

PORTAMAXPOWER™

Solar Sentinel 2400™

*Specifically
Designed with
Simplicity in
Mind*



Users Manual

Here we will tell you everything you need to know about your new PortaMaxPower Solar Sentinel 2400™. We know you won't be disappointed by our reliable, sustainable, superior, solar generator. Our Sentinel boasts a true sustainability that is far beyond what our competition can offer. The Solar Sentinel™ will fully charge while in use, so you can keep the party going or feel safe relying on a power source that's there when you need it most. It is designed for indoor use, so you can leave the maintenance, mess, and dangerous fumes to the other guys. Continue reading to find out why you'll keep loving your new PortaMaxPower Solar Sentinel 2400™.

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Don't forget to read the maintenance and warranty information.

The Solar Sentinel 2400™ is designed with simplicity in mind. We care about your experience and feedback. If you have any questions that are not addressed in this manual, in the guide, or on our website, please use the links below to contact us. We want you to love and enjoy the Sentinel as much as we do and we are dedicated to making that possible.

[Contact PortaMaxPower™](#)

Glossary of Terms



*Visual
References on
next page*

These definitions are to clarify terms used in the following manual. They are defined based upon their usage in reference to and in description of the PortaMax Power Solar Sentinel 2400™.

- › AC IN - Breaker which allows alternate current to flow from another power source into your Sentinel.
- › AC OUT - Breaker which allows alternate current to flow from your Sentinel to your device.
- › Amperage - The rate of electrical flow.
- › Alternating Current/AC - An electrical current that alternates directional flow at a steady rate. This type of current comes from the battery of your unit into the outlets on your Sentinel.
- › Battery Cycles/Life Cycle - The number of times a battery can be used from 100% charged to 0% charged. When you use the battery and do not use the full charge, before recharging, that is not considered a full cycle. For instance, if you use 60% battery, then charge it back up to 100%, it will not be considered a full cycle until you use the other 40%.
- › Black PV extension cable (50ft) - Black extension cable that connects to the black MC4 connector cables coming from the face of your Sentinel and to the black MC4 connectors that come from your solar panels.
- › Continuous Output - The power that runs from your unit to your device.
- › Device - For purposes in this manual, this is anything that you plug into the AC outlets on the faceplate of your Sentinel.
- › Direct Current/DC - An electrical current flowing in one direction. This type of current comes from your solar panels and is sent to your battery.
- › Display - The digital display on the faceplate of your Sentinel.
- › Frequency - The rate at which your alternating current moves. U.S. standard is 60hz.
- › Load - Load is the amount of power that is pulling from your unit.
- › MC4 connector - The connecting pieces on the cords that protrude from the face of your Sentinel unit, from your solar extension cable, and the two cables that are attached to your PortaMaxPower™ solar panels. There are both male and female MC4 connectors.
- › Outlet - The standard AC power outlets on the faceplate of your Sentinel or from a grid power source.
- › Overload - When the power being pulled from your Sentinel is more than the battery is equipped for. If an overload occurs, your Sentinel will automatically shut off to avoid damage to your unit.
- › Retractor Slide - Small black slide on the backside of your unit. Pushing this slide to the right releases the telescopic handle to retract.
- › Self-Sustainable - A system that maintains itself by independent effort.
- › Sentinel - PortaMaxPower™ Solar Sentinel 2400™
- › Solar Hour - For purposes in this manual, the amount of optimal direct sunlight that can be absorbed in an hour, according to your location and your solar panels' location.
- › SOLAR IN - The input breaker on the faceplate of your Sentinel that allows direct current to flow from your PortaMaxPower™ Solar panels into your Sentinel to charge the battery.
- › Surge Output - The initial wattage output needed to start a large motor (e.g. a refrigerator motor) The Sentinel has a surge output max of 6,000 watts.
- › Sustainable - Capable of being maintained at a steady level.
- › Unit - Term that will be used in this manual to refer to your PortaMaxPower Solar Sentinel 2400™ only. This term does not include the solar panels and yellow and black connector cables.
- › Voltage - The force or 'push' that makes electrical charges move. The U.S. standard is 120v.
- › Wattage - Amount of electrical power.
- › Yellow PMP extension cable (25ft) - Yellow cable that connects from the male outlet port on the faceplate of your Sentinel to a wall outlet. This cable allows you to charge your Sentinel from a grid power source.

Visual References



*Silent
Safe
Sustainable*

› Sentinel –



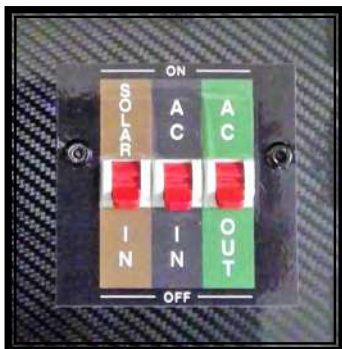
› Unit –



› MC4 connector –



› AC IN/AC OUT /SOLAR IN –



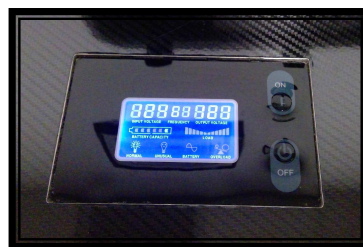
› Yellow PMP Extension cable –



› Black PV solar extension cable –



› Digital Display –



› Retractor slide –





Package Contents

The Solar Sentinel 2400™ will be your light in the night when your power runs low.

Your Solar Sentinel 2400™ package comes with everything you need to run and sustain your power needs. Every piece that comes with your unit is specifically designed to function together to give optimal results. The proprietary design takes out all the guess work and adjustments, so you can enjoy clean, sustainable power without the hassle.

Every PortaMaxPower Solar Sentinel 2400™ package includes the following contents:

- › One Pelican Storm iM2975 case



- › Three 330 watt PortaMaxPower™ Solar Panels – Folding 36x36 (when folded) (14lbs) or Flexible 36x74 (11lbs)



- › One 50ft PV Solar Cable



- › One 25ft PMP Extension Cable



- › One PMP Cabling Case



- › One Pelican Lid Organizer



Case and Hardware



Your Sentinel will support and run refrigerators, TVs, blenders, laptops, coffee makers and much more!

Your Solar Sentinel 2400™ comes standard with a Pelican Storm iM2975 case. Your LiFePO4 battery and internal components come shock-mounted in your Pelican Storm iM2975 case, with an aircraft-grade aluminum chassis. Every component of the PortaMaxPower Solar Sentinel 2400™ is hand picked by our designer with your needs for dependable power at the heart of each decision.

> Pelican Storm iM2975 case

- ▶ Press and Pull latches make opening and closing easy.
- ▶ Water-tight design with O-ring to keep water out when case is closed and latched.
- ▶ When latched properly, this case will float.
- ▶ Rubberized soft grip handles for comfort when moving.
- ▶ Telescopic handle and in-line wheels for easy movement on hard surfaces.
- ▶ 29"x18"x13.8"
- ▶ When your case gets dirty, do not clean with any solvent. Mild soap, warm water, and a rag are recommended for cleaning.



> LiFePO4 Battery

- ▶ Ultra safe.
- ▶ High power to weight ratio.
- ▶ Proprietary Design for maximum power and efficiency.
- ▶ 24V 100ah Lithium battery.
- ▶ Guaranteed for 2000 Life cycles, but most will operate for 10,000+ life cycles.
- ▶ Most batteries are made to operate efficiently above freezing (32°F or 0°C). Please keep your battery above freezing for optimum operation.

> Inverter/Charger

- ▶ Proprietary designed hybrid inverter/charger.
- ▶ Preset factory settings for maximum efficiency for AC/grid charging and Maximum Power Point Tracking (MPPT) solar charging.
- ▶ 2.5kva Solar Sentinel 2400 provides 2,000 watts of continuous Pure Sine Wave AC power that will reliably operate anything you can plug into a standard outlet.
- ▶ Surge capability of 6,000 watts.

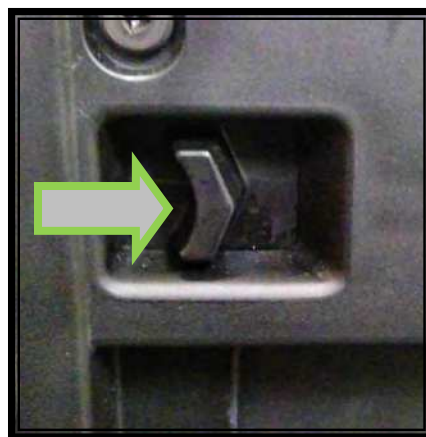
Turning On



The first thing you need to do when you get your Sentinel is charge it fully.

When turning on your Sentinel, make sure there are no devices plugged into the outlets on the faceplate. Ensure the “SOLAR IN”, “AC OUT”, and “AC IN” are in the “OFF” position. You should determine where you will place your Sentinel before you turn it on. Consider how to safely position your solar panels, what will shield your unit from direct sunlight, and how far your power cables will reach. If your Sentinel is brand new and it’s your first time firing it up, please charge fully before first use.

1. To retract the handle, locate the slide on the back of the case below and to the right of the handle. Then push the slide to the right and push down on the top of the handle.



2. Position the Sentinel horizontally, with the main row of latches turned toward you.



3. Depress the “Press” button on each latch to release the bottom of the latches and lift to open the Pelican Case and expose the face of the unit.



Ensure red “SOLAR IN”, “AC IN”, and “AC OUT” breakers are in the “OFF” position.

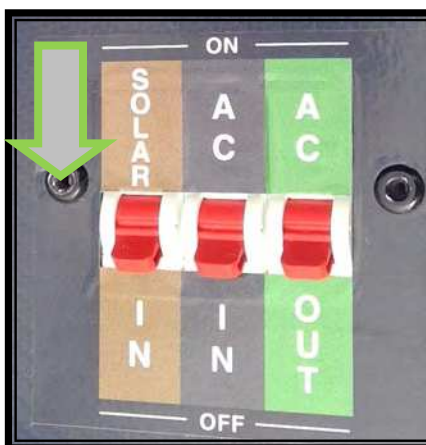
4. Press and hold down the “ON” button, to the right of your digital display, for 3 seconds.



It will take the Sentinel 5 seconds to display accurate readings.



As you turn on your unit, it will beep three times, then three times again. This is the unit running a self-test to ensure all internal components are in proper working condition.



Reading the Display



The readings indicated in these pictures do not reflect the actual readings on your display.

1. The “**ON**” button is located at the top right corner next to your digital display.

Please refer to [TURNING ON](#).



2. The “**OFF**” button is located at the bottom right corner next to your digital display.

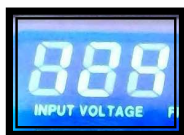
Please refer to [TURNING OFF](#).



3. The “**INPUT VOLTAGE**” at the top left corner of your display will indicate how many volts are entering your Sentinel when it is charging from a grid power source or your AC outlet.

If you are charging from solar, the “INPUT VOLTAGE” will still read “000”.

Your green charging light will turn on to indicate solar charging.



4. The “**FREQUENCY**” indicator is directly to the right of the “INPUT VOLTAGE”.

It should read 60.
This is U.S. standard.



5. The “**OUTPUT VOLTAGE**” indicator is located in the top right corner of your display. It can read a range from 118 to 124.

Note that the fluctuation is normal. Your standard AC outlet at home fluctuates similarly.



6. The “**BATTERY CAPACITY**” indicator is located at the middle of your display, on the left side. It has six charge indicator boxes within the battery shape.

These boxes will light up right to left, one at a time, when charging from a grid or outlet power source. All 6 will light up when battery is done charging and the unit has automatically turned off charging.

When your unit is fully charged, all 6 of the charge indicator boxes will be lit.

As you use your Sentinel and the battery charge is used, the boxes will become dark, one by one, indicating the remaining battery charge.



Reading the Display



[Check out our Solar Sentinel 2400™ vs The Competition comparison chart.](#)

7. The “**LOAD**” indicator is located at the middle of your display, on the right side. The load indicator will show you how much power you are pulling from the AC outlets on your Sentinel. As you plug in devices to the AC outlets, the “LOAD” indicator will light up, starting with the 2 smallest of the 6 tiles in the center of the indicator. The more devices you plug in, the more power you pull from your Sentinel. The more power you pull, the larger the load becomes. As your load increases, the tiles will light up from the inside to outside equally on both sides.

▶ If you overload your Sentinel, the “LOAD” indicator will become fully lit, and the “OVERLOAD” indicator will turn on directly beneath the “LOAD” indicator.

▶ Please note that if the Sentinel is too overloaded, it will automatically cut off as a safety feature. YOUR UNIT HAS NOT BEEN HARMED AND IS READY TO USE AGAIN.



8. The “**NORMAL**” indicator is located at the bottom left corner of your display. The “NORMAL” indicator will light up when plugged into your grid power source or AC outlet.



9. The “**UNUSUAL**” indicator is located to the right of the “NORMAL” indicator at the bottom of your display.



If the indicator comes on, contact PortaMaxPower™ immediately.



Please Note: If you are using PortaMaxPower™ equipment, this indicator should not appear. Use of other equipment voids your warranty.



10. The “**BATTERY**” indicator is located to the right of the “UNUSUAL” indicator at the bottom of the display. The “BATTERY” indicator will light up when the battery is in use and will turn off when the battery is charging.



11. The “**OVERLOAD**” indicator is located at the bottom right corner of your display. The “OVERLOAD” indicator will light up when the battery is starting to overload and is still trying to run the unit.



When the “OVERLOAD” indicator comes on:

- Turn the devices that are plugged in to the unit to the “OFF” position.
- Flip all breakers to the “OFF” position.
- Unplug any charging cables that may be plugged into the unit (grid cable or solar cable) and any devices.
- Once everything is unplugged from the Sentinel and the breakers are all in the “OFF” position, hold down the “ON” button for 3 seconds. You will then hear the two sets of 3 self-test beeps and the Sentinel is ready to use again.
- Please ensure that you prioritize the use of devices on your Sentinel to avoid overloading.



Using the Sentinel



*The Solar
Sentinel 2400™
puts out 2,400
watts per hour!*

When using your Sentinel, there are some best practices that we recommend to ensure you get the best use and power out of your generator. The order of operations laid out in this manual, should be followed with every use. As always, when any device is plugged into your unit, it should be in the “OFF” position. This ensures your safety and the maximum longevity of your Sentinel. The faceplate of your Sentinel is not made to support human weight or to be waterproof. Only when your Pelican Storm iM2975 case is closed and latched properly will your unit be water-proof.

1. Wheel your Sentinel to the desired position.



Ensure that your unit is protected from moisture and direct sunlight.

2. To retract handle, locate the slide on the back of the case below and to the right of the handle. Then push the slide to the right and push down the top of the handle.

3. Position the Sentinel horizontally, with the main row of latches turned toward you.

4. Open and turn on your Sentinel.



See [TURNING ON](#)

Verify that all the breakers on the unit are in the “OFF” position.

5. Plug your device into one of the outlets supplied on the faceplate of your unit.



Use the same best practice as you would at home by verifying that your devices are in the “OFF” position before plugging into your unit.

6. Flip the red “AC OUT” breaker to the “ON” position.

7. Turn your device to the “ON” position.

8. Use your device.



Keep the lid to your Sentinel open while in use. This is necessary for ventilation.



Charging



Use your Sentinel while it is charging; It will still charge to max capacity.

Charging from a grid power source will usually mean plugging your Sentinel into the wall outlet of your house or a building that is connected to the electrical grid. DO NOT deep cycle your battery. This means letting the battery die completely, then charging it back to capacity. The LiFePO4 battery works best when it keeps a charge. It is always best practice to recharge your Sentinel fully after each adventure and prior to storage.

AC/Grid Charging


1. Open your Pelican Case and ensure all breakers are in the "OFF" position.
2. Locate your Yellow PMP extension cable.
3. Plug the female end of the yellow PMP extension cable into the male connection located on the face of your Sentinel.



4. Plug the male end of your yellow PMP extension cable into an AC outlet or grid power source.

5. Turn on your Sentinel.

See [TURNING ON](#).

6. Flip the red "AC IN" breakers to the "ON" position.  The small, green "CHARGING" light will turn on when unit is charging and turn off when unit has reached charge capacity.

7. The digital display will show the level of charge.

8. The battery indicator on the display screen will light up the small boxes within the battery indicator display, one by one from right to left, until the battery is fully charged.



9. Once it is fully charged your unit will automatically stop charging and the battery indicator will have all 6 boxes lit.



Charging



Placement of paneling is critical.

[See Positioning Solar Panels](#)

There are two different ways to charge your Sentinel. First we will tell you how to charge your Sentinel with your solar panels. Our hybrid inverter/charger is specifically designed to work at maximum efficiency when used with PortaMaxPower™ solar panels. For any clarification of terms, please see the [Glossary](#) or [Visual References](#).

Solar Charging

1. Open your Pelican Case.
2. Turn on your Sentinel.
[SEE TURNING ON](#)
3. Make sure that all breakers are in the "OFF" position.
4. Place your panels in an area with the most direct sunlight to receive the maximum amount of solar hours. (On top of your truck, trailer, boat, shelter, hanging off your porch etc.)



Your hours will vary depending on your location, panel placement, and the amount of direct sunlight available.

5. Locate the black PV solar extension cable with the connectors to your solar paneling (MC4).



If you have Folding Panels, keep your Folding panels folded until you have all connections completed and are ready to use.

7. Connect the end of the black PV solar extension cable with 3 MC4 male and 3 MC4 female connectors to the MC4 connectors coming from your solar panels.



Please note that only one female connector and one male connector will connect to each of your solar panels. Since PortaMaxPower™ recommends using 3 solar panels, you are provided with enough MC4 connectors for those panels.



If you are using the Folding panels, your MC4 connectors are located inside the pocket on the outside of your panels.



8. Run the black PV solar extension cable with the MC4 connectors to your unit.
9. Connect the two black solar input cables (MC4) coming from the face of the unit, (1) male and (1) female, into their corresponding partners (male to female) on the black solar extension cable.



Ensure that the connection is with the end of the cable that has only one pair of MC4 connectors and that the MC4 connectors lock into place. You will hear a click when they are locked.



10. Flip the red "SOLAR IN" breaker to the "ON" position.
11. The small, green "CHARGING" light will turn on after 5 to 10 seconds. This indicates the unit is charging.



When charging with solar, the VOLTAGE INPUT will not read in the display. The green charging light will turn off when unit has reached capacity.



12. The digital display will show the level of charge. When the charge is full, 6 blocks will be lit on the battery indicator on your digital display.

Positioning Panels



*See a video on
how to
position your
solar panels.*

The position of your solar panels, your position geographically and topographically, and the time of day and year all affect the average number of Solar Hours you get a day. This constantly changes, so for our general purposes we have some guidelines about how to position your solar panels to get maximum absorption and to keep your panels safe and in working order. For more guided, specific instruction we offer a helpful video.

How it Works:

- › Direct Normal Irradiance is measured with a device that lays perpendicular to the ground, like a solar panel. It measures how much direct solar energy is hitting the surface of the earth in watts per meter². The solar panel absorbs this irradiance, converts it to Direct Current and our inverter turns it into Alternating Current that you can use.
- › The definition for a Solar Hour is, “an hour when the intensity of the sunlight is 1,000 watts per square meter”. The National Renewable Energy Laboratory provides a map of the United states with the average number of solar hours. <https://www.nrel.gov/gis/solar.html>

Some Easy Tips:

- › If you are in the Northern Hemisphere, as a standard rule, your panels should always face the south.



Solar power is stronger closer to the equator since that is where the earth is closest to the sun. If you are in the Southern Hemisphere, you would face your solar panels to the North.

- › Research suggests that adjusting your panels more toward the East in the morning, to catch the rising sun, and West in the evening, to catch the setting sun, could also increase your power production. This applies to the northern hemisphere. It is the opposite for the southern hemisphere.
- › Always place your solar panels in the area that will receive the most direct sunlight throughout the entire day.

- › Always consider the best position to secure your panels out of harm or accident's way.



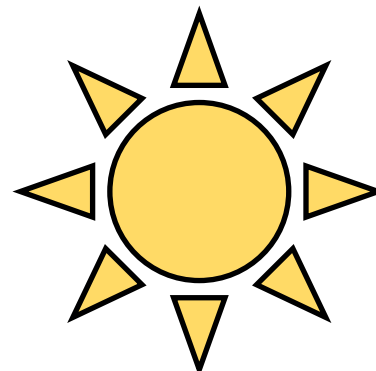
Our solar panels, flexible and foldable, come standard with durable metal rings for easy attachment or hanging.



- › Our panels will still produce on a cloudy day. The power input from the panels on a cloudy day will vary and not be the same as a day with full sun.
- › The amount of time your battery charge lasts varies depending on the amount of sunlight available, initial charge on the unit, and how much power is being pulled from the generator. Typically the battery of the Sentinel will charge fully in a single day, when the Sentinel is used as recommended.



Starting with a full charge, using your Sentinel overnight (12 hours) typically leaves the remaining battery at about 20%.



Removing Panels



Max solar input is 990+ watts, while the other guys lag behind at 360 watts.

Your solar panels connectors/MC4s lock into place when they are attached to the cables from the unit and to the paneling. This is to make sure you don't lose power and no mistakes are made when you may need power most. We provide you with a special tool to make disconnection simple. While your solar panels are durable and light, the cells within can be fragile. Please use care.



Removing Solar Panels

1. Switch the "SOLAR IN" breaker to the "OFF" position.
2. Carefully remove your solar panels from their positions. Store panels in a safe place.

▶ Do not place anything on top of your folding or flexible panels.



3. Locate your disconnecter tool.



4. Slide the two-pronged end of the tool over the grooves on your MC4 connector until there is no excess room between the connector and the inside of the prongs.

▶ It will be a tight fit. That is how the locking mechanism becomes depressed so you can slide apart the male and female MC4 connectors.



5. Leave the disconnecter tool in place, grab both sides of the MCA connection, and pull in opposite directions.



6. Repeat steps 4 and 5 for every MC4 connector that you need disconnected.
7. Carefully store your solar panel extension cable in your PortaMaxPower™ cabling case till the next time you need it.
8. Place your MC4 connector cables that come from the unit back into their rubberized holders on the faceplate.



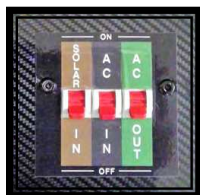
9. Store your solar panels in a safe place. Do not put any weight on top of your panels and treat them with care. The panels themselves are durable, but the cells inside can be fragile.

Turning Off



Once you are done using your Sentinel, go ahead and charge it back to full. If you need to run, charge it when you get home. It's always better to have your back up power ready to go. Storage and maintenance for your Sentinel is practically nonexistent. Follow a few simple steps and you'll be prepared for the next time you need the Solar Sentinel.

1. Turn any devices that are connected to the unit to the "OFF" position, then unplug the devices.
2. Flip the "SOLAR IN", "AC IN", and "AC OUT" breakers to the "OFF" position.



3. Disconnect any cables connected to the unit.



Store cables, connectors, tools, and panels in their designated places.

4. Hold down the OFF button for 3 seconds.
5. Close and latch the lid of your Pelican Case.
6. Store as recommended.

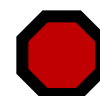
If you ever have questions or concerns, please contact us at

[PortaMax Power™](http://PortaMaxPower.com)

Storage:

- › Always charge your Sentinel fully before storage.
- › Make sure the press and pull latches are down and secured to the bottom lip of the unit.
- › Store unit in a cool, dry place out of direct sunlight.
- › Store solar panels in a safe, dry place. Do not store anything on top of your solar panels.
- › Store PV extensions cable and your PMP extension cable in your PMP carrying case.

Maintenance:



- › Use at least once every six months.
- › Fully recharge your unit after every use.
- › Always turn on, turn off, charge, and use your Sentinel the recommended way. This will maintain your battery's integrity and keep your warranty valid.
- › Wipe interior with dry cloth.
- › Never allow the temperature of your battery to fall below 32°F or 0°C.

Warranty



Our PortaMaxPower Solar Sentinel 2400™ is made to last. Through every camping trip, football game, and power outage the Sentinel will do the job! Our reliable, sustainable, and efficient solar generator will continue to provide you power for years to come. We believe in our product and we know you will too. That's why we offer a 3-year limited warranty for each Solar Sentinel 2400™ unit.

What does my warranty include?

- › PortaMaxPower™ warrants that our product will be free of workmanship and material defects for a period of 3 years from date of purchase to the original owner or purchaser. This warranty cannot be transferred. If your Sentinel warranty is not registered with PortaMaxPower™, the warranty will not be valid. The warranty must be registered within a week of purchase.
- › The LiFePO4 battery is covered under the warranty if the it has been properly maintained. This means following all guidelines and operational instructions that come with your unit.
- › The warranty is void if non-PortaMaxPower™ solar panels, PMP cabling, PV cabling, or other hardware is used with the Sentinel.
- › The warranty is void if product has been modified, misused, or damaged by accident or abuse.
- › The Commercial or Government Agency warranty is valid for one year from the purchase and registration date.



If you have any questions about your, product, warranty, components, or us in general, please contact us.

[EMAIL US](#)

REGISTER
YOUR
WARRANTY
NOW!

Reminders:

- › Always charge your Sentinel fully before storage.
- › Make sure the press and pull latches are down and secured to the bottom lip of the unit.
- › Store unit in a cool, dry place out of direct sunlight.
- › Store solar panels in a safe, dry place. Do not store anything on top of your solar panels.



Battery Guidelines:

- › Use at least once every six months.
- › Fully recharge your unit after every use.
- › Always turn on, turn off, charge, and use your Sentinel the recommended way. This will maintain your battery's integrity and keep your warranty valid.
- › Never allow the temperature of your battery to fall below 32°F or 0°C.
- › Never place liquids on your faceplate. If liquids get into the cooling vents on your Sentinel, your warranty will be voided.