SUPER EMPOWER
Bright Mobile Energy

Lithium Iron Phosphate ($LiFePO_4$) Battery

12.8V 300Ah 3,840WH

Model: 12300-180L

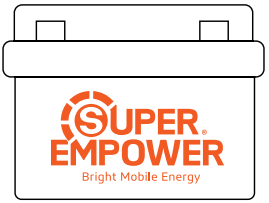
INSTALLATION AND OPERATION GUIDE

APPLICATIONS

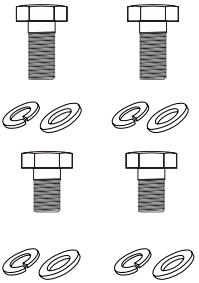
- Outdoor Recreation
- Backup Power
- Off-Grid Systems

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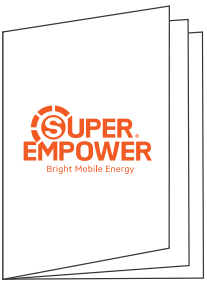
—PACKING LIST



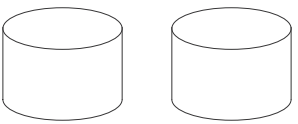
Battery x 1



Screw x 4



Specification x 1



Plastic Insulation Cap x 2

THANK YOU!

Dear Valued Customer,

Thank you for choosing SUPER EMPOWER® batteries. We greatly appreciate your support. Our team works diligently behind the scenes to create advanced battery systems and provide top-notch service to our customers. Support and feedback from our customers along with the hard work and dedication of our staff allow us to deliver exceptional products, competitive prices,and an overall excellent experience.
Thanks again for giving us your vote of confidence. We hope that you'll enjoy using our products as much as we've enjoyed creating them.
Please feel free to reach out to us if you have any questions.

—CAUTION

- Flammable explosive hazard
- Avoid mechanical impact
- **DO NOT short circuit.**
- **DO NOT crush.**
- **DO NOT disassemble.**
- **DO NOT incinerate.**
- **DO NOT heat above 149°F (65°C).**
- **DO NOT exceed charging voltage of 15V.**
- **DO NOT immerse the battery in water.**
- **DO NOT reverse the polarity of the battery and charger.**
- Use the appropriate tools when handling the battery.
- When connecting batteries in series/parallel, do not use batteries from other brands/types (BMS may not be compatible).
- This battery should be charged using a lithium iron phosphate battery charger with a charging voltage of 14.6±0.2V.
- Keep the battery away from fire, hazardous materials, or substances.

—WARNING/AVERTISSEMENT

GENERAL SAFETY PRECAUTIONS / PRÉCAUTIONS GÉNÉRALES DE SÉCURITÉ

ENGLISH

- Batteries may present potential hazards. Appropriate safety precautions must be taken during installation, operation, storage, and maintenance.
- Improper use of the battery may result in battery failure, equipment damage, personal injury, fire, or other hazards.
- Incorrect installation, configuration, or use of connected equipment may damage the battery or other components in the system.
- Wear appropriate personal protective equipment when installing or servicing the battery.
- Installation and maintenance should be performed by trained and qualified personnel.
- Failure to follow these safety instructions may result in personal injury or property damage.

FRANÇAIS

- Les batteries peuvent présenter des risques potentiels. Des précautions de sécurité appropriées doivent être prises lors de l'installation, de l'utilisation, du stockage et de l'entretien.
- Une utilisation incorrecte de la batterie peut entraîner une défaillance de la batterie, des dommages matériels, des blessures, un incendie ou d'autres dangers.
- Une installation, une configuration ou une utilisation incorrecte des équipements connectés peut endommager la batterie ou d'autres composants du système.
- Portez un équipement de protection individuelle approprié lors de l'installation ou de l'entretien de la batterie.
- L'installation et l'entretien doivent être effectués par du personnel formé et qualifié.
- Le non-respect de ces consignes de sécurité peut entraîner des blessures ou des dommages matériels.

1. AVOID SHORT CIRCUITS / ÉVITER LES COURTS-CIRCUITS

ENGLISH

Do not short-circuit the positive and negative battery terminals. Keep metal tools, jewelry, and other conductive objects away from the terminals.

FRANÇAIS

Ne court-circuitez pas les bornes positive et négative de la batterie. Tenez les outils métalliques, les bijoux et autres objets conducteurs éloignés des bornes.

2. DO NOT DISASSEMBLE OR MODIFY / NE PAS DÉMONTER NI MODIFIER

ENGLISH

Do not disassemble, open, puncture, or modify the battery. Doing so may cause an internal short circuit, gas generation, fire, explosion, or other hazards.

FRANÇAIS

Ne démontez, n'ouvrez, ne percez et ne modifiez pas la batterie. Cela pourrait provoquer un court-circuit interne, un dégagement de gaz, un incendie, une explosion ou d'autres dangers.

3. ELECTROLYTE HAZARD / DANGER LIÉ À L'ÉLECTROLYTE

ENGLISH

If electrolyte leaks from a damaged battery and comes into contact with the skin or eyes, rinse the affected area immediately with plenty of clean water and seek medical attention.

FRANÇAIS

En cas de fuite d'électrolyte provenant d'une batterie endommagée et de contact avec la peau ou les yeux, rincez immédiatement et abondamment la zone affectée à l'eau propre et consultez un médecin.

4. KEEP AWAY FROM WATER / TENIR À L'ÉCART DE L'EAU

ENGLISH

Do not immerse the battery in water or any other liquid. Keep the battery away from seawater, beverages, juice, coffee, and other liquids.

FRANÇAIS

N'immergez pas la batterie dans l'eau ni dans tout autre liquide. Tenez la batterie à l'écart de l'eau de mer, des boissons, des jus, du café et de tout autre liquide.

5. BATTERY SERVICE AND REPLACEMENT / ENTRETIEN ET REMPLACEMENT DE LA BATTERIE

ENGLISH

Battery servicing or internal cell replacement should only be performed by the manufacturer, an authorized supplier, or qualified service personnel. Do not attempt to replace the internal battery cells yourself.

FRANÇAIS

L'entretien de la batterie ou le remplacement des cellules internes doit être effectué uniquement par le fabricant, un fournisseur autorisé ou un personnel de maintenance qualifié. Ne tentez pas de remplacer vous-même les cellules internes de la batterie.

—WARNING/AVERTISSEMENT

6. DO NOT USE A DAMAGED BATTERY / NE PAS UTILISER UNE BATTERIE ENDOMMAGÉE

ENGLISH

The battery may be damaged by impact during transportation or handling. Do not use the battery if any abnormal condition is observed, including:

- Cracks or damage to the housing
- Deformation or swelling
- Electrolyte leakage
- Unusual odor
- Excessive heat
- Other visible damage or abnormal conditions

If leakage, an unusual odor, excessive heat, or other abnormal conditions are detected, stop using the battery immediately and keep it away from fire, sparks, open flames, and other ignition sources.

FRANÇAIS

La batterie peut être endommagée par un choc pendant le transport ou la manutention.
N'utilisez pas la batterie si vous constatez une anomalie, notamment:

- Des fissures ou des dommages au boîtier
- Une déformation ou un gonflement
- Une fuite d'électrolyte
- Une odeur inhabituelle
- Une chaleur excessive
- Tout autre dommage visible ou état anormal

En cas de fuite, d'odeur inhabituelle, de chaleur excessive ou de toute autre anomalie, cessez immédiatement d'utiliser la batterie et éloignez-la du feu, des étincelles, des flammes nues et de toute autre source d'inflammation.

7. BATTERY STORAGE / STOCKAGE DE LA BATTERIE

ENGLISH

For long-term storage, keep the battery at approximately 30% to 50% state of charge (SOC) and store it within the specified storage temperature range.
Recharge the battery approximately every six months to help prevent over-discharge.
Store the battery in a dry, well-ventilated location away from heat sources, direct sunlight, fire, and flammable materials.

FRANÇAIS

Pour un stockage de longue durée, maintenez la batterie à environ 30% à 50% de son état de charge (SOC) et stockez-la dans la plage de température de stockage spécifiée.
Rechargez la batterie environ tous les six mois afin d'éviter une décharge excessive.
Stockez la batterie dans un endroit sec et bien ventilé, à l'écart des sources de chaleur, de la lumière directe du soleil, du feu et des matériaux inflammables.

8. BATTERY AGING AND OPERATING CONDITIONS / VIEILLISSEMENT ET CONDITIONS D'UTILISATION

ENGLISH

Battery performance may gradually decrease over time, even when the battery is stored without being used.
Operating, charging, discharging, or storing the battery outside the specified conditions may shorten its service life or cause damage.
If the battery can no longer hold a charge properly even when charged according to the instructions, discontinue use and contact the supplier or qualified service personnel.

FRANÇAIS

Les performances de la batterie peuvent diminuer progressivement avec le temps, même lorsque la batterie est stockée sans être utilisée.
L'utilisation, la charge, la décharge ou le stockage de la batterie en dehors des conditions spécifiées peut réduire sa durée de vie ou provoquer des dommages.
Si la batterie ne parvient plus à maintenir correctement sa charge malgré une recharge effectuée conformément aux instructions, cessez de l'utiliser et contactez le fournisseur ou un personnel de maintenance qualifié.

—WARNING SYMBOLS

ENGLISH



- Do not dispose of the battery with household waste.



- Recycle the battery in accordance with applicable local regulations.



- Read the product manual carefully before installation and use.



- Follow all safety instructions to avoid personal injury or property damage.



- Do not expose the battery to temperatures above 60°C (140°F).



- Keep the battery away from fire, sparks, and open flames.



- Do not immerse the battery in water or expose it to rain or excessive moisture.

—SYMBOLES D'AVERTISSEMENT

FRANÇAIS



· Ne jetez pas la batterie avec les ordures ménagères.



· Recyclez la batterie conformément aux réglementations locales applicables.



· Lisez attentivement le manuel du produit avant l'installation et l'utilisation.



· Respectez toutes les consignes de sécurité afin d'éviter les blessures ou les dommages matériels.



· N'exposez pas la batterie à des températures supérieures à 60°C (140°F).



· Tenez la batterie à l'écart du feu, des étincelles et des flammes nues.



· N'immergez pas la batterie dans l'eau et ne l'exposez pas à la pluie ou à une humidité excessive.

If you have any questions or need any help, please feel free to contact us at Service@super-empower.com.

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—PRODUCT OVERVIEW

Key Features

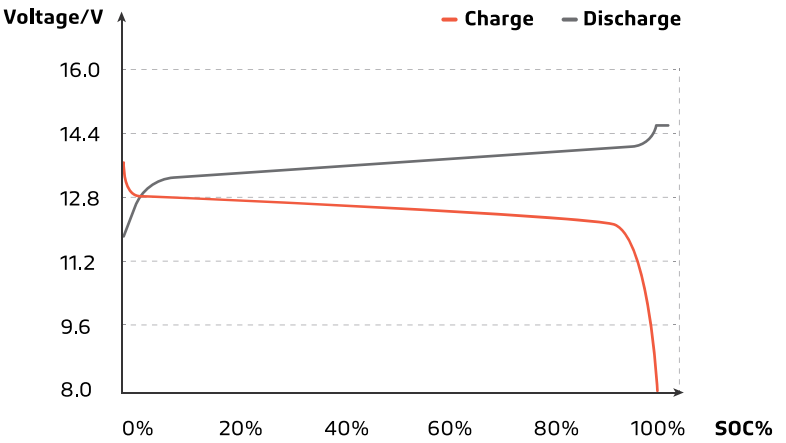
- Lithium Ion Phosphate($LiFePO_4$)chemistry provides exceptional stability and consistent performance.
- Advanced Battery Management System (BMS) ensures product safety and long lifespan.
- Supports fast charging and discharging
- Constant voltage and full usable capacity at any state of charge.
- IP65 Rated (Dust and Water Resistant)

External Featurves



CHARGE-DISCHARGE CURVE

Charge-discharge Curve @ 77°F/25°C

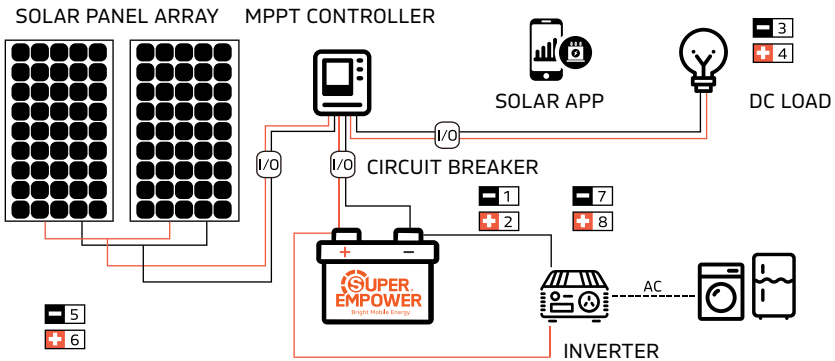


Sample: 12.8V 300Ah battery

*Environmental conditions required for all tests: 77±9°F/25±5°C

Connection Diagram

Note: for a 12.8V 300Ah battery, the usage is the same for other models.



PRODUCT SPECIFICATIONS

Battery Management System (BMS) Warning and Protection

Cell Type	Lithium Iron Phosphate ($LiFePO_4$) Battery
Nominal Voltage	12.8V
Rated Capacity	300Ah
Energy	3840Wh
Battery Management System (BMS)	200A
End of Charge Voltage	14.6V
Recommended Charge Current	60A (0.2C)
Max. Continuous Charge Current	200A
Max. Continuous Discharge Current	200A
Max. Continuous Output Power	2560W
Dimension	L382× W193 × H250 mm L 15.04 × W 7.60 × H 9.84 Inches
Housing Material	ABS (Flame Retardant Plastic)
Protection Class	IP65
Charge Temperature	5°C to 55°C / 41°F to 131°F
Discharge Temperature	-20°C to 55°C / -4°F to 131°F
Storage ≤ 1 Month	-20°C to 45°C / -4°F to 113°F
Storage ≤ 3 Months	-20°C to 45°C / -4°F to 113°F
Storage ≤ 1 Year	-20°C to 20°C / -4°F to 68°F

CHARGING

Charging with AC-DC Battery Charger

Check the AC-DC battery charger you intend to use has a dedicated lithium charge setting that meets the below charging requirements. A lot of battery chargers are designed for charging lead-acid batteries only and may not have a suitable charge setting for $LiFePO_4$ battery.

Charging Tips:

Use a 14.6V $LiFePO_4$ battery charger.

End of Charge Voltage: 14.6V

Recommended Charging Current: 60A (0.2C)

Charging Current	Approx. Charging Time
20A	Approx. 15 hrs
50A	Approx. 6 hrs

Cable Size

Cable size should be selected based on the expected load. Refer to the table below for the amperage of copper cables of different sizes.

Cable Specification and Capacity (AWG = 8.37 mm²)	Current Capacity (A)
14(2.08)	20
12(3.31)	25
10(5.25)	35
8(8.26)	50
6(13.3)	65
4(21.1)	85
2(33.6)	115
1(42.4)	130
1/0(53.5)	150
2/0(67.4)	175
4/0(107)	230

Best Practice Guidelines

1. Same Brand and Model

DO NOT connect batteries from different brands or models.

2. Same Battery Type

Use only $LiFePO_4$ batteries with the same specifications.

3. Same Voltage

Fully charge each battery separately before connecting them in series or parallel, and ensure the battery voltages are closely matched.

4. Same Capacity

Use batteries with the same rated capacity.

5. Similar Age

Use batteries of similar age. DO NOT mix new and heavily used batteries in the same battery system.

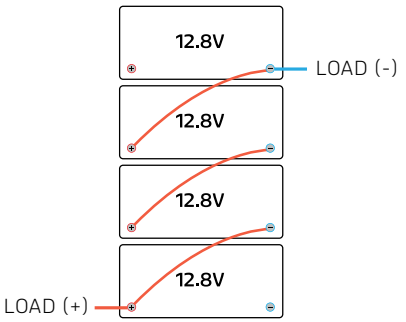
—INSTALLATION GUIDE

STEP 1.
Fully charge each battery separately.

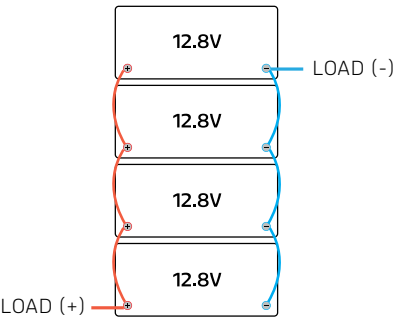
STEP 2.
Allow the batteries to rest, then check that their voltages are closely matched before connection.

STEP 3.
Connect the batteries in series, parallel, or a series-parallel configuration.

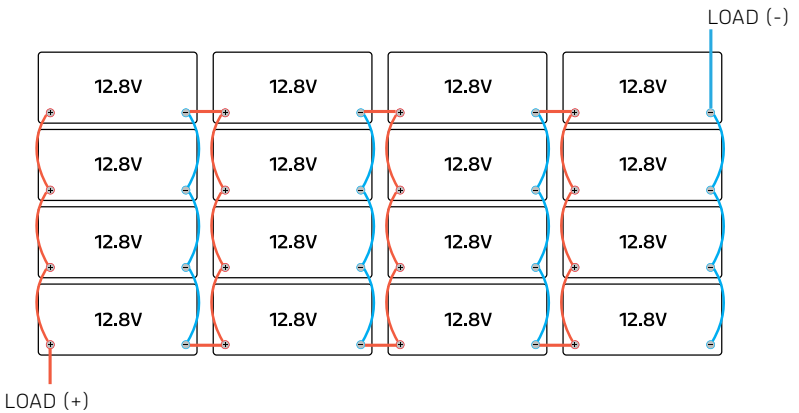
Series Connection
51.2V 300Ah



Parallel Connection
12.8V 1,200Ah



Maximum Series/Parallel Configuration: 4S4P



Using 12.8V 300Ah batteries as an example, connect four batteries in parallel to form a 12.8V 1,200Ah group, then connect four identical groups in series to form a 51.2V 1,200Ah battery system.

—BMS FUNCTION

The battery is equipped with a 200A Battery Management System (BMS) to help protect the battery from over-charge, over-discharge, over-current, short circuit, and abnormal temperature conditions.

Over-Charge Protection
The BMS helps protect the battery from over-charging.

Use a $LiFePO_4$-compatible charger and do not exceed the specified End of Charge Voltage of 14.6V.

Over-Discharge Protection
The BMS helps protect the battery from excessive discharge.

If the BMS enters over-discharge protection, disconnect the load and recharge the battery using a compatible $LiFePO_4$ charger.

Over-Current Protection
Maximum Continuous Charge Current: 200A
Maximum Continuous Discharge Current: 200A
Recommended Charge Current: 60A (0.2C)

If excessive current is detected, the BMS may disconnect the battery to protect the cells and electrical system.

Short-Circuit Protection
The BMS provides short-circuit protection.

If short-circuit protection is triggered, immediately disconnect all loads and charging sources. Check the wiring and connected equipment before reconnecting the battery.

Temperature Protection
Charging Temperature: 5°C to 55°C / 41°F to 131°F
Discharging Temperature: -20°C to 55°C / -4°F to 131°F

Do not charge or discharge the battery outside the specified temperature ranges. The BMS may limit or disconnect charging or discharging when abnormal temperatures are detected.

Cell Balancing
The BMS provides cell-balancing functionality to help maintain consistency among the internal cells and support stable battery performance.

APPLICATION EXAMPLES

Wide Application

- RV
- Solar Energy Storage
- Industrial Battery
- Used to Replace 12V Lead-acid Batteries
- Home Energy Storage & Power Wall
- Nautical Applications
- Fishing, Boating Electronics
- Ice Fishing
- Recreational Vehicle
- Off-grid Life
- Deep Circulation Application



FAQs

Q1. What should I do if the battery shows 0V?
The battery may have entered BMS protection mode. Disconnect all loads and charging sources, check the battery and wiring, and then try charging the battery with a compatible $LiFePO_4$ charger. If the battery cannot be recovered, please contact our technical support team at Service@super-empower.com.

Q2. Is it necessary to charge the battery before first use?
Yes. Fully charge the battery before first use.
NOTE: Before connecting batteries in series or parallel, fully charge each battery separately and make sure their voltages are closely matched.

Q3. How can I check the battery voltage?
If you do not have a battery monitor, use a multimeter to measure the battery voltage.

Q4. Can the battery be mounted in any position?
The battery can be installed upright or on its side. DO NOT install the battery upside down. Make sure the battery is securely mounted and avoid placing pressure or weight on the terminals.

Q5. What charger should I use?
Use a charger specifically designed for 12V $LiFePO_4$ batteries. The recommended charging voltage is 14.4V to 14.6V.

FOR MORE FAQs, PLEASE VISIT OUR WEBSITE:
[www.super-empower.com]

—WARRANTY AND RETURNS

Not covered by warranty:

- Damage caused by insufficient or improper fastening.
- Improper installation, use, maintenance, or service.
- Loose battery terminal connections.
- Series connection of more than 4 batteries (48V above) or parallel connection of more than 4 batteries.
- Reverse polarity connection.
- Improper storage conditions defined in the battery user manual.
- Any short circuit caused by accidentally, intentionally, or unintentionally connecting the positive and negative terminals.
- Damage caused by impact, accidents, collisions, or drops.
- Insufficient/overcharging of the battery as defined in the battery user manual.
- Use in conjunction with other third-party products.
- High resistance caused by terminal corrosion, poor crimping, or undersized cables.
- Battery failure caused by electrical system malfunctions.
- Modification of the product without the explicit written consent of the manufacturer.
- Use of the battery for applications beyond its design and intended use, including repeated engine starting or consuming more amperes than the battery's rated continuous discharge to meet their respective specifications.
- Batteries left uncharged for more than 1 year batteries should to be charged regularly).

- Batteries used in commercial applications that cycle to a discharge depth of 80% or more within 24 hours.
- Force majeure, including fires, typhoons, floods, or earthquakes.
- Buyers are responsible for any damage caused by improper operation or misuse of our products and or failure to follow safety guidelines.

After-sales Service

If you need any after-sales service for the product, please contact Service@super-empower.com. We will provide you with the necessary assistance.

How to Store the Battery?

We recommend bringing the Batteries to a 50% state of charge. Then, disconnect the battery from any loads by removing the negative cable from one battery. On average, the batteries lose <3% capacity per month at 77°F (25°C).

This is subject to increasing if stored in extreme environmental conditions.

Disposal and Recycling

Ensure that the battery is properly disposed of in accordance with the laws and regulations in your area.

This product contains lithium-ion batteries and other recyclable materials.

We strongly encourage our customers to recycle used batteries.

CALIVE LLC reserves the right to update all product data sheets at any time. Consult CALIVE LLC marketing specialists for publication updates at Service@super-empower.com

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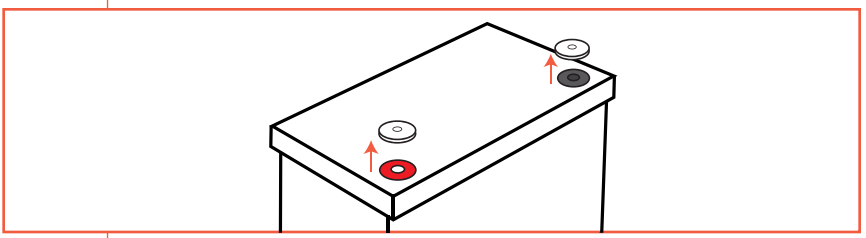
NOTICE BEFORE USING

Step 1

BATTERY ACTIVATION

Step 2

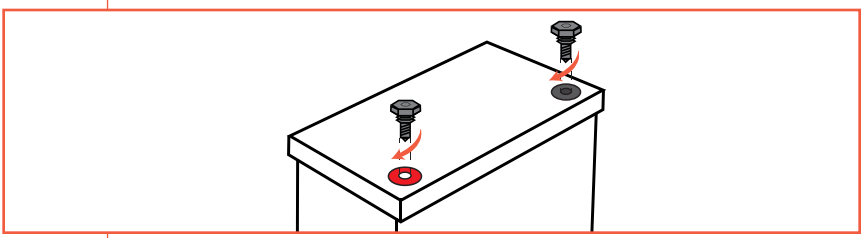
PULL OUT Insulating Plugs



Step 3

TIGHTLY SCREW IN Post Bolts

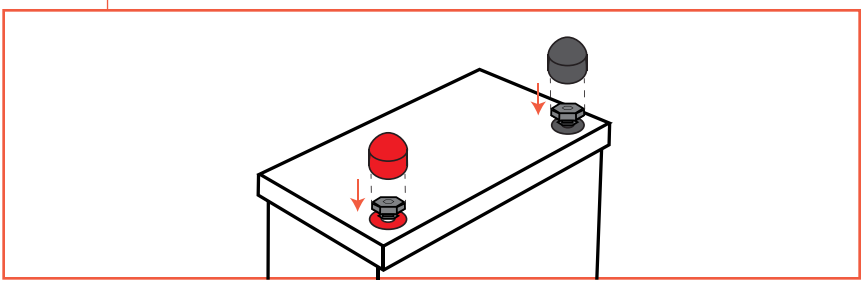
⚠ Please tightly screw in the post bolts. Having loose battery terminals will cause terminals to build up heat resulting in damage to the battery.



Step 4

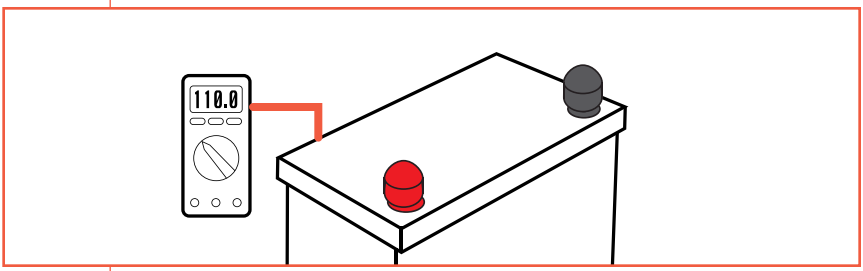
PUT ON Insulating Covers

Please put on the insulating covers to avoid metal or conductive objects touching the positive and negative terminals of the battery at the same time, otherwise it is likely to cause a short circuit.



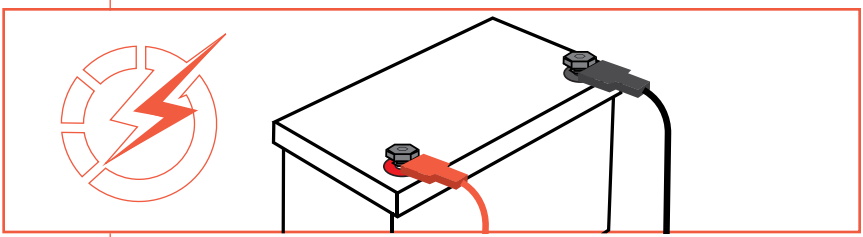
Step 5

TSET The Battery Voltage with a Multimeter
≥ 12.8V To Next Step
< 12.8V Contact us at
Service@super-empower.com
to help solve the problem.



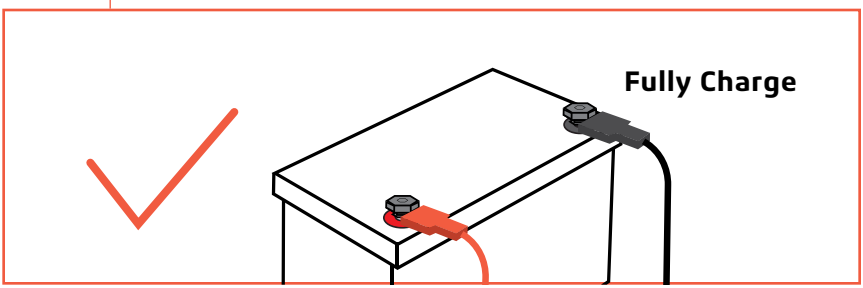
Step 6

FULLY CHARGE The Battery
(Refer to Page 17 for battery charging methods)



Step 7

CONNECT To Use



SUPER EMPOWER

SOLTECH
Smart Solar Lighting

"WE EMPOWER WATT MATTERS"

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