



POINT ZERO
energy

User Manual

Titan solar generator



CHARGE BEFORE USING OR STORING

Your Titan lithium battery will arrive partially charged. Before using or storing, charge your Titan solar generator until it is fully charged.

The Titan battery meter WILL NOT READ CORRECT STATE OF CHARGE PERCENTAGE UNTIL the battery meter is CALIBRATED CORRECTLY.

IMPORTANT SAFETY INSTRUCTIONS

To avoid personal injury or damage to the solar generator or any connected products, carefully read, understand, and comply with all instructions before use. Keep this manual for future reference.

Observe all Input/Output watt ratings: To avoid fire or electrical shock hazard, observe all ratings on unit, and products you intend to use; check manuals for more information.

Use in a well ventilated area: Ensure proper ventilation while in use and keep away from any combustible materials or gases. Do not stack anything on top of the unit in storage or in use. Inadequate ventilation and/or improper storing may cause damage to the unit.

DO NOT operate in wet conditions: In order to avoid short circuits or electric shock do not allow unit to get wet. Let unit dry completely before using.

Keep the unit clean and dry: Inspect the unit for dirt, dust, or moisture on a regular basis.

Shock or Fire Hazard: This Titan solar generator produces the same potentially lethal AC power as a normal household wall outlet. Please use caution when operating, just like using a normal AC outlet on the wall.

DO NOT insert foreign objects into outputs or ventilation holes.

DO NOT open the Titan solar generator; there are no user serviceable parts inside.

Any manipulation to the unit or its components will void all warranties.

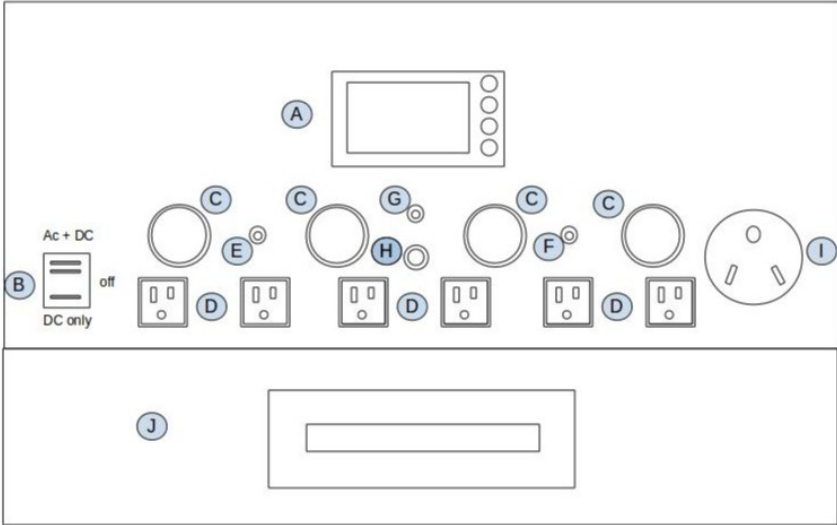
TABLE OF CONTENTS

General Information	2
Controls, Indicators, Connections.....	2
Technical Specifications.....	4
Charging Your Titan Solar Generator.....	5
Charging from the wall.....	5
Charging from solar.....	5
Charging from a cigarette port.....	6
Operating instructions.....	7
General operating and safety instructions.....	7
Initial Setup.....	7
Adding Multiple Battery Packs.....	8
Calibrating the Battery Meter.....	8
Balancing the Batteries.....	9
Battery Meter.....	10
Using Your Titan Solar Generator.....	12
Storage	12
Point Zero Energy Titan Kit Set Up Diagrams.....	13
Troubleshooting.....	17
Warranty Information.....	20

GENERAL INFORMATION

Controls, Indicators, Connections

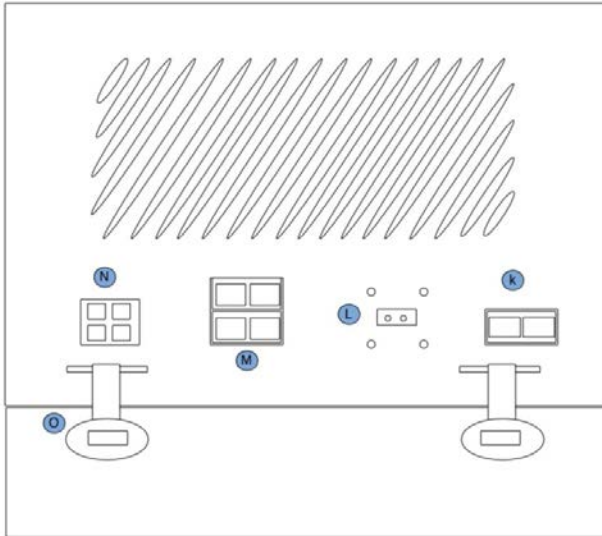
FRONT VIEW



(Figure 1)

- A-** Battery display
- B-** Power switch- down DC only, middle off, up AC and DC
- C-** 12V DC sockets 20Amps max, each socket, or all combined.
- D-** 120V AC sockets 15A per set of 3 (left three combined 15A, and right 3 combined 15A max)
- E-** Reset breaker for left 3 outlets (15A)
- F-** Reset breaker for right 3 outlets (15A)
- G-** Reset breaker for RV outlet (30A)
- H-** 20A fuse for 12V DC sockets
- I-** 30A RV outlet (max 3,000 watts continuously 6,000 watts peak)
- J-** 2,000 watt hour lithium battery pack

SIDE VIEW



(Figure 2)

K– External battery port

L– 12V Car Charging Port and Battery Reset Port (input voltage 11-20V
DC Max charging 160 watts)

M– AC Charging Ports. Max 50A per port @ 29.2V

N– Solar input ports (per port).

Max charging 1,000 watts (more will not cause damage)

Max input amps: 30A

Max voltage (voc): 145V (voltage open circuit)

Min Voltage (vmp): 30V (lower voltage will not charge)

O– Battery latch. Make sure the battery is secure with all 4 latches before
use

Technical Specifications

Weight	32 lbs Power module, 36 lbs battery
Dimensions	18.5x12x12
Generator	
Solar Input	volts: up to 145VDC watts: up to 2000 w
Output Voltage	120V AC Pure sine wave
Continuous Power Output	3,000 watts (recommended 1500 watts with one battery pack)
Peak Power Output	6,000 watts
Outlets	(6) 120V 15A, (1) 120V 30A
USB	6 smart USB, 2 USB C (removable sockets)
Battery	
Cell type	24V lithium ion
Capacity	2,000 watt-hours per battery pack
Life	Up to 10 years or up to 2000 cycles*
Warranty	2 year limited on Titan Power Module 1 year limited on Titan Battery Pack

*Maximum life span of battery is based on ideal conditions. Actual life span will depend on factors such as charge rate, discharge rate, cycle depth of discharge, and usage and storage conditions.

CHARGING YOUR TITAN SOLAR GENERATOR

There are three ways to charge your Titan solar generator: From solar, using an AC charger (wall charger), and from a car cigarette port charger. The Titan is capable of charging from all three sources at the same time.

***It's critical to ensure that ALL THREE SOURCES OF CHARGING COMBINED does NOT EXCEED 1000 watts PER BATTERY.**

Charging from the wall

1. Plug the AC Battery Charger into any wall outlet.
2. Connect the red Anderson plug end of the AC Battery Charger to the Titan AC charging port.
3. Turn the AC battery charger switch to ON.
4. Leave the AC charger on until one LED light turns green.
5. **Your batteries are fully charged when the battery voltage reads AT LEAST 29.0V** (or 100% if the meter has been calibrated correctly). (See section BATTERY METER on reading battery meter). It does not hurt to leave your AC charger connected even after the batteries are fully charged.

Charging from Solar

There are two sets of Anderson plugs on the side of the power module labeled “Solar Input” that are designed for solar charging (see Figure 2 under **Controls, Indicators, Connections**).

Each set is capable of charging up to 1000 watts (or 145v). You can connect more than 1000 watts per set, however, the generator will limit charging to 1000 watts per set. This can be beneficial if you want to limit the charge rate of the battery and get more power in low sun conditions.

It is critical to **NOT EXCEED 145V of SOLAR INPUT.**

If you purchase solar panels from Point Zero Energy, follow the diagrams contained in this user manual. If you purchase solar panels from another source, make sure it is configured to keep the open circuit voltage under 145V.

SEE FIGURES 4-7 for wiring diagrams for Point Zero Energy's solar kits.

Charging from solar (continued)

1. Place your solar panels where they will get as much direct sunlight as possible.
2. Connect solar panels to the generator using the correct configuration.
3. **Your batteries are fully charged when the battery voltage reads AT LEAST 29.0V** (or 100%, if the meter has been calibrated correctly).

It does not hurt to leave your solar panels connect even after the batteries are fully charged.

Charging from car cigarette port

1. Using the cigarette port charger, plug the cigarette port end into the cigarette port of the car.
2. Plug the SAE end of adapter into the 12V charging port on the Titan solar generator (SEE FIGURE 2)

***CAUTION: THIS METHOD OF CHARGING WILL USE UP TO 15 AMPS FROM YOUR CAR BATTERY. SOME CIGARETTE PORTS MAY NOT HAVE THE CAPACITY TO HANDLE CHARGING. PLEASE ENSURE YOUR VEHICLE HAS THE CAPACITY FOR CHARGING BEFORE YOU USE THIS METHOD. ALSO IF YOUR CAR BATTERY GETS TOO LOW, IT WILL BLOW THE IN-LINE 15A FUSE.**

SAFETY MODE

When the battery has been depleted below normal operating levels, the Titan solar generator will go into safety mode. During safety mode, the Titan will not turn on with the power switch. To take it out of safety mode, the battery must be charged. To do this, first turn the Titan solar generator power switch to the OFF position. Next, charge the battery using one of two ways:

1. Using the AC charger, completely charge the battery as explained above.
2. Using solar charging, use two to five panels connected to the MC4 to SAE adapter which is then plugged into the 12V charging port. Leave the solar panels plugged in for 5 minutes then turn the Titan power switch to DC ONLY MODE. When turned on, if the voltage reads 20 volts or more, you can now remove the solar panel and continue to charge as normal, connecting to the solar charging port.

If the generator doesn't turn on, or the voltage reads below 20 volts, turn the Titan back off, leaving it plugged in for another 5 minutes and check again. Repeat this process until the generator reaches above 20 volts.

OPERATING INSTRUCTIONS

GENERAL OPERATING AND SAFETY INSTRUCTIONS

- For optimal performance, use your Titan solar generator in a cool, dry environment. Although the solar panels need to be kept in direct sunlight, keeping the generator away from any direct heat source, including direct sunlight, will keep the generator from overheating and shutting off.
- Keep well ventilated, away from any combustible materials or gases.
- Do not open the Titan solar generator; there are no user serviceable parts inside.

INITIAL SET-UP

Because of its design, there is a specific way to initially setup the Titan solar generator. **PLEASE FOLLOW INSTRUCTIONS CAREFULLY** to keep your Titan functioning properly.

1. Connect the battery pack to the Titan Power Module (FOR SYSTEMS WITH MORE THAN ONE BATTERY PACK, SEE SECTION 'ADDING MULTIPLE BATTERY PACKS')

- a) First, ensure the power switch on the solar generator is in the OFF POSITION.
- b) Stack the Titan Power Module on top of the battery pack, making sure the rubber feet of the generator are aligned on top of the circle indentations of the battery pack.
- c) Tighten the four metal latches on the sides of the battery pack. You may need to press down on the generator to close the latch.
- d) The battery is now connected.

2. Fully charge your battery pack.

1. Turn the Titan Power Module on (DC or DC/AC)
2. Fully charge your battery using the provided AC charger or other charging source (SEE CHARGING YOUR SOLAR GENERATOR).

***IMPORTANT:** Any time you add or replace batteries, you need to fully charge each battery pack so the system can calibrate correctly to the new battery configuration.

ADDING MULTIPLE BATTERY PACKS

***IMPORTANT:** When adding multiple battery packs, it's **critical that you follow the instructions listed below** so that one, the battery meter is calibrated to read the correct state of charge, and two, the battery packs are all balanced BEFORE connecting them together with the solar generator.

***CONNECTING UNBALANCED BATTERIES TOGETHER IN A SYSTEM WILL DAMAGE ONE OR MORE OF THE BATTERIES.**

CALIBRATING THE BATTERY METER

IMPORTANT: The battery percentage is not accurate until these steps are completely finished.

1. Connect the first battery by stacking the Titan Power Module on top of the battery pack, making sure the rubber feet of the generator are aligned on top of the circle indentations of the battery pack.
2. Tighten the four metal latches on the sides of the battery pack. You may need to press down on the generator to close the latch.
3. The battery is now connected.
4. Turn the generator on (DC or DC/AC).
5. Program the battery meter to the correct amp-hours of **all the battery packs combined that will be in use.**

Each Point Zero Energy Lithium Ion battery pack is 74 amp-hours.

For example, if you have 3 battery packs, you will need to set the amp-hours on the meter to 222 amp-hours (3 X 74 amp-hours=222 amp-hours). (SEE SECTION PROGRAMMING THE BATTERY MENU p.11)

6. Fully charge the battery using the provided AC charger.
7. Turn off the Titan solar generator and remove the battery.
8. The Titan solar generator is now calibrated for all battery packs that will be in use.

BALANCING THE BATTERIES

1. Repeat steps 1-8 on CALIBRATING THE BATTERY METER **(excluding step 5)** for each remaining battery.
2. Add all batteries to the system.

***This process of ADDING MULTIPLE BATTERY PACKS will need to be followed every time the battery configuration is changed.**

USING YOUR TITAN SOLAR GENERATOR

After initial setup, your Titan solar generator is ready to use. The Titan solar generator has two modes of use: DC ONLY and DC/AC.

These two modes can be selected using the power switch.

Middle selection is OFF, down is DC ONLY, and up is DC/AC.

DC Mode: If you only need DC power for charging cellphones, tablets, lights, etc., you can save power by using the DC ONLY mode. However, none of the AC outlets will work in this mode.

The DC mode turns on the battery display and the four 12v ports on the front of the solar generator. You can also optionally use the included USB adapters in these four 12v ports.

*** IMPORTANT: The four 12v ports are capable of up to 20 amps each, however, they are also limited to a combined amperage of 20 amps total. For example, you can use 20 amps in one port, OR 10 amps in two ports, OR 5 amps in all four ports. If you go over 20 amps the fuse will blow and will need to be replaced.**

DC/AC Mode: This mode turns on DC power as explained above, as well as the six 15 amp 120v AC outlets and the 120v RV outlet.

The six 15 amp 120v outlets are separated into two 15 amp breakers. The left three outlets are on one breaker and the right three outlets are on the other. This means, the left three outlets are capable of 15 amps per outlet with a total of 15 amps combined. The right three are also capable of 15 amps per outlet with a total of 15 amps combined.

This means, if you want to run a total of more than 15 amps of AC power, you will need to plug 15 amps or less into the left side and 15 amps or less into the right side.

RV Outlet: The 30 amp RV plug can be connected to RV's or any load where you need more than 15 amps.

BATTERY METER

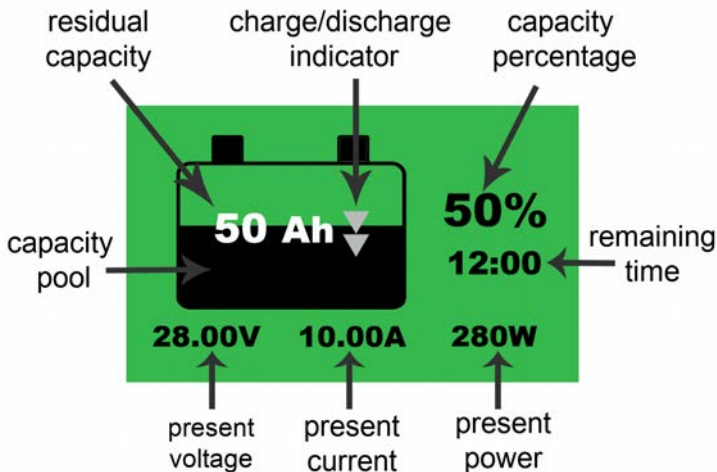
Reading the Battery Meter

The battery meter shows an image of a battery. Inside the battery gives a graphical display as the battery is used, the darker color will gradually lower until the battery is empty. It also shows the remaining battery capacity listed in amp-hours as well as a charge-discharge indicator. When you are draining the battery, these arrows will point down ▼. When you are charging the battery, the arrows will point up ▲. The background lighting will also flash on and off while charging.

The battery meter will also read the percent of battery capacity remaining, as well as the estimated remaining time left of your battery based on your current load. This is only accurate if you're using a constant load that is not fluctuating.

It will also display the battery voltage, current, and power usage in watts. The battery meter measures all power going into or out of the battery. This includes the no load power draw, any inefficiencies of the inverter, and all AC and DC power being used.

BATTERY METER INTERFACE DESCRIPTION



(Figure 3)

PROGRAMMING THE BATTERY MENU

Whenever the battery configuration is changed (i.e. adding, removing, or replacing a battery pack), you will need to program the battery meter accordingly.

1. Press and hold the “OK” key for 3 seconds to enter the programming menu. (See the diagram below to find where buttons are)

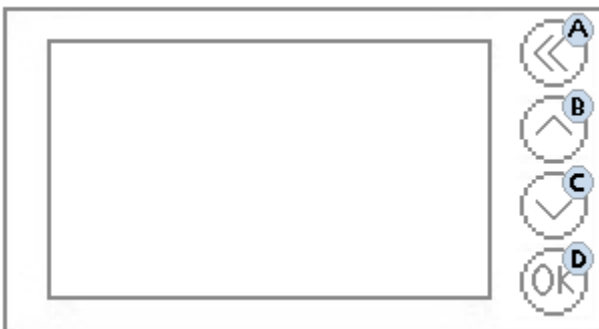
The blinking arrow on the right will indicate which setting is currently selected. You can press the up “^” or down “v” arrow keys to scroll through the settings. Press “OK” to select a setting for programming.

2. Select “CAP” and press the “OK” key to enter the capacity setting. Once inside a setting, the number you are currently on will be blinking. To scroll through the numbers, press the “OK” button.

3. Use the up “^” and down “v” arrow keys to set each digit to the appropriate number for your battery capacity. Remember, the CAP should be 74 times each battery. For instance, if you had 3 batteries, that would be $74 \times 3 = 222$.

4. Once the battery capacity is set, press the escape “<<” button twice to exit the programming menu.

***IMPORTANT: DO NOT CHANGE OTHER SETTINGS IN THIS MENU. OTHERWISE, YOUR METER WILL NOT CALIBRATE CORRECTLY.**



A – ESCAPE
B – UP
C – DOWN
D – OK

USING YOUR TITAN SOLAR GENERATOR

The Titan solar generator can power various appliances such as refrigerators, freezers, microwave ovens, and cooking appliances. Its pure sine wave power output will safely run power tools, electronics, and medical equipment such as CPAP machines.

When deciding on what to power, you will need to calculate the continuous and peak loads of each appliance you want to run simultaneously to determine if the total amount of watts is within the capacity of the generator. Remember, run times will vary depending on the number of batteries and solar panels.

When using large amounts of AC power when the battery is low, the inverter may turn off earlier than normal with useable battery capacity still remaining. If this happens, turn the Titan solar generator off and back on again. Try reducing the amount of power being used via AC.

STORING YOUR TITAN SOLAR GENERATOR

The Titan solar generator will retain a charge for up to 5 years. However, for optimal battery life, you should use 10% of the battery once per year. Make sure each battery pack is charged to at least 50% capacity and the POWER SWITCH is turned to OFF **before storing**.

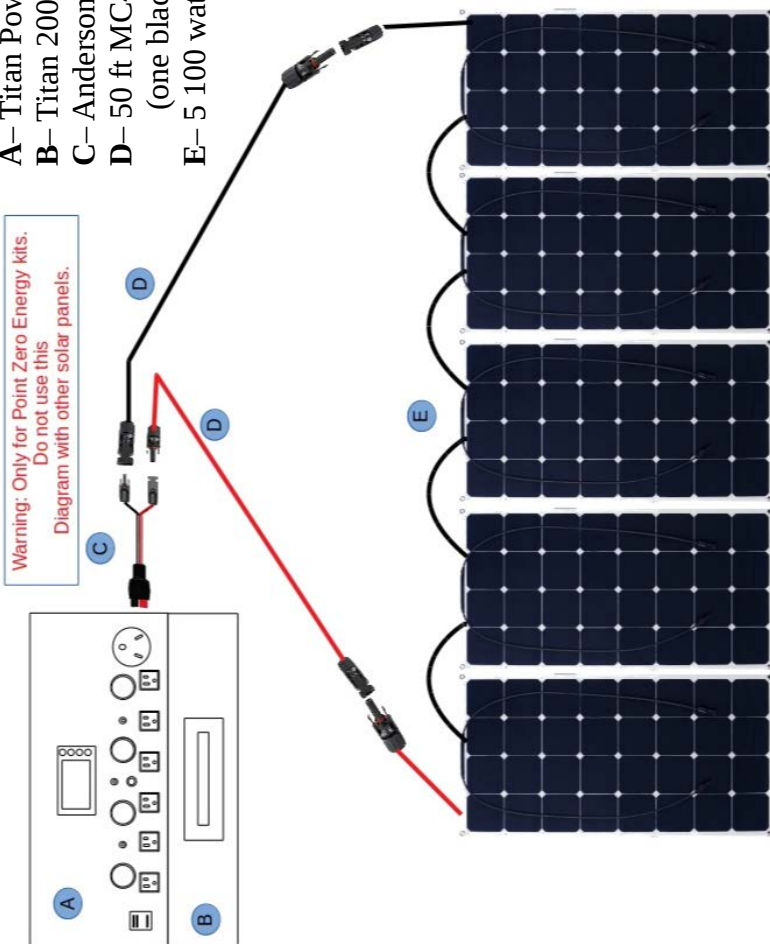
Store your Titan solar generator in cool, dry environments and away from any combustible materials or gases.

***FAILURE TO STORE AND MAINTAIN YOUR TITAN SOLAR GENERATOR PROPERLY WILL VOID THE PRODUCT WARRANTY.**

500 WATT KIT

WARNING:
DIAGRAM IS FOR POINT
ZERO ENERGY KITS

- A- Titan Power Module
- B- Titan 2000 watt hour battery
- C- Anderson to MC4 Adapter
- D- 50 ft MC4 Extension cable
(one black and one red)
- E- 5 100 watt flexible solar panels

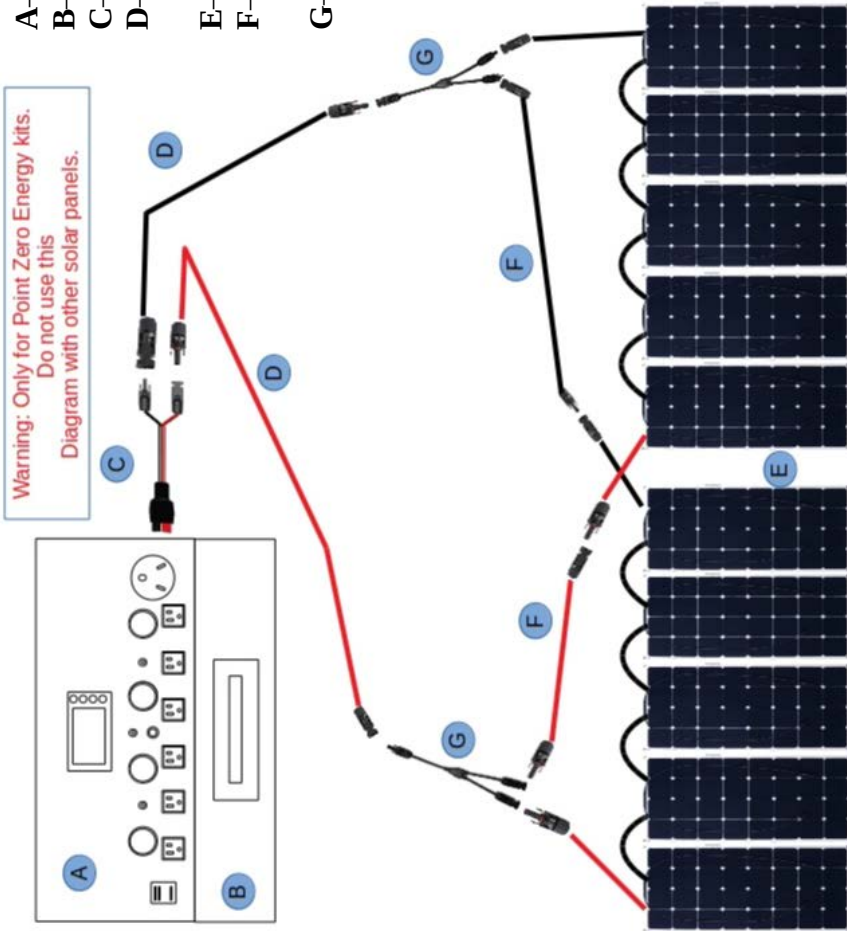


(Figure 4)

1000 WATT KIT

WARNING:
DIAGRAM IS FOR POINT
ZERO ENERGY KITS

- A- Titan Power Module
- B- Titan Battery pack
- C- Anderson to MC4 Adapter
- D- 50 ft MC4 Extension cable (one black and one red)
- E- 10 100 watt flexible solar panels
- F- 15 ft mc4 extension cable (one black and one red)
- G- MC4 Branch connector (one negative and one positive)

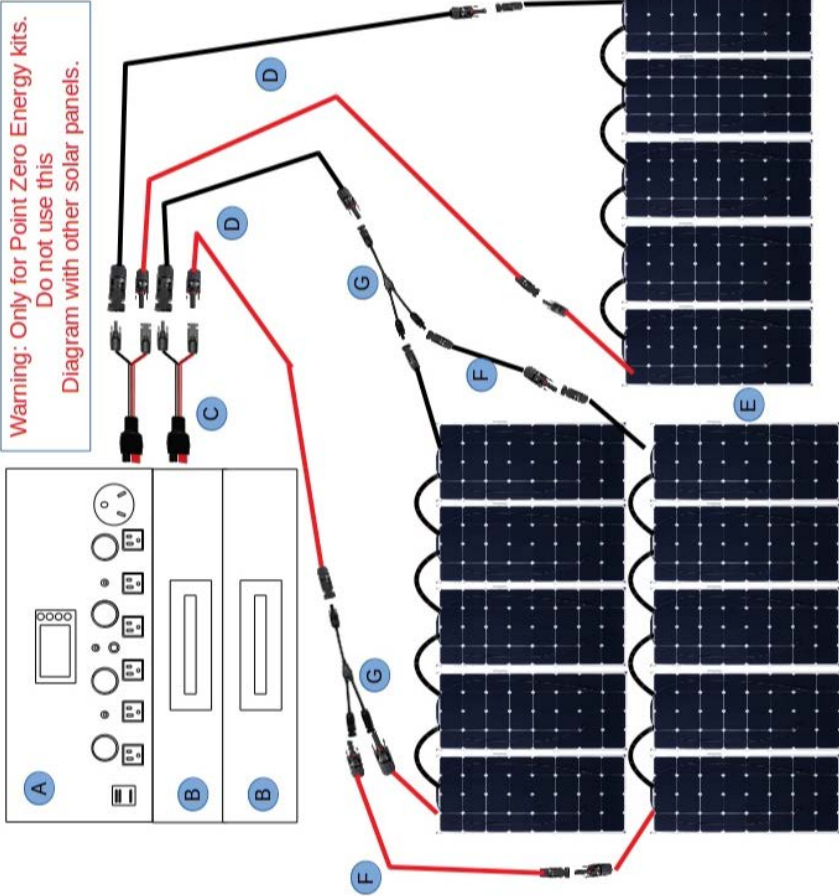


(Figure 5)

1500 WATT KIT

WARNING:
DIAGRAM IS FOR POINT
ZERO ENERGY KITS

- A- Titan Power Module
- B- 2 Titan Battery packs
- C- 2 Anderson to MC4 Adapters
- D- 50 ft MC4 Extension cable (two black and two red)
- E- 10 100 watt flexible solar panels
- F- 15 ft mc4 extension cable (one black and one red)
- G- MC4 Branch connector (one negative, and one positive)

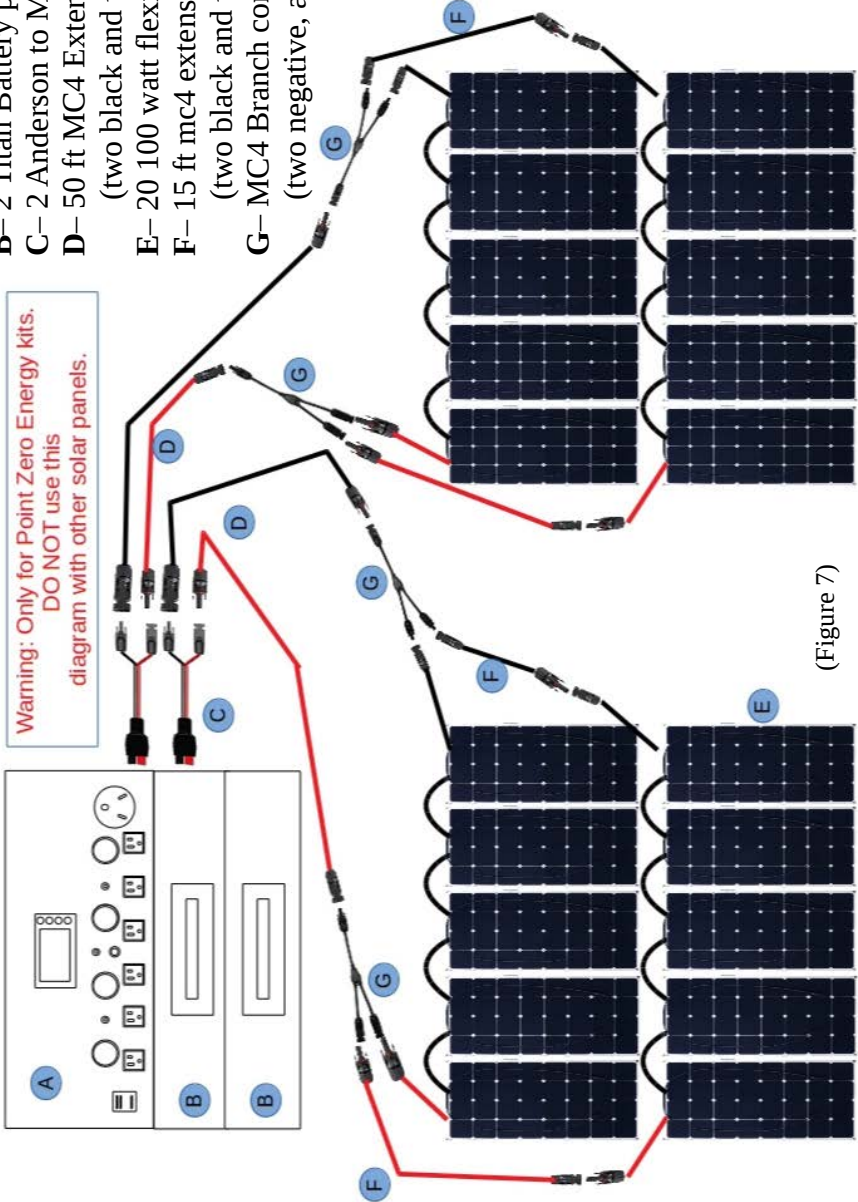


(Figure 6)

- A- Titan Power Module
- B- 2 Titan Battery packs
- C- 2 Anderson to MC4 Adapters
- D- 50 ft MC4 Extension cable (two black and two red)
- E- 20 100 watt flexible solar panels
- F- 15 ft mc4 extension cable (two black and two red)
- G- MC4 Branch connector (two negative, and two positive)

2000 WATT KIT

**WARNING:
DIAGRAM IS FOR POINT
ZERO ENERGY KITS**



(Figure 7)

4. TROUBLESHOOTING

Problem	Possible Cause	Solution
The generator is not turning on	Battery is not installed	Follow the instructions in the user manual on page 7 INITIAL SETUP
	Power switch is not turned on	Flip the power switch up for AC/DC power, or down for DC only.
	Battery has overheated	If you have been running the Titan under a heavy load, or you are operating it in a hot environment, it may have overheated your battery. Turn off the generator and move it to a cool location and allow to cool down.
	Battery has turned off due to an over current condition	If you only have one battery and have been running over 1500 watts, the battery may have turned off for safety. To reset the battery, turn the generator off (power switch in the middle position), leave it for a few seconds, and turn it back on.
	Battery may have gone into safety mode due to being discharged to low.	This may happen if you have left your generator on for a long time, or if you are running a DC load when the battery is already low. If this occurs, you will need to charge the battery back up. Please see SAFETY MODE on page 6.

Troubleshooting Continued...

<p>Battery will not charge. When charging it says it is full, and the voltage is over 29V, but as soon as the solar or AC charger is removed, the voltage drops back down</p>	<p>The battery was charged at over 40A, and for safety reasons the battery has stopped charging.</p>	<p>Turn the power to the generator off, and disconnect anything connected to any charging ports (AC charger, car charger, solar, etc). Wait 5 seconds, and turn it back on.</p>
<p>Generator will turn on, but there is no ac power.</p>	<p>Power switch is turned to DC only mode</p>	<p>Turn the power switch to the up position (DC and AC mode).</p>
	<p>The battery voltage is too low</p>	<p>To protect the battery, the inverter will turn off when the battery voltage reaches 20V. If this happens, you need to charge your battery back up before using AC power.</p>
	<p>A breaker has been tripped</p>	<p>The Titan Generator has resettable breaker buttons for the AC outlets. If one of these have tripped, you simple need to press the button back in again. If this continues to happen, then the load you are running is too high for the outlet. See section USING YOUR SOLAR GENERATOR for how much power each outlet can handle.</p>

Troubleshooting Continued...

There is no DC power	The power switch is turned off	Turn the power switch down for DC only power, or up for DC and AC power
	DC fuse has blown	The maximum DC current to the DC outlets is 20A. If you go over 20A, the fuse will blow. To fix this you will need to replace the fuse with a 20A fuse.
The AC charger will not charge.	The fuse in the charger has blown	Replace the fuse in the AC charger.
The battery meter is not accurate	The amp hours on the meter does not match your battery size	If you have added more batteries, or removed batteries, you need to adjust the amp hour setting on the battery meter Please see page 8 ADDING MULTIPLE BATTERIES
	The battery has not been fully charged since adding a battery or removing a battery	Once any changes have been made to the battery configuration, and the battery meter has been programed, the battery/batteries need to be fully charged before the meter is calibrated correctly.
	The battery has been cycled many times without getting fully charged	The battery meter re-calibrates every time it is fully charged. If you use it for many cycles without ever fully charging it, the meter can slowly get off. To fix this, simply fully charge the battery.

6. WARRANTY

LIMITED WARRANTY

Point Zero Energy warrants to the original consumer purchaser this Titan solar generator to be free from defects in workmanship and material under normal consumer use during the applicable warranty period identified in Paragraph 2, subject to the exclusions set forth in Paragraph 4.

This warranty statement sets forth Point Zero Energy's warranty obligation. We will not assume, nor authorize any person to assume for us, any other liability in connection with the sales of our products.

LIMITED WARRANTY PERIOD

The warranty period for the Titan power module is two years from original purchase date.

The warranty period for the Titan solar generator lithium battery packs, whether purchased as a stand alone product or in a system, is one year from the original purchase date.

This warranty is **NOT** transferable and is **only valid for the original consumer**. The sales receipt from the original consumer purchase, or other reasonable documentary proof, is required in order to establish the start date of the warranty period.

With the exception of the 30 Day No-Fault Warranty, the buyer is responsible for any initial shipping charges required to ship the product for warranty service. Point Zero Energy will pay the return shipping charges if the product is repaired or replaced under warranty.

30 DAY NO-FAULT WARRANTY

This 30 Day No-Fault Warranty is supplemental to the Limited Warranties, and is not a warranty in itself, nor does it waive or modify any exclusions or limitations in the Limited Warranties.

The 30 Day No-Fault Warranty states that within 30 days of date of delivery of original purchase, Point Zero Energy guarantees the Titan Power Module and/or Titan battery packs to be free of any defects in workmanship or material. If not, Point Zero Energy will repair or replace any defective parts with new or reconditioned parts, at Point Zero Energy's discretion, without charge to the original purchaser.

EXCLUSIONS

The above stated limited warranties **DO NOT APPLY** to damage from misuse, alterations, abuse, normal wear and tear, lack of maintenance, accidents, or repairs made or attempted by anyone other than an authorized service technician. This warranty does not cover repair if:

- Normal use has exhausted the useful life of the generator and wear and tear items (including batteries, control panels including digital displays, outlet plugs, switches, and cords if applicable).
- The customer fails to install, maintain, and operate the product in accordance with the instructions and recommendations of the company set forth in the Titan solar generator user manual.
- Damage occurs due to freezing, heat exposure, water exposure, rust, corrosion, thermal expansion, fire, dropping, misapplication or any other improper use, storage, and maintenance.
- Any product or part has been modified without the written permission of Point Zero Energy.

The above limited warranties **DO NOT COVER** shipping or labor charges associated with the inspection and testing of generators.

Point Zero Energy is not liable for any loss, cost, expense, inconvenience or damage that may result from use, misuse, or inability to use this product. Under no circumstances shall Point Zero Energy be liable for any loss, cost, expense, inconvenience, or damage exceeding the purchase price of the product.

The warranty and remedies set forth are exclusive and in lieu of all others, oral or written, expressed or implied. No reseller, distributor, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

HOW TO RECEIVE SERVICE

To obtain warranty service, you must contact us at info@pointzeroenergy.com prior to returning any product to receive an RMA form.

UNAUTHORIZED RETURNS WILL NOT BE ACCEPTED AND WILL BE REFUSED. CUSTOMER IS RESPONSIBLE FOR ALL SHIPPING COSTS ON UNAUTHORIZED RETURNS.