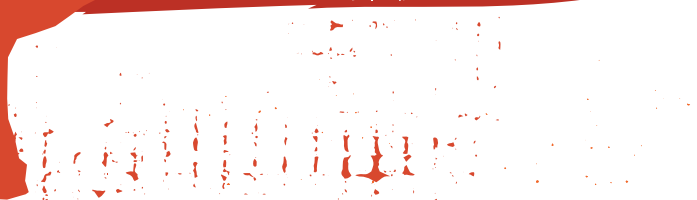


FLEX USER MANUAL



INERGY

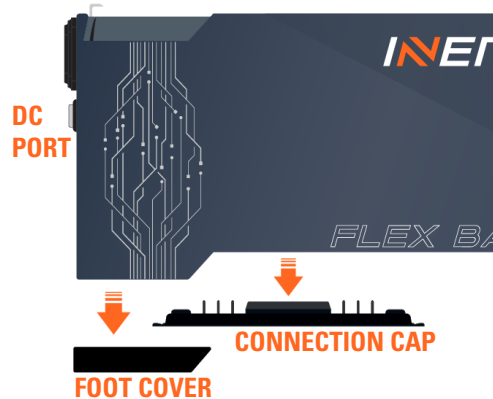
FIRST THINGS FIRST

1. When you unbox your Flex Modular System, **PLEASE DO NOT** throw away the packaging. It may come in handy down the road in case of damage from shipping or handling, or any other issues requiring a return.

2. On the underside of each Flex Module, you will find a plastic connection cap. Additionally, each Flex Battery will have four rubber foot covers (see right). Before stacking your Flex Modules, remove the connection cap and foot covers from all but the module on the bottom of the stack.

DO NOT attempt to stack the Flex modules with either of these protectors in place. Doing so may cause damage to the connection points.

You can use the foot covers on the bottom module in your stack to protect fragile surfaces, but be aware they are designed to be removed and may fall off on their own. You may choose to affix them permanently to one module, but be aware that module will always need to be the bottom module of your Flex system.



3. Next, charge your Flex Modular System to 100% by plugging a Standard Wall Charger (included) into the DC port on the left side of your Flex Battery. For more pro tips on how to keep your battery in the best shape possible, see the **Flex Battery** section of this manual. For instructions on connecting multiple Flex Batteries together, see **Using Your Flex system with Multiple Flex Batteries**.

4. When your Flex Batteries are fully charged, plug a device into each output to make sure that nothing was damaged in shipping and handling.

5. Keep your Flex modules connected together as much as possible, so the batteries remain equalized.

IMPORTANT SAFETY GUIDELINES

NEVER connect an input exceeding **90 volts**, i.e. the open circuit voltage (VOC) on solar input, to the blue EC8 charging port (right side) on the Flex 1500, Flex DC, or Flex MPPT Supercharger.

NEVER exceed output and input connector ratings. Failure to do so may result in unit damage, fire, or electrical shock. You can find these ratings under **Tech Specs**.

NEVER store a Flex Battery in hot environments, such as a hot vehicle. Lithium batteries are sensitive to extremely high temperatures. For more information see **Tech Specs**.

NEVER touch, stick metal objects into, or otherwise come in contact with the

interior of the AC outlets on the Flex 1500. Doing so risks death, serious injury, and electrical shock. These outlets supply power identical to that of a normal home wall outlet and, while ungrounded, still present many of the same dangers.

NEVER allow the Flex system to get wet. Allow any condensation to dry completely before powering-up or charging your Flex system. If your Flex system does get wet, contact us to ensure it's safe before attempting to use it again.

NEVER attempt to repair your Flex system or replace the internal battery yourself; any manipulation or disassembly of any Flex module will void all warranties, including the

10-Year No "B.S." or 10-Year Pro-Rated Warranties. Any tampering with the warranty stickers (black dot with Inergy logo) may also void the warranty. For questions about repair/service, please contact our U.S.-based Tech Support team (see Contact Us). **There are no user-serviceable parts inside.**

ALWAYS keep your Flex system clean and dry. Regularly inspect for dirt, dust, or moisture. You may clean connectors, outlets, and fans with canned air for electronics. Never use an air compressor to clean or dust-off your system.

NEVER use a generic or off-brand charger to charge your Flex Battery. Use only Inergy-supplied chargers specifically for this device.

FAILURE TO FOLLOW THE ABOVE SAFETY GUIDELINES MAY RESULT IN PERMANENT DAMAGE TO YOUR FLEX MODULAR SYSTEM, RISK OF FIRE, WARRANTY VOID, AND/OR BODILY HARM. IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT OUR U.S.-BASED TECH SUPPORT TEAM (SEE CONTACT US).

IMPORTANT SAFETY GUIDELINES

NEVER connect your Flex AC outlets to another power source (i.e. attempt to charge your Flex via the AC outlets). Doing so will permanently damage your device and void your warranty. These outlets are output only, and any such damage is easily detected when diagnosing Flex system failures.

BE AWARE that the Standard Wall and Quick Wall chargers can get hot when in use. Charge your Flex system in a well-ventilated, dry area. We recommend placing your charger on top of the Flex system while charging; the aluminum case works as an effective heat sink to dissipate heat from the charger.

TAKE CARE not to leave anything plugged into the DC outputs that are

unsafe if left to run unattended (cooking equipment, and heaters), or other loads you don't want draining your battery unexpectedly.

NEVER use or store any Flex module or Flex Battery in any orientation other than standing straight up. The Flex Modular System is designed to be stored and operated while sitting on a flat, secure surface.

ALWAYS secure the Flex system with straps or cords when using it in a vehicle to protect against excessive vibration or impacts.

03

FAILURE TO FOLLOW THE ABOVE SAFETY GUIDELINES MAY RESULT IN PERMANENT DAMAGE TO YOUR FLEX MODULAR SYSTEM, RISK OF FIRE, WARRANTY VOID, AND/OR BODILY HARM. IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT OUR U.S.-BASED TECH SUPPORT TEAM (SEE CONTACT US).

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GETTING TO KNOW YOUR FLEX

Currently, the Flex Modular System is made up of four unique Flex modules:

1. Flex 1500 Power Console
2. Flex DC Power Console
3. Flex Battery
4. Flex MPPT Supercharger

With these modules, you can create a Flex system that is perfectly tailored to your present needs and save money in the future by replacing/adding individual modules instead of purchasing an entirely new system.



GETTING TO KNOW YOUR FLEX

Flex 1500 Power Station

Most people will start with a Flex 1500 Power Station, which is the combination of the Flex 1500 Power Console and a single Flex Battery.

From there, you can choose to expand your battery storage capacity and solar charging rate by adding more Flex Batteries and additional MPPT (maximum power point tracking) solar inputs with the Flex MPPT Supercharger. The possibilities are almost endless.



GETTING TO KNOW YOUR FLEX



Flex DC Power Station

People who use only DC power, such as off-grid or van life enthusiasts, may choose the Flex DC Power Station, which is the combination of the Flex DC Power Console and a single Flex Battery.

GETTING TO KNOW YOUR FLEX



Flex MPPT Supercharger

The Flex MPPT Supercharger includes two EC8 solar inputs, each connected to an advanced Maximum Power Point Tracking (MPPT) charge controller. Each EC8 can receive an input equivalent to the MPPT of the Power Console, giving you more input options and faster overall solar charging.

NOTE: Rapidly charging and discharging your battery can affect the cycle life of lithium-ion batteries. For more information, see **CHARGING YOUR FLEX MODULAR SYSTEM.**

GETTING TO KNOW YOUR FLEX

Flex Battery

The Flex Battery is a lithium-ion, low-voltage battery containing a smart BMS (battery management system). The Flex Battery is capable of smart charge and discharge management, self temperature regulation, advanced safety features, and other features to provide the high power density you've come to expect from Inergy, along with industry-leading safety standards and controls.

Each Flex Battery is self-managed, which means that your system can continue operating in the event of a failure of any/all extra batteries in the system. Each battery displays its individual state-of-charge (SoC), voltage, and power measurements on the built-in LCD screen. Batteries are automatically activated by a Flex power console, but you can use the built-in button to activate the display manually. We're firm believers in simplicity, and have kept the number of buttons in the Flex system to a minimum.



GETTING TO KNOW YOUR FLEX

Using Multiple Flex Batteries

To expand your Flex Modular System's overall battery capacity, simply add more Flex Batteries to your stack. Having multiple batteries reduces the strain on each, resulting in longer cycle life for your batteries. Each stack can have up to five (5) Flex modules in addition to a Flex Power Console. To connect more than five modules, you'll need to add a Flex Stack Base, which allows you to connect an additional stack to the system. Do not connect more than five (5) Flex modules in one stack.

When you add Flex Batteries in a stack, they will automatically connect to each other when their voltages are within range of each other (about

0.8V). If your battery voltages are too far apart, you can still connect them, but each individual battery will only enable as it comes within range. As you use the Flex system, the batteries will automatically enable and equalize. Once connected, the power console display will show the combined state of charge for all currently enabled batteries in the stack.

The top battery in the stack acts as the master, providing initial power to the Flex system. Flex Batteries stacked below the master will automatically enable when the voltage is within range of the master.

The best practice for connecting multiple batteries to your Flex power

console is to charge all batteries to 100% before stacking them. Once they're connected, we recommend leaving them together, so the packs remain in balance with each other.

If your batteries are too far out of range and you don't have time to wait, you can speed up the connection and balancing process by following a few simple steps:

If you intend to **charge** your system before using it, place the battery with the **lowest charge** on the top of the stack. As the top battery charges and the voltage increases, the others will enable as they come within range. The order of the other batteries in your stack is not important.

If you have any questions, please call us (see **Contact Us**), and we'll be happy to help you.

GETTING TO KNOW YOUR FLEX

If you intend to **discharge** your system, first, place the battery with the **highest charge** on top instead. As you use power from the top battery, the voltage will drop, and the lower batteries will enable when within range. The order of the lower batteries is not important.

Expand Your Apex or Kodiak with the Flex Battery

You can use the Flex-to-Ring-Terminal Adapter to connect a Flex Battery to your Kodiak or Apex portable power station. By connecting one Flex Battery to your Apex or Kodiak with the Flex-to-Ring-Terminal Adapter, you can increase the total storage capacity by that of the Flex Battery.

To add even more storage capacity, simply stack additional Flex Batteries (up to five per stack). The Flex Batteries will measure the Apex or Kodiak battery level, and automatically enable when their respective voltages get within range (about 0.4V) of each other. Once the batteries automatically enable, they will act as one expanded battery. We suggest you charge all batteries to 100% before connecting them. If you wish to add more than five batteries, please call us for additional information. (See **Contact Us**)

Never connect any other type of battery to the Kodiak or Apex with the Flex Battery at the same time.

Never connect external lithium batteries not supplied by Inergy to the Kodiak or Apex.

CHARGING YOUR FLEX MODULAR SYSTEM

General Information

When charging your Flex System, the power console LCD screen will indicate the amount of power being sent to the battery and an estimated charge time. This estimated charge time is based on the real-time power **input** and **output** shown on-screen, and it will change as the average charge or discharge rates fluctuate. The power console LCD combines the states of charge of all batteries in your Flex system as a percentage of the total combined capacity.

When more than one battery is successfully connected, any charge input, including the Standard Wall Charger input, will charge all batteries

(so long as the power console is powered on). Note: If the Flex Battery is too warm or cold, it won't allow charging until it reaches a safe temperature (see **Tech Specs**).

Cell Balancing

The Flex uses multi-cell lithium battery packs, which can become unbalanced after heavy use or after going a long time between full charges. This means that one cell group is at a higher or lower state of charge (SoC) than the others.

In order to resolve this imbalance, the battery needs to be charged while the intelligent management system balances each cell group. The Flex Battery employs a rapid cell balancing system to address the issue while the

Flex charges, but this process can take several hours. You may see the SoC remain at ~99% for extended periods until balancing finishes.

You can still use the Flex system without charging up those last few percentage points, but you won't get the max capacity until the system reaches 100%. Just give your unit a full overnight charge every now and then to ensure the maximum charge capacity is reached.

Charging for Long-Term Storage

If you intend to store your Flex Battery for an extended period of time, we strongly recommend you check the state of charge once every three months. If the state of charge dips below 30%, we

ATTENTION:

Do not allow your Flex system to remain in storage at a low state of charge for a long time. This may damage your Flex Battery and void your warranty.

CHARGING YOUR FLEX MODULAR SYSTEM

recommend charging it to about 50% before putting it back into storage. The ideal battery SoC range for long-term storage is 30 - 50%.

Charging With Solar Panels

Utilizing solar energy can be as simple as pointing your panels at the sun. However, there are many variables that can affect the panel's performance, and there are a few "best practices" to know. For help charging with solar panels and configuring your solar arrays correctly, please call us (see Contact Us) and we'll be happy to help you out. Here are a few of the most common variables that affect performance, and some tips and tricks to help you maximize your results:

Ideal Time of Day

As a general rule of thumb, the brighter the sun is shining, the better your 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 on a windy day, solar panels can still operate at peak output. Cloud cover will significantly reduce the efficiency of the panels, though they will still continue to generate some electricity.

Time of Year

The amount of daylight changes with the seasons, as the sun moves closer and farther away from you. During summer

months, overall solar production is generally higher due to more daylight hours. Although the winter months have fewer daylight hours, cold temperatures positively affect a panel's performance. In fact, cold temperatures in clear conditions can generate the most solar production overall.

Panel Placement

Place your solar panel where it will get as much direct sunlight as possible. Shade on one or more panels can reduce the performance of the whole string. Take care to avoid trees and other shade that may move with the sun throughout the day.

Peak Your Panels

Pointing your panels directly at the sun

CHARGING YOUR FLEX MODULAR SYSTEM

and adjusting them throughout the day will yield the best results. The angle will vary from month to month, but an angle of 30-60 degrees from flat is generally considered ideal. As long as you point your panels at the sun, you should get good results.

Safety Tips

The Flex is designed for use with and rated for Inergy-brand solar panels, but you can use third-party solar panels if you have them. In general, you should not mix different types and ratings of panels; always use identical panels in a string. As a hard rule, any string of solar panels must not exceed the open circuit voltage (VOC) rating of the Flex system (see **Tech Specs**). If you have any questions or doubts about your solar

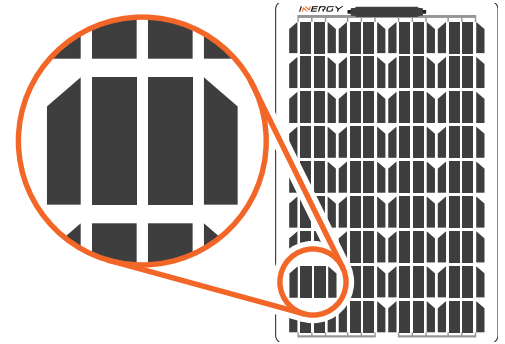
panels' open circuit voltage, please call us. (See **Contact Us**.)

Clean Your Panels

Solar panels function through the interaction of many individual cells (**see right**). Output can be greatly affected by even the slightest obstruction to a single cell of the panel. Make sure the panel is free of any dirt, debris, or other objects like stickers and decals. Aftermarket protective coatings, including clear films, plastic sheet/paneling, and even glass, can also greatly reduce panel performance.

Panel Wiring - Series vs Parallel

Wiring your panels correctly is key to getting the highest efficiency in your unique situation. You can wire panels in



parallel (connecting all positive wires together, and all negative wires together) or **series** (connecting the positive wire of one panel to the negative wire of the next).

Another wiring method is **series-parallel**, which involves a single series string of multiple identical parallel strings. This is slightly more complex but can be useful.

WARNING: **DO NOT** use the 5.5mm x 2.5mm charging port on the Flex Battery for solar charging. It can result in fire, electrical shock, and personal harm; doing so may cause serious damage to your Flex Battery and it will void your warranty.

CHARGING YOUR FLEX MODULAR SYSTEM

Generally, you'll get the highest efficiency with a series configuration, but parallel and series-parallel allow you to use more panels without exceeding the voltage requirements of the system, which can be useful for capturing energy in low-light settings. Refer to the Inergy blog for more detailed information.

Inergy Solar Panels (or Other MC4 Panels) Connected in Series

Connecting solar panels in series increases the voltage of the string. A VOC over 45V can be dangerous, risking electrical shock and personal harm if not handled properly. When using solar panels in series, always follow this process when connecting them to your Flex system:

Step 1. Plug the blue EC8 connector of your 30' EC8-to-MC4 Ascent Panel Cable into the blue EC8 connector on your Flex Power Station.

Step 2. Connect the male and female MC4 connectors on your solar panels in one continuous string, male to female and so on. When you are done connecting your panels, you will have one open male connector on one end of your string, and one open female at the other end.

Step 3. Connect the MC4 connectors on your EC8-to-MC4 cable to the corresponding connectors on each end of your string of solar panels. You should end up with a closed loop (a completed series connection).

See the next page for an illustration of this process. If you have questions or difficulty with this setup, please contact our support team (see **Contact Us**).

You will know the Flex Modular System is charging from your solar panels when the LCD screen indicates a charge input under SOLAR and an estimated charge time in the center of the display. The estimated charge time will fluctuate as the power input and output of the system changes in real-time.

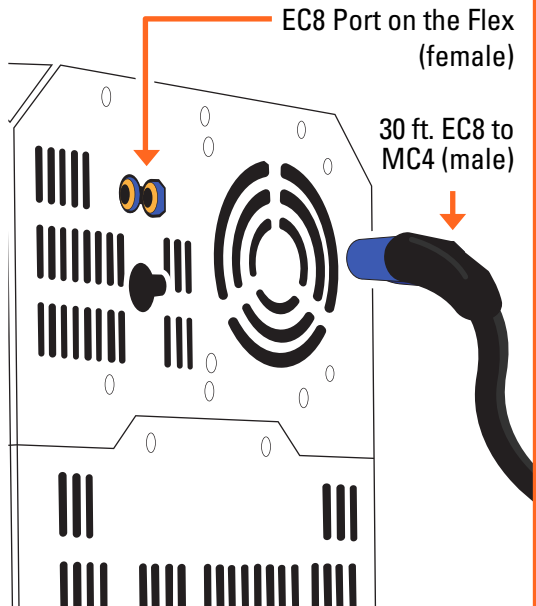
It can take up to 30 seconds for charging to begin, while the smart charger detects your panels and the input voltage stabilizes.

17

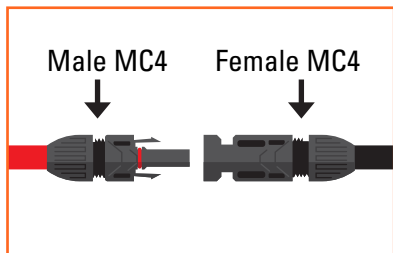
WARNING: **DO NOT** connect your EC8-to-MC4 adapter cable to your solar panel string **BEFORE** plugging the EC8 connector into your Flex Power Station. Connecting the EC8 connector first decreases the risk of severe electrical shock. Always follow the process described above. When disconnecting your solar panels, always go in reverse order, removing the EC8 connector from the Flex last.

CHARGING YOUR FLEX MODULAR SYSTEM

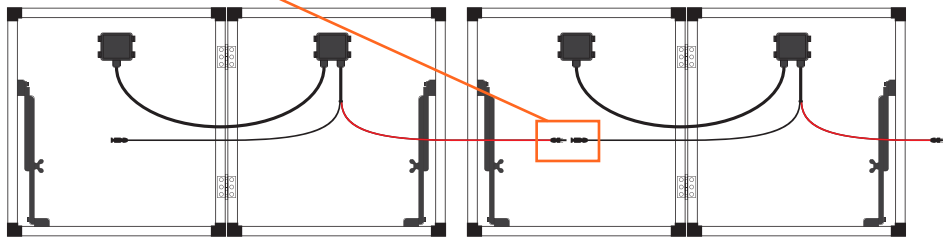
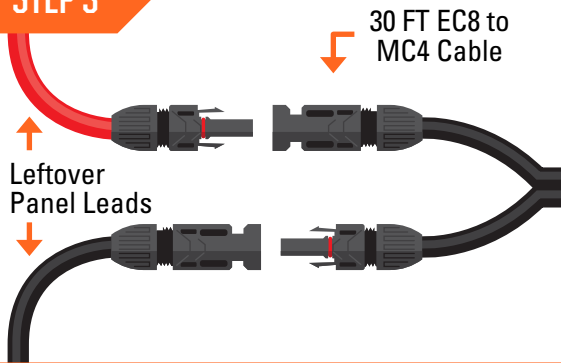
STEP 1



STEP 2



STEP 3



NOTE: When charging with solar panels, you should use only the blue EC8 input port on the right panel of the Flex 1500 or Flex DC power console. Do not use the DC ports on the front of the unit, which are output-only.

CHARGING YOUR FLEX MODULAR SYSTEM

Legacy Inergy Panels With EC8 Connectors

If using legacy Inergy panels with EC8 connectors, always use the following process when connecting your panels:

Step 1. Plug one of the blue EC8 connectors on your 30' EC8 Solar Panel Cable into the blue EC8 connector on your Flex Power Station.

Step 2. Connect the other end of your 30' cable to one of the EC8 leads on your Solar Storm or Linx panels.

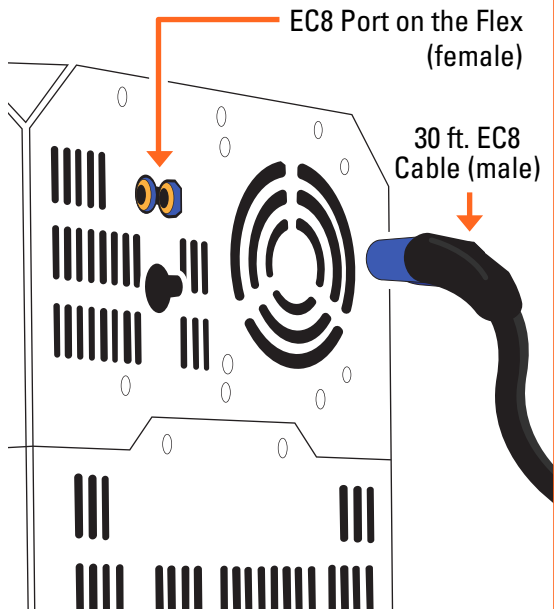
Step 3. Connect additional cables as desired using the 6' EC8 Solar panel cables between panels.

You will know the Flex Modular System is charging from your solar panels when the LCD screen indicates a charge input under SOLAR and an estimated charge time on the center of the display. The estimated charge time will fluctuate as the amount of power input and output from the system fluctuates.

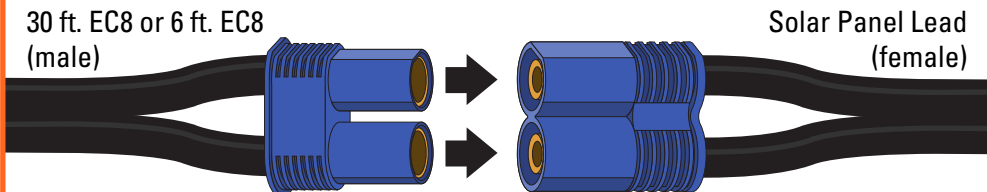
It can take up to 30 seconds for charging to begin, while the smart charger detects your panels and the input voltage stabilizes.

CHARGING YOUR FLEX MODULAR SYSTEM

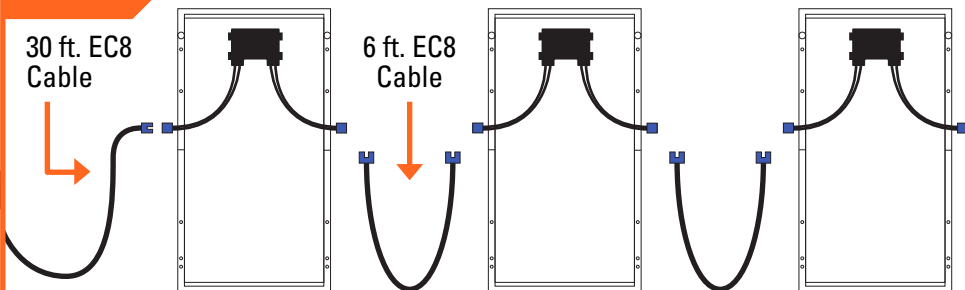
STEP 1



STEP 2



STEP 3



NOTE: Your cables may not look like those shown in STEP 2. These cables are shown without the standard weatherproof coating at the base of the connectors to make them easier to identify.

CHARGING YOUR FLEX MODULAR SYSTEM

Solar Charging With the MPPT Supercharger

When you add the MPPT Supercharger to your Flex system, we recommend you connect it at the bottom of the stack. Although it will work anywhere in the stack, this configuration will improve the efficiency of your power console outputs. Make sure you have all modules securely connected with each latch mechanism fully engaged.

To connect solar panels to the MPPT Supercharger, follow the same

process above, connecting the EC8 to the supercharger first, and the MC4 connectors last. When disconnecting, always unplug the EC8 last.

You can add one Flex MPPT Supercharger for every Flex Battery you have in your Flex Modular System. If you intend to add more than five (5) MPPT Superchargers to your Flex Modular System, please contact us.

Charging From the Grid (AC Wall Outlet)

You can charge your Flex system from normal AC power sources (refer to the specifications on the housing of the charger for exact details). The Standard Wall Charger provides up to 88 watts of charge power, while the Quick Wall Charger can source as much as 225 watts to charge your Flex system.

You can plug the Standard Wall Charger into the 5.5mm x 2.5mm DC input port on the left panel of your Flex Battery. If you have more than one Flex

IMPORTANT NOTE:

The MPPT Supercharger gives you two additional MPPT charge controllers and EC8 inputs, allowing you to connect additional solar panel arrays to double or triple your charge rate. If you do not have more than 400W of solar panels, you may not gain any benefit from using the MPPT Supercharger. Using the MPPT Supercharger requires additional individual strings of solar panels connected directly to it, and will not increase the input capabilities of the power console input.

You can add one Flex MPPT Supercharger for every Flex Battery you have in your Flex Modular System. If you intend to add more than five (5) MPPT Superchargers to your Flex Modular

CHARGING YOUR FLEX MODULAR SYSTEM

Battery, you can purchase additional Standard Wall Chargers to charge each battery directly through this DC port (only the Flex power consoles include a Standard Wall Charger). The Standard Wall Charger can completely charge one Flex Battery in about ten to eleven hours from 0%.

Additionally, you can plug the Quick Wall Charger into the blue EC8 Charging Port on the Flex power console. The Quick Wall Charger can completely charge one Flex Battery in about 5-6 hours from 0%.

If you have an MPPT Supercharger, you can purchase additional Quick Wall Chargers to maximize your charge rate

from grid power. You should be able to charge one Flex Battery with three Quick Wall Chargers and an MPPT Supercharger in about two hours. You do not need to use a Standard Wall Charger to use a Quick Wall Charger.

Charging From Your Vehicle

Use the optional Flex Car Charger to charge your Flex system using your vehicle's 12V power system. Plug the Flex Car Charger into the 5.5mm x 2.5mm DC input port on the Flex Battery and your vehicle's cigarette lighter port to begin charging. You can use as many Car Chargers as you have Flex Batteries.

As long as there is more power going

into the Flex system than is being used, the display will show the estimated time until fully charged. This estimated charge time is based on the power input and output numbers at that moment, and it will change as the average charge or discharge rates fluctuate.

The Flex Car Charger can drain your vehicle's battery if left charging while the engine is off. Take care not to leave it unattended, or you may be left needing a jump.

USING YOUR NEW FLEX MODULAR SYSTEM

Flex 1500 Power Station With AC and Regulated DC Output

The Flex 1500 Power Station has two power buttons that allow you to use specific output ports based on your needs. The Flex 1500 can be charged whether these buttons are switched on or not. A charger will automatically wake the system and begin charging.

The top button with the blue circle around it turns on only the regulated DC outputs of the Flex 1500. The bottom button activates the AC inverter and the six AC outlets. You can use either button or both simultaneously. It is not necessary to press the button on each battery; the power console will wake them up automatically.

Flex DC Power Station With Regulated DC Output

The Flex DC has only one button that activates all outputs, allowing you to power your DC devices with up to 60A of regulated DC power (all outputs combined, see **Tech Specs**).

To maximize your run time, connect your Flex to a charge source while using it. You can charge your Flex Modular System and run your gear at the same time.

Using the Flex Battery

Store the Flex Battery away from flammable items and combustion sources and on a cool, dry, non-

combustible surface. Proper maintenance and storage of lithium batteries will ensure not only the safety of your batteries, but also help you maximize cycle life and performance. When handling lithium-ion batteries, do not short-circuit, crush, drop, mutilate, penetrate with foreign objects or otherwise modify the battery or its enclosure. Do not expose them to extreme temperatures or disassemble packs and cells.

The safe storage and operating temperatures of the Flex Modular System are found in **Tech Specs**. If a Flex Battery is exposed to extremely high temperatures, or it hisses, bulges, or pops, immediately move it away from flammable materials and place it on a

USING YOUR NEW FLEX MODULAR SYSTEM

non-combustible surface for at least 48 hours, and call us immediately.

Although it is very unlikely, there is always a small risk of lithium batteries catching fire. If you do experience a lithium battery fire, douse it with copious amounts of water until extinguished, then remove anything flammable from the vicinity of the battery. Do not attempt to touch or move the battery as it can reignite, putting you in danger.

If you cannot douse the fire with water, allow the fire to burn out on its own in a controlled and safe manner, away from anything flammable. Allow the device to remain on a non-combustible surface for at least 48 hours, as lithium batteries can potentially reignite.

If you have any questions about your Flex Modular System or the above instructions, please contact us.

Getting the Most out of Your Flex system

When using the Flex to power your gear, pay attention to the LCD displays. If you are using appliances that draw a lot of power, like a space heater or heat gun, the state of charge can decrease rapidly, and you may not be able to use the full system capacity.

There will inevitably be some energy loss between the battery and the outputs, which means you may not be able to use the full storage capacity with heavy loads. This energy loss is

common to all electronic devices. If run times are shorter than you expect, this is probably why. As a general rule, higher power output usually results in lower system efficiency.

Another key fact is that the DC outputs are much more efficient than the AC. For instance, it's better to charge your laptop and other mobile devices from the DC ports than plug a wall charger into the AC outputs. The Flex inverter consumes a few watts of power even with no load.

USING YOUR NEW FLEX MODULAR SYSTEM

Using the Flex in Extreme Cold Weather

Temperatures below freezing can affect the Flex Battery's capacity and even prevent charging. If you plan to use the Flex system in sub-zero conditions, you may need to protect it from the cold. Do not use the Flex system outside of the specified temperature ranges (see **Tech Specs**).

READING THE LCD DISPLAYS

POWER CONSOLE STARTUP SCREEN

Software
Version



POWER CONSOLE WITH A NET CHARGE INPUT

Net Charge
Rate



Battery Level Indicator

Estimated Charge Time

READING THE LCD DISPLAYS

POWER CONSOLE WITH SOLAR INPUT RESULTING IN A NET CHARGE



POWER CONSOLE WITH SOLAR INPUT AND POWER OUTPUT RESULTING IN A NET DISCHARGE



NOTE: **Net Charge** charge results if the input power is greater than the output. **Net discharge** results if the total output is greater than the input. **Estimated charge and run times** are calculated using the current net charge or discharge rate and the current total battery capacity.

READING THE LCD DISPLAYS

POWER CONSOLE WITH MULTIPLE FLEX BATTERIES CONNECTED



POWER CONSOLE EXPERIENCING AN ERROR

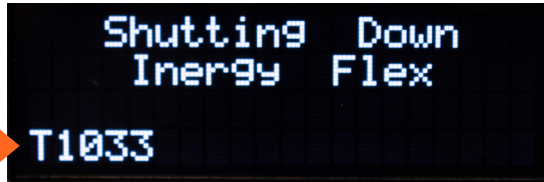


NOTE: In the unlikely event of an error in your Flex system, this view displays the error indicator "!" under the battery level icon. When you see this indicator, you may experience reduced system performance, and your fans may stay on. Shutting down the system will display any active diagnostic trouble codes (DTCs); take a note or picture of these codes, and contact us for assistance.

READING THE LCD DISPLAYS

POWER CONSOLE SHUTDOWN SCREEN WITH ERROR CODE (DTC)

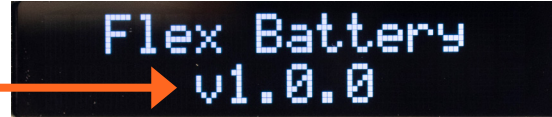
Error Code



READING THE LCD DISPLAYS

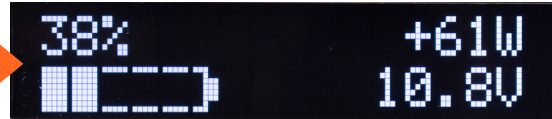
BATTERY STARTUP SCREEN

Software Version



BATTERY WITH NET CHARGE INPUT

Battery Level

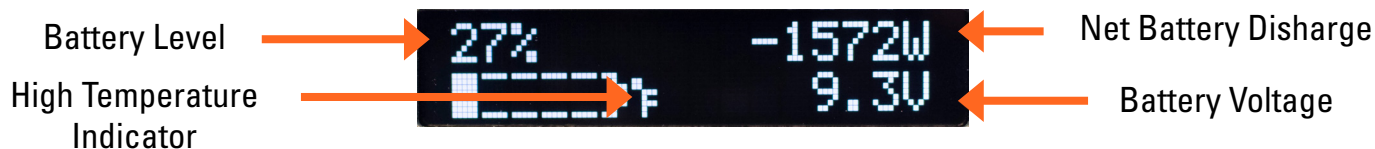


Net Battery Charge

Battery Voltage

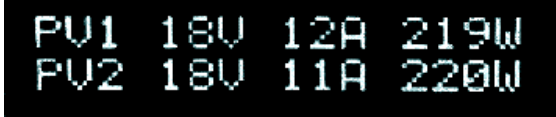
READING THE LCD DISPLAYS

BATTERY WITH NET CHARGE OUTPUT



NOTE: This view displays the result of a net power usage from the battery. A continuous high power usage rate will increase the internal temperature of the battery. As the temperature rises above a certain point, an icon “°F” will appear to let you know you may soon experience a performance impact. At this point, you may not be able to charge the battery. The high-temp indicator flashes before the Flex will shut down to protect the system if the temperature rises higher.

USING YOUR NEW FLEX MODULAR SYSTEM



PV1 18V 12A 219W
PV2 18V 11A 220W

Reading the LCD Screen: MPPT Supercharger

The LCD screen on the MPPT Supercharger indicates the status of each input. The lines correspond to the EC8 Charging Ports on the right side, with the top line displaying the status of the top port. These display the power,

current, and voltage of each string, helping you to fine-tune your solar arrays and diagnose any poor performance issues.

TECH SPECS

Flex 1500 Power Station (AC and DC Output)

- A. (6) 110-120VAC outlets (1500w max output)
- B. (2) 60w USB-C ports with PD and QC 3.0
- C. (2) USB-A ports with QC 2.0
- D. (2) 5.5mm x 2.5mm DC outputs for Basecamp LEDs & future accessories
- E. LCD display
- F. (2) 15A cigarette lighter ports with 13.8V regulated DC output (20A at 13.8v DC total combined output)
- G. DC power button
- H. AC power button
- I. Flex Battery LCD Display
- J. Flex Battery power button
- K. EC8 charging port (14 - 90v DC input)
- L. 5.5mm x 2.5mm input port (for Standard Wall Charger or Flex Car Charger)
- M. Module connection latch
- N. Fan vents
- O. Rubber foot protectors



Flex 1500: Technical Details

Battery: Genuine Inergy Flex Battery

AC Inverter: 1,500-watt pure sine wave, 3,000-watt surge

Charging: Combine multiple charge sources simultaneously (14 - 90VDC Solar Input, Standard Wall Charger/ Car Charger Input). Combined maximum charge rate per Flex Battery (with optional Flex MPPT Supercharger): 1.5 hours

Lithium-ion Battery Expansion: Yes; the Flex 1500 accepts up to 96 Flex Batteries (5 Flex Batteries per vertical stack maximum, connect multiple stacks with Flex Battery Adapter Plate—coming soon)

MPPT Charge Controller: 14-90VDC solar input, 30A maximum battery charge rate.

13.8V Regulated DC Power: Increases run time and stability for 12V devices

Solar Array Options: Accepts either series or parallel wiring configurations. 90VDC input maximum, no Amperage input maximum.

Discharge Temperature:
-20 – 50°C; -4 – 122°F

Charge Temperature:
0 – 45°C; 32 – 113°F

Storage Temperature:
-20 – 35°C; -4 – 95°F

Dimensions: 14" x 8" x 8.9"

Weight: 29 lbs.

Standard Warranty: 24 Months

TECH SPECS

Flex DC Power Station (DC-only Output)

- A. (2) 30A Anderson Powerpole output ports (one w/ regulated DC output)
- B. (4) 60W USB-C ports with PD and QC 3.0
- C. (4) USB-A ports with QC 2.0
- D. (4) 5.5 x 2.5mm DC outputs for Basecamp LEDs & future accessories
- E. LCD display
- F. (4) 15A cigarette lighter ports w/ regulated DC output (60A total from all ports combined)
- G. Flex DC Console power button
- H. Flex Battery LCD display
- I. Flex Battery power button
- J. EC8 charging port (14 - 90v DC input)
- K. 5.5mm x 2.5mm input port (for Standard Wall Charger or Flex Car Charger)
- L. Module connection latch
- M. Fan vents
- N. Rubber foot protectors



Flex DC: Technical Details

Battery: Genuine Inergy Flex Battery

Charging: Combine multiple charge sources simultaneously (14-90V Solar Input, Standard Wall Charger/Car Charger Input). Combined maximum charge rate per Flex Battery (with optional Flex MPPT Supercharger): ≈ 1.5 hours

Lithium-ion Battery Expansion: Yes. The Flex DC accepts up to 96 Flex Batteries (5 Flex Batteries per vertical stack maximum, connect multiple stacks with Flex Battery Adapter Plate—coming soon)

MPPT Charge Controller: 14-90VDC input, 30 amps maximum continuous charge rate

13.8V Regulated DC Power: Increases run times for 12V devices

Solar Array Options: Accepts either series or parallel wiring configurations. 90VDC input maximum, no Amperage input maximum.

Discharge Temperature:
-20 – 50°C; -4 – 122°F

Charge Temperature:
0 – 45°C; 32 – 113°F

Storage Temperature:
-20 – 35°C; -4 – 95°F

Dimensions: 14" x 8" x 8.9"

Weight: 26.5 lbs

Standard Warranty: 24 Months

TECH SPECS

Flex Battery: Technical Details

Internal Battery: 1,058 Watt-hours nominal, lithium-ion NMC cells.

Charging: Direct charge using Standard Wall Charger or Car Charger. Solar charge from Flex power console, Apex, or Kodiak Solar Power Stations. Accepts charge using any of the above methods simultaneously.

Lithium-ion Battery Expansion: Yes; the Flex System accepts up to 96 Flex Batteries (5 Flex Batteries per vertical stack maximum, connect multiple stacks with Flex Battery Adapter Plate—coming soon).

Battery Equalization: When connected to a Flex, Apex, or Kodiak Power Station, the Flex Battery will act as an expansion to the main or master battery. For the Flex, when the expansion battery's state of charge is within 0.8V of the master battery, the Flex expansion battery will automatically connect and equalize with the connected power station to ensure safe and effective operation.

For an Apex or Kodiak, the expansion battery's state of charge must be within 0.4V of the master battery before it can connect and equalize.

Connecting to Apex or Kodiak Power Stations: Connect using Flex-to-Ring Terminal Adapter (sold separately).

5.5mm x 2.5 mm DC Input: User-friendly, plug-and-play interface for the Inergy Standard Wall Charger.

Discharge Temperature:
-20 – 50°C; -4 – 122°F

Charge Temperature:
0 – 45°C; 32 – 113°F

Storage Temperature:
-20 – 35°C; -4 – 95°F

Dimensions: 14" x 8" x 4.7"

Weight: 17.5 lbs

Standard Warranty: 24 Months

MPPT Supercharger: Technical Details

Expansion: Combine this module with your Flex 1500 or Flex DC Power Station for the fastest solar charge times on the market.

Charging: two additional panel arrays at 90V each and 60A additional max solar input. two 30A MPPT Independent Charge Controllers: Allows for faster and more efficient charging with two additional solar panel arrays

Two EC8 Charging Ports: User-friendly, plug-and-play interface for solar supercharging. Compatible with EC8-to-MC4 Adapter.

Solar Array Options: Accepts either series or parallel wiring configurations. 90VDC input maximum, no Amperage input maximum.

Discharge Temperature:
-20 – 50°C; -4 – 122°F

Charge Temperature:
0 – 45°C; 32 – 113°F

Storage Temperature:
-20 – 35°C; -4 – 95°F

Dimensions: 14" x 8" x 3.4"

Weight: 1 lbs

Warranty: 24 Months

FREQUENTLY ASKED QUESTIONS

What are the benefits of a modular system versus an all-in-one product with a set battery size and fixed solar charging capabilities?

First and most importantly, you can adapt your Flex Modular System to suit your needs. You could choose to keep three Flex Batteries at home for power-down situations and power your refrigerator for days. You could take the same system camping with only one Flex Battery for a lightweight, portable power solution with no noise or toxic fumes. You have tons of options that allow you to power dozens of critical devices whenever and wherever you want, for as long as you want.

My Flex Modular System is not responding, or is not behaving normally. What should I do?

Unplug the Flex from all charge sources, unplug all outputs, and reboot your Flex system by turning the power buttons off and then on again. This should reset the system. If this does not correct the issue, please contact us.

Are there faster ways to charge my Flex Modular System?

Yes. You can use the Quick Wall Charger to charge faster using a wall outlet. You can also use more solar panels with the Flex MPPT Supercharger. Visit our website or give us a call to learn more.

How do I maximize my solar charging speed?

Read **Charging with Solar** and pay special attention to the information about how to set up your solar panels. If you want to supercharge your solar charging, you can add the Flex MPPT Supercharger upgrade, which allows you to add two more 90V strings of solar panels for a total of three 90V panel arrays for 90A of solar charge input. You could charge one Flex Battery in about an hour and a half.

As you expand your Flex Modular System with additional Flex Batteries, you can also boost your system's solar charge rate to as much as 990A. For every Flex Battery you add to your

FREQUENTLY ASKED QUESTIONS

system, you can also add another MPPT Supercharger (up to one per battery in your stack) to maintain a rapid charge time as you expand your system.

Before connecting six or more MPPT Superchargers, please consult with an Inergy Support Specialist by calling us. The MPPT Supercharger can be used only with a Flex 1500 or Flex DC Power Station.

Can I use the Flex MPPT Supercharger with my Kodiak or Apex?

Unfortunately, no. The Supercharger is designed specifically for the Flex modular platform and cannot be used with the Apex or Kodiak power stations.

Why do the Flex 1500 and Flex DC Power Stations have different solar charging specs than the Apex or Kodiak?

When we developed the Flex Modular System, we completely overhauled how the system charges. Our goal was to allow up to four (4) 100-Watt panels to be connected in series for those wanting to pursue that path, while not limiting the size of the solar string if connected in parallel. You can use additional panels in parallel to support the 30A maximum charge rate in sub-par solar conditions.

In previous systems, you were limited to a maximum solar input of 500 or 600W and you could use only parallel wiring configurations. With the Flex Modular

System, we removed those limits. You can now use series with four 12V 100-Watt panels, or you can use parallel with even more.

What is the difference between maximum solar input and maximum charge rate?

The maximum solar input is 90V to the MPPT charge controller; and if you stay within this range, the controller will charge the battery at a max rate of 30A.

Does the Flex Battery come with cables to connect it to my Kodiak or Apex?

No; you'll have to purchase the Flex-to-Ring-Terminal Adapter separately.

FREQUENTLY ASKED QUESTIONS

How fast can you charge the Flex 1500 and DC Power Stations with solar panels?

Short Answer: With one full array of panels you can charge one Flex Power Station in about three and a half hours. If you add the Flex MPPT Supercharger with additional panels, you can charge the Flex Power Station in about an hour and a half.

Advanced Answer: The Flex power consoles' on-board MPPT charge controller is rated for 14-90V of solar input, which gives you more options for solar panels in either parallel or series configurations. You will be able to charge one Flex Battery from 0 to 100% in about 3½ hours.

If you want to boost your solar charging ability beyond this, you can connect the Flex MPPT Supercharger, which includes two advanced maximum power point tracking (MPPT) charge controllers with up to 90V of solar charge input each, so it gives you even more options and charges faster using solar panels—you can charge one Flex Battery from 0 to 100% in as little as an hour and a half. You will love the freedom of capturing clean, unlimited power from the sun whenever you need it. The Flex Modular Platform is designed to be completely plug and play. To connect the Flex MPPT Supercharger to the Flex 1500 or Flex DC Power Stations, simply add the Supercharger anywhere in your stack (though, for maximum system efficiency in heavy-

use situations, it's best to locate it at the bottom, with the batteries on top). Make sure you secure the latch system all the way. It takes only seconds to triple your system's solar charge rate.

Can I connect off-brand solar panels to my Flex system?

Yes, you can use our EC8-to-MC4 adapter to do so. You can connect in either parallel or series (as long as you don't exceed the max input voltage, or VOC). Please follow the specs listed previously, and on the units themselves, for specific details.

FREQUENTLY ASKED QUESTIONS

Can I connect two Flex 1500 Power Consoles together to double the inverter output?

No, but you can expand the battery capacity with the Flex Battery, almost infinitely. Connecting two systems together could void your warranty.

What is the cycle life of the Flex Battery?

The cycle life of your battery is totally dependent on how you use it. Your Flex Battery could last anywhere from 400 cycles under heavy use up to 2,000 cycles or ten years if you use it to run moderate loads and take good care of it. Refer to the section of this manual titled **Flex Battery Basics**.

Can I connect third-party batteries to my system?

No; the Flex Modular Power Platform only supports Flex Batteries due to the communication requirements resulting from interfacing with the Kodiak, Apex, and Flex Power Stations. No third-party batteries of any type will function with the system. Our smart communications system ensures safety, reliability, and expandability, and cannot be bypassed.

How many Flex Batteries can you connect together in one stack?

You can connect up to five genuine Inergy Flex Batteries together in one stack. If you want to use more than five Flex Batteries in your Flex Modular

System, you will need a Flex Expansion Stack Base, which will be available soon.

When using your Flex Power Station in mobile applications, please do not attempt to carry more than three modules (one power console and two Flex Batteries) using the carry handle.

You can connect up to 96 Flex Batteries for nearly 100 kilowatt-hours of combined storage capacity.

Can I use more than one charge source at a time to charge the Flex Battery?

Yes. First, the MPPT controller in the Flex 1500 and Flex DC Power Stations

FREQUENTLY ASKED QUESTIONS

will charge each Flex Battery in your stack at the same time. One single Flex Battery will charge in as little as one hour. More batteries in the stack will, of course, take more time. If you need faster charge times, you can add the Flex MPPT Supercharger, which triples the standard solar charge input to an industry-leading 90A input. You can also directly charge each Flex Battery with a Standard Wall Charger or Car Charger. The Flex Battery accepts charge using any of the above methods simultaneously when connected to a Flex Modular System.

How big is the inverter?

The system has a 1500-Watt continuous (3,000-Watt surge) pure sine wave inverter.

Why does the DC portion of my Flex 1500 turn on when I draw a large amount of AC power?

We use the regulated DC output to increase the cooling capacity of the fans in the unit. As the state-of-charge gets lower, the fans may slow down. So, under certain circumstances, we power-up the regulated DC output to power the fans, but only on the rare occasion that the unit will overheat otherwise. This is usually only when drawing large amounts of AC power at a low state of charge or in a hot environment. Take care not to leave anything plugged into the DC outputs that you don't want turned on automatically in this situation, as all of the outputs may power-

up without warning. E.g. cooking equipment, heaters, or even just loads you don't want draining your battery unexpectedly.

Can I use the Flex Battery with my Kodiak or Apex?

Yes. With the addition of a Flex-to-Ring-Terminal Adapter, the Flex Battery will nearly double your storage capacity with 1,058 Watt-hours of additional capacity. If you want, you can even connect up to 96 Flex Batteries to one Kodiak or Apex for a ludicrous amount of battery capacity.

The Flex Battery can detect the state of charge of your Kodiak, Apex or additional Flex Batteries, and equalize to work as

FREQUENTLY ASKED QUESTIONS

one. If one battery is too low, the main battery will automatically charge it to a safe voltage range, at which point they will automatically connect and work as one large battery bank.

How does the Flex Battery connect to my Apex or Kodiak?

The Flex Battery connects to the Apex or Kodiak with the Flex-to-Ring-Terminal Adapter, which is sold separately.

Will the Apex Car Charger, Standard Wall Charger, and Quick Wall Charger work with the Flex Modular System?

Yes. All three work with the Flex platform.

Can I jump start my car with the modular system?

No; you cannot.

Can I charge each Flex Battery individually?

Yes you can charge each lithium expansion battery with the Standard Wall Charger or Car Charger.

How should I store my Flex Modular System?

Storing the system at 30-40% state-of-charge ensures the longest battery storage life. We recommend checking

the battery level every three months. Batteries can be permanently damaged if stored at 0% for long periods of time. Although they enter into a “deep sleep” mode eventually, lithium batteries and management systems will still slowly discharge on their own. Batteries may permanently deactivate if the voltage gets too low, requiring replacement. This is a critical safety feature, as charging would no longer be safe. The system does this automatically, preventing all charging.

Can I connect the Flex system to my home’s breaker panel?

The Flex system can connect to your home’s breaker panel as a backup power source only with the use of the Inergy-

FREQUENTLY ASKED QUESTIONS

approved Home Integration Switch, which you can purchase on www.InergyTek.com. With this Integration Switch, you will be able to use your Flex Modular System to run up 1,500W (3,000W surge) of power to up to four selected circuits within your home, in the event of a power outage or grid failure.

What is the warranty on the Flex Modular System?

Inergy offers a standard 24-month warranty on manufacturing defects.

Can I solar charge each Flex Battery individually?

No. The only safe way to solar charge a Flex Battery is through one of the Flex

consoles or an Apex or Kodiak Power Station.

Can I use the Flex Battery without the Power Console?

No, the Flex Battery isn't fitted with any output ports. No battery power is available unless attached to a compatible Flex console.

Can I use the Flex while it charges?

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

How long will the Flex Battery hold its charge?

Up to a full year, however; we

recommend checking the battery level every three months to ensure it is between 30-50% charged.

Can I fly on an airplane with the Flex, or ship it myself?

No. The Flex Modular System cannot be carried or checked onto any passenger aircraft. Similarly, due to the size of the internal lithium battery, shipping the Flex Battery can only be facilitated by a hazmat-certified shipping agent/service, in the original UN-certified packaging in which the device was shipped to you. For any returns or service, Inergy's trained personnel will provide everything you need to return your unit to our repair facility.

FREQUENTLY ASKED QUESTIONS

Can I connect lead acid or AGM batteries to the Flex?

No. ONLY genuine Flex Batteries supplied by Inergy should be connected to the Flex. No third-party batteries are currently supported.

My solar panels are connected correctly, but my Flex system's LCD display does not show a charge coming in. Why?

The Flex DC and Flex 1500 Power Consoles are equipped with a resettable circuit breaker on the MPPT Charge Controller to prevent damage. In the event that open circuit voltages are exceeded, this breaker will pop and turn off the charge controller to protect the

Flex system. If this happens, disconnect your solar panels using the process described in **Charging with Solar Panels** and simply reset the breaker by allowing it to cool for several minutes, then push it back into place. Before reconnecting your solar panels, you must make sure the open circuit voltage of your solar panel array does not exceed the specified limits (located in this manual and on the unit itself). If you need any help making sure your solar panels are wired correctly, please call us (See **Contact Us.**) We would be happy to assist you.

WARRANTY INFORMATION

INERGY HOLDINGS, LLC (“Inergy Solar” or “Inergy”) 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’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.

2. Warranty Period

In each case, the warranty period is measured starting on the date of shipment to 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.

3. “No Lemon” Policy

Inergy Solar warrants to the original consumer purchaser that should this Inergy product require service (rendered only by Inergy) on (3) three separate occasions within the above-stated 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 technician of product failure is required prior to replacement.

Your warranty remains in force for the duration of the original 24-month warranty period, and is in no way terminated by replacement product under this No Lemon Policy.

4. 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.

5. 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.

WARRANTY INFORMATION

6. Exclusions

Inergy's warranty does not apply to (i) any product that is misused, abused, modified, neglected, damaged by accident, or used for anything other than normal consumer use as authorized in Inergy's then-current product literature, or (ii) any product purchased through an unauthorized seller. Inergy'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 six months. The Flex Battery records critical system event data. This data can be used to determine if a battery has been improperly used, including but not limited to improper charging/discharging, short-circuits, water damage, and extreme temperature exposure.

7. How to Receive Service

To obtain warranty service, you must contact our technical support team via telephone, on live web chat on www.InergyTek.com, or via email. (See **Contact Us**.) 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 product packaging, clearly marking the RMA number on the package and including proof of your purchase with the product.

CONTACT US

If you have any questions about your Inergy Flex Modular System or the above instructions, please contact our support team using the information here:

Phone: _____ (877) 891-2657

Web Chat: _____ www.InergyTek.com / Use the web chat tool at the bottom right of the page.

Phone and Chat Hours: _____ Monday - Friday, 9:00 AM to 6:00 PM Mountain Time

Email: _____ support@inergysolar.com

NOTES



Designed in the U.S.A. and Made in China

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

INERGY

FLEX USER MANUAL v 1.3

