



INERGY

APEX USER MANUAL

#POWERFORLIFE

NOTES

FAQ

Q: How much does the Apex weigh?

A: The Apex weighs 25 pounds total.

Q: What type of AC Inverter is built into the Apex?

A: 1,500 Watt Pure Sine Wave. Maximum starting surge of 3,000 Watts.

Q: What is the expected lifespan of the Apex battery?

A: Up to 2,000 cycles or 10 years if the battery is well maintained.

Q: What is the warranty for the Apex?

A: The warranty is one year limited.

Q: Is the internal lithium battery user replaceable?

A: No. Any battery service must be rendered by Inergy.

Q: How long will the battery hold its charge?

A: Up to a full year, however; we recommend checking the battery level every 3 months to ensure it is over 10% charged.

Q: Can I use the Apex while it is charging?

A: Yes. It's capable of outputting power while charging.

Q: Can I fly on an airplane with the Apex, or ship it myself?

A: No. The Apex cannot be carried on or checked onto passenger aircraft. Similarly, due to the size of the internal lithium battery, shipping the Apex needs to be facilitated by a hazmat certified shipper ONLY.

Q: Can I connect lithium ion batteries to the Apex?

A: ONLY lithium batteries supplied by Inergy should be connected to the Apex.

Q: The LCD is still on, but I'm no longer getting power from the Apex - Why?

A: The Apex is equipped with resettable circuit breakers on the side of the unit to prevent damage. In the event power output maximums are exceeded, one of these breakers will pop and turn off that portion of the Apex. Simply reset the breaker by allowing it to cool for several minutes, then push it back into place. Reduce the power demand on the Apex, and you're good to go!

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CHARGING YOUR APEX

The Apex has two ports for charging. Only connect one charge source at a time, connecting two simultaneously will damage your Apex and may be dangerous.

•**Port 1:** Low current charge input for use with the included Energy Standard Wall Charger or Apex Car Charger **ONLY**.

DO NOT USE FOR SOLAR CHARGING. Both the Standard Wall Charger and Apex Car Charger have a small LED light on the power supply that will turn red when the system is charging. Once the light turns green, the system is fully charged. Another way to verify the system is charging is by turning the Power Switch to DC ONLY mode (see page 3 for more information). The LCD should display **CHG** in the top middle to indicate the system is charging, and the Wattage figure on the top right will display the charge rate in Watts.

•**Port 2:** High current charge input for use with the Apex Quick Wall charger and Energy solar panels.

MAXIMUM INPUT: UP TO 500 WATTS, NOT TO EXCEED 26 VOLTS DC (OPEN CIRCUIT, ABBREVIATED AS VOC) or 30 AMPS. When a charge source is connected to Port 2, the blue charge indicator LED will illuminate to indicate the system is charging. Another way to verify the system is charging is by turning the Power Switch to DC ONLY mode (see page 3 for more information). The LCD should display CHG in the top middle to indicate the system is charging, and the Wattage figure on the top right will display the charge rate in Watts.

Charging with Solar Panel(s)

Charge times vary depending on solar panels used, sun conditions, and angle of panel(s) relative to the sun. If using third-party panels not supplied by Energy, always connect panels in a **PARALLEL** wiring configuration—**not a SERIES wiring configuration**. See PAGE 8 “Solar Energy General Guidelines.”

Charging with Standard or Quick Wall Charger

-The provided **Standard Wall Charger** is a 100 Watt charge source, taking approximately 11 hours to fully recharge a completely discharged battery. Connect to Port 1.

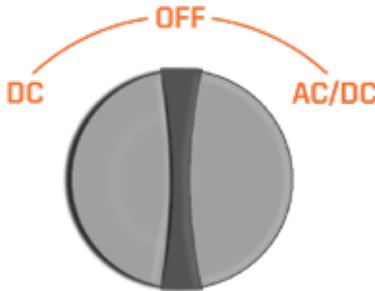
-The **Quick Wall Charger** is a 189 Watt charge source, taking approximately 6 hours to fully recharge the Apex. Connect to Port 2.

Charging with Car Charger

Using a vehicle's 12V DC socket charges the Apex at up to 113 Watts, taking approximately 10-11 hours to fully recharge. Connect car charger to Port 1.

USING YOUR APEX

The Apex has a 3-position power switch that allows only specific output ports to be activated based on your needs. The Apex can be charged with the 3-position power switch in any position. See the illustration and descriptions below for more information:



LEFT POSITION: All DC ports (12V DC sockets, Basecamp LED Light ports, and the USB ports) on, otherwise referred to as DC ONLY mode. This will also activate the LCD Display.

MIDDLE POSITION: All output ports off, otherwise referred to as OFF mode.

RIGHT POSITION: All AC & DC ports on, otherwise referred to as ALL ON mode. This will also activate the LCD display.

Powering Your Gear

- Simply plug in your devices and turn on the power switch by following the guide above! Lithium batteries, like EVERY kind of battery, are affected by how quickly they are both charged and discharged. The faster the battery is discharged, the less overall battery capacity you are able to access—and the fewer life cycles. It's like driving on the highway. Driving at 65 mph will give you much better gas mileage than driving at 90 mph. By driving slower, you're able to go farther on one tank of gas, and your car won't wear out as fast! Batteries operate the same way.

- Many manufacturers simply state that under heavy use you may not get the full battery capacity. A 550 Watt discharge rate will allow you to more fully access the peak 1,100 Watt hour capacity and will also help your battery last longer—up to 2,000 cycles. Remember—discharging your battery at the fastest possible rate is like driving your car at the fastest possible speed; it will wear out faster. The Apex battery can deliver up to 1,700 Watts of power (1,500 Watts AC plus 200 Watts DC), but . . . by sticking to lower rates on a regular basis you can maximize battery capacity and enjoy a longer lifespan!

- When using large amounts of AC power at lower battery levels, the inverter may turn off earlier than normal with useable battery capacity still available. Try reducing the amount of power being used via AC. DC power may still be available, but more battery capacity is needed to power the inverter (AC outlets). Often the last 10 - 20% of the battery is only available via DC.

- For safety, we have equipped the Apex with 3 resettable circuit breakers on the side of the unit to prevent exceeding the maximum output rating for the various outputs. If the LCD remains on, but power is no longer available from the Apex—it is possible one of the circuit breakers opened. In the event that power output maximums are exceeded, one of these breakers will open by popping outward and turn off power output to the portion of the Apex that was under stress. They are labeled as AC, DC 1, and DC 2. Simply reset the breaker by allowing it to cool for several minutes, then press it back into place. Reduce the power demand on the Apex, and you're good to go!

Reading the LCD Display

• The LCD Display is activated by the power switch in both DC mode (DC ONLY) or AC/DC mode (ALL ON). A **fully charged** Apex will be between 12.3 - 12.6 Volts. A completely **discharged** Apex will be between 9.3 - 9.6 Volts. The LCD Display is used for determining battery capacity, how much power is being used (power output), and how much power is coming into the Apex (charge input).

NOTE: Very small power outputs (< 25 Watts) may not register on the LCD on Section E, but remaining battery capacity percentage will be accurately reflected. See the illustration and descriptions below for more information:

HOW TO READ THE LCD DISPLAY



- A** Percentage of Battery Capacity Remaining
- B** Battery Level Icon
- C** Displays net combination of Power INPUT and Power OUTPUT.
CHG = Charging DIS=Discharging
- D** Arrow to the RIGHT indicates DISCHARGING
Arrow to the LEFT indicates CHARGING
- E** Displays net combination of Power INPUT and Power OUTPUT in Watts.
- F** Displays Battery Voltage

Safety Mode

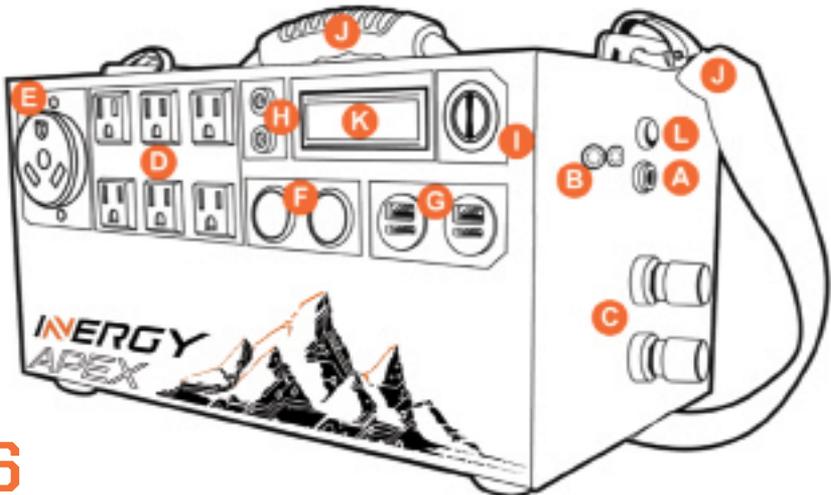
• Sometimes following transport, heavy use, or extended storage, the Apex will go into Safety Mode. During Safety Mode, the Apex **will not** turn on with the Power Switch. To take the system out of Safety Mode, simply connect a charge source to either Charge Input and leave it in for approximately 10 - 15 seconds. This should restart the system. If the battery is depleted from long-term storage at a low battery level, the charge source may need to remain connected for several minutes before the system will turn on again.

Storing the Apex

• The Apex will retain a charge for up to a full year, but we recommend you check the battery level every 3 months to ensure it is not below 10%. **Never leave the Apex in environments exceeding 140°F** (like a hot vehicle), or in damp environments.

PRO TIP: Storing the Apex at half charge ensures the longest battery life. See page 15 (Important Notice Regarding Lithium Batteries) for more information about storing the Apex.

APEX INFOGRAPHIC



APEX INFOGRAPHIC KEY

(A) Charge Port 1: Low current charge input for use with the included Inergy Standard Wall Charger or Apex Car Charger ONLY. DO NOT USE FOR SOLAR CHARGING.

(B) Charge Port 2: High current charge input for use with the Inergy Apex Quick Wall charger and Inergy solar panels. MAXIMUM INPUT: UP TO 500 WATTS, NOT TO EXCEED 26 VOLTS DC (OPEN CIRCUIT VOLTAGE, ABBREVIATED AS VOC) or 30 AMPS.

(C) External Battery Bank Connection: Battery posts for use with connecting external batteries. For use with Lead Acid, AGM, Gel Cell or INERGY LITHIUM 12 Volt Batteries ONLY. NEVER CONNECT A CHARGE SOURCE TO ANY CONNECTED EXTERNAL BATTERIES. See page 12 (External Battery Guidelines) for more information. Connector Type: Ring Terminals.

(D) 110V AC Outlets: 1,000 Watts (10 Amps) maximum output per outlet. 1,500 Watts combined total output from all outlets, 3,000 Watt starting maximum surge.

(E) RV Plug: Outlet for connecting to RV shore power cord. 1,500 Watt maximum output (12.5 Amps), 3,000 Watt starting surge maximum. Connector Type: Nema TT-30R.

(F) 12V DC Sockets: 180 Watts (15 Amps) maximum output per socket.

(G) USB Ports: USB-C PD: 5V 3A / 9V 2A / 12V 1.5A; USB-A QC 3.0: 5V 3A / 9V 2A / 12V 1.5A. NOTE: For full quick-charge or power delivery performance, the Apex battery must be charged over 12 Volts.

(H) Basecamp LED Light Ports: 12V DC output. Connect up to 10 Basecamp LED Lights chained together per port.

(I) Power Switch: 3 Position rotary switch: DC (DC ONLY MODE), ALL OFF, AC/DC (ALL ON MODE)

(J) Carrying Handle & Shoulder Strap

(K) LCD Display: Turns on with power switch in either “on” position.

(L) High Current Charge Indicator Light: Illuminates when a high current charge source is connected to Port 2 (see above).

APEX SPECIFICATIONS

General Specifications

- **Weight:** 25 lbs (11.3 kg)
- **Dimensions:** 7" tall, 14" wide, 8" deep (17.78 x 35.56 x 20.32 cm)
- **Operating Temperatures (Ambient):**
 - **Charging Temperatures:** 32°F - 104°F (0°C - 40°C)
 - **Discharging Temperatures:** 20°F - 115°F (-6°C - 46°C)
- **Charge Controller Type:** MPPT
- **Inverter:** Pure Sine Wave—1,500 Watts Maximum Output, 3,000 Watt Starting Surge
- **Warranty:** 12 Months

Battery Specifications

- **Chemistry:** Lithium NMC
- **Capacity:** 1,100 Wh peak (12.6V, 90 Ah), The Apex battery can deliver up to 1,700 Watts of power at one time (AC: 1,500 Watts + DC 200 Watts).
- **Life Expectancy:** Up to 2,000 Cycles to 80% Capacity
- **Shelf Life:** Up to 10 years—charge every 6 months, store at 68°F (20°C).
- **Management:** Over-charge and over-discharge protection, short circuit protection, thermal protection, battery balancing.

SOLAR ENERGY: GENERAL GUIDELINES

Solar energy **IS** as simple as pointing panels at the sun. However, there are many variables that **CAN** affect the panel's performance; and as such, there are few hard and fast rules involved. Our panels are rated at maximum output in IDEAL CONDITIONS. On the next page are a few of the most common variables that affect performance, and some safety tips.

Ideal Time of Day

As a general rule of thumb, the brighter the sun is shining and the clearer the day, the better solar panels will work. Panels operate at peak efficiency when the sun is most direct—typically around midday.

Solar panels run off of light, not heat. In fact, solar panels produce the most during cold, clear days rather than in extremely hot conditions. Even during windy or rainy conditions, they are able to function. While cloud cover will significantly reduce the efficiency of the panels, they will still generate electricity.

Time of Year

The amount of daylight changes with the seasons. Summer months offer the most daylight hours. Because of this, overall solar production is generally higher during those months.

While the winter months have fewer daylight hours, it is important to note that cold temperatures do not negatively affect the panel's performance. In fact, colder temperatures in clear conditions can generate the most solar production overall.

Panel Angle

As a general rule of thumb, pointing your panel directly at the sun will yield the best results. The angle will vary from month to month and season to season. A panel angle of 30-60 degrees from flat is generally considered the optimal angle, but as long as you position your panels facing the sun, you will see results. Tracking the sun throughout the day maximizes these results.

Unobstructed Sunlight

Solar panels function through the interaction of many individual cells. Keeping this in mind, solar results can be greatly affected with even the slightest obstruction to a single cell of the panel. When selecting a location for panel placement, keep this in mind. Make sure the panel is free of any debris, or any shadows created by things like tree branches, overhead structures, or any other objects in the environment.

Safety Tips

The Apex is designed for use with Inergy branded solar panels. These solar panels will provide the best experience possible. As a hard rule, all solar panels must be connected to the Apex (and to each other) in a PARALLEL wiring configuration. Inergy solar panels are designed in this way.

EXTERNAL BATTERY GUIDELINES

The Apex was designed with user customization in mind, in an effort to expand the number of applications and the versatility of the system. External batteries are one of the main ways we have done this. Below are some guidelines for expanding the power of the Apex through additional batteries, as well as some important safety tips.

Connecting Batteries

Before external batteries are connected, they must be balanced to match the Voltage of the Apex. Discharge the Apex to 10.5 Volts prior to connecting any external batteries. Similarly, **ALL EXTERNAL BATTERIES MUST BE WITHIN 0.1 VOLTS OF APEX VOLTAGE (10.4 VOLTS - 10.6 VOLTS) BEFORE CONNECTING.**

FAILURE TO DO SO VOIDS THE WARRANTY AND CAN RESULT IN IRREPARABLE DAMAGE TO THE APEX AND/OR RISK OF FIRE.

External batteries should be connected in a PARALLEL wiring configuration to expand the battery capacity of the Apex (see page 13 for more information). This is done by connecting positive to positive, and negative to negative. This is the only approved method for expanding battery capacity, any deviation can result in severe damage to the Apex and create a potentially dangerous situation. It will also void any and all warranties.

Battery wires & connectors: When connecting external batteries to the Apex, we recommend using 2/0 Gauge battery cables (made of pure copper, NOT copper plated) with 3/8" ring terminals for up to a 5 foot long cable. Call our technical support team for questions about longer lengths at **(877) 891-2657**.

Number of Batteries

“How many batteries can I connect to the Apex?”

In general, we recommend connecting no more than 3,000 Watt hours (238 Ah, 12.6V) of external batteries for best results. Remember, the maximum charge input of the Apex remains steady at 500 Watts. The more batteries that are connected, the longer they all take to charge.

Types of Batteries

“What types of batteries can I connect to the Apex?”

Any 12 Volt Deep Cycle Lead Acid, AGM, or Gel Cell battery can be connected to the Apex. DO NOT connect external lithium batteries not supplied by Inergy. Irreparable damage to the Apex or fire could result.

CONNECTING EXTERNAL BATTERIES



INTERNAL BATTERY CAPACITY

EXTERNAL BATTERY

TOTAL CAPACITY

1,100 WATTS + 1,000 WATTS = 2,100 WATTS



INTERNAL BATTERY CAPACITY

EXTERNAL BATTERIES

TOTAL CAPACITY

1,100 WATTS + 2,000 WATTS = 3,100 WATTS



INTERNAL BATTERY CAPACITY

EXTERNAL BATTERIES

TOTAL CAPACITY

1,100 WATTS + 3,000 WATTS = 4,100 WATTS

SAFE USE AND STORAGE GUIDELINES

- **NEVER** connect solar panels or other charge sources exceeding 26 Volts (Open Circuit, abbreviated as VOC) to the Apex.
- **NEVER** connect solar panels in a SERIES wiring configuration. All solar panels must be connected in a PARALLEL wiring configuration.
- **NEVER** store the Apex in environments exceeding 140 °F, like a hot vehicle.
- **NEVER** connect an external battery charger to any external batteries that are connected to the Apex.
- **NEVER** connect any external battery to the Apex that is charged higher than 12.6 Volts. We strongly recommend connecting external batteries charged to 10.5 Volts.
- **NEVER** connect an external battery that measures more than 0.1 Volts different than the Apex voltage at the time they are connected. To illustrate, if your Apex is charged to 10.5 Volts at the time you wish to connect an external battery, ensure the external battery measures between 10.4 - 10.6 Volts before it is connected. A Voltage meter (available at local hardware or auto parts store) can be used to measure your external batteries.

IMPORTANT NOTICE REGARDING LITHIUM BATTERIES

In general, devices with large quantities of lithium ion batteries (like the Apex) should be stored similar to a gas-powered generator: away from flammable items and on a cool, dry, non-combustible surface (like a garage or storage shed). When handling lithium batteries, do not short-circuit, crush, drop, mutilate, penetrate with foreign objects, apply reverse polarity, expose to high temperature or disassemble packs and cells. If a Lithium ion battery (or Apex) overheats, hisses, bulges, or pops, immediately move the device away from flammable materials and place it on a non-combustible surface for at least 48 hours. If you experience a lithium battery fire and the fire cannot be extinguished, allow the fire to burn out on its own in a controlled and safe manner. It is possible for burning lithium-ion

batteries to reignite after being extinguished, so allow the device to remain on a non-combustible surface for at least 48 hours.

If you have any questions about your Apex or the above instructions, please call us at **(877) 891-2657**.

*****IMPORTANT SAFETY INFORMATION*****

- **NEVER** connect an external battery charger to any external batteries that are connected to the Apex. If connecting the Apex to “house batteries” on an RV or Van, ensure those house batteries are disconnected from any charge source in the vehicle. Similarly, never attempt to charge external batteries that are still connected to the Apex with a solar charge controller and solar panels. **ANY CONNECTED EXTERNAL BATTERIES MUST BE MANAGED SOLELY BY THE APEX!**
- **NEVER** connect any external battery to the Apex that is charged higher than 12.6 Volts. We strongly recommend connecting external batteries charged to 10.5 Volts.
- **NEVER** connect an external battery that is more than 0.1 Volts different than the Apex at the time they are connected. To illustrate, if your Apex is charged to 10.5 Volts at the time you wish to connect an external battery, any external battery must measure between 10.4 - 10.6 Volts before they are connected. A simple Voltage meter commonly available at local department stores can be used to measure external batteries.
- **NEVER** connect external lithium batteries not supplied by Energy.

FAILURE TO FOLLOW THE ABOVE SAFETY TIPS MAY RESULT IN PERMANENT DAMAGE TO YOUR APEX, RISK OF FIRE, OR BODILY HARM. CALL OUR TECHNICAL SUPPORT TEAM IF YOU HAVE ANY QUESTIONS AT (877) 891-2657.

LIMITED WARRANTY

ENERGY HOLDINGS (ENERGY SOLAR) LLC warrants to the original consumer purchaser that this INERGY SOLAR 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 6, below. This warranty statement sets forth INERGY SOLAR's total and exclusive 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.

WARRANTY PERIOD

The warranty period for all INERGY SOLAR products and components is one (1) year. In each case, the warranty period is measured starting on the date of purchase by the original consumer purchaser. The sales receipt from the first consumer purchase, or other reasonable documentary proof, is required in order to establish the start date of the warranty period. Registration is not required.

NO LEMON POLICY

ENERGY SOLAR warrants to the original consumer purchaser that should this INERGY SOLAR product require service (rendered only by INERGY SOLAR) on (3) three separate occasions within the above stated one (1) year warranty period, the unit can be exchanged for a replacement product of comparable type, quality, and functionality at the request of the original consumer purchaser. Validation by an INERGY SOLAR technician of product failure is required prior to replacement. Your warranty remains in force for the duration of the original one (1) year warranty period, and is in no way terminated by replacement product under this No Lemon Policy.

REMEDY

INERGY SOLAR will repair or replace (at INERGY SOLAR's option and expense) any INERGY SOLAR product that fails to operate during the applicable warranty period due to a defect in workmanship or material.

LIMITED TO ORIGINAL CONSUMER BUYER

The warranty on INERGY SOLAR's products is limited to the original consumer purchaser and is not transferable to any subsequent owner.

EXCLUSIONS

INERGY SOLAR's warranty does not apply to (i) any product that is misused, abused, modified, damaged by accident, or used for anything other than normal consumer use as authorized in INERGY SOLAR's then-current product literature, or (ii) any product purchased through an online auction house. INERGY SOLAR's warranty does not apply to any battery cell or product containing a battery cell unless the battery cell is fully charged by you at least once every 6 months.

HOW TO RECEIVE SERVICE

To obtain warranty service, you must contact our technical support team via telephone at (877) 969-2432, or via email at support@inergysolar.com. If our technical support team determines that further assistance is required, they will give you a Return Material Authorization ("RMA") number and return shipping label. You must package the product in original provided product packaging, clearly marking the RMA number on the package and including proof of your purchase with the product.

If you have any questions about your APEX or the above instructions, please call us at **(877) 969-2432**.

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