGT unit control panel features

- 2 x 240v AC sockets
- 2 x 12v 10A DC sockets
- 1 x USB 1x USB-c ports with battery status meter
- 1 x LCD digital power consumption display
- 1 x Battery percentage display
- 1 x RCD
- 1 x Green illuminated power on button
- 1 x Red power off button
- 1 x Solar panel input charge socket (2 x on 1800w version)
- 1 x Fixed operating instruction panel

Rugged SGT case features

- 1 x IP65 water resistant body
- 1 x Telescopic extendable pull along handle
- 2 x Durable fixed roller travel wheels
- 2 x Heavy duty carrying handles
- 2 x lockable durable lid latches
- 1 x Rear dust and splash proof air vent
- 1 x Inner lid foam insert
- 4 x IP65 Cable out ports
- 1 x Continuous lid water resistant seal

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SGT 120w folding Solar panel features

- 1 x Black water resistant canvas folding carrier case
- 4 x Linked water resistant monocrystalline solar panels
- 2 x Wide durable adjustable rear leg stands
- 10 x jack plug adapters accessories
- 1 x conversion adapter lead accessories
- 1 x 2.5m DC5521 power cable to generator
- 2 x power outlets a USB QC 3.0 and USB-c
- 24% High conversion efficiency technology
- 120w 6.6A power output

Victron Blue Solar panel Charge Controller built in

- 1 x MPPT 145W 10A/ 175w 15A control system
- Focusing tracking technology
- Peak efficiency 98%
- Intelligent battery management system
- Internal temperature sensor
- Fully discharged battery recovery system
- Bluetooth smart blue (SGT1500+ optional and 1800w standard)

Internal deep cycle Lithium Ion Battery features

- 1 x 12v LiFePO4 100Ah 1280Wh 4000 deep cycle
- 1 x BMS (battery management system)
- Using the technology of lithium iron phosphate cell, superior safety
- Operating temperature between -20° to 60°
- Internal cell balancing
- Low voltage cut off
- Automatic over, under charge and temperature control



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Internal 240v power inverter and SGT control system features

- 1 x 240v1500w/3000w or 1800w/3600w ac pure sine wave inverter
- 1 x intelligent start/stop control systems
- 1 x TN-S RCD set up
- Failsafe fault detect system
- Overheat and overload cut out protection
- Internal overheat cut out sensor
- Short circuit and over current protection
- Operation temperature range 0° to 50°

The SGT was designed for uses ranging from the leisure industry to the workplace with options of 240v power outlets, 12v power outlets and USB ports.

It's ideal for when you are on a boat, in a camper van or caravan where there is no alternative electrical hook up or when camping in a tent on a camp site.

It is common that camp sites and parks not to allow the running of an engine to supply power after 6:00 PM in the evening, making this a alternative solution for silent power.

Our SGT Generator works without making a noise or causing any pollution as it generates 100% green silent renewable energy

It can be used both during the day whilst charging and a night when it's not charging. All the energy from the daylight is cleverly collected, stored and can be used anytime.

The SGT is rugged, weather resistant and can be used on building sites working when an environment that does not allow noise pollution or has no alternative 240v power supply.

It can also comfortably take a step down 240v to 110v yellow site transformer to run certain on site equipment.

It's also designed to prevent the need to run long extension cables from the house to the garden should you need power to use lawn strimmer, hedge trimmer, lawn mower etc.

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It's safe for small garden events and works well on music sound systems, Garden lights to bouncy castles and much more.

It charges via the SGT solar panel and requires no fuel (petrol/diesel) like some generators. The SGT Generator charges completely from the sunlight producing zero noise, zero pollution, zero fuel bills and zero maintenance.

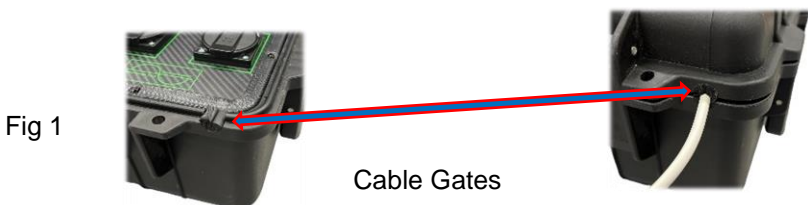
SGT can be used day and night and is designed for indoor and outdoor use but to charge the battery the solar panel requires to be facing towards the direction of the sun at all times for maximum efficiency, so it is highly recommended that the solar panel always remains outside to take full advantage of the UV sunlight.

Like any generator whether solar powered or petrol it is always important to never handle the 240v equipment plug and socket during the rain, damp weather or if the control panel has become wet as there would be a high risk of electric shock and possible permanent damage to the unit.

However the unit is IP65 weatherproof rated when the lid is closed and locked correctly and with the cables correctly laid in the cable gates- please refer to fig 1.

Again always ensure before use that the solar panel including cables are in good condition and free from any damage. If you do find any damage STOP using immediately and contact our technical department for help and advice.

For further advice on using outdoors in bad weather see fig 12 Fig 11 and Fig 14. Within this user guide



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Please ensure that you familiarise yourself with the controls and sockets on the main control panel as it's important to understand all their functions

Fig 2



Fig 3



Fig 4



Fig 5



Fig 6

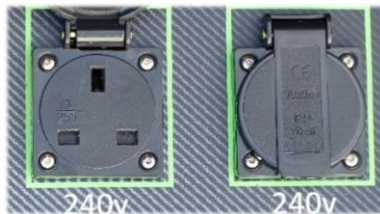


Fig17 (See battery page)



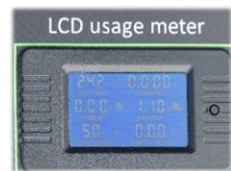
Fig 7



Fig 8



Fig 9





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Fig 10



Panel adjustable support legs

Fig 11



Fig 12



Fig 13



Fig 14



Fig 15



Fig 16





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Fig 2: Main 240V power supply button, to turn on pressed for 1 second the green button will illuminate the LCD consumption meter will illuminate and display information. This should only be used when 240v is required to save battery power.

Fig 3: Main 240v power supply off button, press this button for one second and this will shut down the 240v supply. Ensure the green button no longer illuminates and the LCD consumption meter switches off.

Fig 4: This is the solar DC input Jack socket and charging LED for the solar panel. Following the correct procedure for plugging in the solar panel to the DC socket refer to Fig 12 for solar panel instructions.

Fig 5: 12v DC Outlet sockets powered continually directly from the battery without the need to switch on the main unit via the green on switch. Note any appliance plugged into it will be directly and immediately powered. Either of these 2 12v outlets can also be used to recharge the battery via the correct (optional) DC mains battery charger but only on occasions for example when you are planning a weekend and the battery needs topped up prior to you leaving. Please note that the unit is primarily a solar charged unit and solar power must always be the preferred method of charging

Fig 6: 240v Outlet sockets deliver 240 volts of pure sine wave electricity. Note this is the similar supply to the home supply and therefore is extremely dangerous if mishandled can cause electric shock and in some cases even death. Please ensure all appliances to be plugged in are in good working order with no signs of damage to the device, plug or cables. Do not plug appliances in before powering up the main unit (via the green on button) this may cause damage to both the unit and your appliances. Once the unit is powered up then attach the plug it to this 240v socket that is now giving 240v.

Fig 7: USB port have 1 x 5v Q C 3.0, 1 x USB-c outlets these will illuminate blue along with the battery voltage displayed in the middle when the power button is switched on the 12v Internal battery meter! It is important to understand how much voltage your battery can store, this will determine how much and how long you have power within your unit. The battery is considered flat and requiring recharge at around 10.9v and fully charged between 13.6v and 14.4v. See fig 17: within the manual on battery voltage and percentage.



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Fig 8: RCD is a device that can detect a fault between the earth and live terminals that will cause the unit to trip out should it detect this fault. when the switch is in the up position the switch is on, you can test this switch with the test button which will trip will the switch down disconnecting the 240v supply to the sockets. Simply reset by pressing the switch back to the top position. should a fault occur the switch trip out. If the switch does trip out due to a faulty appliance its very important that you disconnect the faulty appliance before reinstating the switch to the up/on position. for further information on the regulations around earthing for mobile generators please see the extract Earthing conforms to the IET on-Site Guide BS 7671 :2018 Extract 2.4.1 Portable generator isolated from earth printed at the back of this booklet.

Fig 9: The LCD power consumption meter when illuminated will give information such as the 240v being supplied to the 3 pin outlet sockets, the amount of current and wattage your appliance is using. This will help ensure you do not overload the units capabilities.

Fig 10: The folding solar panel. Ensure that you only handle the DC output lead while the solar panel is folded, as soon as the panel is exposed to any form of light the panel begins to generate power, the lead becomes live and can generate 22v offload, we recommend that you plug the panel lead into the unit first and then open the panel before placing the panel facing towards the sun. See solar panel user manual.

Fig 11: The cable gates. It's extremely important that when the lid is closed before use in a wet environment that the cables sit directly in the centre of the cable gate foam. Please take extreme care to ensure this is done correctly as this can ensure the IP65 rating for weatherproof use, failure to do so may allow water to access the unit therefore not provide an IP65 weatherproof rating.

Fig 11 Fig 12: and Fig 14: These illustrate the positions in which the unit should be operated in. Fig 12 demonstrates the unit lid must be closed when operating in this position. Fig 13 illustrates the position the unit can be operated on dry conditions only. Fig 14 illustrates the position the unit must be operated in under wet conditions. It is extremely important that you follow these instructions to ensure the unit remains IP65 water resistant.

Fig 15: The Air vent. The air vent is situated at the back underside of the unit's main body this has been designed and placed specifically to ensure the unit can breathe and the internal fans that keep the unit cool by circulating cool air when needed, it is important that water is not allowed to enter this area.

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To operate the unit correctly to prevent this from happening you must follow the instructions as laid out in Fig 11:, Fig 12: and Fig 14: The fans only come on when the unit becomes hot inside. Should you hear the fans running this is perfectly normal but for faster cooling times, if convenient ensure the lid is firmly closed and stand the unit up right to help increase Max air flow if needed see Fig 12.

Fig 16: The telescopic extendable pull along handle. The unit is approximately 22 kilogrammes a useful feature works with cases fixed wheels and like a suitcase the extendable handle will enable you to pull the unit along behind you whilst transporting it between users. It is important not to use this handle to lift the unit off the ground as the handle is only designed to pull the unit along it is not designed to be strong enough to take the entire weight of the unit and doing so could cause damage to the handle.

The sturdy handle on the front and the top are design for carrying the case as they were heavy duty and can easily handle the 22 kilogrammes the unit weighs

For further information and understanding of the features and functions or anything you are unsure of please don't hesitate visit at www.solargreentech.co.uk or email us at info@solargreentech.co.uk

WHAT CAN BE POWERED BY THE SGT 1500w and 1800w 240v Unit

The unit has a total of 6 power outlets 2 x 240v sockets 2 x USB ports and 2 x 12v sockets. In order to use the 240V you need to switch on the main unit by pressing the green power button until it illuminates.

If you wish to just use the 12v sockets only you do not need to power on the main 240v unit supply as the 12 Volt sockets are continually supplied. When using only the 12 volts the battery is able to run down to about 10.9v before

requiring a recharge however if the 240v the unit is powered up this may shutdown when the battery voltage is around 11.1 V See Fig 17: for battery chart. (Guide only) see full battery operating details on back page

If you wish to use the USB ports quite simply press the USB power button USB ports illuminate blue.

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The 12v internal a lithium ion battery has a capacity of 100Ah and 1280Wh with 4000 deep cycles and will power the unit for a time dependent on what appliance you use and for how long please see below an example the equipment you should or should not use.

Run time and charge time.

Run time can vary depending on how you use the power and what you plug in so here are some examples from a full charge without the solar panel fitted. Using the sockets

- 1 x 12v socket only on a good quality camping fridge will run for approximately 85 hours between charges
- 2 x 12v socket only on 2 good quality camping fridge will run for approximately 42 hours between charges
- 1 x 240v socket only on a good quality camping fridge will run for approximately 58 hours between charges
- 2 x 240v socket only on a good quality camping fridge will run for approximately 27 hours between charges
- 1 x 240v socket only on a 42 inch TV will run for approximately 8 hours between charges
- 2 x 240v socket only on a 42 inch TV's will run for approximately 4 hours between charges
- 1 x USB socket only on a Ipad will run for approximately 460 hours between charges
- 2 x USB sockets only on 2 Ipad's will run for approximately 243 hours between charges

On a full charge you will have between 13.6v and 13.4v charge giving 1280Wh available from the internal 12v battery, whenever the 240v is turned on the using the main Green on button the internal inverter users approximately 8w from the battery so it's worth remembering when working out run time and capacity to factor in the inverter's own consumption.

Battery information showing voltage to percentage ratio chart including safe operation and care. Please see Fig 17: and Fig 18: and on back page.

Example

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When running camping fridge that is normally 45w the fridge will only peak at 45w in normal conditions for approximately 20 minutes of every hour and the remainder of the time the fridge will be on standby at around about 7w. This means the total amount of wattage per hour on a 45w fridge is calculated divide 45w by 3 equals 15w per hour.

If the above fridge is powered for 1 hour from the 12v supply only you will use 15w per hour.

Divide 15w by the 1280wh battery capacity and you will get approximately 85 hours run time from the battery

If you run the same fridge from the 240v inverter supply you will use 15w for the fridge and 6w from the inverter totalling 21w
Divide 12800w battery capacity by the 21w load and you will get approximately 60 hours from the same battery and fridge.

We therefore advised if there are the two options available to run your fridge which is normally the case with camping equipment we would recommend that you used the 12v socket and leave the 204v turned off to give longevity between charges. However you also enjoy the luxury of being able to run 240v appliances where 12v input is not possible. For example running appliances such as power tools, lawn mowers, grass strimmer's, lap top charges, hair dryers, hair straighteners and much more items that you would use for shorter periods of time that needed more power.

A list of recommended example items that can be used on the 240v sockets
The SGT Generator has an output capacity of continuous 1500w 240v output with a peak output for surge start-up of 3000w or 1800w surge 3600w
This is an example of appliances that can be used safely and are considered none continues

- 1200w hair dryer running stop start for up to 1 to 2 hour.
- 200w hair straighteners running for 6 hours
- 250w to 850w power tools Running stop start for up to 6 to 8 hours.
- lawn mowers and hedge trimmers running for up to two hours.
- Coffee machines that run for 5 or 6 minutes 3 hours
- 650w camping kettles running for 10 minutes up to 4 hours
- 160w infrared panel radiator with thermostat control 15 hour

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This is an example of appliances that can be used safely and are considered continuous running

- 45w Camping fridge can safely run from 12v up to 85 hours continuously
- 240v 40w work light can run for up to 58 hours continuously
- 240v to 110v Step down transformer running a 40w light will run for 30 hours continuously
- 240v 42 Inch television will run continuous for 8 hours continuously
- Table and stand lamps of approximately 20 amps would run for approximately 80 hours continuously
- Tablets and smart phones plugged into USB will run for 400+ hours continuously
- 350w Bouncy castles can run between 3 and 3.5 hours continuously
- Garden entertainment systems can run for up to 40 hours continuously

This is an example of appliances that should not be used or user for prolonged time and what other companies are not disclosing to you.

- Microwaves above 800w and no longer than 5 to 7 minutes at a time as these run at high amperage.
- 900w to 1200w High amp electric fan heaters as the high amperage and dramatically drain the battery and shut down the inverter safely.
- Vacuum cleaners for example a 1200w vacuum cleaner will draw 1200w whilst there is no suction pressure but when the vacuum cleaner hits a surface where you hear it change tone is generally when the power draw is increased greatly from 1200w to 1900w which could cause the inverter to safely cut out and may not restart for up to five minutes afterwards.
- 1200 Watt chop saw cutting through wood, while the saw is spinning freely it will run perfectly fine at 1200w but when put under intense pressure for example struggling through wet wood would push the 1200w to as much as 2400w which could cause the inverter to safely cut out and may not restart for up to five minutes afterwards.
- We do not recommend that you use cheap cool boxes that continuously run without thermostat control as this unnecessary drains the battery down as they are extremely inefficient.
- when use in small panel heaters ensure they have a thermostat cut out control as these can unnecessarily drain the battery

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- **Warning** Do not Place, store or leave the battery exposed in direct sunlight, Close the lid or place in a shaded and cool area. Allowing the battery to overheat is potentially dangerous and can cause permanent damage and void the warranty. See back page.

Never attempt to jump start a vehicle directly from the 12v output this will cause the battery management to shut the battery down safely and a battery restart will be required by plugging in the charge supply I.e. the solar panel. However the heavy current draw on the internal wiring may cause irreversible damage.

Only use the supplied solar panel for this unit and never try to attach more than 1 solar panel at a time.

See solar Panel instructions for full user details.

When operating the units 240v the SGT follows the ITE on site guide for portable generators. Never apply a direct short circuit between the positive and negative terminal's as this will cause irreversible damage to the SGT1500.



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Please see below instructions regarding earthing and type 1 and type 2 equipment types that should be used in conjunction of the regulations.

Earthing conforms to the IET on-Site Guide BS 7671 :2018

Extract 2.4.1 Portable generator isolated from earth

551.4.4

Portable generators ranging in output from 0.2 kVA to 10 kVA single-phase are often isolated from Earth, i.e. there is no connection between the chassis and/or earth connection of socket-outlets) of the unit and the neutral of the generator winding and Earth. The ends of the generator winding are brought out to one or more three-pin socket-outlets which should conform to BS EN 60309-2. The earth socket-tube of the socket-outlet (s) is usually connected internally to the frame of the generator only; see Figure 2.4.1.

413 This arrangement is a form of electrical separation, where basic protection is provided 418.3

by basic insulation of live parts or by barriers and enclosures, and fault protection is provided by simple separation of the separated circuit from other circuits and from Earth. The requirements for electrical separation can be found in Section 413 of BS 7671 where one item of equipment is supplied and Regulation 418.3 where more than one item of equipment is supplied by the separated circuit. However, the requirements of Regulation 418.3 could prove difficult or impracticable to meet in a typical application of a portable generator.

It is extremely important to note that a portable generator isolated from earth should

- only be used to supply equipment in the following permutations:
- one or more items of Class II equipment
- one item of Class I equipment

one or more items of Class II and one item of Class I equipment.

The supply of only Class II equipment, however, is preferable.

No more than one item of Class I equipment should be supplied at any time as faults can be presented as voltages and operatives can provide a path for current flowing between exposed-conductive-parts of faulty equipment.



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General safety and good practise

Like all Power generators there is limits to what can be done and this is no different with the SGT. The units 240v pure sine wave output is capable of delivering 240v up to 1500w continuously and approximately 5 amps.

Do not try to overload the unit with appliances that are too powerful. this will cause the unit to trip out and continually trying to overload the unit or you may cause irreversible damage that will not be covered under warranty.

If the unit has shut down due to overload or overheat it will be required to self-cool The unit under normal operating conditions will always switch on in under 3 seconds. Do not try to force the unit to start if it has shut itself down by pressing and holding the green power on button for more than 3 seconds as this could also cause irreversible damage that would result in your warranty being void.

It is also extremely important that you do not operate this unit with the lid open when it is raining. If any of the internal components or the Control panel become wet do not switch the unit on. It is important for the safety of the user and the components inside that the unit remains dry at all times even if you suspect that it may have become wet inside do not use this unit.

If the unit does become wet leave in dry environment with the lid open in the operational position but do not switch on, contact us and ask for technical advice on how to rectify this problem as each situation may be different.

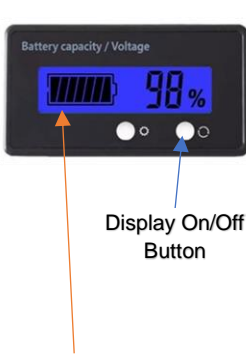
You should only ever use the number of sockets that have been provided if you wish to run an extension cable ensure that you still only have two outlets for the 240v, the 12v and the USB. Overloading the sockets can cause irreversible damage and will result in your warranty becoming a void.

Do not store or carry the unit upside down as the internal battery is heavy and could become dislodged Also do not drop from any height and if the unit has been dropped carry out a thorough investigation of the external box and internal control panel and battery. If any damage has occurred you must not use the unit and contact us for technical advice.



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Battery information showing voltage to percentage ratio chart and battery safety Fig 17: Note:(this is a guide and not a calibrated meter)



14.6v	100%	Recovery charge
13.5v	100%	Fully charged
13.2v	75%	Healthy
12.9v	50%	Good
12.6v	25%	Running low
11.5v	0%	Recharge

(Battery voltage status display)

When the battery is under load for example when you are powering an appliance that the battery voltage will drop. This is normal with all batteries including the Lithium ion battery fitted in this unit..

However this voltage reading is not the true representative voltage level. The true voltage will show when the unit is not powering any appliances. For true accurate voltage reading wait a minute after powering down all appliances and read the voltage again.

Charging the Battery may peak at 14.6v max then rest at fully charged at 13.4v to 13.6v (float charge) See back page for full details on how the BMS Battery functions

This is the Lithium ion battery so it is very important that it is looked after and nothing placed on to it. If this shows any sign of damage you must stop using the unit immediately and contact us for further advice in how to proceed or return for repair.

Fig 18:

Lithium ion battery



Warning Do not Place, store or leave the battery exposed in direct sunlight, Close the lid or place in a shaded and cool area.

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Disclaimer

Do Not apply a direct short circuit between the positive and the negative terminals of the 240v 3 pin socket outlets as this misuse can cause irreversible damage that is not covered under warranty. This includes using faulty appliances that are known to have a previous or new faults.

Do Not Place, store or leave the battery exposed in direct sunlight, Close the lid or place in a shaded and cool area. Allowing the battery to overheat is potentially dangerous and can cause permanent damage and void the warranty.

Do Not operate any of the units socket outlets during wet or damp weather as this can cause electric shock and irreversible damage to the unit.

When using the units IP65 rated feature always ensure the unit is plugged in and powered up then the lid closed correctly with the cable through the cable gates correctly in a dry environment before allowing it to become exposed to any rain or water. should the unit become wet inside **you must stop** using it immediately

When using the unit continuously for more than 10 minutes at max power (100%) I.e. using heavy powered appliances the unit can run hot and safely turn itself off. Similar to running any electronic or mechanical device I.e. a vehicle or petrol generator at 100% for prolong time. Its advised that when you run continuously for more than 10 minutes that you don't exceed more than 75% capacity when possible. This will protect the unit and help prolong the life of both the unit and battery.



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Selling on or loaning out this SGT unit

If you loan out or sell this generator you must supply the new user/owner a copy of this user Manual you are responsible for passing on the information to ensure the unit continues to be operated safely and in accordance with these instructions to prevent the likelihood of anyone becoming injured as a result of a lack of understanding of the operating procedures.

These operating instructions are extremely important so ensure your 1 year guarantee is upheld and you can achieve longevity and enjoy the benefits that the SGT can bring.

The units manufacturing here in the UK are very tightly controlled and regulated and also marked with three unique serial numbers on tamperproof tags.

These serial numbers are registered on a database in order to ensure a very high standard of quality control, should these seals or serial numbers be tampered with the warranty will be void.

The unit has a nonreturnable lithium ion battery that starts its life cycles the moment you purchased, switch on and as so cannot be return for a refund once used (in the same way if you were to purchase a mobile phone, laptop, washing machine etc) however any faults or problems with the item will be rectified by the manufacturer in accordance with our warranty policy again it must be stressed that the unit cannot be returned for a refund once used if the unit remains unused you will have a statutory 28 days to request a refund.

The Battery Management system (BMS)

The battery management system is clever technology that protects the battery against overcharge, undercharge overheating, short circuit protection and many more features that protect the life and longevity against damage.

The voltage meter reading on the unit although very accurate is a guide only, the battery management system will operate the voltage accordingly.

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For example if the unit is continually charged and not being used the battery management system will have a float mode voltage of around 13.4v 13.6v but when charging will peak as high as 14.6v for a few seconds when fully charged before reverting to lower float charge, the 14.6v will be displayed for a short space of time but you may miss this. However if you want to check to see if it has reached its 14.6 V simply unplug the solar panel supply for approximately one minute and then plug it's back in ensuring the panel is facing the sun, after 30 seconds you will see the genuine stored battery voltage for a brief time before the display reverts back to the float voltage.

If the battery management system identifies there is too much power and the battery has gone unused it will drop the voltage down to 13.2v this is perfectly normal and the batteries management system protecting the battery correctly.

Examples of what to expect when using the battery everyday this will charge and discharged the battery, these are ideal conditions the battery voltage displayed on the meter will peak at 13.6v when fully charged and dropped to as low as 10.9v when recharge is required these are ideal operating parameters.

the battery has 100Ah-1280Wh capacity, when using the battery the Wh represents number of watts per hour can be used and is the calculation for what you should work too when deciding how long an appliance will last by using the appliances date tag that tells you the wattage output you must however factor in approximately 6wh for the inverter itself on top of your appliances you are calculating to.

Simply divide appliance Watts by the 1280 watts will give you an estimate of how long you have for that product between charges. Remember fridges etc only peak at the maximum wattage for between 10 and 20 minutes per hour so

in some circumstances you may get much longer than expected see manufacturers guide on these appliances.

Example: A TV that is 240v and 100 watts. Add in the 6 watts the inverter needs giving you a usage of 106 watts to power the TV, simply divided 1280 battery watts by 106 TV watts and that gives you approximately 12 hours TV run time from A full battery.

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As explained earlier if you run a high wattage (800 max) kettle or microwave for approximately 5 minutes you will see the battery voltage dip from its full charge of 13.4v down to as low as 12.2v, the lower 12.2v is not a true representation of what the battery voltage is. The true representation of the battery voltage will reappear when the kettle is switched off and the battery returns to rest mode. it is advised that if you do run a kettle you allow the unit several minutes before re boiling the kettle. Should you continually boil a kettle time after time without a rest this will cause the unit to heat and then automatically cut. Cooling can take 10 to 20 minutes before you're able to reuse the SGT1200 model range.

Troubleshooting battery charging issues

If for any reason you allow your battery to run completely flat then forget, fail to charge it or cause a short on the 12v side by accident for any reason the battery will shut down completely. When this happens no voltage on either the USB or battery will display will be available. In order to fix this you are required ensure all appliances on the 12v, USB and 240v outlets are unplugged, then using either the solar panel that is in good sunlight or the Standby AC charger plug into the 12v socket. This will reset the battery voltage and will start displaying again on the battery meter and USB.

Once you have completed the above instructions plug in the solar panel or AC charger into the charge socket and this will restart the battery. To prevent having to complete this task it is always advised that you do not short circuit the battery nor do you put the unit away with a flat battery as this is not the correct way to use the Solar Green Tech 1500w/1800w

Battery chart Guide for reference only

14.6v	100%	Recovery charge
13.5v	100%	Fully charged
13.2v	75%	Healthy
12.9v	50%	Good
12.6v	25%	Running low
11.5v	0%	Recharge



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The SGT Charges from solar power using the solar panel provided and is 100% renewable energy in this form however there is an AC charger option. Only ever use the solar panel or AC charger provided with this unit to prevent causing any irreversible damage to the internal components as the charger controller has been programmed for its specific job for further information and details for useful links or tips please visit us at www.solargreentech.co.uk

For any troubleshooting tips or advice please don't hesitate to contact us via our website.

For further products and offers please visit us at www.solargreentech.co.uk

For further help or assistance when using, operating or trouble shooting advise the SGT please don't hesitate to contact us at info@solargreentech.co.uk



Solar Green Tech Website QR Code

If applicable when using the SGT with the Bluetooth scan this QR code to access the Victron website for information on how to use the Bluetooth and download the phone app



Victron QR Code

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Models SGT 1200/SGT1200+. SGT 1200+2 Continue to next page.