



Owner and Operating Manual for

**120VAC Manual Control
24VDC Solar Manual Control**

**120VAC Remote Control
24VDC Solar Remote Control**

GEN3.2 Remote Versions Only

Boat Lifts

Please read this manual thoroughly before operating your remote control boat lift system.

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Overview

Congratulations on your recent boat lift purchase. This owner and operating manual covers how to operate the following lift control apparatuses. Please refer to the appropriate sections of the document for the specific unit you have purchased. It is strongly advised that you read all relevant sections and familiarize yourself completely with instructions before operating your lift control unit.

120VAC Push Button Control

- Refer to [Push Button Operated Lift Controls Overview](#) section of this document.
- Refer to [Tips and Maintenance](#) and [Troubleshooting](#) sections of this document.

120VAC Remote Control

- Refer to [Remote Operated Lift Controls Overview](#) section of this document.
- Refer to [Tips and Maintenance](#) and [Troubleshooting](#) sections of this document.

24VDC Solar Battery Manual Control

- Refer to [Push Button Operated Lift Controls Overview](#) section of this document.
- Refer to [Solar Setup and Maintenance Overview](#) section of this document.
- Refer to [Tips and Maintenance](#) and [Troubleshooting](#) sections of this document.

Requires purchase of 2 batteries, as described below, to function:

- ☐ **Two 12v 35Ah Deep Cycle Marine AGM SLA Batteries**
- ☐ Each battery should not exceed 6" x 8" x 9.5"H
- ☐ Minimum 18A output
- ☐ Both batteries must be identical in brand, size, and model to ensure optimal performance

24VDC Solar Battery Remote Control

- Refer to [Remote Operated Lift Controls Overview](#) section of this document.
- Refer to [Solar Setup and Maintenance Overview](#) section of this document.
- Refer to [Tips and Maintenance](#) and [Troubleshooting](#) sections of this document.

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Push Button Operated Lift Controls Overview

This section of the document covers how to manually operate a **push button** 120vac or 24vdc solar battery lift control unit. Your push button operated lift control system is designed to be used with a 3-way push button (rocker switch).

Push Button Operation

- To **RAISE** boat lift:
From the **HOLD** position, move push button to **RAISE** position. Blower will turn **ON**.
After lift is in raised position, move push button back to **HOLD** position.
- To **LOWER** boat lift:
From the **HOLD** position, move push button to **LOWER** position.
After boat is floating free, move push button back to **HOLD** position.

**DO NOT LEAVE PUSH BUTTON IN LOWER POSITION AFTER BOAT IS FLOATING FREE.
SYSTEM WILL CONTINUE TO OPERATE AND WILL DRAIN BATTERY WHILE BOATING ON THE WATER.**

Do's

- Always raise the lift if it is not used for an extended period of time (more than a day), or in rough waters. By keeping it in the raised position, this will preserve the life of the lift during the winter (stationary ice, etc.), storms, and electrolysis.
- Always secure the boat to the boat dock in case the lift is accidentally lowered in your absence.
- Always keep valves closed (push button in HOLD position) when lift is not in use.

Don'ts

- If valves do not automatically open when boat lift is raising or in the raised position, never allow motor to run more than 5 seconds before opening valves. **FAILURE TO KEEP VALVES OPEN WHEN BLOWER IS ON WILL RESULT IN OVERHEATING AND DAMAGE TO BLOWER.**



Remote Operated Lift Controls Overview

This section of the document covers how to operate a **remote** 120vac or 24vdc solar battery lift control unit. Your remote system is designed with a 3-way push button (rocker switch), enabling you to operate your boat lift without a remote transmitter, if required.

Manual Override Operation

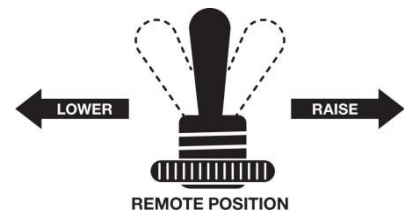
NOTE: The push button must remain in the **REMOTE** (center) position when the lift is not in use or when operating the remote. Remote key fob(s) will be locked out and inoperable while the switch remains in the RAISE or LOWER position.

REMOTE SYSTEMS HAVE A BUILT-IN SECURITY AUTO-SHUTOFF FEATURE TO PROTECT THE SYSTEM FROM OVERHEATING AND EXCESSIVE BATTERY DRAINAGE.

To raise your boat lift:

1. Move the push button to the **RAISE** position to raise the lift. When done raising the lift to the desired height, move the push button back to the **REMOTE** (middle) position to turn off the lift.

Auto-Shutoff Feature: If push button is manually left in the RAISE position after 8 minutes and is not moved back to the REMOTE position, the system will go into auto-shutoff mode. The LED light on front of unit will begin to blink rapidly for 15 seconds before turning the blower off and closing the valves. This will maintain the boat lift in the raised position. System must be reset manually by moving the push button back to REMOTE position before operating again.



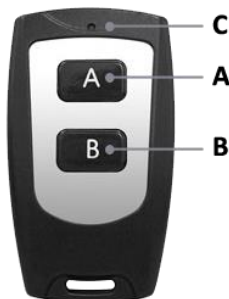
To lower your boat lift:

2. Move the push button to the **LOWER** position to lower the lift. When done lowering the boat lift completely into the water and your boat is floating free, move the push button back to the **REMOTE** (center) position to turn off the lift.

Auto-Shutoff Feature: If push button is manually left in the LOWER position after 12 minutes and is not moved back to the REMOTE position, the system will go into auto-shutoff mode. The LED light on the front of the unit will begin to blink rapidly for 15 seconds before closing the valves. System must be reset manually by moving push button back to the remote position before operating again.

Remote Key Fob Operation

The push button must be in **REMOTE** (center) position to operate the lift via remote key fob. Button(s) must be pressed for 1 second in order to transmit a signal to the lift. This is a built-in safety feature to help prevent accidental triggering of the lift.



A. Raise your boat lift. Press button A to raise the lift. When done raising the lift to the desired height, press button A again to turn off the lift. *All other key fob buttons are deactivated while lift is being raised.*

B. Lower your boat lift. Press button B to lower the lift. When done lowering the boat lift completely into the water and your boat is floating free, press button B again to turn off the lift. *All other key fob buttons are deactivated while lift is being lowered.*

C. LED Indicator. The key fob LED light should blink for the duration of each button press. If light does not flash when pressing any key fob button, the key fob battery is likely needs to be replaced. *Refer to the Replacement Battery section of this document on how to replace the battery.*



If the system is left running in the RAISE (after 8 minutes) or LOWER (after 12 minutes) position, the auto-shutoff feature will be activated to protect the system. The LED light on the front of the unit will begin to blink rapidly for 15 seconds before turning off the blower and/or closing the valves. System can be reset by pressing either the UP or DOWN button on the key fob or manual override push button on the unit.

Programming Your Remote Key Fob(s)

By default, two key fob remotes (Transmitters) are paired with the Receiver at the factory. When the unit is initially purchased, you should not be required to pair up the remote key fobs to the Receiver. If the key fob(s) are not responding and needs to be reprogrammed, the following steps should be performed.

Step 1: Gain access to the remote Enclosure (Receiver).

- Remove external housing of your control unit to access the remote Enclosure for programming.
- Locate the clear small LED button on the white remote Enclosure installed under the control unit housing.

Step 2: Reset (erase) all key fob modes previously programmed to the Receiver.

- Press and hold LED button for ~10 seconds until it begins to blink. An audible beeping from the speaker will be heard.

Step 3: Program the key fob to the Receiver.

- Press LED button 1 time and release. The LED button will stop blinking and maintain a steady light.
- Hold the key fob to close proximity of the Enclosure and press the A button on the key fob. Wait 5 seconds, then press the A button again.
- Mode 2 will be successfully programmed if there are two short beeps and LED light will turn off.

NOTE: Repeat step 3 for each additional key fob you wish to program to the Receiver.

Step 4: Final Step

- Unplug power to the control unit. Wait 5 seconds before plugging and turning unit back on.

Note: Mode 2 (Button A) is the default factory setting for all key fobs. Button B (Mode 1) is reserved for special installations only. Mode 1 will be successfully programmed if there is a long beep and LED light will turn off.



Solar Setup and Installation

If you have a solar battery control unit, the system is designed to recharge and maintain most standard 12v deep cycle marine for years of enjoyment.

Usage

The 24v system is not designed for continuous heavy-use. On average, it is designed to allow operate (raise) a boat lift 5-6 times weekly (based on an average of 8 hours of continuous sunlight). Be conscious in conserving batteries as much as possible. Contact the boat lift manufacturer for custom applications that require significant usage.

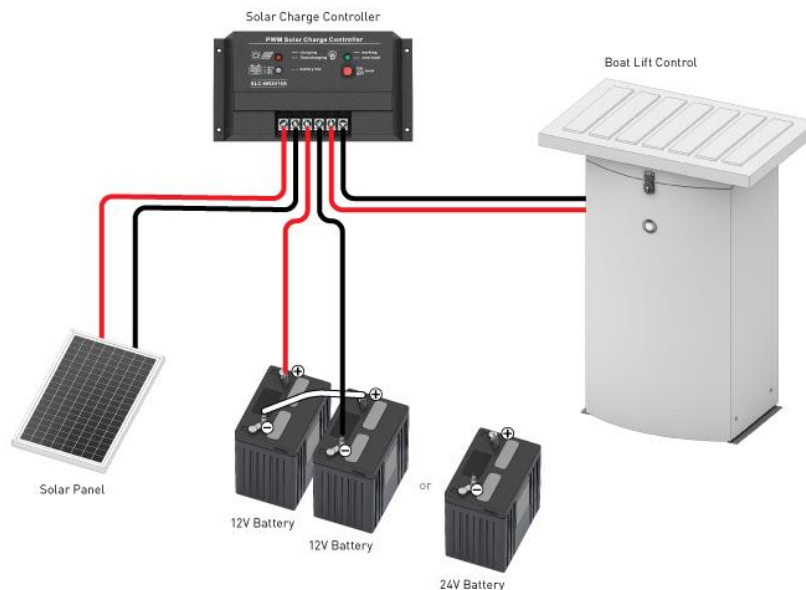
How it works

Solar panels convert light energy (sun) into 24vdc electricity which is then transported to the rechargeable batteries through lead wires and connectors.

WARNING: This product not designed to re-charge a fully discharged battery. Batteries depleted beyond 80% cannot be fully recharged and fully depleted (dead) batteries will not charge.

Setup

Ensure that the front of the solar panel on your control unit faces the sun with no shadow cast on the solar panel. It is recommended that the long side of the solar panel be positioned towards the South-to-North direction.





IMPORTANT: READ BEFORE PROCEEDING WITH INSTALLATION

Battery requirements

The 24v solar system requires two 12vdc 35Ah deep cycle marine batteries wired up to a 24v series to work properly. To ensure longevity and maximum protection of the system, the battery should meet the criteria below. *Failure to use proper batteries can permanently damage the system.*

- ☐ **Two 12v 35Ah Deep Cycle Marine AGM SLA Batteries**
- ☐ Each battery should not exceed 6" x 8" x 9.5"H
- ☐ Minimum 18A output
- ☐ *Note: both batteries must be identical in brand, size, and model to ensure optimal performance*

Installation

Upon receiving the system for the first time, all wiring connections are completed at the factory. User is only required to install and connect the system to a 24v battery source. Always ensure that installation is performed in the following sequence. Failure to do so can potentially harm the system.



NOTE: INSTALLATION REQUIRES TWO PEOPLE

1. Remove cover

- Remove (4) screws on the bottom outside cover.
- Remove wire tie from wiring bundle on top plate.
- Carefully slide cover up and over the frame and control panel.
- 💡 *Tip: Put screwdriver or rod through hasp hole to secure lid to cover before lifting*
- 💡 *Tip: Lift from front and back rather from sides (allows more hand clearance)*

Note: Take extreme care in ensuring that the wires connecting from the solar charge controller (located under the lid) through the control panel to the lift control are not forcibly jerked when removing the cover. Hard jerking can loosen wires which will cause the system to not to work properly.

2. Install and connect batteries

To install the batteries:

- Place both 12v batteries side-by-side onto battery plate resting against the frame side opposite of the motor.
CAUTION: Ensure battery terminal posts are facing away from each other (minimum 4-6 inches) to avoid accidental short-circuiting.
- Connect batteries to 24v series using the 16" BLACK jumper wire with yellow ring connectors supplied with your system. Connect one end of the jumper wire to the (+) terminal of Battery 1 and the other end of the jumper wire to the (-) terminal of Battery 2.
Note: Ensure connection between batteries are secure. Failure to do so can potentially harm the system or create bodily harm.

3. Connect the boat lift control

Connect the two lead wires with battery terminal ring connectors (stemming from light bulb symbol indicated on the solar charge controller) to the corresponding battery terminals.

- Connect the RED (+) lead wire with ring connector to the unattached (+) terminal of Battery 1



- Connect the BLACK (-) lead wire with ring connector to the unattached (-) terminal of Battery 2

Note: After ensuring the connections are tightly secured, all LEDs will light if wires are connected properly. (Refer to Solar Charge Controller and LED Displays section for details.) Failure to secure connections can potentially harm your system.



Example 12v 35ah Deep Cycle Marine AGM Batteries



Side-by-Side Installation

4. Quick test

Briefly test the system to ensure it is working before putting the covers back on.

- Move the manual override push button to the RAISE position. Ensure that the blower motor turns on and one valve opens.
- Move the manual override push button to the LOWER position. Ensure that both valves open.
- Move the push button to the HOLD position installing cover.

5. Install cover

- Carefully slide cover back over the top of the unit, slowly sliding it down and ensuring that wires are not touching any part of the blower motor.
 - 💡 *Tip: Place long lift control and LED light slack wires to front of lift control before sliding cover onto unit.*
 - 💡 *Tip: Lift from front and back rather from sides (allows more hand clearance)*
- Gently tighten any slack wire by pulling the wires upward through the top plate control panel. Use a wire tie or rubber band to secure the wire bundle and insert it into the cavity of the lid.
- Attach lid to lift control frame using existing 4 screws.

6. Installation complete. Lift control is now ready for use.



Solar Charge Controller and LED displays

Solar charge controller monitors the state of charge of the battery bank, controls the charging process, and manages the connection/disconnection of loads. LED indicators display the current status of the system to ensure it is working properly. Solar charge controller consists of the following components:

Icon	Indicator	State	Description
Solar Panel	Battery Charge LED	Off	Not charging. Solar panel not connected or weak sunlight.
		On	System is charging battery.
		Flickering	Float charging. Battery fully charged.
Battery	Battery Capacity LED	Green On	Battery full
		Yellow On	Battery normal
		Red On	Battery low
		Red Flickering	Low voltage protection for battery
Load	Lift Control LED	On	Lift control connected.
		Off	Lift control disconnected.
		Flickering	Load disconnected, output overload or short-circuit.

Caution and Maintenance

1. Keep children away from solar system.
2. Always check charging process regularly.
3. Solar charge controller is maintenance-free.
4. Always keep the tempered glass surface clean with a soft cloth in order to ensure maximum output.
5. Avoid contact with acid and alkali.
6. Operating the solar charge controller is dangerous in any of the following situations:
 - Solar charge controller does not work at all
 - Solar charge controller or connected cables are visibly damaged
 - Emission of smoke or fluid penetration
 - When parts are loose

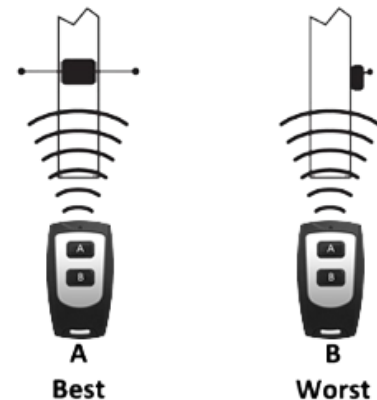
In these cases, immediately disconnect the solar charge controller from the solar panel and battery. Contact your boat lift manufacturer or dealer.



Tips and Maintenance

With the proper care, your remote and manual-operated systems will offer you years of trouble free service. The following recommendations will help ensure the longevity of your system.

- It is not necessary to unplug the system when left unattended for short periods of time. False triggering from another remote device is highly unlikely. However, during the winter or when you will be away for an extended period of time, it is a good idea to unplug your system. This will help prevent damage from lightning or other unforeseen conditions.
- All AC lift control units are equipped with a built-in safety GFCI to help protect from voltage fluctuations that are common on many boat docks, especially community docks. Occasionally the system might receive a large enough voltage fluctuation to trip the safety GFCI. If this happens, the system will not respond to the remote transmitter and the GFCI will need to be reset. If this does not solve the issue, the GFCI may need to be replaced.
- It is advised that your boat lift should always be in the raised position even if the lift is not in use or there is no boat on the lift. This preserves the durability of your boat lift and prevents from electrolysis or salt corrosion, which can slowly corrode your boat lift.
- Never operate your boat lift when it is not in view. Occasionally, a lift has unknowingly been triggered from inside of a house or condo leading the owner to believe the system has malfunctioned. It is a good practice to store the transmitter in a safe place when not in use.
- When raising the lift without a boat on it, allow the tanks to just break the surface before shutting off the lift. This will remove stress both from your dock and the lift, and minimize the time it takes your lift to drop when you return.
- **ANTENNA.** Your antenna under the housing should be kept clean and free of cobwebs. Attempt to keep the antenna as straight as possible. If the antenna is broken, it will have to be replaced. Be careful not to pinch or cut the wire connecting the antenna. This will result in poor performance or malfunction. Never wash down the antenna. It is designed to resist moisture, but can be damaged if directly sprayed with water.
- **RANGE.** Your remote system uses the most powerful transmitter and receiver allowed by law. Environmental and atmospheric conditions can affect your range. The system has been tested to over 500 feet. However, not everyone will experience this type of range. Best range is achieved by pointing the remote so that you are facing across the antenna as shown in diagram A. Pointing the remote down the end of the antenna will result in poor range, as shown in diagram B.
- **TRANSMITTER.** Your remote transmitter is waterproof but **will not float**. Caution should be used around the water. If a remote falls in the water or is splashed, **do not** press the buttons. If the remote has been underwater for more than 30 minutes, open the case and let the circuit board dry. If the battery becomes wet, replace it. If the range of the remote becomes weak or the LED fails to light up, replace the battery. The remote uses a 12 volt DC battery, model number 23A, which may be found in most stores that sell consumer electronics.
- **REPLACEMENT BATTERY.** Hold the remote in your hand and twist the keychain portion to help pry the remote halves apart. Take great care to ensure that the membrane is put back into the channel over the lower half. This creates a waterproof seal.





➤ **MAINTENANCE.** To help ensure the longevity of your boat lift control unit, it is advised that periodic maintenance is performed 2x annually. Like your car or boat, most materials are highly resistant but not completely corrosion-proof in extreme marine environmental conditions, more specifically in geographical areas that have constant salt air and salt water exposure.

- To help combat corrosion, it is recommended that the following areas of your lift control unit be wiped down with a clean damp cloth (use CLEAN WATER), and a long-term corrosion inhibitor and anti-corrosion spray be applied:
 - Valve nut where the handle attaches to the ball valve
 - Internal and external components of the ball valve
 - Welds around the handle and rod
 - Any additional areas that may show any sign of corrosion
 - Recommended anti-corrosion spray: Clear Everbrite (www.everbrite.com)

The following applies to solar units only:

- As the battery in your lift control unit charges and discharges, it creates gases that escape through the vents in the top of the battery. As the gases escape, an acid residue also escapes and carries to the top of the battery. Over time, residue builds up around the battery terminals, cable ends and battery tray. Removing the residue without damaging the battery takes just a few minutes and will restore the connection between the battery terminal and battery cable end. This ensures that your lift control unit always operates under maximum performance conditions possible.



Troubleshooting

Sometimes, unplanned or unforeseen events can cause either the remote or boat lift to fail. Read through the list of possible problems before calling your lift dealer for service. Most situations can be resolved by following the steps below.

1. The remote will neither raise nor lower the lift.
 - a. Check to see if the manual push button works. If it does, continue below. If not, go to #2.
 - b. Make sure you are pressing the remote for at least 1 second.
 - c. Make sure the red LED is lighting on the remote (if not, replace the battery).
 - d. Make sure you are within range of the lift (500' in most cases).
2. Neither the manual push button nor the remote will operate the lift.
 - a. Make sure there is power at the dock.
 - b. If equipped with a GFCI, make sure it is working properly. See #7.
3. The range on my remote is not as good as it used to be.
 - a. Check to make sure that the antenna wire is not bent or if the wiring to the antenna has any breaks or cuts.
 - b. Clean off cobwebs or dirt (they can affect your range). Do not apply water or chemicals.
4. My remote works but the strobe light is not flashing.
 - a. Make sure the wires to the strobe have not been pulled loose.
 - b. The strobe light can and will burn out, please call for a replacement.
5. The strobe is flashing but my lift is not lowering. These conditions are not remote related and are characteristic of this type of boat lift.
 - a. Make sure nothing has floated into the lift that could prevent it from lowering, such as sticks, trash, or a tree branch.
 - b. If you raise the lift all of the way up without a boat on it, it can take a very long time to drop.
 - c. If the water is rough, the waves can cause the water in the tanks to block the air hose. This will cause an "air lock" which will prevent the lift from lowering. Turn blower on to blow air into the air hose to clear proceed in continuing lowering the lift.
6. The lift will not stop raising/lowering with the remote.
 - a. Make sure the manual switch is in the remote position.
 - b. See #1.

The following is applicable to only AC-powered units (does not apply to DC Solar units)

7. Checking for GFCI failure.

GFCIs are susceptible and purposely **designed** to fail a specific number of times in protecting the end-user and blower/pump equipment before experiencing total failure. This does not necessarily mean that the boat lift control unit is defective. Environmental factors such as power surges, moisture, etc. can cause GFCI failure.

Check and ensure your dock still has power and reset the GFCI by pushing on the RESET button on the top plate. If your system still fails to have power, the GFCI may have reached a point of "total failure" status. Most common solution is simply purchasing a replacement 20amp GFCI which can be purchased at most hardware stores.

If the steps above do not fix the problem, call your local dealer for service. Your remote system has been designed using a plug-n-play feature allowing the remote module to be easily swapped out without sending back the entire lift control unit.

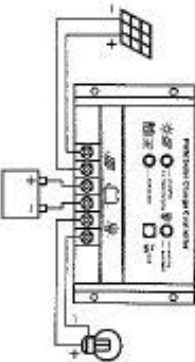
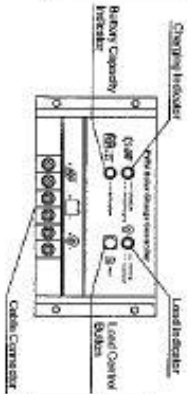
Troubleshooting faults and remedies for solar charge controller

Thank you for choosing the Solar Charge Controller. Please read this manual carefully before use to ensure correct, safe and effective product operation. Please keep this manual in a safe place for future reference.

Features

- LED indicators show the system status at all times including:
 - a. Battery capacity
 - b. Charging and discharging state of the battery/system
- Electronic Protections:
 - a. Reverse Polarity
 - b. Short Circuit
 - c. Battery Over-Charge and Over-Discharge (At night)
 - d. System Overload (Loads exceed the system parameters)
 - e. NO REVERSE POLARITY LOAD PROTECTION. Incorrect load connection can cause permanent system and/or component damage. Be very careful when connecting loads to ensure the correct polarity.
- Outstanding battery charging performance utilizing PWM technology, increasing charge efficiency between 3% - 6% as compared with non-PWM charging
- Charging parameters are preset, no adjustment is required.

Installation Instructions



Controller Layout

Wire Connections

Connecting the System:

- Install controller in a well ventilated and protected environment;
- Unit is not waterproof, keep away from water and moisture.
- Keep away from flammable liquids and gases.
- Recommend suitable multi-core cables. Make sure that the current density is 4A/mm² or less, which can reduce the voltage drop of line (11AWG cable is recommended for 10A controller and 9AWG cable is recommended for 20A controller)
- Connect the Battery First. The battery capacity LED will light up as soon as you connect the Battery. If it does not light up the battery is likely connected in reverse.
- Connect the Solar Panel next. When connecting the Solar Panel the Charging LED will flicker twice to indicate a good connection and the system is working. If the LED does not light up the Solar Panel is likely connected in reverse.
- Finally connect the Load (Light, Fan, etc) to the load output terminal of the controller. Pay close attention to the polarity. Connecting incorrectly may result in permanent damage to your load.

Disconnecting the System:

Disconnect the panel first, then the battery and finally the load.

Notice:

Voltage and capacity of the battery as well as voltage and current of solar panel must match voltage and current of controller.

LED Indicators Instruction

Icon	Indicator	Status	Interpretation
	Charging LED	On	Not charging, solar panel not connected or weak sunlight
		On	System is charging the battery
		Flickering	Final charging, battery fully charged
	Battery Capacity LED	Green Led On	Battery capacity full
		Yellow Led On	Battery capacity normal
		Red Led On	Battery capacity low
		Red Led Flickering	Low voltage protection for battery
	Load LED	On	Load on
		Off	Load off
		Flickering	Load closed, output overload or short circuit

FAQ & Trouble Shooting Guide

Problem	Display	Possible Reason	Corrective Action
No power getting to the load	Battery Capacity LED Off	Capacity of battery is insufficient	Battery will be connected to the load automatically after charged.
		Voltage of the terminal of battery is too high.	Reserve the full and re-connected the battery
		When connection of battery is loose.	Check the wiring of battery.
Battery powers of short duration	Load LED Flickering	Overload or short-circuit.	Shut off all loads and resolve the fault. Controller will try to release the protection mechanism automatically in two minutes, or equivalent can press the load switch to reset the output.
Battery charges too quickly	Charging LED Flickering	Capacity of battery has been very limited, likely old or damaged.	Battery likely requires replacement.
		Battery I.R. high, capacity low, connecting with is possibly too thin and too long.	Battery likely requires replacement, shorter / thicker connecting wires should be installed.
		Solar module polarity reversed.	Check the connections and correct the polarity.
		Wires connection of solar panel is loose or damaged.	Check the wiring of solar panel.
		There is no sunshine or sun is covered.	It is normal.
		Solar panel is damaged.	Replace the solar panel.

Warranty

The Solar Charge Controller has a warranty of 1 year from date of invoice. Please read these instructions very carefully. The manufacturers shall not be liable for damages to the controller, including:

- The installation is not completed according to the instructions in this user's manual.
- The controller is used in conditions outside of the environmental and technical requirements, such as wet and damp conditions.
- The controller is opened & repaired by yourself or any other unauthorized person.
- Instances of natural disasters (acts of God) out of our control which can cause the breakdown, damage and aging of the controller.
- Improper transportation or storage.
- The warranty is immediately void if batch numbers, serial numbers or identification marks are manipulated or are unidentifiable.

The controller is equipped with solar panel and battery reverse connection protection, but it DOES NOT HAVE LOAD REVERSED CONNECTION PROTECTION. We are not liable for damage caused to loads due to incorrect, reversed connection of loads.

- This controller can only be used to control the charging from a solar panel to a lead acid battery. It cannot be used to control power generated from any other type of device such as a Gasoline Generator to charge the battery. Misuse waives the controller warranty.