Elite Power Solutions

ePower 4803c and 4803e

Installation and Operation Manual

Warranty Terms

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1. Introduction

The ePower 4803 line of products is a fully enclosed, all-in-one, drop in 48 volt Lithium-Ion battery intended for use in golf cars. The ePower 4803c model fits in a Club Car Precedent. The ePower 4803e model fits in an EZ GO RXV. These are some of the most commonly available golf car models available in the market.

The ePower 4803 line includes a standard 15 amp on board charger inside of the battery case which will recharge the unit in 4 hours or less.

The lithium ion battery in the ePower 4803 series offers high round trip charge/discharge efficiency compared to traditional lead acid batteries, a longer service life and no maintenance is required.

The ePower 4803 line is recommended for use with stock or minimally modified vehicles with continuous power ratings of 5kW or less. It is not recommended for use in vehicles with high speed motors and controllers or on heavy vehicles. The ePower 4805 is more suitable for these applications.

2. System Components

4803E for EZ Go

4803C for Club Car

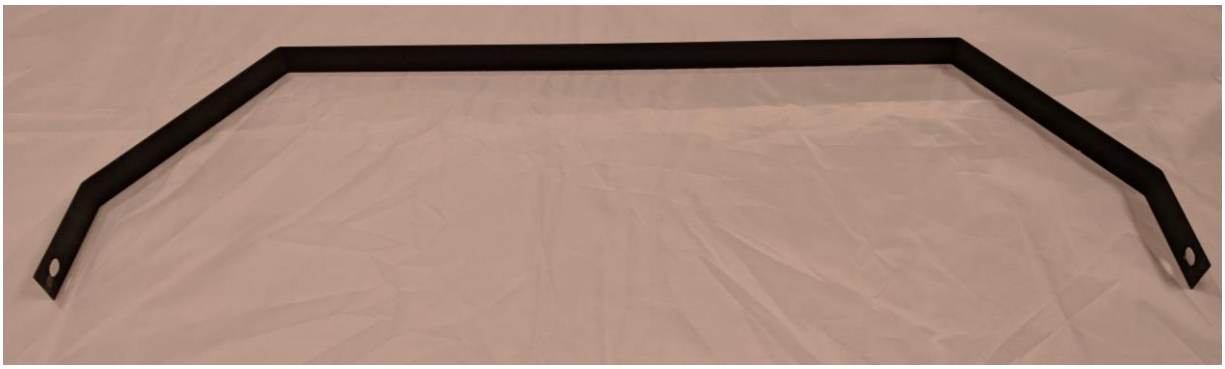
The ePower 4803 battery comes with the following accessories:

DC Cord:

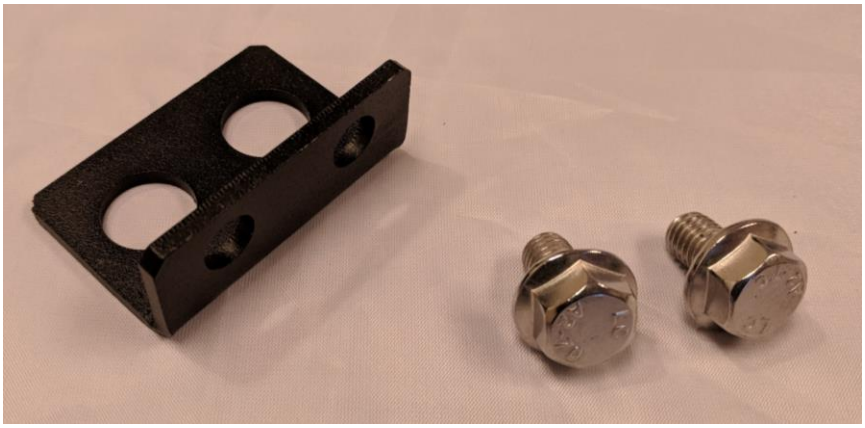
AC Cord:

State of Charge (SOC) Gauge and Charger Indicator:

Hold Down Bracket (EZ Go only):



Lifting Brackets (EZ Go only, quantity 4 per system):



3. Installation ePower 4803c for Club Car Precedent

It is highly recommended that the vehicle be test driven before installation of the ePower product to ensure that the vehicles existing systems operate as normal.

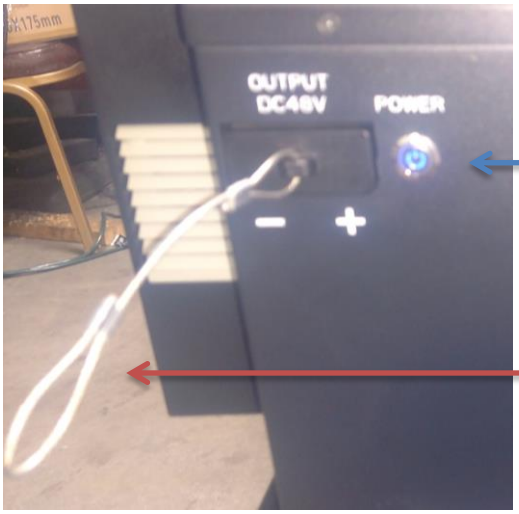
A) Remove the seat bottom. The vehicles existing lead acid batteries will have to be removed. Please recycle these batteries properly.

B) The battery tray should be thoroughly cleaned of any residual battery acid using a 50/50 mixture of baking soda and water to scrub the tray with a soft bristle brush. The tray should be rinsed with water and dried thoroughly before proceeding.

C) Two people should team lift the ePower battery in to the vehicle. The ePower 4803c sits down vertically in to the battery tray as shown below:

D) Install the 120VAC power cord on the vehicle using the existing charge port hole. Connect the AC cord to the ePower's input. The connector has a cam lock type connector. When aligned properly and turned it will click in to its locked position.

E) The main DC power cable has a push in style connector marked "Output DC48V". There will be a plastic protective cover installed in the plug from the factory. To remove the plug grasp the wire hook and give it a sharp pull to remove.



The ePower comes with a pre-made main power harness. For this step ensure that the main Power button is in the off position, the back light will not be lit. Connect the ring terminals of the main power harness to the vehicles existing positive and negative connections. Plug the connector in to the ePower DC 48V output by firmly pressing it in to the ePower until the connector click in to place.

F) Optionally, the included state of charge gauge can be installed on the vehicle where desired. The state of charge gauge has four LED's which represent 25% increments of the batteries available charge. A fifth LED at the bottom of the gauge indicates the chargers status. While the vehicle is charging the LED will flash and will turn solid once the battery is fully charged.

G) Secure the ePower to the vehicle by using four self drilling screws through the mounting feet at the bottom of the box to mount the ePower to the vehicle.

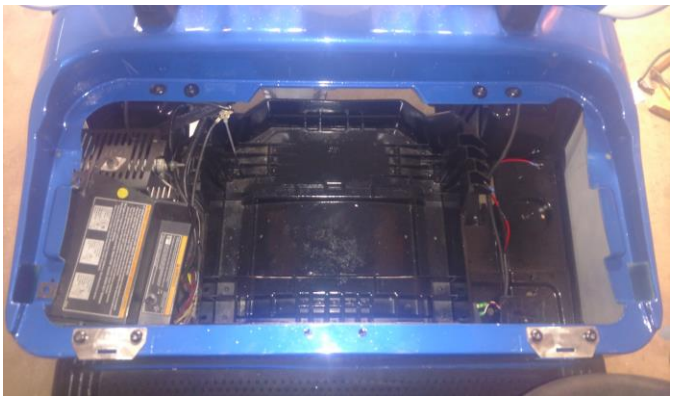
H) To activate the system press the main power button. The back light will turn on the button after a brief moment indicating the system is on. 48V power will be activated after a few seconds. The system is now on and the vehicle can be driven. It is highly recommended that the vehicle be plugged in and allowed to charge to full before driving any significant distance however.

4. Installation ePower 4803e for EZ Go RXV

It is highly recommended that the vehicle be test driven before installation of the ePower product to ensure that the vehicles existing systems operate as normal.

A) Remove the seat bottom. The vehicles existing lead acid batteries will have to be removed. Please recycle these batteries properly.

B) The battery tray should be thoroughly cleaned of any residual battery acid using a 50/50 mixture of baking soda and water to scrub the tray with a soft bristle brush. The tray should be rinsed with water and dried thoroughly before proceeding.



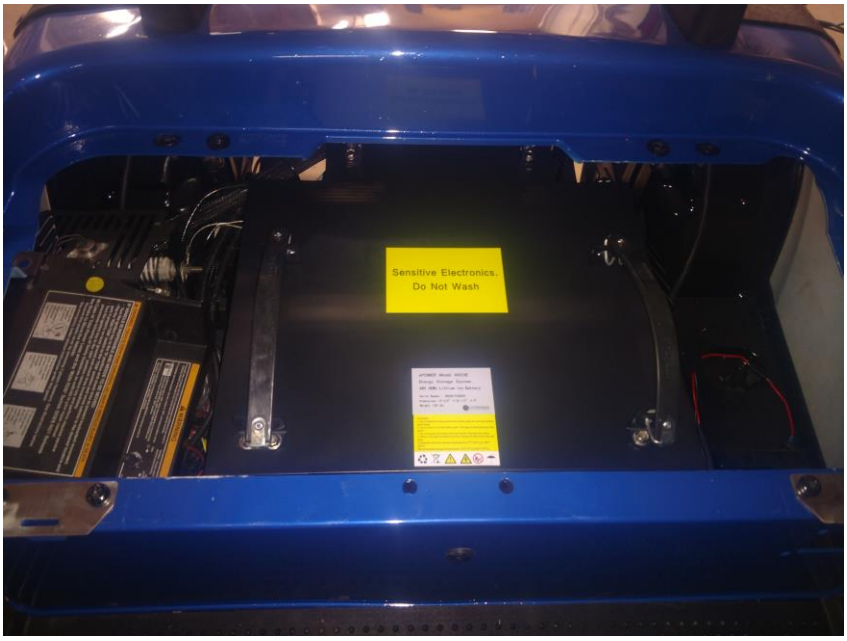
Lead acid batteries removed and tray is clean and dried.

C) Two people should team lift the ePower battery in to the vehicle. The included lifting brackets will need to be installed in to the ePower box before continuing. The ePower 4803e uses standard battery lifting straps and goes in to the existing battery tray at an angle. Use caution to not damage the body when installing this system. Install the ePower battery as pictured below:

Then

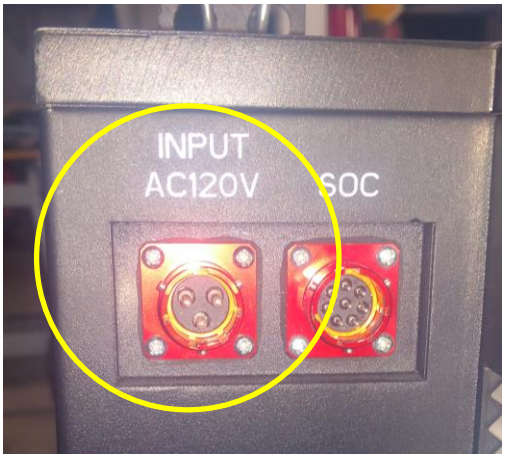
The ePower battery is lowered in at an angle,

then lowered down.



Once the ePower batteryis set in the battery tray the lifting straps can be removed.

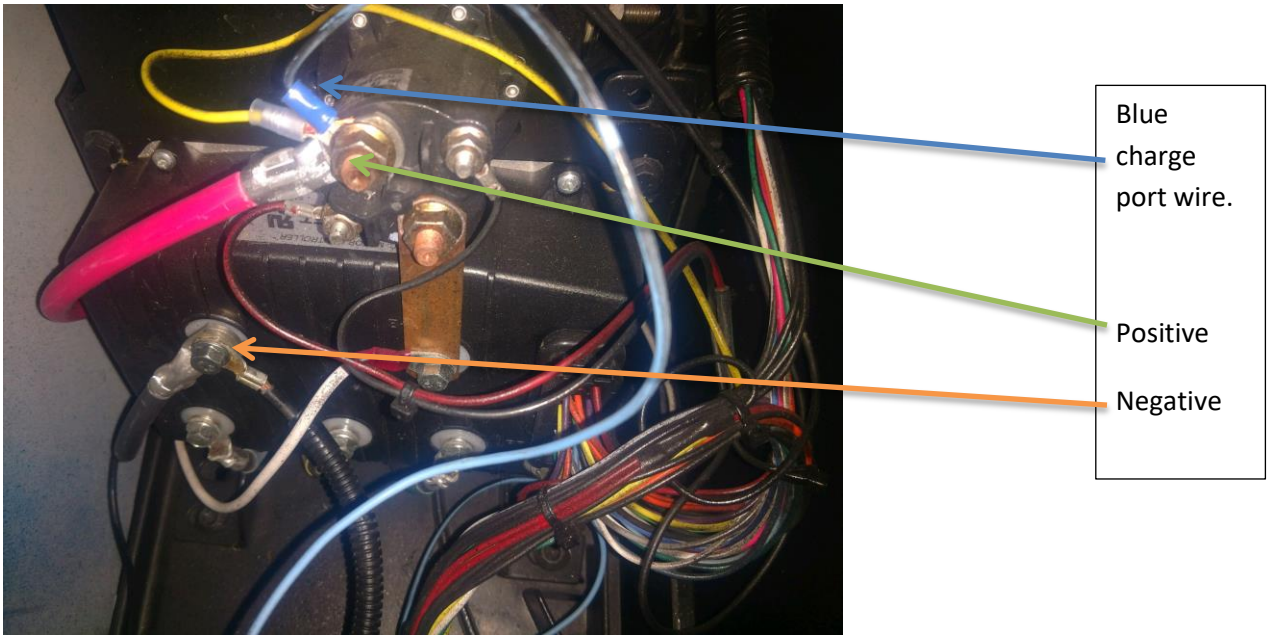
D) Install the 120VAC power cord on the vehicle using the existing charge port hole. Connect the AC cord to the ePower's input. The connector has a cam lock type connector. When aligned properly and turned it will click in to its locked position.



E) The main power cable has a push in style connector marked "Output DC48V" which is located on the rear of the ePower near the drive motor of the vehicle. There will be a plastic protective cover installed in the plug from the factory. To remove the plug grasp the wire hook and give it a sharp pull to remove.

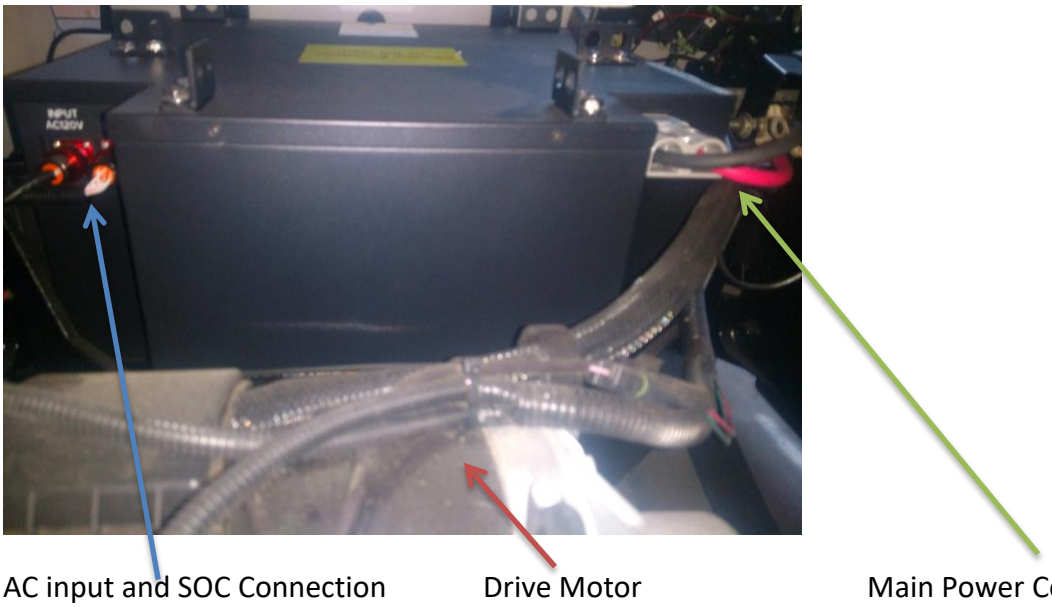
The ePower comes with a pre-made main power harness. For this step ensure that the main Power button is in the off position, the back light will not be lit. There is a plastic cover over the vehicles speed controller that will have to be removed. The speed controller is located on the passenger side of the vehicle next to the battery tray. The vehicles existing main positive and negative cables will be removed during this process.

The ring terminals of the ePower main power harness are connected as shown below:



A blue wire goes in to the vehicles existing charge port. This wire will need to be moved over to the main vehicle positive. The main contactor is a convenient location to connect this to.

Plug the connector in to the ePower DC 48V output by firmly pressing it in to the ePower until the connector click in to place.



F) Optionally, the included state of charge indicator can be installed on the vehicle where desired. The state of charge gauge has four LED's which represent 25% increments of the batteries available charge.

A fifth green LED at the bottom of the gauge indicates the chargers status. While the vehicle is charging the LED will flash and will turn solid once the battery is fully charged.

G) Secure the ePower battery to the vehicle by using the supplied hold down bracket. There are two T50 torx bolts in the sides of the existing battery tray that are removed. The strap is laid over the top of the ePower box and will line up with the existing bolt holes. The existing bolts are then secured back in place with the hold down bracket underneath the bolts.

H) To activate the system press the main power button. After a brief delay the back light will turn on on the button indicating the system is active. 48V power will be activated after a few second delay. The system is now on and the vehicle can be driven. It is highly recommended that the vehicle be plugged in and allowed to charge to full before driving any significant distance however.

5. Charging

The ePower batteries have a built in charger that is supplied via the 120VAC input port. A pre-made cord is provided. To charge, make sure that the main power button on the box is on, indicated by the back light being lit, and simply plug in an extension cord to the ePower. The extension cord should be a minimum of 14ga wire and no longer than 50ft. A 12ga extension cord can be used up to 100ft.

If the optional State of Charge gauge is installed the lower green LED will blink when the ePower battery is charging. This LED will turn on solid green when the unit is fully charged. It is normal to see this LED cycle from full to charging after a full charge is done.

It is recommended that whenever possible the ePower battery be plugged in to AC power.

A fully depleted ePower will take up to four hours to fully charge from 0%. The charge time will be shorter if the battery is not fully depleted.

The battery charger in the ePower 4803 battery is designed to work with most standard existing garage electrical circuits. It will draw approximately 850 watts while charging of the 1,440 watts permissible on a standard 15A 120VAC circuit. If there are other items, such as a refrigerator, in use on the same circuit it is possible that the circuit breaker may trip from an over current condition. If this occurs then a dedicated circuit will need to be installed for the ePower 4803 to charge from.

Two ePower 4803 batteries may be charged simultaneously on a dedicated 20A 120VAC circuit.

6. Using the ePower battery

> The ePower battery is not water proof and should not be sprayed with water.

To use the ePower battery the main power button must be turned on to supply power to the vehicle and the battery must have sufficient charge in it in order to be able to operate the vehicle. This is indicated on the State of Charge display.

The ePower battery is used much like any traditional battery pack. It is normal that users will notice a significant improvement in how the vehicle accelerates compared to a traditional lead acid battery pack. This is due to the significantly lower weight of the battery and lesser voltage sag under load.

The ePower will not exhibit any significant loss of electrical power as the battery discharges, which they may have become accustomed to with lead acid batteries. Please pay attention to the State of Charge display as the vehicle is operated to ensure that the vehicle will make it back to a location where it can be re-charged.

When the indicator reaches 0% charge, as indicated by two rapid flashes of the left most LED on the state of charge meter, the ePower will automatically turn off the main power output to the vehicle. When this occurs the vehicle must be plugged in to 120VAC power so that the battery may be recharged before the ePower will allow the vehicle to operate again. It is not recommended that the battery be discharged to this point on a regular basis. There is no need to wait for the ePower battery to be discharged to any certain point before recharging it.

The ePower battery will slowly drain itself if it is left un-used for a long duration of time. From a full charge the ePower battery cannot be left unplugged for more than one week with the power switch in the on position. The time it can be left without 120VAC power will be less if the battery is not fully charged. If the battery needs to be left for a longer period the main power switch must be turned off. Please see section 6 Storage of this document for more information.

To clean the ePower battery use an alcohol based cleaner sprayed on to a soft cloth and wipe clean. Do not spray water directly on to the ePower battery.

7. Storage

Important The ePower battery cannot be left in storage with the power switch in the on position. Doing so will result in the battery discharging to a state that it may not be recoverable by the user and will require a service technician to recover the battery. This may result in a service call fee.

To store: Fully charge the ePower battery then turn off the power switch. Maximum storage time is 6 months.

The ePower battery needs to be fully charged before using this approach. This is indicated when the green LED on the State of Charge gauge is lit solid. It can take up to four hours for the battery to fully charge. Once the green LED is lit solid unplug the unit from 120VAC power and press the main power button to turn the ePower battery off. You will hear an audible click from the box and the back light on the power button will turn off. Ensure that the vehicle cannot be turned on and driven.

In this state the ePower battery can be left for up to six months with no maintenance charge. During this time a maintenance charge can be applied if desired by turning the main power button on, plugging the ePower battery in to 120VAC power and then turning the power button back off after the charger has fully recharged the ePower.

After a long period of storage the ePower should be fully charged before using. While in storage, the ePower Battery will slowly loose charge, this is normal. When turned back on the unit will display the same amount of charge that is stored in memory as before it was placed in to storage, but this will be incorrect. Fully charging the battery will re-sync the Stage of Charge indication with the actual value.

Storage Temperature

The ePower must be kept between -4°F and 149°F at all times. The recommended temperature range is between 32°F and 100°F for optimal life time. Exposing the ePower battery to temperatures below -4°F will cause the battery to freeze. Such damage is not covered by warranty. The ePower batteries freezing temperature does not change with the state of charge like it does with lead acid batteries.

Failure to observe proper storage practices may potentially result in a battery that becomes over discharged while in storage. A battery that is not stored properly may not be covered by warranty.

8. Warranty

These special warranty provisions only apply to Elite Power Solutions (EPS) ePOWER© 4803c and 4803e products. Other warranty terms apply to EPS's other product lines.

What Does The Limited Warranty Cover?

The warranty covers Elite Power Solutions battery assembly (referred to as the "battery") which fails due to defect in materials or workmanship. Warranty only applies to original purchaser and cannot be transferred. The warranty period is four years (maximum 1,461 days) starting from the date of delivery. During the four year limited warranty period the customer will receive a replacement for a defective product free of charge (except for taxes, where applicable).

EPS reserves the right to replace the ePOWER battery with either a new or refurbished battery which meets or exceeds minimum performance specifications.

How To Obtain A Warranty Claim?

To obtain a warranty claim, please contact your authorized ePOWER distributor who will confirm that the system is defective and eligible for warranty. They will install a replacement battery. The defective ePOWER battery must be surrendered in order to obtain a warranty replacement.

In the event that an authorized dealer is not located within what is determined to be a reasonable distance from the user, EPS may issue a replacement via a freight carrier to the customer. The customer will be responsible for returning the defective unit to EPS and complying with all legal shipping regulations.

What Is Not Covered?

ePower products are only to be opened and serviced by a qualified service technician authorized by EPS to perform such work. There are no customer serviceable parts inside.

This warranty does not cover defects resulting from improper installation, from abuse, misuse, misapplication, improper maintenance, neglect, alteration, accidents, casualties, fire, flood, collision, freezing, theft, or other such as act of God. The warranty will be void under the following conditions:

- Apply voltage and current to Elite Power Solutions's products beyond specified ranges. All ePOWER products contain internal protection fuses. A blown fuse or battery used at too high of a current or otherwise short circuited battery may be excluded from the warranty at EPS's discretion if abuse is evident.
- Use chargers that are not provided or not approved by Elite Power Solutions.
- Over-charge or under-discharge batteries beyond the specified voltage range during usage or storage. Batteries MERELY DISCHARGED are not considered defective.

- Operate and store batteries in the temperature or humidity ranges outside of specified ranges.
- Expose batteries to water, rain or direct Sun light for extended period of time.
- Product serial numbers, date coding or tamper evident seals, tampered with or destroyed.
- Improper storage. ePOWER batteries must be stored per section 6 “Storage” of this document. A completely discharged battery pack will not be covered by warranty.

Gradual capacity loss over time and with use is normal and expected with the ePOWER battery. Gradual capacity loss is not covered by this warranty.

Limitations and Exclusions

Elite Power Solutions’ liability is limited to replacement of the battery according to the terms stated above. Elite Power Solutions will not be responsible for any expenses, electrical system tests, charging of batteries, any other implied warranties, including those of merchantability and fitness for a particular purpose. Elite Power Solutions will not be responsible for any incidental or consequential damages, including travel expense, telephone charges, data charges, loss of revenue, loss of time, inconvenience, loss of use of the product, and damage caused by the product and its failure to function properly. This warranty sets forth all of the Elite Power Solutions’ responsibility regarding this product.

9. Specifications

Internal fuse: 200A
Max recommended power: 5 kW
Battery voltage:
    Maximum 56.8V
    Nominal 51.2V
    Minimum 44.8V
Battery Chemistry: LiFeMnPO4
Number of cells: 16
Cell capacity: 60Ah
Available capacity: 80%
Battery cell safety certifications: CE, UL 1642, UL 1973, UN38.3
Battery Management System Protections: Over Voltage, Under Voltage, Over Temperature, Under Temperature
Temperature Range:
    Charge 32F to 140F
    Discharge 0F to 140F
Cooling: Forced air with automatic thermostat
Input Power: 120VAC 60hz, 850 watts
Power Factor: > 0.90