

TERRAVAN

TETRAPACK

USER GUIDE



POWER YOUR ADVENTURE



Charge Me Now

Before using or storing, plug your Tetrapack into the wall until it is fully charged. Keep your Tetrapack plugged in when not in use to ensure it is always ready. This will NOT cause harm to your battery. For more tips and tricks on keeping your battery healthy, see the BATTERIES 101 section.

Important Safety Instructions

Read all instructions and cautions carefully before use to avoid personal injury or damage to the unit and any connected products

Observe all Input/Output connectors 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 ventilated area: Ensure proper ventilation while in use and do not obstruct fan openings on unit. Inadequate ventilation may cause damage to the unit. Do not stack anything on top of the unit in storage or in use.

Power supplies will get hot when in use: Keep your Tetrapack supply in a dry, well ventilated area when in use.

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 Tetrapack generates the same potentially lethal AC power as a normal household wall outlet. Please use it carefully just like using a normal AC outlet on the wall. DO NOT insert foreign objects into outputs or ventilation holes. DO NOT tamper with or attempt to replace your battery. For information about a replacement battery contact the Terravan solutions center. Any manipulation to the unit or its components will void all warranties.

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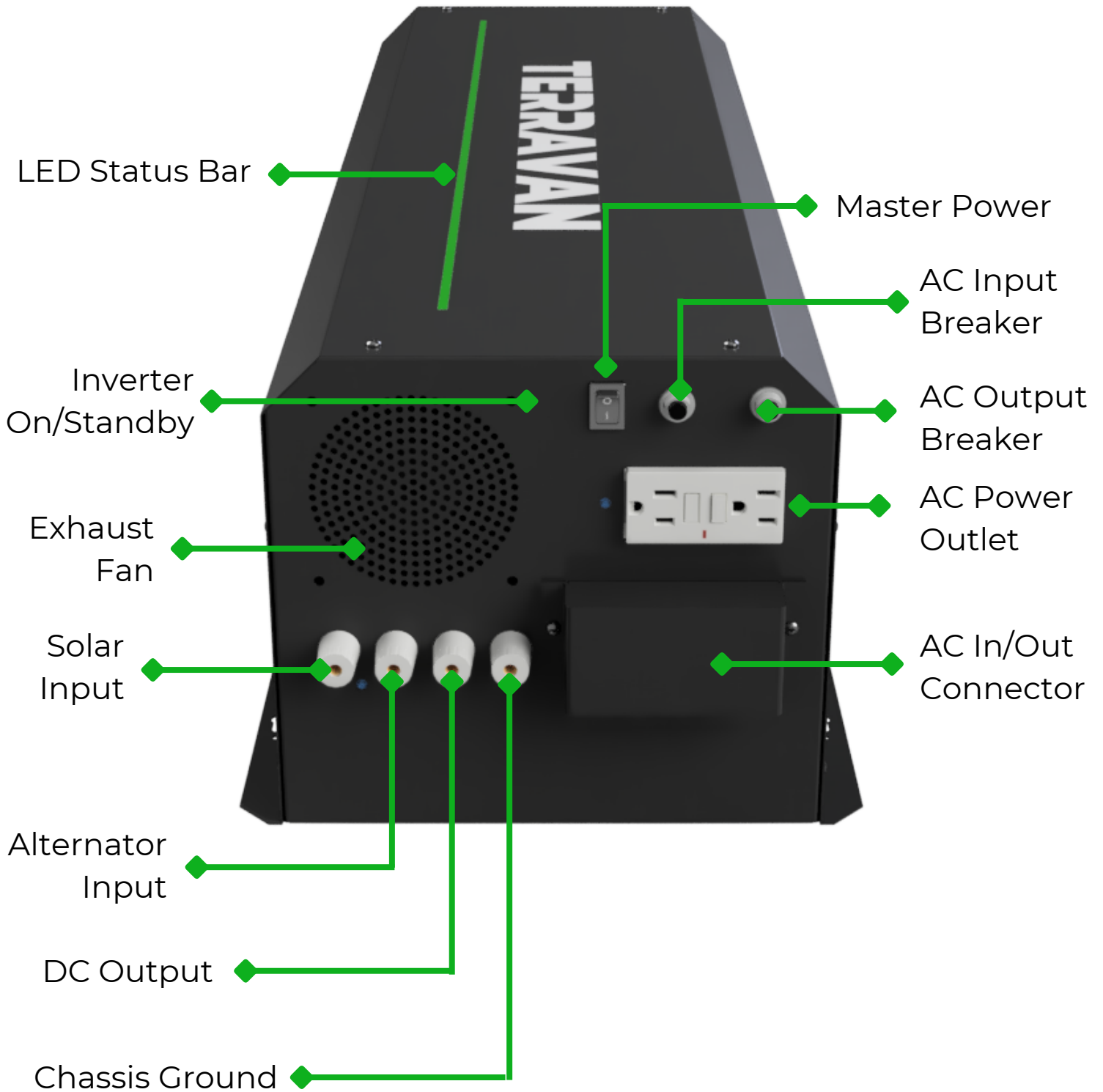
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Get to Know Your Gear

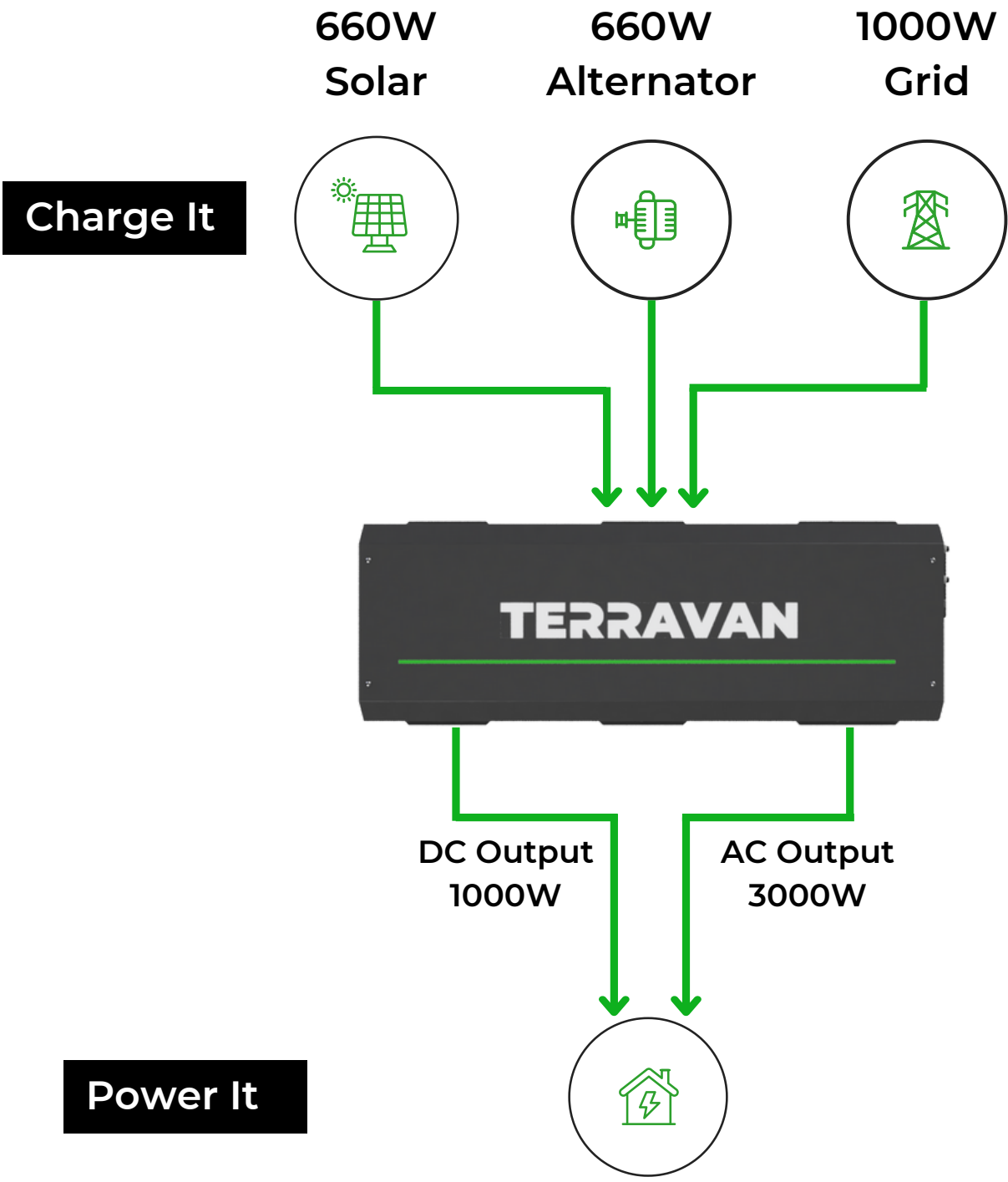


We recommend using 10-12Awg wire to connect to the ac terminal block.

There are 3 different ways of connecting to the terminal block depending on the model. All the wirings are CE compliant, Call our tech support if you are not sure about how to wire any part of your inverter.

<p>Wiring Option 1</p> <p>230V single phase/120V single phase Input: Hot line+Neutral+Ground Output: Hot line+Neutral+Ground</p>	
<p>Wiring Option 2</p> <p>230V split phase Input: Hot line+ Hot line +Ground Output: Hot line+ Hot line +Neutral</p>	
<p>Wiring Option 3</p> <p>230V split phase Input: Hot line+ Hot line +Ground Output: Hot line +Neutral</p> <p>Remark: In such cases, each output hotline can only carry a max of half the rated capacity.</p>	

How It Works



Charging your Tetrapack Unit

CHARGE ME NOW: Before using or storing, plug your Tetrapack into the wall until it is fully charged. Keep your Terravan Tetrapack plugged in when not in use to ensure it is always ready. This will NOT cause harm to your battery. For more tips and tricks on keeping your battery healthy, see the BATTERIES 101 section

Charging from the Wall

Using the included 120VAC cable, connect your Terravan Tetrapack to a standard 120VAC outlet or shore power for a fast charge of up to 100A.

Charging from Solar

Connect up to 660W of solar power to the Terravan Tetrapack solar input and the internal MPPT charger will charge the Tetrapack up to 50A total charge.

Charging from Alternator

Connect the vehicles alternator/starter battery to the Alternator input of the Terravan Tetrapack. The Terravan Tetrapack works with both traditional and smart alternators and will automatically detect when the vehicle's alternator is running. No ignition wire required! Get up to 50A total charge from alternator.

Using your Tetrapack Unit

How to use your Terravan Tetrapack:

1. First switch the master switch to ON position
2. You'll know the unit is powered on when the LED status bar begins to illuminate green.
3. Plug in your gear for power anywhere life takes you.
4. If possible, keep your Tetrapack plugged into a power source when not in use.
5. You can charge your Tetrapack and run your gear at the same time.

Best-Use Strategy: When charging gear with your Terravan Tetrapack, take note of the LED STATUS BAR. If you plug in devices that have a high power requirement (a large ac unit), the charge level of your Terravan Tetrapack can drop very quickly and you may not get exactly 3000Wh of capacity. Also, especially when using the AC power output, the Terravan Tetrapack will be converting the energy from the DC power of the battery to the AC power needed by your device. Although your Tetrapack has a highly efficient inverter, there is still some energy lost in the conversion and you will not get the full rated capacity of the battery. If you're experiencing shorter runtimes, you may want to check the device's power requirements, see TROUBLESHOOTING for help.

Using your Tetrapack Unit

Cold Weather Usage:

Cold temperatures (below freezing) can impact the Tetrapack's battery capacity. If you'll be out living off-grid in sub-zero conditions, we recommend running the inverter and powering something while connected to a charge source. The natural heat generated by the Tetrapack will keep battery capacity at its highest. The Tetrapack also supports a built-in heater add-on for charging below freezing. The heater will be powered on when the following conditions are met:

1. Battery Temperature is below freezing (0C/32F)
2. A charge source is available

This smart algorithm prevents your Terravan Tetrapack from draining needlessly and also protects the batteries from charging below freezing which can cause irreversible damage to the cells.

LED Status Bar

The LED status bar is used to indicate the current state of charge (SOC) of the battery. It is also used to indicate when the device is in over-the-air update mode with a blue color. You can switch your Tetrapack LED bar to "Audio Mode" where it will react to audio coming from its surroundings such as reacting to music.

Storage and Downtime Maintenance

Having your Terravan Tetrapack connected to a power source, like a solar panel or wall plug, between adventures or while in storage keeps its battery healthy and topped off. This prolongs battery life and will ensure your Terravan Tetrapack is charged and ready to go all day, every day.

If you can't keep your Terravan Tetrapack plugged into a power source during storage, fully-charge your Terravan Tetrapack every 3 months and store it in a cool, dry place. If the Tetrapack has not been used for several months, it may require several charge cycles to restore accurate results on the battery percent and time remaining values on the mobile app. Failure to maintain your Terravan Tetrapack by following these steps can result in battery damage which will void the product warranty.

Technical Specifications

INVERTER CHARGER

Max Rated Power	3000W
Input Voltage AC (Charging)	120VAC
Input/Output Frequency	50/60 Hz. Adj.
Output Voltage	120VAC +/- 5%
Output Waveform	Pure Sine Wave
Peak Efficiency	>95%
Max DC Charging Current	90A

BATTERY SPECIFICATIONS

Chemistry	LifePo4
Nominal Voltage	12.8V
Capacity	230 Ah / 2.94 kWh
Protection	BMS + Fusing
Voltage Range	10V - 14.4V
Max Continuous Current / Power	200A / 2560W
Cycle Life	3500 Cycles

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	32°F - 131°F
Storage Temperature	32°F - 131°F
Humidity	5%-95%

ALTERNATOR CHARGER

Max Input/Output Power	660W/660W
Voltage Input Range	12V-16V
Max Charging Current	50A
Algorithm	Smart Isolator
Smart Alternator Support	Yes

MECHANICAL SPECIFICATIONS

Dimensions	28" x 11" x 11" (LWH)
Weight	75 lbs
Mounting Options	Floor/Wall Mount



SOLAR CHARGER

Max PV Input/Output Power	660W/660W
Max PV Charging Current	50A
Max PV Input Voltage	25V
MPPT Efficiency	97%

Frequently Asked Questions

My Tetrapack is not responding or is exhibiting odd behavior what should I do?

Try resetting the unit by switching off the master power and wait 5 seconds before powering back on. Check your Tetrapack to see if the issue is resolved after the reset.

My new Tetrapack does not initially charge to 100%, it only charges to 95% what's going on?

Cycle the battery a few times and the issue should resolve itself as the Tetrapack dials in its charge parameters.

Are there faster ways to recharge my Tetrapack?

Yes, check out our full list of charging options at terravansolar.com. Here we have options for fast charging.

There is a new version of Firmware available and I want to update my Tetrapack how do I do this?

Download the Terravan app from your favorite app store and follow the instructions there for an update to your Tetrapack.

Is Tetrapack Expandable?

Yes, we offer expansion battery packs. Visit terravansolar.com for more information on them.

Troubleshooting

If you are not receiving power from the output of your Terravan Tetrapack, follow these steps:

1. Ensure the master switch has been turned on. The LED strip should be lit up.
2. Check the LED strip. If it is below 10% and is lit up RED, charge your Terravan Tetrapack.
3. Check the LCD Display for warning icons:
 - OVERLOAD: Power draw exceeds port's maximum allowance. Indicated by red light in the port's button.
4. Verify your device is suitable for use with the Terravan Tetrapack:
 - a. All of the Terravan Tetrapack output ports have their own max power capacity. Check the Terravan Tetrapack's Tech Specs to ensure your device is compatible.
5. If you are still experiencing trouble with your Terravan Tetrapack, please call our Customer Solutions Center at 571-269-0609 or by email at support@terravansolar.com.

Education

BATTERIES 101: Terravan utilizes the latest and greatest in battery technology to accompany you on all life's adventures. From the versatile and lightweight Lithium Ion, to the robust and powerful Lead Acid, we've compiled some helpful tips to keep your Terravan batteries working their best.

i. **Batteries need exercise.** The best thing for any battery is to use it. Don't leave the battery sitting without being charged for extended periods of time. If you will be storing the Terravan Tetrapack without a charger, make sure it's fully charged before you put it away.

ii. **The "Battery Memory" myth.** Thanks to old Nickel-Cadmium (NiCd) batteries, there's a myth running around that you should completely drain your batteries before plugging them in for a recharge, called "deep cycling". Although true with NiCd batteries, the typical batteries you'll find in most of your gear today, including the advanced lithium and lead-acid batteries used in your Terravan rechargers, require no such draining. In fact, you should avoid deep cycling your batteries – it does more harm than good in most cases.

iii. **The "Stadium Effect".** The stadium effect occurs when recharging your batteries. You'll notice your battery quickly filling up in the beginning, then slowing down noticeably when trying to charge up the last several percentages. Think of how quickly a stadium fills up when the doors first open – there are hundreds of open seats so it's easy to find the one you want. Eventually there are only a few open seats here and there and people have to maneuver around to find the spot they want and filling those seats takes longer. The same theory applies to recharging batteries. It's easy for energy to flow in and take up empty space in the beginning, and as time goes on and there is less space available, it takes longer for the energy to fill in the holes.

iv. **Read the manual.** Yeah, it might be a long read, but the manual is the best place to find the dos and don'ts for the battery in your specific device. Reading your manual will ensure you're taking steps to keep your batteries happy and healthy.

SOLAR 101: Terravan makes it easy to recharge your gear from the sun – we didn't invent solar power, we perfected it. Some things to keep in mind when recharging your gear with solar power:

i. Solar panels don't store power from the sun, they collect it.

We teach you to COLLECT – STORE – USE, which is the best way to utilize solar power to recharge your gear. COLLECT the sun's energy with a solar panel. STORE the power in a recharger. USE the recharger to power your gear, day or night. If you're really a diehard, you can plug your gear directly into the junction box located on the back of our NOMAD Solar Panels to recharge from the sun.

ii. Not all solar charge times are created equal.

Most solar panel manufacturers calculate their recharge times with the following equation: $\text{Device Watt Hours} / \text{Solar Panel Watts} = \text{Solar Recharge Times}$. So theoretically, a 13 watt solar panel would recharge a 50 watt-hour recharger in 3.84 hours ($50/13 = 3.84$) – and this is the number you could find in marketing material for a solar panel. However, in order to standardize results across all manufacturers, these tests are completed in laboratory settings. The truth is, on a good, sunny day, you'll receive about 50-75% of your solar panel's rated wattage, and this is how the engineers at T calculate the solar recharge times you see on our packaging.

iii. Solar works, even in overcast conditions.

Solar panels utilize IR, UV, and visible rays from the sun that can penetrate through clouds. Although the efficiency of the solar panel will decrease in cloudy conditions, you'll still be collecting valuable power from the sun.

iv. Keep away from shade and windows.

Although you should seek out the shade on sunny days, your solar panels will collect more power when fully exposed to the sunlight. Windows also have a habit of decreasing efficiency. So keep those panels outside and in the bright sunlight.

v. Proper alignment works wonders.

Keeping your solar panel angled toward the sun can dramatically increase solar efficiency. Set it up and let Mother Nature do the rest.

Warranty and Contact

LIMITED WARRANTY

This LIMITED WARRANTY from AFL VENTURES LLC (“Terravan”) warrants to the original consumer purchaser that this Terravan product will be free from defects in workmanship and material under normal consumer use during the applicable warranty period identified in Paragraph 2, below, subject to the exclusions set forth in Paragraph 5, below. The foregoing provisions state Terravan’s entire liability, and your exclusive remedy, for any breach of warranty, express or implied. Terravan will not assume, nor authorize any person to assume for it, any other liability in connection with the sales of Terravan products.

WARRANTY PERIOD.

The warranty period for Terravan lithium battery based Tetrapack products is two (2) years. The warranty period for all other Terravan products and components is one (1) year from the date of original purchase by the original consumer. A sales receipt from the original consumer purchase, or other reasonable documentary proof, is required in order to establish the start of the warranty period. If you completed the online Terravan Product Registration Form within thirty (30) days after purchasing your product, that registration can also establish the start date of the warranty period (but warranty coverage is not conditioned upon such registration).

REMEDY

Terravan will, at its option, (1) repair the product at no charge, using new or refurbished replacement parts, or (2) exchange the product with a product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product. A replacement product/part assumes the remaining warranty of the original product or ninety (90) days from the date of replacement or repair, whichever provides longer coverage for you. When a product or part is exchanged, any replacement item becomes your property and the replaced item becomes Terravan’s property.

LIMITED TO ORIGINAL CONSUMER BUYER

This warranty is not transferable to any subsequent owner of a Terravan product

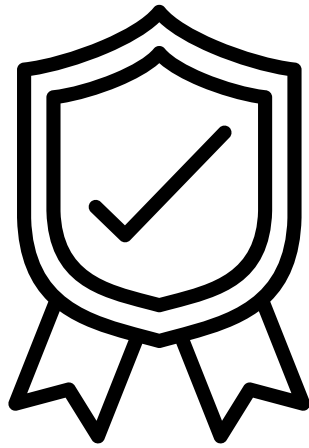
EXCLUSIONS

This Limited Warranty applies only to hardware products manufactured by or for T that can be identified by the "TERRAVAN" trademark, trade name, or logo affixed to them. The Limited Warranty does not apply to any non-TERRAVAN products, even if packaged or sold with TERRAVAN products. Non-TERRAVAN manufacturers, or suppliers may provide their own warranties. For consumers outside of the contiguous US 48 states, a one (1) year warranty period is enforced for lithium power stations and Boulder solar panels. Claims on lithium power stations and Boulder panels from consumers outside of the contiguous 48 states after the one (1) year warranty period will be handled on a case by case basis, in compliance with local regulatory standards.

This warranty does not apply to: (i) to damage caused by accident, abuse, misuse, misapplication, or non-TERRAVAN products; (ii) to damage caused by service performed by anyone other than TERRAVAN; (iii) to a product or a part that has been modified without the written permission of TERRAVAN; (iv) to a product where any TERRAVAN serial number has been removed or defaced, or (v) to any product purchased through an online auction house. This limited warranty does not apply to any battery cell or product containing a battery cell unless the battery cell has been fully charged by you within seven (7) days after your purchase of the product and at least once every 6 months thereafter.

THIS WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. TERRAVAN SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IF TERRAVAN CANNOT LAWFULLY DISCLAIM IMPLIED WARRANTIES UNDER THIS LIMITED WARRANTY, ALL SUCH WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. No TERRAVAN reseller, agent, or employee is authorized to make any modification, extension, or addition to this warranty. IN NO EVENT WILL TERRAVAN BE LIABLE FOR ANY DIRECT, SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES ARISING FROM ANY USE OR MALFUNCTION OF ANY TERRAVAN PRODUCT, OR FROM ANY BREACH OF WARRANTY, INCLUDING DAMAGE TO OTHER DEVICES. IN NO EVENT WILL TERRAVAN'S LIABILITY FOR ANY CLAIM, WHETHER IN CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY), OR UNDER ANY OTHER THEORY OF LIABILITY, EXCEED THE AMOUNT PAID BY YOU FOR THE TERRAVAN PRODUCT. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

OBTAINING WARRANTY SERVICE To obtain warranty service, you must contact our customer service team via telephone at (571) 269-0609, or via email at support@terravansolar.com. If our customer service team determines that this is a warranty matter, they will give you a Return Material Authorization ("RMA") number. You must properly package the product, clearly marking the RMA number on the package and including proof of your purchase date with the product. You must then send the product by mail or courier, with shipping costs paid by you, to Terravan at 235 E Broadway, Long Beach CA 90802. We will process your return and send your repaired or replacement product to you at our expense for product being shipped to locations in North America. For product purchased or being shipped outside of North America, please contact the local distributor from whom you purchased the product, or email support@terravansolar.com to obtain further distributor information.



1 YEAR WARRANTY

WE HOPE
YOU HAVE
AN AMAZING
ADVENTURE!

TERRAVAN

