Limited Warranty Conditions

The above Limited Warranty is further subject to the following conditions: This Limited Warranty extends only to Products distributed and/or sold by the Company. It is effective only if the Products are purchased and operated in the USA. This Limited Warranty covers ***only*** "normal use" of the Product ("**Normal Use**" as used herein, is defined as operating the system as defined by the guidelines and instructions presented in this document". The Company shall not be liable under this Limited Warranty for any damage or defect resulting from (i) misuse, abuse, neglect, improper shipping, storage, or operation;
(ii) Service or alteration by anyone other than an authorized dealer; or (iii) damages incurred through irresponsible, non-intended, or any other use other than Normal Use. You must retain your bill of sale or other proof of purchase to receive Limited Warranty service. No Limited Warranty extension nor extension of the Warranty Period will be granted for any replacement part(s) nor any new Product furnished to the purchaser in fulfillment of this Limited Warranty.
Please note that any warranty services or questions must be accompanied by the serial number, located on the controller enclosure of the lift. *This number serves as your warranty number and must be retained***.** The Company will offer no warranty service without this number.
All warranty claims must be reported to the dealer from whom the lift was purchased as they have responsibility for handling your warranty claim. The dealer is to contact the Service Department of the Company and provide the serial number of the lift along with a description of the events leading to the warranty claim. Dealers may charge for labor, service, travel, or other associated costs to make repairs, and such charges are not covered by this Limited Warranty. All parts used to replace defective materials must be genuine Staying Home Corporation parts to be covered by this Limited Warranty. This Limited Warranty gives you specific legal rights, and you many have other rights which vary from state to state.

Staying Home Corporation
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Solar Charge Controller
Model PV-17
Owner's Manual

November 1, 2022

Contents

We at Staying Home Corporation greatly appreciate your gracious willingness to trust us with your accessibility needs. Each of our associates take a great deal of pride in designing and building products to assist people in staying in the homes they have grown to love.

Located just south of Kansas City, MO in the small town of Harrisonville, we understand what it means to work hard and how important it is to spend your money wisely. While we cannot promise you will never have a problem with your lift, we give our word we will do everything we can to make sure your issues are addressed. If you cannot get in touch with your dealer, you may contact our office directly and we will attempt to contact them for you. Our toll-free number is 877-378-4275 and we are generally open Monday – Friday from 7:00 – 5:00 CST. If able, feel free to visit our website at www.stayinghome.com to see other products available to enable you to safely reside in your home.

Date Purchased_____

Dealer Name/Phone _____

Serial #_____

Limited Warranty

This Limited Warranty is issued by **Staying Home Corporation** (the "**Company**") in favor of the original purchaser of the Product. It commences upon the date of purchase, expires upon the second anniversary date thereof (the "**Warranty Period**"); and is otherwise conditioned as hereafter described and, in the paragraph captioned "Limited Warranty Conditions".

The Company warrants to the original purchaser of a solar charge controller manufactured by the Company to be free from defects in material or workmanship during the Warranty Period defined as follows:

{2 Years for all component parts}

- and will repair/replace defective parts with new or reconditioned parts; or replace with an entirely new Product at the Company's option, without charge to the original purchaser. Shipping Fees both to and from the Company for returns pursuant to this Limited Warranty must be paid by the purchaser. Original parts replaced by the Company or an authorized dealer, become the property of the Company. Any after-market additions or modifications will not be warranted.

The purchaser is responsible for the payment, at current rates, for any service or repair outside the scope of this Limited Warranty. The Company makes no other warranty, either express or implied, including but not limited to implied warranties of merchantability, fitness for a particular purpose, or conformity to any representation or description, with respect to this Product other than as set forth herein. The Company makes no warranty or representation, either express or implied, with respect to other manufacturer's product or documentation, quality, performance, merchantability, fitness for a particular purpose, or conformity to any representation or description. Except as provided below, the Company is not liable for any loss, cost, expense, inconvenience or damage that may result from use or inability to use the Product. Under no circumstances shall the Company be liable for any loss, cost, expense, inconvenience or damage exceeding the purchase price of the Product. This Limited Warranty and remedies set forth herein are exclusive and in lieu of all others, oral or written, expressed or implied. No reseller, agent or employee is authorized to make any modification, extension or addition to this Limited Warranty. Labor costs are not covered by this Limited Warranty.

Maintenance

- Verify the controller is mounted in a clean, dry and ventilated area.
- Verify cables going into the controller are free from damage or wear.
- Verify terminals are free from corrosion, insulation damage and burnt/discoloration marks.
- Verify the solar panel is securely fastened.
- Verify the solar panel is not shaded by a tree or other object.
- It is not recommended that you clean the solar panel, but if you do, only use a soft stream of water from your garden hose (just like rain). Using any type of high-pressure attachment or a power washer will likely cause damage to your solar panels which could greatly (and permanently) reduce your production and void your warranty. Never apply any chemicals to the panel.

General Information

The solar charge controller is an intelligent controller suitable for various off-grid solar applications. It protects the battery from being over-charged by the solar modules and over-discharged by the load. The controller features a smart tracking algorithm that maximizes the energy from the solar panel and charge the batteries. At the same time, the low voltage disconnect function will prevent the battery from over discharging.

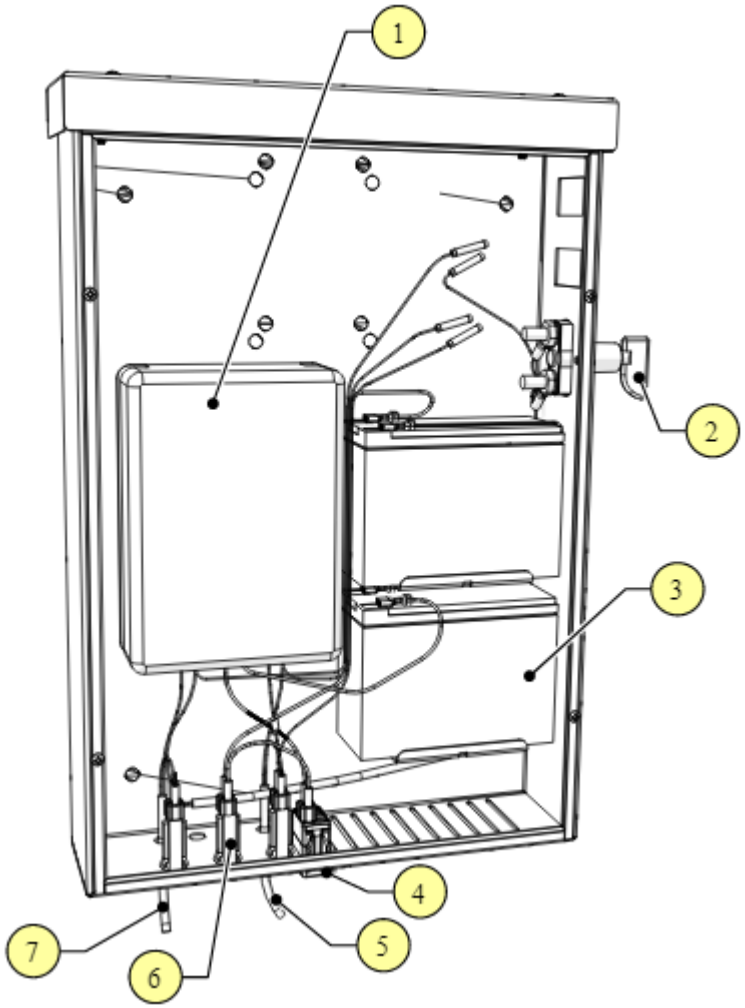
The charging process has been optimized for long battery life and improved system performance. The comprehensive self-diagnostics and electronic protection functions can prevent damage from installation mistakes or system faults.

Key Features

- Innovative MPPT technology with high tracking efficiency up to 99% and peak conversion efficiency of 98%
- Electronic protection: Overcharging, over-discharging, overload, and short circuit
- Reverse protection: Any combination of solar module and battery, without causing damage to any component
- The controller monitors the temperature and uses this data for accurate temperature compensation. This ensures proper battery charging regardless of the temperature.
- RS232 port to communicate with Bluetooth module (optional)

MPPT Technology

The MPPT Charge Controller utilizes Maximum Power Point Tracking technology to extract maximum power from the solar panel. The tracking algorithm is fully automatic and does not require user adjustment. MPPT technology will track the panel's maximum power point voltage as it varies with weather conditions, ensuring that the maximum power is harvested from the array throughout the course of the day.



Key Components

1. Solar Charge Controller
2. Solar Panel Voltage Disconnect
3. Two 12 Volt 10 AH Batteries
4. Controller On-Off Switch
5. Load to Lift
6. Circuit Breakers
7. Cable to Solar Panel

Battery Indicator

Condition	Status
Solid	Battery bank is normal
Slow Flashing	Battery bank is overcharged *Disconnect the wire going to Load + and let the charge the batteries. Batteries may need*
Fast Flashing	Battery bank is over-discharged

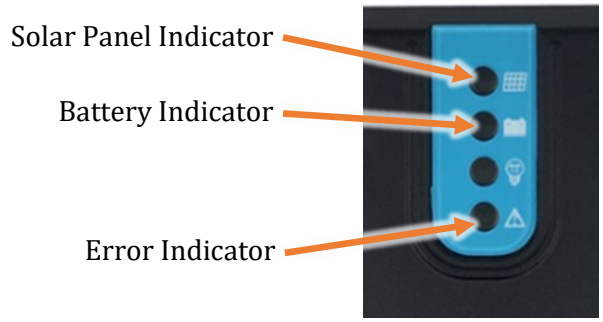
Error Indicator

If Error is illuminated, press the ▼ key on the controller one time to display the Error Code.

Error Code	Description
E0	No error detected
E1	Batteries over-discharged
E2	Batteries over-voltage
E3	Batteries under-voltage
E4	Short circuit from lift
E5	Lift overloaded
E6	Controller over-temperature
E8	Solar Panel input over-current
E10	Solar Panel over-voltage

LED Indicators

Controller LED Indicators when Illuminated:



Solar Panel Indicator

Condition	Status
Off	The Panel is **not charging** the battery bank
Off during daylight	*Ensure that the PV wires are correctly secured inside the Controller PV terminals. Use a multi-meter to make sure the poles are correctly connected to the*
Solid	The Panel is charging the battery bank
Slow Flashing	The Controller is undergoing boost stage
Single Flashing	The Controller is undergoing float stage
Fast Flashing	The Controller is undergoing equalization stage
Double Flashing	The Panel is charging the battery bank at a slow rate. Ensure Panel is not shaded

Operation

The charge controller is programmed to function as needed to charge the batteries in a stair lift or wheelchair lift.

The controller needs to be powered on at all times.

Also, the solar panel voltage disconnect needs to be on at all times. Turn red key clockwise to turn off, counter-clockwise to disconnect. The red key can be removed as a form of lockable disconnect.

> ***Caution:*** *The solar disconnect should never be on when the controller is turned off.*

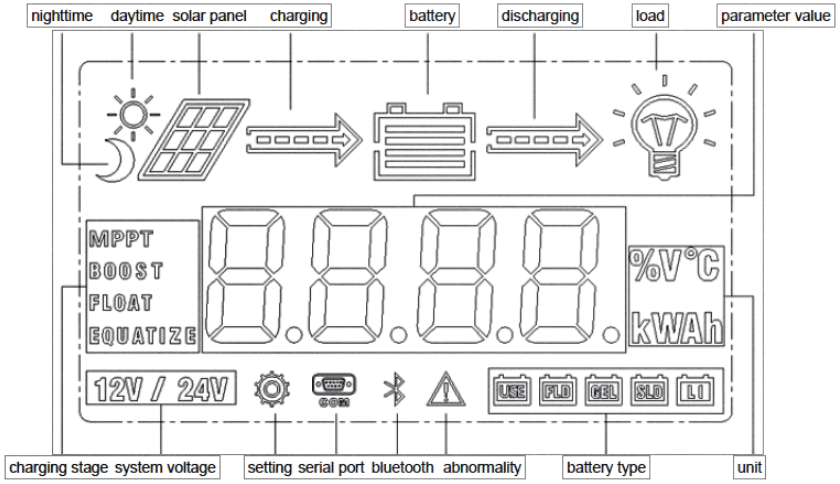
The solar array voltmeter displays the voltage coming from the solar panel. Voltage will vary between 0 and 40VDC.

The battery voltage voltmeter displays the voltage of the onboard batteries.

Controller LCD Screen

The controller is equipped with an LCD screen and 4 directional buttons to maneuver through the menus.

The main screen shows the status of the solar panel, batteries and load as well as the battery voltage.



Use the up and down directional buttons to see other values:

1. Solar Panel Voltage
2. Charging Current
3. Battery Capacity
4. Battery Voltage
5. Load Current
6. Accumulated AH
7. Discharged AH
8. Ambient Temperature C°
9. Load Mode *Should be set to 17*
10. Error Code *See page 9 for codes*

Caution: *Using the right and left directional buttons may change the value of the settings.*

Charging Stages

The charge controller has 4-stage battery charging algorithms for a rapid, efficient, and safe battery charging. They include: Bulk Charge, Boost Charge, Float Charge, and Equalization.

1. **Bulk Charge:** This algorithm is used for day to day charging. It uses 100% of available solar power to recharge the battery and is equivalent to constant current. In this stage the battery voltage has not yet reached constant voltage, the controller operates in constant current mode, delivering its maximum current to the batteries (MPPT Charging) . When the batteries reach the constant voltage set point, the controller will start to operate in constant charging mode, where it is no longer MPPT charging. The current will drop gradually. This has two stages, equalize and boost and they are not carried out constantly in a full charge process to avoid too much gas precipitation or overheating of the battery.
2. **Boost Charge:** Boost stage maintains a charge for 2 hours.
3. **Float Charge:** After the constant voltage stage, the controller will reduce the battery voltage to a float voltage set point. Once the battery is fully charged, the charge controller reduces the voltage charge to smaller quantity, while lightly charging the batteries. The purpose for this is to offset the power consumption while maintaining a full battery storage capacity.
4. **Equalization:** Is carried out every 28 days. It is intentional overcharging of the batteries for a controlled period of time. Batteries benefit from periodic equalizing charge, which can stir the electrolyte, balance battery voltage and complete chemical reaction. Equalizing charge increases the battery voltage, higher than the standard complement voltage, which gasifies the battery electrolyte. During this stage, the load to the lift is turned off, causing the lift to beep.